

**ADMINISTRATIVE DRAFT
ENVIRONMENTAL IMPACT REPORT**

**OTAY RANCH RESORT VILLAGE
SCH# 2004101058**

**GPA 04-003, SP 04-002, TM5361A and TM5361B, REZ 04-009
Environmental Log Number ER 04-19-005**

Lead Agency:

**County of San Diego
Planning and Development Services
5510 Overland Ave., Suite 310
San Diego, California 92123**

March 2015

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
afy	acre-feet per year
ALUCP	Airport Land Use Compatibility Plan
AMSL	above mean sea level
APCD	Air Pollution Control District
AQIS	Air Quality Impact Analysis
ARB	Air Resources Board
ASTM	American Society for Testing and Materials
ATCM	air toxic control measure
BLM	Bureau of Land Management
BMP	best management practice
B.P.	before present
BRT	Bus Rapid Transit
BTU	British Thermal Units
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CBC	California Building Code
CCAP	California Climate Action Protocol
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDI	Construction, Demolition, and Inert debris
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFD	Community Facilities District
cfh	cubic feet per hour
CFR	Code of Federal Regulations
CH ₄	methane
CHHSL	California Human Health Screening Level
CIP	Capital Improvement Plan
CIWMB	California Integrated Waste Management Board
CLUP	Comprehensive Land Use Plan
CMP	Congestion Management Plan
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California National Resources Agency

CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalents
CPA	California Power Authority
CPEP	Community Protection and Evacuation Plan
CRA	Colorado River Aqueduct
CSD	Community Services District
CUDA	Current Urban Development Area
CVESD	Chula Vista Elementary School District
CVFD	Chula Vista Fire Department
CVPD	Chula Vista Police Department
CVT	Chula Vista Transit
CWA	Clean Water Act
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
DEIR	Draft Environmental Impact Report
DOE	Department of Energy
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DPW	Department of Public Works
DTSC	Department of Toxic Substances Control
du/acre	dwelling units per acre
DWR	Department of Water Resources
ECA	Environmentally Constrained Area
EDR	Environmental Data Resources
EDU	equivalent dwelling unit
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EPP	Emergency Preparedness Plan
ESA	Endangered Species Act
EUCSPA	Eastern Urban Center Sectional Planning Area
°F	degrees Fahrenheit
FCV	fuel cell vehicle
FEMA	Federal Emergency Management Agency
FFS	free-flow speed
FFV	flexible fuel vehicles
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPP	Fire Protection Plan
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
FUDS	Formerly Used Defense Site
GCC	global climate change
GDP	General Development Plan
GGE	greenhouse gas equivalent

GHG	greenhouse gas
GIS	Geographic Information System
GMOC	Growth Management Oversight Committee
GPA	general plan amendment
gpm	gallons per minute
GPU	General Plan Update
GWP	global warming potential
H&SC	Health and Safety Code
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HDM	Highway Design Manual
HFC	hydrofluorocarbon
HMP	Hydromodification Management Plan
HOA	Homeowner Association
HOV	high-occupancy vehicle
HRA	health risk assessment
HSA	Hydrologic Subarea
I	Interstate
ICBO	International Conference of Building Officials
ILV	Intersecting Lane Volume
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
IPR	Integrated Resource Plan
IWMA	Integrated Waste Management Act
IWMP	Integrated Waste Management Plan
JEPA	Joint Exercise of Powers Agreement
JURMP	Jurisdictional Urban Runoff Management Program
kW	kilowatt
kWh	kilowatt hours
L _{eq}	average noise level over a measured period of time
LAFCO	Local Agency Formation Commission
LARA	Local Agricultural Resource Assessment
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
LEV	Low-Emission Vehicle
LID	low-impact development
LOS	level of service
MCL	Maximum Contaminant Level
MEI	Maximally Exposed Individual
mgd	million gallons per day
MMBTU	million British thermal units
MMT	millions of metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization

MRZ	Mineral Resource Zone
MSCP	Multiple Species Conservation Program
MSR	Municipal Service Review
MT	metric tons
MTS	Metropolitan Transit System
MU	mixed-use
MUP	Major Use Permit
MWD	Metropolitan Water District
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHB	National Association of Homebuilders
NAHC	Native American Heritage Commission
NCCP	National Communities Conservation Planning
NHTSA	National Highway Traffic Safety Administration
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NSLU	noise sensitive land use
O ₃	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
ORWMP	Otay River Watershed Management Plan
OVRP	Otay Valley Regional Park
OWD	Otay Water District
Pb	lead
PCB	polychlorinated biphenyl
PCC	Portland Cement Concrete
PDS	Planning and Development Services
PEIR	Program Environmental Impact Report
PFC	perfluorocarbon
PFE	Public Facilities Element
PFFP	Public Facilities Financing Plan
PHEV	plug-in hybrid electric vehicle
PLDO	Park Land Dedication Ordinance
PM _{2.5}	fine particulate matter
PM ₁₀	suspended particulate matter
POM	Preserve Owner Manager
ppm	parts per million
PPV	peak particle velocity
PRG	Preliminary Remediation Goal
QCB	Quino checkerspot butterfly
QSA	Qualification Settlement Agreement

RAQS	Regional Air Quality Strategy
RCP	Regional Comprehensive Plan
RDA	Rural Development Area
RFPD	Rural Fire Protection District
RGMS	Regional Growth Management Strategy
RLUE	Regional Land Use Element
RMP	Resource Management Plan
ROG	reactive organic gas
RPO	Resource Protection Ordinance
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCS	Soil Conservation Service
SD	Sanitation District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDCGHGI	San Diego County GHG Inventory
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas and Electric
SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
SLT	screening level threshold
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SO ₂	sulfur dioxide
SPA	Specific Plan Area
SR	State Route
SRA	Subregional Area
SRP	Subregional Plan
SRS	Sensitive Resource Study
SSA	Special Study Area
SSM	Storm Water Standards Manual
SUHSD	Sweetwater Union High School District
SUSMP	Standard Urban Storm Water Mitigation Plan
SVSD	Spring Valley Sanitation District
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWPG	Source Water Protection Guidelines
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDIF	Transportation Development Impact Fees
TDS	total dissolved solids
TIF	Transportation Impact Fee

SUMMARY

S.1 Project Synopsis

Project Description

Baldwin & Sons, LLC, and JPB Development, LLC (Project applicants), have submitted to the San Diego County Department of Planning and Development Services (PDS) applications for general plan amendments (GPA), specific plan, rezone, and tentative maps (TM) for the proposed Otay Ranch Resort Village (Project). The Project includes the proposed development of 1,881 single-family dwelling units, a mixed-use area with 57 multi-family residences and up to 20,000 square feet of neighborhood commercial uses, and a 17.4-acre resort hotel that would consist of up to 200 guest rooms and up to 20,000 square feet of ancillary commercial/office uses, including meeting rooms, a conference center, offices, shops, and restaurants. The Project also includes an elementary school site, nine park sites, a public safety site that could house a fire station and law enforcement storefront, approximately 1,089 acres of Preserve open space, and approximately 144 acres of other open space. Preserve open space is generally undisturbed land or restored habitats set aside for dedication to the public while the non-preserve open space designation generally includes the fuel modification zone and exterior manufactured slopes within the Project development footprint and excludes internal residential manufactured slopes. Internal circulation makes up approximately 39.1 acres.

Project Location and Environmental Setting

The proposed Project site consists of approximately 1,869 acres located on Otay Lakes Road in southwestern San Diego County (County), east of Chula Vista. The Project is a portion of Otay Ranch, which covers approximately 23,000 acres within the jurisdictions of the County and the City of Chula Vista and for which a Program Environmental Impact Report (PEIR; SCH No. 89010154) was certified by the County and Chula Vista in 1993.

Access to the Project site is provided by Otay Lakes Road, east of Wueste Road, via three proposed entrance roads. The topography of the Project site is characterized by a broad mesa sloping to the south, broken by several steep canyons draining from north to south. The Project site elevations range from approximately 500 feet above mean sea level (AMSL) to approximately 900 feet AMSL in the proposed neighborhood development areas; and also include elevations up to approximately 1,600 feet AMSL in the open space areas. The Project site lies within the watershed of the Otay River, which drains an area of approximately 145 square miles. The EastLake Vistas residential community and the U.S. Olympic Training Center are located approximately one-quarter mile to the west of the Project site; Lower Otay Lake is to the south; Upper Otay Lake is to the northwest; and lands preserved as open space are located to the north and east. The Project site is currently vacant with vegetation consisting of native coastal sage scrub and disturbed grassland habitats. Riparian vegetation occurs in drainages located within the Project site.

The Project site would be constructed in multiple phases as shown in **Table 1.0-5**, to ensure construction of necessary infrastructure and amenities for each phase. **Figure 1.0-10** depicts the

Conceptual Phasing Plan, which reflects anticipated absorption for the proposed land uses. The Conceptual Phasing Plan is non-sequential to allow for adjustments in response to market changes, economic conditions, or regulatory constraints. Project development is divided into multiple phases, as shown with different colors in **Figure 1.0-10**. The PFFP imposes specific facilities requirements on each development phase to ensure the Otay SRP facility thresholds are met for each phase of development.

Project Features

Single-Family Residential Uses

As shown in **Figure 1.0-1** and as depicted in **Table 1.0-3**, 525.1 acres (28.1 percent) of the total Project site would be designated as single-family residential, which would accommodate 1,881 homes. This designation would allow for five single-family residential neighborhoods, with an average density ranging from 3.2 to 4.4 dwelling units per acre (du/acre). Site Plans would be required to refine the design, architecture, and landscape architecture for the proposed single family neighborhoods.

Multiple-Use

The Project site would include a 14.1-acre multiple-use (MU) area located adjacent to Otay Lakes Road, north of the Strada Piazza entrance to the community. As shown in **Table 1.0-3**, the MU designation would allow for 57 attached homes and up to 20,000 square feet of neighborhood commercial, retail, and office uses. A Site Plan would be required to refine the development program, facilities, site design, architecture, and landscape architecture for the proposed mixed-use area.

Resort Uses

The proposed Resort site would be located on a 17.4-acre promontory in the southeastern portion of the Project site. The resort land use designation would allow a hotel with up to 200 guest rooms and up to 20,000 square feet of ancillary commercial/office uses, including meeting rooms, a conference center, offices, shops, and restaurants. A Site Plan would be required to refine the development program, facilities, site design, architecture, and landscape architecture for the proposed resort uses.

Parks and Recreation Uses

The Project site would include 28.6 acres of parks on nine park sites. As illustrated in **Figure 1.0-1** and as shown in **Table 1.0-3**, the P-5 neighborhood park is 10.3 acres and would be located in the Village Core, adjacent to the elementary school site and the public safety site. The P-5 park and five additional public parks (P-1, P-2, P-3, P-4, and P-8) located within residential neighborhoods, would be maintained by an assessment district/mechanism. Three parks (P-6, P-7, and P-9) are planned as private parks, to be maintained by an HOA.

Public Uses

The 1993 Otay Ranch Facility Implementation Plan located a fire station within Village 15. Village 15 has been acquired for conservation purposes. To ensure that a site for future fire services is available, the Project reserves a 2.1-acre public safety site, which could house a fire station and a law enforcement storefront. As depicted in **Figure 1.0-1**, the public safety site would be located in the Village Core, across from the elementary school site.

The 1993 Otay SRP located an elementary school within Village 15. However, Village 15 has been acquired for conservation purposes. To ensure that a site for future school services is available, the Project proposes to locate the Village 15 elementary school to the Project site, with the designation of a 10-acre elementary school site located in the Village Core, adjacent to the neighborhood park (P-5).

Open Space

Approximately 144.0 acres of the Project site are designated as Open Space. This designation generally includes the fuel modification zone and exterior manufactured slopes within the Project development footprint and excludes internal residential manufactured slopes. Open space areas are planned to be maintained by either an HOA or an assessment district/mechanism, consistent with the requirements of the Resort Village Specific Plan.

Otay Ranch Preserve

The Land Use Plan designates approximately 1,089.0 acres of the 1,869-acre Project site (approximately 58.3 percent of the site) as Preserve land, which will be offered for dedication to the Otay Ranch Preserve system. Preserve land is generally undisturbed land or restored habitats set aside for dedication to the public. The Preserve land would be maintained by the Otay Ranch POM, the funding of which would be through an assessment district/mechanism.

The Specific Plan design calls for development on terraces integrated into the natural landform to minimize grading, optimize views, and promote passive solar heating and cooling opportunities. The goal of the proposed Land Use Plan is to concentrate development on the flatter areas (e.g., mesas and hilltops) that would result in undulating slopes of variable horizontal and vertical gradients and integrate Project development into the natural landform. Approximately 14.2 million cubic yards of cut and 14.2 million cubic yards of fill are proposed in a balanced grading operation.

The Specific Plan includes a Landscape Concept Plan, depicted in **Figure 1.0-3**. This style includes flowing, informal, timeless forms, pedestrian scaled building masses, indoor/outdoor spaces, and use of warm, natural materials and colors. Maintenance of the various components of the Landscape Concept Plan is detailed in the Specific Plan's Landscape Maintenance Plan. A "California friendly" landscape palette corresponds with the different landscape zones identified in **Figure 1.0-3** and is proposed to reduce water use and wildfire risk. This plant palette can be found in the Resort Village Design Plan, Resort Village Fire Protection Plan, Resort Village Preserve Edge Plan, and Resort Village Water Conservation Plan.

The Project would be served by Otay Water District for potable water and by the San Diego County Sanitation District and the City of Chula Vista for wastewater disposal. All connections to existing water and sewer lines would be provided via Otay Lakes Road, which would be widened from two lanes to four lanes from Wueste Road to the second Project entrance road. A 5-million-gallon water reservoir would be installed on-site. A fire station for the County Rural Fire Protection District would be constructed on-site; and a County Sheriff's storefront station would be provided on-site. Chula Vista Elementary School District and Sweetwater Union High School District would serve the Project.

S.2 Summary of Significant Effects and Mitigation Measures that Reduce or Avoid the Significant Effects

Table S.1 provides a brief summary of each potential environmental effect found to be significant with implementation of the proposed Project, the mitigation measures that would reduce or avoid that effect, and the conclusion as to whether the effect is reduced to below a level of significance by applying the mitigation measures. The table also includes the subchapters of this Environmental Impact Report (EIR) where each topic is analyzed in detail.

S.3 Areas of Controversy

The Notice of Preparation (NOP) for the EIR was distributed on October 14, 2004, for a 30-day public review and comment period. Public comments were received on the NOP reflect concern and/or controversy over several environmental issues. The NOP and NOP comment letters are in **Appendix A** of this EIR. Major environmental issues and potential areas of controversy were raised in nine letters commenting on the NOP, as listed below:

- Native American cultural resources
- Traffic congestion
- School impacts
- Parks and recreation
- Biological resources
- Provision of public services and utilities (fire, police, water, sewer, energy)
- On-site hazardous materials impacts
- Growth-inducing impacts
- Visual impacts/aesthetics
- Long-term governmental jurisdiction

In addition, a public scoping meeting was held on November 3, 2004, at the Chula Vista Civic Center, located at 276 Fourth Avenue, Chula Vista, California. No comments were received during the public scoping meeting. Issues raised in the NOP comment letters are evaluated in the EIR, in Chapters 2.0 through 4.0.

In addition to potentially controversial issues identified during the NOP process, air quality and noise impacts and greenhouse gas emissions would result from the increase in traffic from an estimated 27,177 new average daily trips. Traffic, air quality, and noise impacts would also result from the need for on-site blasting during Project grading. The Project would also extend road

improvements and water and sewer service that would have a potential growth-inducing impact on undeveloped lands to the east of the site.

The following Major Project Issues were raised by County staff during review of the proposed Project:

Hydromodification Report: The project was required to comply with the (IHC) Interim Hydromodification Criteria (IHC). The project is directly upstream from a waterbody (Otay Lakes Reservoir) that may be exempt, but the project discharges upstream of the waterbody in more than one basin.

DPW Modification Requests: The Project proposed street sections different from the County of San Diego's adopted public street sections.

Site Plans: The proposed rezone should require a Site Plan approval for the resort, single-family areas, commercial area, multi-family area and the public services areas by adding a Special Area Designator "D" in the proposed zone box.

Fire Response Time: Discussions on fire service state that the development is required to meet the 5-minute response time pursuant to the Public Facilities Element of the County's General Plan.

Preserve Design/MSCP Hardline/ Agency Concurrence - Revegetated manufactured slopes do not have sufficient biological value to warrant mitigation credit. A MSCP major amendment may be required for the current proposal if the Agencies do not accept the like or equivalent findings.

Recycled Water – The proposed project does not propose to use recycled water due to the proximity to Lower Otay Lake, a drinking water source owned and operated by the City of San Diego. The City of San Diego expressed concerns regarding the use of recycled water up-stream of the reservoir. As a result, the project requested, and OWD prepared, a revised Water Supply and Assessment Verification Report which evaluated the project's using only potable water.

City of San Diego Concurrence: The City of San Diego has reviewed the project drainage and water quality studies; however, the City must still review the proposed impacts and mitigation for widening Otay Lakes Road through their MSCP Cornerstone Lands.

Chula Vista Sewer Agreement: The option for Chula Vista to provide sewer service to this development should be accompanied by a Sewer Agreement ensuring treatment capacity.

S.4 Issues to be Resolved by the Decision-Making Body

The County Board of Supervisors would be required to make decisions concerning the significant impacts to aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, transportation and traffic, and solid waste that can be avoided and/or reduced to less than significant with mitigation measures, and significant impacts to aesthetics, air quality, and solid waste that cannot be avoided and/or reduced to less

than significant with mitigation measures. Findings are required to be adopted for each significant impact that shows the Project has been changed (including adoption of mitigation measures) to avoid or substantially reduce the magnitude of the impact. The Board of Supervisors must also determine that adopted mitigation measures are feasible and would be implemented during the design and construction phases of the Project.

S.5 Project Alternatives

Alternatives are required to be identified and evaluated to determine if they would lessen or avoid the significant impacts identified in Chapter 2.0. These alternatives are described and evaluated in Chapter 4.0. The No Project Alternative would result in no development of the Project site. Six site development alternatives have been selected based on either achieving the same 1,938 dwelling units as the proposed Project while increasing the total acreage of proposed preserve and open space (Alternatives B, D, and F), or reducing the number of dwelling units and increasing the total acreage of preserve and open space (Alternatives C, E, and G). Alternative C would reduce the Project to 1,241 dwelling units, Alternative E would reduce the Project to 1,391 dwelling units, and Alternative G would reduce the Project to 465 dwelling units.

The development alternatives that would reduce significant impacts in comparison to the proposed Project are listed below. The issues for which each alternative would have a lesser impact than the proposed Project are shown in parenthesis. The following list begins with the most superior alternatives followed by the inferior alternatives:

- Alternative G (aesthetics, air quality, biological resources, cultural resources, noise, and transportation and traffic);
- Alternative C (aesthetics, air quality, biological resources, cultural resources, and solid waste);
- Alternative E (aesthetics, air quality, cultural resources, noise, and transportation and traffic);
- Alternative D (aesthetics and cultural resources); and
- Alternative F (air quality and cultural resources).

Alternative B is not listed above because it would not reduce significant impacts in comparison to the proposed Project.

Chapter 4.0 of the EIR concludes that Alternative G would be considered the environmentally superior alternative.

Table S.1
Summary of Significant Effects and Mitigation Measures

SIGNIFICANT AND UNAVOIDABLE IMPACTS		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
PROJECT-LEVEL IMPACTS		
2.1 Aesthetics and Visual Resources		
2.1.2.2 Damage to Visual Resources		
AE-1 Substantial adverse change in the visual character and visual quality of the Project site caused by building an urban development in an undeveloped natural setting.	<p>M-AE-1 All grading plans, landscape plans, and improvement plans for the proposed Project shall be evaluated for Project compliance with the aesthetic design mitigation measures of this EIR, the Resort Village Specific Plan (Development Regulations), the Resort Village Design Plan, and the Resort Village Preserve Edge Plan.</p> <p>M-AE-2 Pursuant to Chapter IV, Implementation, of the Otay Ranch Resort Village Specific Plan, Site Plans (“D” Designator) shall be evaluated for Project compliance with the Resort Village Design Plan, the Resort Village Preserve Edge Plan, and the provisions of the Specific Plan related to colors, materials, and other architectural characteristics of adjacent buildings, building massing, siting of buildings and structures including setbacks from tops of slopes, architectural colors adjacent to open space, height, use of non-reflective/non-glare surfaces, and other aesthetic design measures of this EIR.</p>	Significant and unmitigable
2.1.2.3 Scenic Vistas		
AE-2 Permanent alteration to views of scenic resources caused by graded hills, buildings, and landscaping.	M-AE-1 and M-AE-2 See Above.	Significant and unmitigable
AE-3 Permanent alteration to views of the Project site from Otay Lakes Road—a designated scenic route.	M-AE-1 and M-AE-2 See Above.	Significant and unmitigable
2.9 Transportation and Traffic		
TR-1 Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed Phase I project trips would comprise 73.8% (more than 5%) of the total segment volume, and would also add 8,230 ADT (more than 800 ADT) to this roadway segment.	M-TR-1 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 728 th building permit.	Significant and unmitigable
TR-4 The unsignalized Otay Lakes Road/Wueste Road intersection (LOS E, City of Chula Vista) - With the addition of Project traffic, this intersection (#20) would operate at unacceptable LOS E during the PM peak hour and the buildout Project traffic would comprise	M-TR-4 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500 th building permit.	Significant and unmitigable

SIGNIFICANT AND UNAVOIDABLE IMPACTS		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
more than 5 percent of the total entering volumes.		
TR-5 Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 86.0% (more than 5%) of the total segment volume, and would also add 16,310 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour.	M-TR-5 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 910 th building permit.	Significant and unmitigable
TR-6 Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed project trips would comprise 87.0% (more than 5%) of the total segment volume, and would also add 19,540 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour.	M-TR-6 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 728 th building permit.	Significant and unmitigable
TR-7 Otay Lakes Road / Wueste Road (City of CV) - This intersection (#20) would operate at unacceptable LOS F during both the AM and PM peak hours with the addition of the project traffic because the Project traffic would comprise more than 5 percent of the total entering volumes.	M-TR-7 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500 th building permit.	Significant and unmitigable
TR-8 Otay Lakes Road / SR-94 (County) - This intersection (#21) would operate at unacceptable LOS E and F during the AM and PM peak hours, respectively.	M-TR-8 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with Caltrans to install, cause to be installed, or make a fair-share payment towards an approved plan or program for the signalization of the intersection of Otay Lakes Road and SR-94 such that the traffic signal is operational consistent with Caltrans requirements.	Significant and unmitigable
TR-9 Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 74.7% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT). Additionally, the intersection Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours.	M-TR-9 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 910 th building permit.	Significant and unmitigable

SIGNIFICANT AND UNAVOIDABLE IMPACTS		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
TR-10 Otay Lakes Rd, between Wueste Road and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed buildout project trips would comprise 76.5% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT). Additionally, the intersection of Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours.	M-TR-10 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 910 th building permit.	Significant and unmitigable
CUMULATIVE-LEVEL IMPACTS		
2.1 Aesthetics and Visual Resources		
2.1.2.3 Scenic Vistas		
AE-4 Contribution to aesthetic resources impacts within Otay Ranch and southeastern San Diego County, including impacts to views from scenic vistas and scenic highways and impacts to the visual character of the area.	M-AE-1 and M-AE-2 See Above.	Significant and unmitigable
2.2 Air Quality		
2.2.2.1 Project Conformity with the San Diego Regional Air Quality Strategy		
AQ-1 VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} emissions during Project construction	Construction Emissions M-AQ-1 The applicants shall implement all of the following measures during construction of the proposed Project: <ul style="list-style-type: none"> Water actively disturbed surfaces at least three times daily; On-site dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. The use of approved nontoxic soil stabilizers shall be incorporated according to manufacturers' specifications to all inactive construction areas; Water sprayers shall be installed on the rock crushing equipment to control particulate emissions during crushing operations; Approved chemical soil stabilizers shall be applied according to the manufacturers' specifications to all inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas; Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom permitted) if soil material has been carried onto adjacent paved, public thoroughfares from the Project site; 	Significant and unmitigable

SIGNIFICANT AND UNAVOIDABLE IMPACTS		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<ul style="list-style-type: none"> • Traffic speeds on all unpaved surfaces shall be reduced to 15 mph or less, and unnecessary vehicle traffic shall be reduced by restricting access. Appropriate training to truck and equipment drivers, on-site enforcement, and signage shall be provided; • The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained before and for the duration of on-site operation; • Termination of grading shall occur if winds exceed 25 mph; • Hydroseeding of graded pads shall occur if development will not occur within 90 days; • Minimize simultaneous operation of multiple construction equipment units. During construction vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions; • All construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. A copy of each unit's BACT documentation shall be provided at the time of mobilization of each applicable unit of equipment; • All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications; • All diesel-fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible; • The use of electrical construction equipment shall be employed where feasible; • The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible; • The use of injection timing retard for diesel-powered equipment shall be employed where feasible; and • Construction diesel fuel shall be comprised of at least 25 percent biodiesel; 	
AQ-2 Operational emissions of VOC, CO and PM ₁₀	M-AQ-2 Project permittees shall implement the following mitigation measures to reduce the air pollutant emissions associated mobile sources and on-site gas combustion (CAPCOA 2010):	Significant and unmitigable

SIGNIFICANT AND UNAVOIDABLE IMPACTS		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<ul style="list-style-type: none"> Plant low-maintenance, drought-resistant plant species that reduce gas-powered landscape maintenance equipment usage and water consumption. Equip residential structures with electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment. All single-family residences shall be constructed with connections for solar water heaters and solar and/or wind renewable energy systems. Use regulated low-VOC coatings for all architectural coating activities. Incorporate pedestrian trails, paths and sidewalks, and bicycle trails to encourage reduction in vehicle usage and trips. 	
AQ-3 VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} emissions during Project construction	M-AQ-1 See Above.	Significant and unmitigable
AQ-4 Cumulative operational emissions of PM ₁₀ , CO, and VOC	M-AQ-2 See Above.	Significant and unmitigable
2.9 Transportation and Traffic		
TR-11 Otay Lakes Rd, between City of Chula Vista/County boundary and Project Driveway #1 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment.	M-TR-11 Otay Lakes Road, between City/County Boundary and Project Driveway #1 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.	Less than significant
TR-12 Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment.	M-TR-12 Otay Lakes Road, between Project Driveway #1 and Project Driveway #2 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
PROJECT-LEVEL IMPACTS		
2.3 Biological Resources		
2.3.2.1 Special Status Species		
BI-1a-1k Potential permanent and temporary impacts to sensitive vegetation communities on-site.	<p>M-BI-1a Conveyance Prior to the approval of the first Final Map for the project, the Project Applicant shall coordinate with the County of San Diego to establish and annex the project area into a County-administered Community Facilities District to pay for the on-going management and maintenance of the Otay Ranch Preserve. Prior to the recordation of the first Final Map within each Tentative Map, the project applicants shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager or its designee at a 1.188 acre for each "Developable Acre" impacted at Final Map as define by the Otay Ranch RMP. The total required conveyance for this project is 887.7 acres.</p> <p>M-BI-1b Biological Monitoring Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits for any areas adjacent to the preserve and the off-site facilities located within the preserve, the Project Applicant shall provide written confirmation that a County-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. The biological monitor shall also be responsible for implementing the monitoring as required and specified in the restoration plans. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the County's MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.</p> <p>Before construction activities occur in areas adjacent to preserve areas containing sensitive biological resources, all workers shall be educated by a County-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.</p> <p>M-BI-1c Temporary Fencing Prior to issuance of land development permits, including clearing, grubbing, grading and/or construction permits, the Project Applicant shall install prominently colored,</p>	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>fencing and signage wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the preserve and for all off-site facilities constructed within the preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence to the satisfaction of the Director of Planning and Development Services (of their designee) and the Director of Parks and Recreation, that work was conducted as authorized under the approved land development permit and associated plans.</p> <p>M-BI-1d Upland Restoration Restoration areas may incorporate salvaged materials, such as seed collection, and translocation of plant materials as determined to be appropriate. The project biologist shall review the plant materials prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. Prior to grading the project, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village Biological Resources Technical Report in Appendix C-3 to this EIR) will be submitted to and receive approval from the Director of Planning and Development Services (of their designee) and the Director of Parks and Recreation.</p> <p>The Conceptual Upland Restoration Plan shall include, but not be limited to, the following to ensure the establishment of the restoration objectives: a 24-by 36-inch map showing the restoration areas, site preparation information, type of planting materials (species ratios, source, size of container, etc.), planting program, 80% success criteria, 5-year monitoring plan, and detailed cost estimate. The cost estimate shall include planting, plant materials, irrigation, maintenance, monitoring, and report preparation. The report shall be prepared by a County approved biologist and a state of California licensed landscape architect. The habitat created pursuant to the Conceptual Upland Restoration Plan must be placed within an open space easement dedicated to the County prior to or immediately following the approval of the Conceptual Upland</p>	

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>Restoration Plan.</p> <p>M-BI-1e Limited Building Zone (LBZ) Easement. In order to protect sensitive biological resources in the adjacent preserve, a Limited Building zone (LBZ) easement will be granted to the County, as shown on the Tentative Map. The purpose of this easement is to limit the need to clear or modify vegetation for fire protection purposes within the preserve, restrict unauthorized access, prohibit landscaping with exotic pest plants that may invade the preserve, and prohibit artificial lighting and focal use areas that would alter wildlife behavior in the preserve. This easement requires the landowner to maintain permanent fencing and signage. The easement precludes 1) placement, installation, or construction of habitable structures, including garages or accessory structures designed or intended for occupancy by humans or animals; 2) landscaping with exotic pest plants; 3) artificial lighting except low-pressure sodium fixtures shielded and directed away from the preserve; and 4) focal use areas including arenas, pools, and patios.</p> <p>M-BI-1f Fencing and Signage. In order to protect the preserve from entry upon completion of construction, an open space fence or wall will be installed along all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan and Proposed Fencing, Preserve signage, and Fuel Modification Zones (see map pocket). The barrier must be a minimum construction of vertical metal fencing, but may be other suitable construction material, as approved by Department of Planning and Development Services and the Director of Parks and Recreation. In order to protect the preserve from entry, informational signs will be installed, where appropriate, along all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan. The signs must be corrosion resistant, a minimum of 6 inches by 9 inches in size, on posts not less than three (3) feet in height from the ground surface, and state "Sensitive Environmental Resources Protected by Easement. Entry without express written permission from the County of San Diego is prohibited."</p> <p>M-BI-1g Habitat Manager for the Offsite 10.2-acre Parcel. In order to provide for the long-term management of the proposed 10.2-acre parcel that will</p>	

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>be added to the MSCP Preserve, a habitat manager shall be designated either privately selected, a non-profit organization, or a government agency. If a private or non-profit organization is selected as the habitat manager, a Resource Management Plan (RMP) will be prepared and implemented. The final RMP will be completed to the satisfaction of the Director of Department of Planning and Development Services, as follows: 1) the plan will be prepared and approved pursuant to the most current version of the County of San Diego Biological Report Format and Content Requirements; 2) the habitat land to be managed will be owned by a land conservancy or equivalent; 3) open space easements will be dedicated in perpetuity; 4) a resource manager will be selected and approved, with evidence provided demonstrating acceptance of this responsibility; 5) the RMP funding mechanism will be identified and adequate to fund annual costs for implementation; and 6) a contract between the applicant and County will be executed for the implementation of the RMP, and funding will be established with the County as the third party beneficiary. In lieu of providing a private habitat manager as noted above, the applicant may contract with a federal, state, or local government agency with the primary mission of resource management to take fee title and manage the 10.2-acre parcel of land. Evidence of satisfaction must include a copy of the contract with the agency, and a written statement from the agency that (1) the land contains the specified acreage and the specified habitat, or like functioning habitat; and (2) the land will be managed by the agency for conservation of natural resources in perpetuity.</p>	
BI-2 Potential permanent impacts to sensitive vegetation communities on City of San Diego Cornerstone Lands.	<p>M-BI-2 Prior to widening Otay Lakes Road, the project applicants mitigate for the replace 11.09 acres of impact to Cornerstone Lands and complete and MHPA Boundary Adjustment to the satisfaction of the City of San Diego Development Services Director (or their designee). Replacement of MHPA lands within Cornerstone Lands is proposed to be at a 1:1 ratio for lands replaced inside the MSCP Preserve. For replacement lands that are located outside of the MSCP Preserve, the mitigation is at a 4:1 ratio. Mitigation for impacts to the various vegetation communities shall be based on the tier of the impacted lands in accordance with the mitigation ratios provided by the MSCP. The mitigation and MHPA Boundary Adjustment may be implemented within the Otay Ranch Preserve on property surrounding the existing Cornerstone Lands, north of Otay Lakes Road, or may be off-site at a location</p>	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	determined to be acceptable by the City of San Diego.	
BI-3 Potential permanent impacts to sensitive vegetation communities on City of Chula Vista lands.	<p>M-BI-3 Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the project will be required to obtain a HILT Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and II vegetation communities as shown in Table 2.3-11 and in accordance with Table 5-3 of the Chula Vista MSCP Subarea Plan. Mitigation for off-site impacts outside of Otay Ranch will be in accordance with the Chula Vista MSCP Subarea Plan and the Chula Vista Habitat Loss and Incidental Take (HLIT) Ordinance.</p> <p>Prior to issuance of any land development permits, the Project applicants shall mitigate for direct impacts pursuant to Section 5.2.2 of the City of Chula Vista MSCP Subarea Plan. In compliance with the Subarea Plan, the applicant shall secure mitigation credits within a City- and wildlife agency-approved Conservation Bank or other approved location offering mitigation credits consistent with the ratios specified in Table 2.3-11 herein.</p> <p>The applicants shall be required to provide verification of purchase to the City prior to issuance of any land development permits.</p> <p>In the event that a Project Applicant is unable to secure mitigation through an established mitigation bank approved by the City and wildlife agencies, the Project Applicant shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City's MSCP Subarea Plan or MSCP Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City of Chula Vista MSCP Subarea Plan and subject to wildlife agency concurrence.</p> <p>Prior to issuance of any land development permit for the widening of Otay Lakes Road, and to the satisfaction and oversight of the City's Development Services Director (or their designee), the Applicant shall secure the parcel(s) that will be permanently preserved for in-kind habitat impact mitigation, if a mitigation bank purchase is unavailable, prepare a long-term management and monitoring plan for the mitigation area, secure an appropriate management entity to ensure that long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and</p>	Less than significant

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	<p>monitoring of the mitigation area in perpetuity.</p> <p>The long-term management and monitoring plan shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the management and monitoring plan. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the wildlife agencies as being sufficient to insure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the wildlife agencies shall be recorded prior to issuance of any land development permits.</p>	
BI-4 Potential permanent and temporary impacts to jurisdictional waters and wetlands on-site.	<p>M-BI-4 Prior to impacts occurring to waters and wetlands under the jurisdiction of ACOE, CDFW and RWQCB, the Applicant shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation should be 3:1 overall. A total of 2.15 acres of wetlands will be created (1:1 creation to impact ratio). An additional 4.30 acres of wetlands will be enhanced (2:1 enhancement to impact ratio). Creation/enhancement will occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in Appendix C-3 to this EIR) approved by the County and appropriate resource agencies. The wetland creation should include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.</p> <p>Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project Applicant shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (of their designee), the Director of Parks and Recreation, ACOE, RWQCB, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall at a</p>	Less than significant

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Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	minimum prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters will be mitigated by restoring to original condition immediately upon completion of the project but will be subject to all of the success criteria and monitoring as the permanent impacted wetlands.	
BI-5 Potential permanent impacts to jurisdictional vernal pools on-site.	<p>M-BI-7 Option No. 1: This option consists of mitigation in the form of restoration of vernal pools within the Resort Village Project site. This option shall involve restoration and reconfiguration of the K8 vernal pool group. These vernal pools are proposed to be preserved, and a 100-foot minimum buffer is provided for protection of the pools and their watershed. Mitigation shall involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species. A Conceptual Vernal Pool Mitigation Plan shall be prepared that outlines the location and activities of the restoration (Appendix J of the Otay Ranch Resort Village Biological Resources Technical Report in Appendix C-3 to this EIR). The plan will be submitted to and be to the satisfaction of, both the Directors of the Department of Planning & Development Services and of Parks and Recreation. A ratio of at least 1:1 restoration shall include the establishment of new vernal pool basins within the K8 vernal pool group. The balance of the mitigation ratio shall include enhancement of the existing pools. There is a total of 0.26 acre available for enhancement within the existing pools. The additional restoration mitigation requirement (a total of 0.112 acre) shall be directed toward establishing new basins within the K8 vernal pool group to the greatest extent feasible. An additional area of potential vernal pool restoration is located within the K9 mesa, if needed. This area is also composed of suitable soils for vernal pools. These soils are present on the K6 and K8 mesas. This additional area is composed of nonnative grass species, is of relatively flat topography, and exhibits some mounding characteristics similar to mima mounds.</p> <p>Based on the inundation records, fairy shrimp surveys, and floral inventory, the following potential vernal pools meet the previously applied ACOE</p>	Less than significant

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	<p>jurisdictional criteria:</p> <ul style="list-style-type: none"> • K6 – Vernal Pools 1, 3, 5, 6, 7, 8, 9, 10, 12, and 13 (0.11 acre – total basin area) • K8 – Vernal Pools 1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, A1, and A4 (0.26 acre – total basin area) <p>Assuming all of K6 is impacted and the mitigation requirement is a combination of 2:1 and 5:1, as outlined above, a total mitigation of 0.239 acre shall be required. This is typically satisfied by providing at least 1:1 as restoration and the balance as enhancement. Enhancement within the K8 pools will likely be restricted by the resource agencies to those pools not containing fairy shrimp. Table 2.3-12 summarizes the existing conditions of the pools within the K8 mesa.</p> <p>Option No. 2: This option consists of mitigation in the form of purchase of vernal pool mitigation bank credits for a total of 0.239 acre at a combined 2:1 and 5:1 mitigation ratio.</p>	
BI-6 Potential indirect impacts to jurisdictional waters and vernal pools.	<p>M-BI-13 Prior to issuance of grading permits for development areas adjacent to the Preserve, the Project applicants shall develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Project's Preserve Edge Plan (Appendix C-23) shall be implemented to avoid the release of toxic substances associated with urban runoff:</p> <ul style="list-style-type: none"> • Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. • Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled "No Dumping–Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness. • Parking lots shall be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants. 	Less than significant

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	<ul style="list-style-type: none"> Permanent energy dissipaters shall be included for drainage outlets. The BMPs contained in the SWPPP shall include silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding. 	
BI-7 Potential permanent impacts to jurisdictional waters and wetlands on Cornerstone Lands.	<p>M-BI-5 Prior to impacts occurring to waters and wetlands within the City of San Diego Cornerstone Lands, under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 2.15 acres of wetlands shall be created (1:1 creation-to-impact ratio). An additional 4.30 acres of wetlands shall be enhanced (2:1 enhancement to impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in Appendix C-3 to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.</p> <p>Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to original conditions immediately upon completion of the Project, and</p>	Less than significant

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	shall be subject to all of the success criteria and monitoring as the permanent impacted wetlands.	
BI-8 Potential permanent impacts to jurisdictional waters and wetlands on County of San Diego lands.	<p>M-BI-6 Prior to impacts occurring to waters within the County of San Diego under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 0.01 acre of waters of the U.S. shall be created (1:1 creation-to-impact ratio). An additional 0.02 acre of waters of the U.S. shall be enhanced (2:1 enhancement-to-impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in Appendix C-3 to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.</p> <p>Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to their original conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanently impacted wetlands.</p>	Less than significant
BI-9 Potential indirect impacts to	M-BI-14 During construction, material stockpiles	Less than

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vegetation communities	<p>shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive plant communities. During grading and construction, graded areas shall be periodically watered to minimize dust affecting adjacent vegetation.</p> <p>During Project operation, all recreational areas that use chemicals or animal by-products, such as manure, that are potentially toxic or impactive to sensitive habitats or plants shall incorporate methods on-site to reduce impacts caused by the application and/or drainage of such materials into Preserve areas.</p> <p>No invasive nonnative plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat.</p> <p>During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.</p> <p>Dewatering shall be conducted in accordance with standard regulations of RWQCB. A National Pollutant Discharge Elimination System (NPDES) permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of construction. This will minimize erosion, siltation, and pollution within sensitive communities.</p> <p>Design of drainage facilities shall incorporate long-term control of pollutants and storm water flow to minimize pollution and hydrologic changes. An Urban Runoff Plan and operational BMPs shall be approved by the San Diego County Department of Planning and Development Services prior to construction.</p> <p>Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.</p> <p>A hydroseed mix that incorporates native species, is appropriate to the area, and is without invasive shall be used for slope stabilization in transitional areas.</p> <p>Peruvian pepper trees and other invasive vegetation would not be planted in streetscapes, or within 50 feet of the Preserve, where they could impact native</p>	significant

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	habitat.	
BI-10 Potential permanent impacts to San Diego fairy shrimp	M-BI-10 Prior to the issuance of the first grading permit that impacts the K6 vernal pool complex, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) that the Project has secured take authorization of San Diego fairy shrimp through Section 7 Consultation, a Section 10 incidental take permit, or as may be incorporated into the provisions of the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment to achieve the best results toward the survival and recovery of the species.	Less than significant
BI-11 Potential permanent impacts to Quino checkerspot butterfly.	<p>M-BI-9a. Take Authorization: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) it has secured the necessary take authorization for Quino checkerspot butterfly through either the Section 7 Consultation, Section 10 incidental take permit requirements, or the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment, if/when approved. The Project shall provide preservation of 962 acres of the required mitigation of 966 acres (2 x 483 acres). The Project is required to provide an additional 4 acres of occupied habitat. This mitigation is proposed to be accomplished by restoration of unsuitable habitat within the Preserve to suitable coastal sage scrub. Figure 2.3-18 illustrates the location of these potential restoration areas. A total of 6.3 acres is designated as potential restoration of which 4 acres will be needed.</p> <p>M-BI-9b Quino Management/Enhancement Plan: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall prepare a long-term Quino Checkerspot Butterfly Management/Enhancement Plan that shall, at a minimum, include a survey methodology for on-site preserve areas pre- and post-construction to monitor effects on Quino checkerspot butterfly population health. This plan will be submitted to, and be to the satisfaction of, both the Directors of the Departments of Planning & Development Services and of Parks and Recreation. The Quino Checkerspot Butterfly Management/ Enhancement Plan shall be superseded or unnecessary upon completion and adoption of the County of San Diego Quino Checkerspot Butterfly MSCP Amendment. Adaptive management</p>	Less than significant

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	techniques shall be developed within the plan with contingency methods for changed circumstances. These measures shall ensure that the potential loss of individuals and the loss of habitat for the species related to the proposed development are adequately offset by measures that will enhance the existing preserved population, and shall provide data that will help the species recover throughout its range.	
BI-12 Potential permanent impacts to California adolphia	<p>M-BI-8 Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable California adolphia, the Project applicants may prepare a Resource Salvage Plan if seed collection is considered to be warranted. As described above in M-BI-1d, the project biologist shall review the California adolphia (approximately 20 plants) proposed to be impacted prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. If determined that salvage is appropriate, a Resource Salvage Plan shall be prepared by a county-approved biologist to the satisfaction of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.</p> <p>The Resource Salvage Plan shall, at a minimum, evaluate options for seed collection within the Preserve or from the plants proposed to be impacted. The Resource Salvage Plan shall include collection methods and timing. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site within the slope restoration areas and will be based on the most reliable methods of successful restoration. The plan shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success; identification of receptor locations; discussion of the goals of the plan; maintenance activities during the monitoring period; monitoring plan; and inclusion of performance standards, reporting schedules, and long-term management. As an alternative, the California adolphia may be included within planting palettes for the slope revegetation areas that shall receive monitoring and shall be required to meet restoration goals and success criteria. Prior to grading the project, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village</p>	Less than significant

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	Biological Resources Technical Report in Appendix C-3 to this EIR), as noted in M-BI-1d , will be submitted to and receive approval from the Director of the Department of Planning and Development Services (or their designee) and the Director of Parks and Recreation. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.	
BI-13 Potential indirect impacts to sensitive plant species	<p>M-BI-14 During construction, material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive plant communities. During grading and construction, graded areas shall be periodically watered to minimize dust affecting adjacent vegetation.</p> <p>During Project operation, all recreational areas that use chemicals or animal by-products, such as manure, that are potentially toxic or impactive to sensitive habitats or plants shall incorporate methods on-site to reduce impacts caused by the application and/or drainage of such materials into Preserve areas.</p> <p>No invasive nonnative plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat.</p> <p>During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.</p> <p>Dewatering shall be conducted in accordance with standard regulations of RWQCB. A National Pollutant Discharge Elimination System (NPDES) permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of construction. This will minimize erosion, siltation, and pollution within sensitive communities.</p> <p>Design of drainage facilities shall incorporate long-term control of pollutants and storm water flow to minimize pollution and hydrologic changes. An Urban Runoff Plan and operational BMPs shall be approved by the San Diego County Department of Planning and Development Services prior to construction.</p> <p>Grading and/or improvement plans shall include the</p>	Less than significant

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	<p>requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.</p> <p>A hydroseed mix that incorporates native species, is appropriate to the area, and is without invasives shall be used for slope stabilization in transitional areas.</p> <p>Peruvian pepper trees and other invasive vegetation would not be planted in streetscapes, or within 50 feet of the Preserve, where they could impact native habitat.</p>	
BI-14 Potential indirect impacts to sensitive wildlife species	<p>M-BI-15 No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for coastal California gnatcatcher (February 15 to August 15, annually). If construction occurs during the breeding season, a nesting survey for California gnatcatcher shall be conducted prior to the onset of construction and construction may occur if active nests can be avoided and provided an adequate buffer or noise levels are documented to be below 60 dBA L_{eq} at the nest site.</p> <p>When clearing, grading, or grubbing activities occur during the breeding season for raptors (January 15 to July 31, annually), nesting bird surveys shall be conducted by a qualified biologist for the San Diego County Department of Planning and Development Services to identify active nest locations.</p> <p>Construction activities shall be restricted or modified such that noise levels related to those activities are below 60 dBA L_{eq}, or other Wildlife Agency approved restrictions, in the vicinity of the active nest site.</p> <p>Lighting of all developed areas adjacent to the preserve shall be directed away from the preserve, wherever feasible and consistent with public safety. Where necessary, development shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the preserve and sensitive species from night lighting. Consideration shall be given to the use of low-pressure sodium lighting.</p> <p>Uses in or adjacent to the preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve.</p>	Less than significant

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	<p>Excessively noisy uses or activities adjacent to breeding areas must incorporate noise-reduction measures or be curtailed during the breeding season of sensitive bird species.</p> <p>Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.</p>	
BI-15 Potential direct and indirect impacts to nesting migratory birds	<p>M-BI-11 To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance shall occur outside of the breeding season for these species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project applicants shall retain a County-of-San-Diego-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction, and the results shall be submitted to the County of San Diego for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the County of San Diego, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the County of San Diego for review and approval, and implemented to the satisfaction of the Director of Planning and Development Services (or his/her designee). The County of San Diego's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.</p>	Less than significant
BI-16 Potential direct and indirect impacts to wildlife	<p>M-BI-12 Four wildlife culverts shall be constructed to provide and improve habitat linkages and movement corridors (Figure 2.3-14). In general, the design of the wildlife culverts has been developed to be consistent with the MSCP Subarea Plan, where feasible. The wildlife culverts shall have fencing to funnel wildlife movement, shall have a natural bottom with native vegetation at either end, and shall be of size and height of opening so there is direct line of site from one end to the other. Because there is natural light within the culverts, low level</p>	Less than significant

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	<p>illumination is not included. Traffic is generally of low volume on the internal crossings hence the sound insulation is of little benefit. The details of each wildlife culvert or crossing that shall be provided are presented below.</p> <p>Internal Wildlife Crossing No. 1 (214 feet long × 28.83 feet wide × 13.17 feet tall = openness ratio of 0.44)</p> <p>This arch culvert structure shall be situated internal to the project site along Strada Piazza, which connects the central portion of the open space to the lake. The 150-foot length is augmented by wing walls on either side of the crossing structure. This is beneficial as it effectively visually decreases the length of the culvert.</p> <p>Otay Lakes Road Wildlife Crossing No. 1 (95 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 0.68)</p> <p>This structure shall be located south of Internal Wildlife Crossing no. 1 along Otay Lakes Road. The culvert is sized appropriately and should function as intended. It is well below the grade of Otay Lakes Road to prevent wildlife movement up to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.</p> <p>Internal Wildlife Crossing No. 2 (248 feet long × 43.00 feet wide × 16.18 feet tall = openness ratio of 0.63)</p> <p>This structure shall be situated along Strada Piazza, which is a single non-split roadway at this location. The culvert slopes 12% to the south. This culvert conveys wildlife to a location just east of Lower Otay Lake to quality riparian habitat and lands to the east. Wing walls occur at both ends of the culvert. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.</p> <p>Otay Lakes Road Wildlife Crossing No. 2 (58 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 1.12)</p> <p>This structure shall be located south of Internal Wildlife Crossing no. 2 under Otay Lakes Road. This crossing is also located below the grade of Otay Lakes Road to prevent wildlife from gaining access to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.</p>	

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2.4 Cultural Resources		
CR-1 Potential impacts to archaeological resources (nine prehistoric sites) within the proposed grading and brushing envelope.	<p>M-CR-1 Prior to the issuance of grading permits, the Project applicant shall implement or cause the implementation of a data recovery program, as described below, for the following nine sites located within the proposed grading and brushing envelope:</p> <p>SDI-11,406 SDI-11,409 SDI-12,368 SDI-12,371 SDI-16,303 SDI-16,309 SDI-16,312 SDI-16,326 SDI-16,332</p> <p>Data Recovery Program</p> <p>The data recovery program is contingent upon extracting a sample that will exhaust the data potential of each site. The County has not adopted a policy that identifies the specific level of excavation required to achieve mitigation of impacts by data recovery. In most cases, the level of sampling is dictated by the information potential of the site. Data recovery is commonly discussed in terms of sampling percentages, referring to the percent of the area of the significant subsurface deposit to be excavated. The general approach for achieving the mitigation of impacts through data recovery would begin with an indexing of the site. The site index shall include a sufficient sample of the subsurface deposit, ranging from 2.5 to 4.0 percent of each deposit, to effectively stratify the deposits into areas of differing artifact content, densities, and activity areas. The small percentage value proposed for site indexing is reflective of the basic characterization of each of the significant sites as quarry locations with minimal evidence of occupation activities. The indexing process shall use a static grid to cover each site, with a sample unit placed in each grid cell. Using a grid will produce a very structured, nonrandom, and uniform index of the content of each cultural deposit. Within the portion(s) of each site that retains the greatest research potential, an additional 2 percent of that area shall be excavated. For most sites in the data recovery program, the area excavated shall be between 2.5 and 3 percent of the significant subsurface deposit (area of greater research potential). This volume of recovery would be sufficient to successfully pursue the research objectives of the research design and to provide other researchers with a large information resource. At the sites considered to retain the greatest research potential, a third level of stratified sampling may be implemented to focus block excavations on areas that demonstrate intense artifact recovery, features, or multi-cultural depositional patterns.</p>	Less than significant

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	<p>The excavation of the subsurface deposits shall be accomplished with standard 1-meter-square test units excavated by hand in 10-centimeter levels. All units shall be screened, mapped, measured, and photographed through standard stratigraphic control measures. A more detailed description of the field methods to be used is provided in Section 10.5 of the Archaeological/Historical Study provided in this EIR, Appendix C-4.</p> <p>For the phases of work at each site, the first phase shall be the site indexing and the second phase shall be the focused investigation. A third phase, if warranted, would be extremely focused on high-potential elements of any significant site. Each phase has specific goals: the site index is a nonrandom representative sample of the entire site, while the second and third phases are focused, biased, and intuitive studies of the area within the deposit that has the greatest potential.</p> <p>The grid for each site shall be determined by the number of sample units needed to accomplish the sample level of 2.5 percent. For most sites, the grid shall be set at 15-meter or 25-meter intervals. To calculate the grid size, the number of test units that represent the Phase 1 sample was divided into the calculated area of the deposit. The resulting quotient represents the area within each grid cell, and the square root of this value provides the dimension of the grid cell. For example, assuming a site contained 2,000 square meters of a cultural deposit, a 2.5 percent sample would be 50 square meters. The grid size would be determined by dividing the deposit size (2,000 square meters) by the number of units (50), which equals 40 square meters. The square root of 40 square meters is 6.3 meters; thus, the intersection of each grid line is spaced at 6.3 meters. Within each 6.3-meter by 6.3-meter grid cell, one test unit would be excavated to complete the site index.</p> <p>For consistency, all of the sites shall be treated similarly, with an index phase followed by a focused, intuitive phase in the area of greatest importance. The phases of the sampling procedure to be used at the sites included in the data recovery program are as follows.</p> <p><u>Data Recovery Program Phase 1</u></p> <p>The first phase of excavation at any particular site shall typically involve a 2.5 percent sample used to index the site content and document intra-site variation. Test units shall be uniformly distributed</p>	

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	<p>within each site using a grid system. For most sites, the presence of multiple rock outcroppings would constitute voids in the sample grid. These areas would be deleted from the calculations of site deposits when the data recovery programs are initiated; however, the areas represented by the outcrops cannot be calculated at this time.</p> <p><u>Data Recovery Program Phase 2</u></p> <p>The second phase of excavation shall consist of a 2 to 4 percent sample of each site area identified as representing the greatest research potential. The stratification of the site following the Phase 1 work would typically identify an area of approximately 10 percent of the sample area identified as retaining additional research potential. For this sampling phase, the test units must not be randomly placed but shall be intuitively located at the discretion of the archaeologist.</p> <p><u>Data Recovery Program Phase 3</u></p> <p>The last phase of excavation shall be conducted at any sites that are found to contain particularly important deposits worthy of extended excavation. The sample size of any such area is dependent on the nature of the deposit and research potential.</p> <p>The procedures noted above shall be applied to each of the sites listed below in addition to any site-specific mitigation measures. The actual number of square meters to be excavated in any particular site would depend on the site size, importance, and research potential. The projected size of the sample for each of the sites listed below is a minimum of 2.5 percent, but the actual size of the sample needed to satisfy the data needs of the research objectives will ultimately be determined by the assessment of the recovery from the sample. The possibility exists that previously unidentified subsurface deposits would be identified during data recovery, increasing the research potential of a significant site. In this case, the sample size of the Phase 1 or Phase 2 excavation may be readjusted. If the recovery from any site is evaluated as redundant even before the minimum Phase 1 sample level of 2.5 percent is achieved, the consulting archaeologist shall request a variance from the County of San Diego to reduce the sample size to reflect the redundancy of the sample. This request would need to be supported by data and analysis from the excavations in progress at the site(s) in question. At each site, a backhoe may be employed following the completed sampling program to search for any anomalies within the site.</p>	

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	<p>Trenches would be used to expose portions of the sites; however, the number of trenches used in this type of investigation would be discussed and approved by the County before initiation.</p> <p>Backhoe Trenching</p> <p>All sites that are subject to data recovery and test unit excavations shall be subject to backhoe trenching following the test unit excavations to search for any unusual features or anomalies that would need to be examined further. The number and locations of the trenches to be excavated at each site shall be determined by the archaeologist on the basis of the size of the site and the recovery from the test units. If the trenches reveal the presence of deposits or features within a site that were not previously detected, then additional test units shall be excavated to expose the features and permit further investigation and recordation. For those four significant sites (SDI-12,368; SDI-16,312; SDI-16,326; and 16,332) that lie partially within the development envelope and partially within the Preserve (open space), the data recovery mitigation program would include portions of these sites within the development envelope as well as an area 10-feet-wide extending into the open space portion of the site. This extension of the data recovery program into the open space portions of the sites is intended to provide mitigation for indirect impacts in the buffer area of the open space that directly affects the development envelope.</p> <p>Data Recovery Procedures</p> <p>For all sites that are subject to data recovery, the program to carry out the necessary data recovery procedures, including the applicable field methodologies, laboratory analyses, and special studies for these sites, shall be provided as described below.</p> <p>The data recovery program must be consistent with the policies and guidelines of the County and with the California Office of Historic Preservation (OHP) publication, Guidelines for Archaeological Research Design Preservation Planning Bulletin No. 5 (1991).</p> <p>Field Methods</p> <p>The data recovery program shall focus on the excavation of test units measuring 1-meter-square to a minimum depth of 30 centimeters or until bedrock is encountered. If cultural materials are present beyond this depth, the excavation shall continue until one sterile level is exposed. The units shall be</p>	

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	<p>excavated in controlled, 10-centimeter levels. All removed soils shall be sifted through 1/8-inch mesh hardware cloth. All artifacts recovered during the screening process shall be properly labeled with provenience information in the field and subsequently subjected to standard laboratory procedures of washing (if appropriate) and cataloging. The excavation of the units shall be documented with field notes, illustrations, and photographs.</p> <p>At the conclusion of the test unit excavations, backhoe trenches may be excavated to investigate the site(s) further and search for any unusual features or artifact concentrations. When a backhoe is used, the methodology to be followed is outlined below:</p> <ul style="list-style-type: none"> • All trenches must be excavated under the supervision of the Project archaeologist. • All trenches must be mapped, measured, photographed, and sketched. • Periodic screening of the excavated material from the trenches shall be conducted. • Provenience data for all screened soil shall be recorded. <p>Based on data from the backhoe trenches, the data recovery program could be expanded to focus on features or unique deposits that differ from the materials already studied.</p> <p>Any features discovered during the archaeological excavations shall be exposed through careful hand excavation. Additional test units may be needed to fully expose the features, which shall then be recorded by sketching and photography. Any datable materials found in association with discovered features shall be collected for radiocarbon dating. If obvious datable samples cannot be found at the sites in the data recovery program, then several bulk soil samples may be collected and processed in an attempt to date the deposits.</p> <p>At each site, column samples shall be taken to permit microanalysis of midden contents. The columns shall measure 10 centimeters square and shall conform to the walls of selected completed test units to the bottom of the deposit. All of the soil from the column shall be collected and not screened in the field. The samples shall be returned to the laboratory for analysis. In addition, during hand excavation, special attention shall be given to the identification of lithic tools found in situ and their potential for</p>	

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	<p>residue analysis. When possible, such tools shall be bagged separately, thereby excluding them from the wet-screening process. A sample of the surrounding soil shall be collected to serve as a control sample, should the artifact be chosen for pollen, phytolith, or blood residue analyses.</p> <p>Throughout the field operations, standard archaeological procedures shall be implemented. All test units and features shall be mapped using the established datums.</p> <p><u>Laboratory Analysis</u></p> <p>All of the materials recovered from the field excavations shall be subjected to standard laboratory analysis. Artifacts may be washed, if necessary, to permit proper identification. The artifacts shall be sorted and cataloged, including counts, materials, condition, weight, provenience, and unique artifact identification numbers.</p> <p>The lithic artifacts recovered from the Project site shall be subjected to analysis, which shall include recordation of critical measurements and weight, and inspection for evidence of use/wear, retouch, patination, or stains. The recovered flakes (or a representative sample) shall be subject to an analysis of attributes such as size, condition, type, termination, and material. The attribute analysis shall include the flake collections recovered during the testing program.</p> <p>Nonlithic materials, such as ecofacts (shell and bone), shall be subject to specialized analyses. The shell shall be cataloged by species and weight of recovery per level. The bone material shall be weighed and subsequently submitted for specialized faunal analysis. The laboratory analysis of the column samples may include flotation procedures to remove seeds and other microfaunal remains from the soil, followed by the screening of the remainder through a 1/16-inch mesh sieve, if the potential for nonlithic materials is noted in the deposit.</p> <p>Other specialized studies that shall be conducted if the appropriate materials are encountered during the data recovery program include marine shell species identification, faunal analysis, otolith analysis (for seasonality), oxygen isotopic analysis (also for seasonality), radiocarbon dating, obsidian sourcing and hydration, and blood residue and phytolith studies. These specialized studies are briefly described below.</p>	

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	<p>Shell Analysis</p> <p>Analysis of any shell recovery would include the speciation of all shell fragments collected. The shell shall be recorded by weight and shall include a count of hinges to determine the minimum number of individuals represented by the recovery.</p> <p>Faunal Analysis</p> <p>Any bone material recovered during the data recovery program shall be analyzed by a faunal expert to identify species, types, age, and evidence of burning or butchering. The prehistoric bone recovery shall provide information concerning diet, activity areas within the sites, the habitats exploited, and methods of processing.</p> <p>Radiocarbon Dating</p> <p>This dating technique shall be attempted whenever possible. The investigations conducted thus far have not recovered any dateable material, although bulk soil dating was not attempted to determine if the deposits contained sufficient carbon for dating. The radiocarbon dating would be useful in conjunction with the stratigraphic recovery of cultural materials to establish the chronology of the sites. Therefore, the collection of samples for dating should be based on the presence of diagnostic artifacts, features, or geological strata delineations. In conjunction with the research topics, any possible opportunities to delineate parts of sites into Late Prehistoric and Archaic periods shall be advanced through the use of dating methods.</p> <p>Blood Residue Studies</p> <p>Organic residue on lithic artifacts may be useful in the determination of the species of animals represented by the residue. However, the use of blood residue studies is necessarily dependent upon the identification of such residues on artifacts. The detection of blood residue shall be made prior to any washing of artifacts so that the residue samples will not be lost.</p> <p>Isotopic Profiles</p> <p>The analysis of Oxygen-18 isotopic profiles from shells may be used to determine the season during which the shells were collected. This process measures the ratio of isotopes of oxygen, which is determined by water temperature. A minimum of five shells shall be used in this analysis, particularly if no other means of determining seasonality can be used. Use of this type of analysis is not likely due to</p>	

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	<p>the paucity of shell at the site.</p> <p>Obsidian Hydration and Sourcing</p> <p>Any recovered obsidian artifacts shall be submitted to a specialist to determine the source of the lithic material. The obsidian shall also be analyzed to produce hydration readings, which may then be used to provide relative dates for the use of the artifacts.</p> <p><u>Monitoring</u></p> <p>All brushing and grading activities within the Project site shall be monitored on a full-time basis by one or more archaeologists, as dictated by the size of the grading operation. All utility excavations, road grading, or brush removal must be coordinated with the archaeological monitor. Any known resources that are graded must be intensively monitored during grading to ensure that any important features, isolates, or deposits are either recorded and collected, or excavated. Should any resources be encountered during the monitoring of the brushing and grading that were not previously recorded, the action shall be temporarily halted or redirected to another area while the nature of the discovery is evaluated. Any resources that may be encountered shall require testing to determine their significance. If the testing demonstrates that a resource is significant, then a data recovery program shall be implemented consistent with these mitigation measures.</p> <p><u>Cultural Material Curation</u></p> <p>Cultural materials recovered from the Project site shall be permanently curated at a facility that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. No other collections from previous studies could be located at the time of this study. Should any additional collections be discovered from previous studies, these will be curated with the collections generated from the site evaluations.</p> <p><u>Site-Specific Data Recovery Programs</u></p> <p>As part of the data recovery program and other actions described above under mitigation measure M-CR-1, the Project applicant shall also cause a Data Recovery program to be implemented for each of the nine CEQA significant prehistoric sites that would be impacted by implementation of the proposed Project as described below.</p>	

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	<p>M-CR-1a Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,406, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 858-square-meter deposit. This represents a sample of 21 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 858 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1b Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,409, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 10,637-square-meter subsurface deposit. This represents a sample of 266 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 5 percent of the 10,637 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1c Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,368, which shall focus on a uniform indexing of the focused subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 1,735-square-meter deposit. This represents a sample of 43 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-12,368 be subjected to data recovery. This will add five test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 1,735 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1d Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,371, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 781-</p>	

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	<p>square-meter deposit. This represents a sample of 20 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 781 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1e Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,303, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 67-square-meter deposit. This represents a sample of 2 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 67 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1f Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,309, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 5,496-square-meter deposit. This represents a sample of 137 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 5,496 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1g Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,312, which shall focus on a uniform indexing of the subsurface deposit. Approximately 24 percent of this site will be impacted, including 1,618 square meters of the 4,967-square-meter deposit identified. This first level of index sampling shall consist of a 2.5 percent sample of the 1,618-square-meter deposit. This represents a sample of 41 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-16,312 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential</p>	

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	<p>estimated to be approximately 10 percent of the 1,618 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations, but it is estimated to be a sample of three additional test units.</p> <p>M-CR-1h Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,326, which shall focus on a uniform indexing of the subsurface deposit. The site contains three separate deposits, of which only the western deposit will be impacted. The western subsurface component encompasses an area of 860 square meters. This first level of index sampling shall consist of a 2.5 percent sample of the 860-square-meter deposit. This represents a sample of 22 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,326 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 860 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1i Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,332, which shall focus on a uniform indexing of the subsurface deposit. The total area of the subsurface deposits is approximately 1,731 square meters. The development will impact approximately one-third of SDI-16,332, including 924 square meters of the significant subsurface deposits. This first level of index sampling shall consist of a 2.5 percent sample of the 924-square-meter deposit. This represents a sample of 23 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,332 be subjected to data recovery. This will add seven test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 924 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.</p> <p>M-CR-1j All cultural materials recovered from the Project, either during the mitigation program or during the past archaeological testing programs,</p>	

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	shall be professionally prepared for permanent curation at a local facility meeting the criteria for such curation centers as listed in 36CFR79. The cost to curate collections shall be the responsibility of the applicant. Copies of field notes, reports, maps and catalog data shall be included with the curated collection.	
CR-2 Potential indirect impacts to archaeological resources (10 prehistoric sites) within the designated open space area, including potential impacts associated with the future use of the Preserve for public hiking and riding trails.	<p>M-CR-2a All sites, regardless of significance status, that are located outside of the development area shall be placed in open space easements. The sites may be included in general Project-wide open space preserves, in which case, site-specific easements would not be necessary. For sites that would be preserved within the development envelope, easements shall be dedicated for individual sites unless incorporated within larger biological or other open space designation. The open space designation shall include language that prohibits any type of surface modification to the sites or intrusions into the site by grading, trenching, or other development-related improvements. For any sites located within open space, a park area, or the Preserve, specific requirements for individual sites are necessary to ensure that the sites are not impacted by maintenance or landscaping. Open space areas shall be transferred to County Department of Parks and Recreation (County Parks) and maintained as part of the Preserve. County Parks shall assume responsibility for the protection of the sites in the open space areas as part of the management of the Preserve. Aside from temporary fencing during grading and construction to ensure preservation during this period, no individual site preservation measures are deemed necessary during development activities. Subsequently, the long-term protection of the sites will be achieved through management of the Preserve by County Parks. During grading or brushing, the monitoring archaeologist shall determine the need for temporary fences and direct their installation to provide a physical barrier between the grading machinery and adjacent significant cultural resources that are designated for preservation or eventual data recovery. Once the open space areas are transferred to the Preserve, it will become the responsibility of the Preserve owner/manager to maintain the easements for the archaeological sites.</p> <p>M-CR-2b Prior to any improvements to existing trails or development of new trails, improvement plans shall be reviewed by the Project archaeologist under the direction of the County to determine the</p>	Less than significant

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	potential for impacts to cultural resources, and the need for additional field research, testing, mitigation for potential impacts during construction and use, and monitoring of construction. The requirements of mitigation measure M-CR-1 for data recovery and analysis, including Native American monitoring, shall be applied during all subsequent surveys if new cultural resources are identified.	
CR-3 Potential impacts to buried human remains	M-CR-3 In the event that human burials are encountered, standard procedures for such discoveries shall be implemented, including notification of the County Coroner's Office, the County, the Native American Heritage Commission and local Native American representatives. Fieldwork shall cease in the area of any such discovery. The Native American representative and the County shall be consulted to determine a preferred course of action, and the burial shall be treated according to the requirements of Public Resources Code §5097.98.	Less than significant
CR-4 Potential impacts to paleontological resources within the upper sandstone/mudstone, middle gritstone, and lower fanglomerate members of the Otay Formation.	M-CR-4 Paleontological monitoring shall be conducted during all mass grading and excavation activities in surface exposures of the Otay Formation to mitigate any adverse impacts (i.e., loss or destruction) to potential nonrenewable paleontological resources. A mitigation monitoring and reporting program consistent with County and CEQA guidelines and requirements shall be developed and implemented prior to any mass grading and/or excavation-related activities, including utility trenching, within the Otay Formation. The mitigation monitoring and reporting program shall be conducted in accordance with the following procedures: A. A Qualified Paleontologist or Paleontological Resources Monitor (under the supervision of the Qualified Paleontologist) shall be on-site during all excavation operations within geologic formations that may contain paleontological resources (i.e., the Otay Formation). The Qualified Project Paleontologist is a person with a Ph.D. or master's degree in paleontology or related field, and who has knowledge of San Diego County paleontology, and documented experience in professional paleontological procedures and techniques. A Paleontological Monitor is defined as an individual with at least 1 year of experience in field identification and collection of fossil materials. The Paleontological Monitor shall work under the direct supervision of the Qualified Paleontologist. The applicant shall authorize the Qualified Paleontologist	Less than significant

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	<p>and/or Paleontological Monitor to direct, divert, or halt any grading activity, and to perform all other acts required by the provisions listed below.</p> <p>B. The Qualified Paleontologist and/or Paleontological Monitor shall monitor all grading and excavation activities of undisturbed formations of sedimentary rock;</p> <p>C. If paleontological resources are unearthed, the Qualified Paleontologist or Paleontological Monitor shall do the following:</p> <ol style="list-style-type: none"> 1. Direct, divert, or halt any grading or excavation activity until such time that the sensitivity of the resource can be determined and the appropriate recovery implemented. 2. Salvage unearthed fossil remains, including simple excavation of exposed specimens or, if necessary, plaster-jacketing of large and/or fragile specimens or more elaborate quarry excavations of richly fossiliferous deposits. 3. Record stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including a detailed description of all paleontological localities within the Project site, as well as the lithology of fossil-bearing strata within the measured stratigraphic section, if feasible, and photographic documentation of the geologic setting. 4. Prepare collected fossil remains for curation to include cleaning the fossils by removing the enclosing rock material; stabilizing fragile specimens using glues and other hardeners, if necessary; and repairing broken specimens. 5. Curate, catalog, and identify all fossil remains to the lowest taxon possible; inventory specimens; assign catalog numbers; and enter the appropriate specimen and locality data into a collection database. 6. Transfer the cataloged fossil remains to an accredited institution (museum or university) in California that maintains paleontological collections for archival storage and/or display. The transfer shall include copies of relevant field notes, maps, stratigraphic sections, and photographs. <p>D. The Qualified Paleontologist shall prepare a final Paleontological Resources Mitigation Report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils</p>	

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	<p>recovered, and the significance of the curated collection.</p> <p>E. Submit two hard copies of the final Paleontological Resources Mitigation Report to the Director of DPLU for final approval of the mitigation, and submit an electronic copy of the report according to the County DPLU's Electronic Submittal Format Guidelines.</p>	
CR-5 Contribution to cumulative archaeological resources (prehistoric sites) impacts within the Project vicinity	M-CR-1 and M-CR-2 See Above.	Less than significant
CR-6 Contribution to paleontological resources impacts within the Project vicinity.	M-CR-4 See Above.	Less than significant
2.5 Geology and Soils		
GE-1 Potential for unstable slopes.	<p>M-GE-1a Otay Lakes Road, Widening & Realignment (Appendix C-8): Excavations of cut slopes shall be observed during grading by an engineering geologist to evaluate whether the soil and geologic conditions differ significantly from those expected. Cut slopes that expose shared claystone bedding may require slope stabilization consisting of stability fills.</p> <p>M-GE-1b Area A and B, Tentative Map (Appendices C-6 and 7): Because of the potential presence of adverse geologic structures, the geologic structure of permanent cut slopes composed of Otay Formation, Fanglomerate materials, or metavolcanic rock should be analyzed in detail by an engineering geologist during grading operations. Grading of cut and fill slopes and intermediate terrace benching shall be designed in accordance with the requirements of the local building codes and the 2010 California Building Code (CBC). Additional recommendations for slope stabilization may be necessary if adverse geologic structure is encountered. Mitigation of unstable cut slopes can be achieved by the use of drained stability fills. In addition, cut slopes exposing cohesionless surficial deposits or rock slopes with unfavorable geologic structure may require stability fills. In general, the Typical Stability Fill Detail presented in Figure 10 (Appendices C-6 and 7) should be used for design and construction of stability fills, where required. The backcut for stability fills should commence at least 10 feet from the top of the proposed finished-graded slope and should extend at least 3 feet into formational materials. For slopes that exceed 30 feet in height, the inclination of the backcut may be flattened as determined by the engineering geologist</p>	Less than Significant

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Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	during grading operations.	
GE-2 Potential for rock fall hazards on cut and natural slopes.	<p>M-GE-2a Otay Lakes Road, Widening & Realignment (Appendix C-8): Mitigation measures will be required along the eastern portion of the roadway due to the steepness of the natural slopes and boulder outcrops above the proposed cut slope. The areas of proposed rock fall mitigation are shown on Figures 2.5-2A and B. The mitigation shall consist of the construction of a rock fall debris fence or other acceptable catchment device at the toe of the proposed cut slope. The hard rock slopes should be evaluated by an engineering geologist during site development and final locations of the debris fence or alternative method shall be provided at that time.</p> <p>M-GE-2b Area A and Area B, Tentative Map (Appendices C-6 and 7): Mitigation shall consist of the construction of rock fall debris fences or other acceptable catchment devices at the toe of proposed slopes or at the edge of daylight cut or fill areas. The area of proposed rock fall mitigation for Area A is shown on Figure 2.5-2A and Area B on Figure 2.5-2B. Area A consists of the northern-most section of proposed residential development, east of Upper Otay Lake and the northern section of Lower Otay Lake. Area B encompasses the eastern-most section of proposed residential development and resort. The hard rock slopes shall be evaluated by an engineering geologist during site development and final locations of the debris fences or alternative method shall be provided at that time.</p> <p>M-GE-2c Area A and Area B, Tentative Map (Appendices C-6 and 7): Hard rock slopes shall be analyzed in detail by an engineering geologist during the grading operations. In areas where loose or potentially hazardous rock is encountered during grading, the loose material shall be scaled off the slope face to mitigate the hazard. If adverse geologic structures are encountered during grading, rock slope stabilization measures such as rock bolting, or rockfall protection systems may be necessary.</p> <p>M-GE-2d When all measures to mitigate rock fall hazards have been provided, a professional opinion from an engineering geologist shall be provided that indicates that the potential risk for rockfall hazards to impact the proposed development would be less than significant with the mitigation measures that were implemented. It should also be stated that with mitigation measures incorporated, the proposed development is considered safe for human</p>	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	occupancy.	
2.6 Hazards and Hazardous Materials		
HZ-1 Proposed storm water retention basins may cause an increased human exposure to health vectors such as mosquitoes.	<p>M-HZ-1a Project grading and improvements plans shall be reviewed by the Director of Public Works to determine that water quality basins are designed to drain within 72 hours and include a mechanism to open a flap gate or similar manual device if the drain time becomes too long. Manual drainage shall be conducted if water is held beyond 72 hours. Routine and semi-annual inspections shall include modification of orifice drain holes, if needed, to provide for optimum performance and suitable drain time.</p> <p>M-HZ-1b The Director of Public Works shall determine the design of the water quality basins include rip-rap fields at inlet scour-protection points to be self-draining concurrent with the processing of grading and improvement plans.</p> <p>M-HZ-1c Routine and semi-annual water quality basin inspections to the satisfaction of the Director of Public Works shall include removal of accumulated trash and debris that may capture and hold rainwater or runoff, or that accumulates around the outlet riser pipe or discharge orifice; repair of erosion or low-lying areas where ponding of water develops; identification and elimination of possible vector harborage or burrowing rodent activity; inspection for sufficient vegetation coverage for basin side slopes and floor; reduction of vegetation height to minimize insect harborage, with the height of ground cover grasses reduced to a maximum height of 6 inches; investigation and elimination or minimization of upstream dry season flow sources if dry season flows are persistent and lead to constant ponding; and notification of San Diego County Vector Control if sources are from off-site properties.</p>	Less than significant
2.7 Noise		
N-1 Traffic noise resulting in exposure of sensitive receptors within the Project site to exterior noise levels in excess of 60 dB CNEL, and interior noise levels in excess of 45 dBA CNEL.	<p>M-N-1a The Project proponent shall prepare a noise protection easement for those lots identified in Table 2.7-7 of the project EIR. The noise protection easement language shall contain a restriction stating that the structure and the outdoor activity area will be placed such that a noise barrier will complement the residence's architecture, reduce noise levels at outdoor activity areas to within acceptable standards, and will not incorporate a solid (opaque) wall in excess of 10 feet in height.</p> <p>M-N-1b Concurrent with approval of the Final Map, the Project proponent shall dedicate to the County a</p>	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>noise protection easement on each of the lots identified in Table 2.7-6 for the receptor locations shown in Figures 2.7-3, 2.7-4, and 2.7-5 of the Project EIR. These easements are for the protection of noise-sensitive locations from excessive traffic noise. The noise protection easements shall be shown on the Final Map(s).</p> <p>M-N-1c For any lot shown to be exposed to noise levels exceeding 60 dBA CNEL, the noise protection easement shall require that, prior to approval of the building permit or other development approval, an acoustical study be prepared based on proposed noise barrier placement and housing construction to demonstrate and ensure that interior noise levels are below 45 dBA CNEL.</p> <p>M-N-1d The Project proponent shall construct a noise barrier at the top of the slope and at the back of yards for any NSLU that is exposed to a CNEL greater than 60 dBA, as shown in Figures 2.7-3, 2.7-4, and 2.7-5 of the Project EIR. The barrier shall be the height specified in Table 2.7-7. Barriers may be constructed of masonry, wood, and/or transparent materials, such as glass or Lucite. Earthen berms or a combination of berms and walls could also be used to provide noise attenuation.</p> <p>M-N-1e Noise barriers, as described in M-N-1d, would not reduce noise levels to second-story elevations due to their lesser barrier heights relative to two-story structures. Where two-story homes are to be located where traffic noise levels would meet or exceed 60 dBA CNEL without abatement (see Table 2.7-6 of the Project EIR), the noise protection easement required by mitigation measure M-N-1 shall specify that the applicant for a building permit or other development approval must have to demonstrate that interior noise levels due to exterior noise sources would not exceed 45 dBA CNEL prior to approval of the building permit or other development approval. In these cases, it is anticipated that the typical method of compliance would be to provide the homes with air conditioning or equivalent forced air circulation to allow occupancy with closed windows, which, for most residential construction, would provide sufficient exterior-to-interior noise reduction.</p>	
N-2 Noise generated by on-site HVAC and emergency generators.	M-N-2 Prior to Site Plan approval of proposed land uses within the mixed-use, resort, public safety, or single family residential sites, the applicant or designee(s) shall prepare acoustical studies of	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	proposed mechanical equipment, which shall identify all noise-generating equipment (including emergency generators and generators associated with the proposed sewer pump stations), predict property line noise levels from all identified equipment, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation) as necessary to comply with the County Noise Ordinance, Section 36.404.	
N-3 Noise generated by other on-site land use activities (e.g., other stationary sources) associated with the proposed Project could exceed the Sound Level Limits of Section 36.404 of the County Noise Ordinance.	M-N-3 Prior to the issuance of a building permit for commercial land uses containing loading docks, delivery areas, and parking lots, the applicant, or its designee, will prepare an acoustical study(s) of proposed commercial land use site plans, which will identify all noise-generating areas and associated equipment, predict noise levels at property lines from all identified areas, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation, reduction of parking stalls), as necessary, to comply with the County Noise Ordinance Section 36.404.	Less than significant
N-4 Noise generated by construction activities associated with the proposed Project, including rock crushing and drilling could exceed the construction hours of Section 36.408 and the construction Sound Level Limits of Section 36.409 of the County Noise Ordinance.	<p>M-N-4 To reduce impacts associated with air blast over-pressure and rock drilling and crushing generated by Project-related grading activities, Project applicant(s) of all phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:</p> <ul style="list-style-type: none"> ● All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County. ○ Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast. ○ A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan. ● Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines. ● Blasting shall not be conducted within 1,000 	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level.</p> <ul style="list-style-type: none"> ○ All rock drilling and crushing activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study. ○ All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study. 	
N-5 Impulsive noise from explosives blasting or on-site rock-crushing and drilling activities resulting in exposure of a noise-sensitive land use to noise impacts in excess of County standards.	<p>M-N-5 To reduce impulse noise impacts associated with air blast over-pressure and rock drilling and crushing noise generated by Project-related grading activities, Project applicant(s) of all phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:</p> <ul style="list-style-type: none"> • All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County. • Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast. • A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review 	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>prior to the first blast. Blasting shall not commence until the County has approved the blast plan.</p> <ul style="list-style-type: none"> Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines. Blasting shall not be conducted within 1,000 feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level. All rock drilling activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study. All rock crushing activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study. 	
N-6 Groundborne vibration on-site from construction equipment activities (site grading and truck transport), rock blasting, or rock-breaking activities could resulting in exposure of noise-sensitive land uses to significant vibrations or groundborne noise impacts in excess of the County guidelines.	<p>M-N-6 To reduce impacts associated with groundborne vibration generated by Project-related construction activities, the applicant(s) of all Project phases shall conform to the following requirements, which shall be prominently noted on grading plans:</p> <ul style="list-style-type: none"> Heavy construction equipment shall not be operated within 200 feet of any residential structure. Rock blasting shall not be performed within 1,000 feet of a residential structure. A vibration analysis assessing the proposed 	Less than significant

SIGNIFICANT IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT		
Impact No. and Description of Impact	Mitigation	Conclusion and Mitigation Effectiveness
	<p>blasting and materials handling associated with proposed project shall be submitted to the County for review prior to the first blast.</p> <p>Blasting shall not commence until the County has approved the plan.</p>	
2.9 Transportation and Traffic		
TR-2 Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment.	M-TR-2 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between the City/County Boundary and Project Driveway #1 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896 th building permit.	Less than significant
TR-3 Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment.	M-TR-3 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Project Driveway #1 and Driveway #2 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896 th building permit.	Less than significant

CHAPTER 1.0 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL SETTING

1.1 Project Objectives

Pursuant to Section 15124 (b), of the CEQA Guidelines, the statement of objectives sought by the proposed Project is described below. The objectives are intended to assist the County in developing a reasonable range of alternatives to evaluate in the EIR and aid the decision makers in preparing findings or a statement of overriding considerations.

The underlying purpose of the proposed Project is to complete the planned development of an Otay Ranch-designated specialty village, and to help accommodate the projected demand for a distinct community as envisioned by the adopted Otay SRP. The proposed Project's statement of objectives is as follows:

- Implement the goals, objectives, and policies of the adopted Otay SRP, the Otay Ranch RMP, and the County MSCP Subarea Plan South County segment.
- Create a prestigious destination resort that maximizes unique South County open space, high-terrain, and lake views within a distinct, predominantly single-family home community, and allow first-time buyers and others to transition to distinct, high-quality homes within Otay Ranch.
- Decrease the intensity of development at higher elevations away from Lower Otay Lake, and thereby enhance unique South County open space, high-terrain, and lake views.
- Establish an executive-level, "specialty" housing enclave within Otay Ranch that attracts business owners and employers within both the Otay Ranch and Otay Mesa planned business parks, urban centers, and university uses, thereby providing this segment of the housing community with opportunities to live and work in South County.
- Create increased housing diversity within Otay Ranch by balancing higher densities associated with Otay Ranch's multi-family development with lower density, predominantly single-family homes to ensure a balance of housing opportunities in South County, consistent with the Otay SRP.
- Ensure public facilities are provided in a timely manner and financed by the residents and occupants, and thereby ensure no adverse fiscal consequences to other neighboring communities within Otay Ranch.
- Preserve the Project site's most sensitive resources, including the Quino checkerspot butterfly and higher-quality vernal pools.
- Preserve the major north/south rocky canyon located in the eastern portion of the Project site as a wildlife corridor, and connect to wildlife crossings under Otay Lakes Road.
- Relocate the Otay Ranch Village 15 elementary school site to the Otay Ranch Resort Village in order to create a neighborhood elementary school environment within the village core and thereby enhance the self-sufficiency of the Project's land use plan.

- Provide a continuous public trail system through the community, with access to the resort, the village core, mixed-use area and surrounding trails, including the California Riding and Hiking Trail.
- Provide for a neighborhood park system that provides a variety of active recreational opportunities within walking distance of all planned neighborhoods.
- Create an internal, safe, and efficient street circulation system that is safe and efficient and that promotes walking and community cohesiveness while minimizing paved surfaces.
- Incorporate sustainable design elements and the latest conservation technologies, consistent with creating a distinct destination-resort unique to South County.

1.2 Project Description

1.2.1 Background

1.2.1.1 *History of the Otay Subregional Plan*

On October 28, 1993, the San Diego County Board of Supervisors and the Chula Vista City Council jointly certified the Otay Ranch Program EIR 90-01 (Program EIR or PEIR; SCH No. 89010154), and approved the Otay Ranch Project, including the Otay SRP, following an extensive 4-year collaborative planning and environmental review process. The Otay Ranch Project was jointly planned and concurrently processed by the County and the City of Chula Vista (City) because the site was located in unincorporated San Diego County¹ and the City of Chula Vista had proposed annexing portions of the site.

The planning of Otay Ranch was directed by an Interjurisdictional Task Force composed of elected officials and citizen representatives from the County and cities of Chula Vista and San Diego. The planning process included 11 citizen advisory task forces and more than 130 meetings with South County citizen participation to help formulate the design of the Otay Ranch land plan. Over a 4-year planning process, numerous alternative land use plans were developed and refined, incorporating comments from the citizen advisory task forces, a joint planning team, and elected officials. In addition, the Otay Ranch Program EIR evaluated eight Project alternatives, including the No Project Alternative, an environmental alternative, and five off-site alternative Project locations. After several hearings before the jointly convened County and Chula Vista Planning Commissions, and the County Board of Supervisors and Chula Vista City Council, the Otay SRP was approved on October 28, 1993.²

¹ Except approximately 300 acres in the City of San Diego (Otay Mesa).

² Thereafter, Chula Vista, in cooperation with the County, annexed the western most 9,000 acres of Otay Ranch. The San Diego County Local Agency Formation Commission (LAFCO) approved the annexation on July 1, 1996, and the annexation was effectuated upon execution of the required tax-sharing agreement between the County and Chula Vista.

1.2.1.2 *Approved Otay SRP*

The approved Otay SRP, which is a part of the County General Plan (County of San Diego 2011), contemplates development of the Otay Ranch community. The Otay Ranch community is to be composed of a broad range of residential, mixed-use, and non-residential land uses within a series of villages and planning areas with schools; recreational parks; business/industrial parks; a circulation system; neighborhood commercial areas; regional-serving commercial centers; open space; preserve land; trails; and other infrastructure, public services and amenities.

The Otay SRP encompasses the Project site and designates it as a specialty village composed of a destination resort, residential neighborhoods (single- and multi-family homes), local parks, commercial areas, and public uses. Described as “Village 13/Resort Village,” the Otay SRP establishes policies to reflect the unique aspects of this village based on its physical attributes and location within Otay Ranch. The Otay SRP, as amended in 2001, specifies permitted uses within Village 13/Resort Village include hotel uses with up to 800 rooms, shops, restaurants, and conference facilities. The residential component calls for a maximum of 2,066 homes (658 single-family residential homes and 1,408 multi-family residential homes), with a buildout population of approximately 5,269 residents. The specified land uses also identify two neighborhood parks and commercial areas. The Otay SRP allows for the possibility of a golf course with up to 27 holes, but does not require its inclusion in the Project site.

At the time the Otay SRP was originally adopted, the Village 13/Resort Village included the Birch Family Estate Parcel, located to the west of the Project site. This 135-acre parcel was identified for use as a specialty conference center/community center, with low-density residential uses and open space, consistent with the residential densities of the nearby areas. A total of 128 single-family homes were designated on this parcel. The Birch Family Estate Parcel is not included as part of the proposed Project because it is geographically separated from the Project site, lies within the City of Chula Vista, is owned by a different entity, and is not currently proposed for development. As a result, for the area within the proposed Resort Village boundary, the Otay SRP permits 1,938 homes (530 single-family residential homes³ and 1,408 multi-family residential homes).

Under the implementation program for the approved Otay SRP and pursuant to Government Code Section 65450 et seq., adoption of a Specific Plan is necessary to govern development of the Project site. The proposed Otay Ranch Resort Village Specific Plan (Specific Plan) further refines the land use plans, development regulations, goals, objectives, and policies of the proposed Project.

The PEIR prepared for the Otay SRP analyzed the existing conditions, significant impacts, and mitigation measures related to developing a new community over the entire 23,000-acre Otay Ranch area. As permitted under sections 15152 and 15168 of the CEQA Guidelines, this EIR tiers from the previously certified Otay Ranch PEIR, and concentrates on the issues specific to the proposed Project. The certified PEIR prepared for the Otay SRP evaluated development of

³ 658 single family homes in the Resort Village/Village 13 overall minus the 128 single family homes designated on the Birch Family Estate Parcel which are not included as part of the proposed Project.

the entire Otay Ranch community, including the Project site. As such, this EIR, in some instances, relies on the analysis contained in the PEIR. However, where the proposed Project differs substantively from what was analyzed in the previously certified PEIR, or where the existing conditions have significantly changed, additional analysis is provided in this EIR to ensure all potential significant impacts are adequately analyzed and applicable mitigation measures are included.

This EIR evaluates the proposed Project in the context of both the County General Plan and the approved Otay SRP, which is part of the General Plan. For that reason, the previously approved Otay SRP primary planning principles are identified below.

1.2.1.3 Otay Subregional Plan Primary Planning Principles

Three primary planning principles have guided overall development and implementation of the approved Otay SRP. Those principles are to (a) create neighborhoods with a sense of place and reduce reliance on the automobile; (b) create a managed preserve system to conserve important natural resources, including multiple sensitive species and their habitats; and (c) provide public facilities in a timely manner without burdening existing residents/taxpayers. Each of these principles is discussed further below.

Principle: Create Neighborhoods with a Sense of Place and Reduce Reliance on the Automobile

In the 1980s, the prevailing planning approach was to divide areas into zones that segregated residential, commercial, and civic uses into separate areas, thereby requiring residents to drive or use public transportation for nearly all daily activities. Otay Ranch sought to replace this prevailing planning ethic by combining land uses within each neighborhood, locating specific uses and other activity centers within walking distance of most homes, and linking the community with enhanced sidewalks, trails, pedestrian bridges, and pathways. Otay Ranch's planning approach provided for neighborhoods with a "sense of place" and reduced reliance on the automobile through adoption of the Otay Ranch Land Use Plan and the Otay Ranch Village Concept Policies. These plans and policies established a series of 11 urban villages and one planning area (seven of which are transit-oriented), located in the westernmost 9,500 acres of Otay Ranch (the Otay Valley Parcel), most of which was annexed to the City of Chula Vista in 1996. In the Otay SRP adopted in 1993, these 11 urban villages and one planning area contained 80 percent of the residential units planned for Otay Ranch.

The remaining residential units in Otay Ranch were located in the three specialty villages and two rural estate areas on the two eastern Otay Ranch parcels: the Proctor Valley Parcel and the San Ysidro Mountains Parcel. Villages 13, 14, and 15 are the "specialty villages" within Otay Ranch.⁴ Village 13, along with the neighboring Village 15, were intended to accommodate higher-end residential units to house executive personnel associated with Otay Ranch's planned business parks (plus the Otay Mesa area's planned business parks), urban centers, planned university uses, and the Otay Mesa industrial area.

⁴ Village 13 represents the proposed Project for purposes of this EIR and is referred to as "Otay Ranch Resort Village" or "Resort Village" in this EIR.

The Resort Village creates a sense of place by establishing major activity centers distributed throughout the village. The Multiple Use Planning Area at the western edge of the proposed Project includes 57 multi-family residences and up to 20,000 square feet of commercial/retail uses. This area is intended to serve the day-to-day needs of the Resort Village population. Farther east, the Village Core Activity Center includes a 10.3-acre neighborhood park, an elementary school site, and a public safety site. The Otay Ranch Facility Implementation Plan located a fire station within Village 15 and the Otay SRP located an elementary school within Village 15. Subsequently, Village 15 was acquired for conservation purposes. To ensure future fire services and school services are available, the Project proposes amendments to the Otay SRP to locate these civic uses in the Resort Village. This area is designed to be the civic center where residents can socialize as they drop their children at school or take them to the park. The eastern portion of the Project site includes the Resort Activity Center, which will include resort-style amenities, up to 200 guest rooms, and up to 20,000 square feet of ancillary commercial/office uses.

In addition to these major activity centers, the proposed Project distributes neighborhood parks throughout the Project site, which will serve as smaller gathering spaces for residents. These parks are connected by an integrated pathway and trail plan. The pedestrian experience is enhanced by the street sections, which provide landscaped parkways as a barrier between pedestrians and vehicle traffic. Traffic calming features such as intersection neckdowns and raised intersections are also incorporated throughout the Resort Village to slow travel speeds and increase pedestrian safety.

Principle: Create a Managed Preserve System to Conserve Important Natural Resources, Including Multiple Sensitive Species and their Habitats

In the 1980s, the prevailing regulatory scheme was to focus on single species conservation and set aside patches of open space to accommodate sensitive species and their habitats. Otay Ranch sought to replace this approach by creating a large, contiguous preserve system to be professionally managed and funded in perpetuity. The Otay SRP provided for this managed preserve system through adoption of the Otay Ranch RMP, designation of an 11,375-acre Otay Ranch Preserve, and establishment of the Otay Ranch Preserve Owner Manager (POM), funded in perpetuity through a series of assessment mechanisms.

The 11,375-acre Otay Ranch Preserve was created concurrent with the development of Otay Ranch. For every “Developable acre” (as defined by the Phase 2 RMP) of land approved for development, 1.188 acres of preserve land is conveyed to the designated POM. To date, more than 3,200 acres of preserve land have been offered for dedication to public ownership due to development of Otay Ranch.

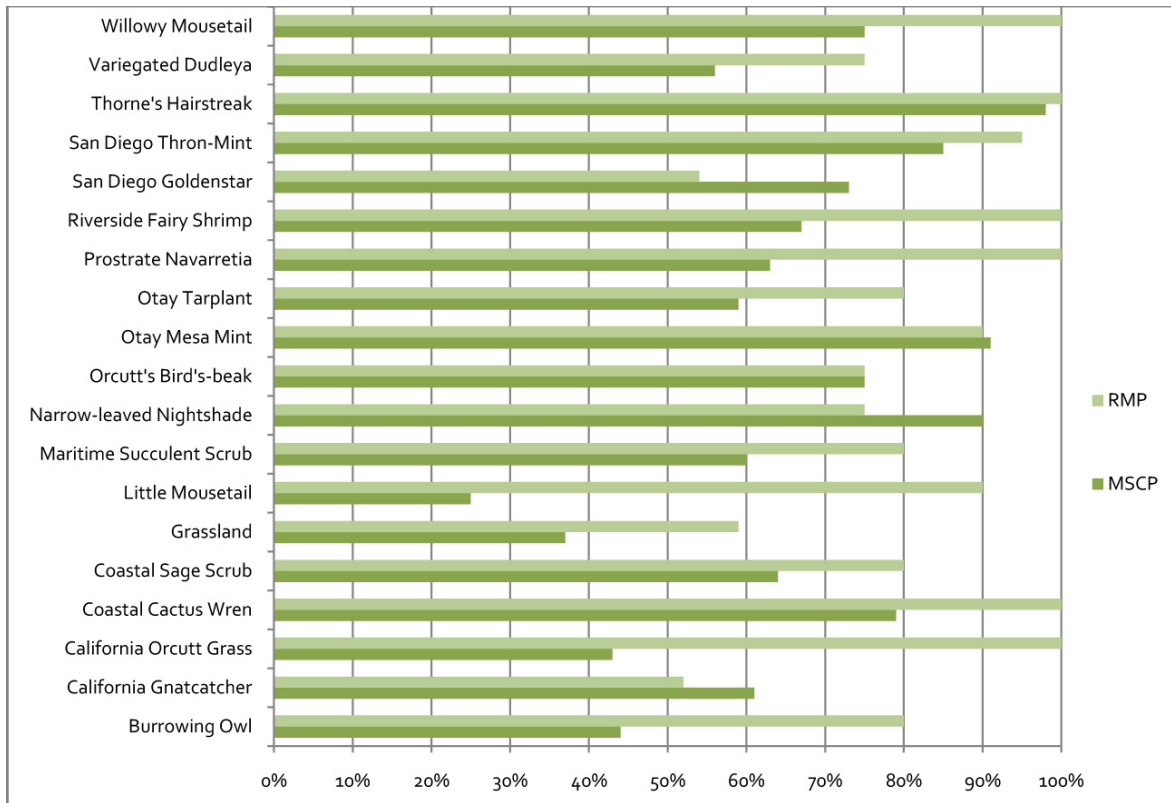
The Otay Ranch Preserve is designed to protect not only biological resources, but also preserve natural resources such as floodplains, archeology, paleontology, watersheds, wetlands, viewsheds, steep slopes, and wildlife linkages. It is also a multi-species system planned to protect both species that currently are threatened and endangered, and to preserve the habitat of other species so they do not become endangered.

Significantly, the Otay Ranch Preserve is a managed system. Experience has shown that setting aside open space is not sufficient to ensure the survival of sensitive species and habitats; instead, land must be actively managed and, in some instances, restored or enhanced. Examples include Otay Ranch programs to restore maritime succulent scrub and Otay tarplant, which have been successfully implemented. The Preserve also has an established assessment mechanism to generate funds to pay for the active management of the entire 11,375-acre Preserve. As of this writing, the assessment mechanism generates roughly \$500,000 annually for management, maintenance, and monitoring, as described in the adopted Otay Ranch RMP. In addition, the Preserve provides educational and recreational opportunities.

The Preserve is also a part of San Diego's Multi-Species Conservation Program (MSCP) adopted in 1997. In addition, the Preserve has improved the MSCP plan in several important respects. First, Otay Ranch generally conserves sensitive species at a higher level than the MSCP. While the MSCP primarily focuses on upland species, the RMP and the Otay Ranch Preserve also protect wetland habitats in a system-wide fashion, conserving 90 percent of identified wetlands within the Preserve and providing mitigation for impacts to wetlands outside the Preserve through wetland creation, restoration, or enhancement within the Preserve. Specifically, the Otay Ranch Preserve conserves the following within the Preserve:

- a. 93 percent of southern willow scrub habitats;
- b. 100 percent of freshwater marsh habitats;
- c. 95 percent of vernal pool habitat, including a vernal pool preserve of 330 acres on Otay Mesa;
- d. 95 percent of the San Diego button celery; and
- e. 100 percent of the Otay thornmint.

The table below graphically illustrates (by percentage) the greater conservation levels that have been achieved by implementing the Otay Ranch Preserve as compared to the MSCP.



In addition, while portions of the MSCP Preserve will be acquired through public funding, the Otay Ranch Preserve is currently being assembled through land dedications and without the need for public funding.

Since the Otay SRP and RMP were adopted in 1993, the Otay Ranch Preserve also has been enhanced by the following actions:

- a. Otay Valley Road was removed from the Preserve;
- b. The Wolf Canyon trail system was removed from the Preserve;
- c. The Wolf Canyon sewer system was removed from the Preserve;
- d. Alta Road was removed from the Preserve;
- e. The size of the university permitted in the Preserve was restricted;
- f. The Preserve along Wolf Canyon was expanded to protect a stand of thornmint;
- g. Restoration of maritime succulent scrub was restored beyond that required by the RMP or MSCP; and
- h. The size of active recreation in the Otay River Valley was reduced by approximately 200 acres.

The proposed Project will further the implementation of the Otay Ranch Preserve. First, the development footprint has been revised to reduce impacts to the most sensitive biological

resources including the QCB and high quality vernal pools. As a result of this redesign, the proposed Project also includes wildlife corridors that were not identified in the original Project design. Second, the proposed Project will convey Preserve land to the Otay Ranch Preserve at the required conveyance ratio consistent with the requirements of the Otay Ranch Phase 2 RMP. Implementation of the proposed Project would contribute to the dedication of approximately 888 acres to the Otay Ranch Preserve. By conveying land to the Otay Ranch Preserve, the proposed Project will help ensure the preservation of high quality, regionally integrated, fully managed Preserve lands. In addition, the single and multi-family homes, commercial area and Resort will pay into the Preserve assessment mechanism, increasing the funds available for Preserve management and monitoring. For further discussion of the Otay Ranch Preserve, please refer to Section 2.3 – Biological Resources and Section 3.3 – Land Use and Planning.

Principle: Provide Public Facilities in a Timely Manner without Burdening Existing Residents/Taxpayers

In the 1980s, growing communities throughout California, in the wake of Proposition 13, found it difficult to fund or build the new public facilities and infrastructure necessary to serve new development. Otay Ranch sought to address these concerns through creation of a series of “pay as you grow” facility thresholds and processes to assure that new development would construct needed public facilities and infrastructure concurrent with need. The adopted Otay SRP provided for the timely provision of public facilities without burdening existing residents and taxpayers through adoption of the Otay Ranch Facility Implementation Plan, which provides specific facility thresholds, service levels, and facility financing policies and mechanisms.

Since construction commenced in Otay Ranch in 1999, four elementary schools have been constructed (Heritage, McMillin, Veterans, and Wolf Canyon). In addition, Otay Ranch development assisted in funding Hendenkamp Elementary School in the adjacent Sunbow community. Two public high schools have also been constructed (Otay Ranch and Olympian).

Further, six neighborhood parks and 12 pedestrian parks have been constructed by new development in Otay Ranch since 1999. Additionally, Otay Ranch development has contributed land and funds for the eventual construction of a 70-acre community park.

Chula Vista Fire Station No. 7 was also constructed in Village 2. This new station was funded by new development in Otay Ranch, and it serves Otay Ranch and surrounding communities.

In addition, Otay Ranch development constructed the following new arterials: Olympic Parkway, Heritage Road, La Media Road, and the extension of Birch Road and Eastlake Parkway. The expansion of Telegraph Canyon Road was also funded by Otay Ranch development. As critical components of a comprehensive facility financing and funding program, all of these arterials were sized to accommodate forecasted Otay Ranch development, including the proposed Project.

Similarly, the development in the Salt Creek sewer basin financed construction of the Salt Creek Interceptor sewer, which was constructed based on plans that it would serve development within the southern half of the Otay Valley Parcel and portions of the San Ysidro Mountains and Proctor Valley Parcels, including the proposed Project.

Otay Ranch also shifts the burden from the general tax base to the residents and businesses that directly benefit from the development through creation of maintenance assessment districts. These districts fund a variety of maintenance and operational services related to landscape medians and parkways, street trees, pedestrian lighting, graffiti abatement, and private open space. Public neighborhood and pocket parks, which provide residents with walkable recreation opportunities, are funded through an assessment district mechanism such as Homeowner Association (HOA) fees rather than public funds.

The proposed Project includes a Public Facilities Financing Plan (PFFP) as Appendix IV to the Resort Village Specific Plan. The PFFP identifies the public facilities required in the Resort Village and infrastructure improvements necessitated by the proposed Project. It also identifies the phases of development that would finance and construct these facilities, as well as thresholds for their construction to prevent falling out of compliance with Otay SRP requirements.

1.2.2 Project Components

The Project application includes a Specific Plan (SP04-002), General Plan Amendment (GPA04-003), Rezone (REZ04-009), Tentative Maps (TM5361A and TM5361B), the Otay Ranch RMP amendment/adoption, and the County MSCP Subarea Plan South County Segment Boundary Adjustment. **Table 1.0-1** lists the discretionary approvals and permits associated with the proposed Project. Discretionary actions likely to be processed in the future, but not part of the proposed Project, are listed in **Table 1.0-2**. The following describes the major components and characteristics of the proposed Project.

1.2.2.1 Specific Plan

The Specific Plan is an implementation document required by the Otay SRP to refine and implement the land use plans, goals, objectives, and policies of the Otay SRP. Pursuant to Government Code Section 65450–65457, the Specific Plan includes a description of the land uses, public facilities and services, development regulations, and implementation strategies for the proposed Project.

The Otay SRP identifies implementation tasks that must be performed as conditions of approval of Specific Plans, including the preparation of particular plans and technical reports. These implementation requirements have been satisfied through the preparation of various supporting documents and plans included or referenced in the Specific Plan. The components of the Specific Plan, including the supporting documents and plans that provide its framework, are identified below.

Development Plan

The Specific Plan's Development Plan consists of the Site Utilization Plan or Land Use Plan, the Grading Concept Plan, the Circulation Plan, and the Landscape Concept Plan. Each plan is discussed below.

Site Utilization Plan/Land Use Plan

The Otay SRP requires the preparation of a Site Utilization Plan that describes the proposed land uses for the Project. The uses proposed by the Resort Village Specific Plan consists of single-family residential uses, mixed-use residential and neighborhood commercial uses, resort hotel and associated commercial facilities, park and recreational uses, public safety site, elementary school site, open space, Preserve land, circulation, and associated public services and amenities. **Figure 1.0-1** depicts the proposed Land Use Plan, as described in the Specific Plan (Site Utilization Plan).

The proposed Land Use Plan is anchored by the location of the Project site's three significant activity centers: (1) Resort Planning Area, (2) Mixed-Use Planning Area, and (3) Village Core. The Resort and Mixed-Use planning areas are each depicted in **Figure 1.0-1** and described below. The Village Core is centrally located within the Project site and includes the public safety site, a neighborhood park, and an elementary school site. Each use is described further below.

Three access points are provided from Otay Lakes Road to and from the Project site. Strada Piazza would serve as the primary access from Otay Lakes Road from the western edge of the Project site, continuing east toward Neighborhood R-5 and the Resort planning area. Strada Ravenna would provide secondary access from Otay Lakes Road in the southeastern edge of the Project site, fronting the easternmost residential neighborhood (R-5), and leading to the Resort planning area. Strada Sicilia would provide access from Otay Lakes Road in the northwestern portion of the Project site to the westernmost residential neighborhoods (R-1).

Single-Family Residential Uses

As shown in **Figure 1.0-1** and as depicted in **Table 1.0-3**, 525.0 acres (28.1 percent) of the total Project site would be designated as single-family residential, which would accommodate 1,881 homes. This designation would allow for five single-family residential neighborhoods, with an average density ranging from 3.2 to 4.4 dwelling units per acre (du/acre). Site Plans would be required to refine the design, architecture, and landscape architecture for the proposed single family neighborhoods.

Multiple-Use

The Project site would include a 14.1-acre multiple-use (MU) area located adjacent to Otay Lakes Road, north of the Strada Piazza entrance to the community. As shown in **Table 1.0-3**, the MU designation would allow for 57 attached homes and up to 20,000 square feet of neighborhood commercial, retail, and office uses. A Site Plan would be required to refine the development program, facilities, site design, architecture, and landscape architecture for the proposed mixed-use area.

Resort Uses

The proposed Resort site would be located on a 17.4-acre promontory in the southeastern portion of the Project site. The resort land use designation would allow a hotel with up to 200 guest

rooms and up to 20,000 square feet of ancillary commercial/office uses, including meeting rooms, a conference center, offices, shops, and restaurants. A Site Plan would be required to refine the development program, facilities, site design, architecture, and landscape architecture for the proposed resort uses.

Parks and Recreation Uses

The Project site would include 28.6 acres of parks on nine park sites. As illustrated in **Figure 1.0-1** and as shown in **Table 1.0-3**, the P-5 neighborhood park is 10.3 acres and would be located in the Village Core, adjacent to the elementary school site and the public safety site. The P-5 park and five additional public parks (P-1, P-2, P-3, P-4, and P-8) located within residential neighborhoods, would be maintained by an assessment district/mechanism. Three parks (P-6, P-7, and P-9) are planned as private parks, to be maintained by an HOA.

Public Uses

The 1993 Otay Ranch Facility Implementation Plan located a fire station within Village 15. Village 15 has been acquired for conservation purposes. To ensure that a site for future fire services is available, the Project reserves a 2.1-acre public safety site, which could house a fire station and a law enforcement storefront. As depicted in **Figure 1.0-1**, the public safety site would be located in the Village Core, across from the elementary school site.

The 1993 Otay SRP located an elementary school within Village 15. However, Village 15 has been acquired for conservation purposes. To ensure that a site for future school services is available, the Project proposes to locate the Village 15 elementary school to the Project site, with the designation of a 10-acre elementary school site located in the Village Core, adjacent to the neighborhood park (P-5).

Open Space

Approximately 144.0 acres of the Project site are designated as Open Space. This designation generally includes the fuel modification zone and exterior manufactured slopes within the Project development footprint and excludes internal residential manufactured slopes. Open space areas are planned to be maintained by either an HOA or an assessment district/mechanism, consistent with the requirements of the Resort Village Specific Plan.

Otay Ranch Preserve

The Land Use Plan designates approximately 1,089.0 acres of the 1,869-acre Project site (approximately 58.3 percent of the site) as Preserve land, which will be offered for dedication to the Otay Ranch Preserve system. Preserve land is generally undisturbed land or restored habitats set aside for dedication to the public. The Preserve land would be maintained by the Otay Ranch POM, the funding of which would be through an assessment district/mechanism.

Grading Plan

The Specific Plan design calls for development on terraces integrated into the natural landform to minimize grading, optimize views, and promote passive solar heating and cooling opportunities. The goal of the proposed Land Use Plan is to concentrate development on the flatter areas (e.g., mesas, hilltops) and retain the unique topographic features of the Project site. The proposed Project's grading would integrate Project development into the natural landform.

Cut and fill slopes occur across the Project site due to the variability of existing topography. These slopes range in height up to approximately 140 feet in higher elevation areas. The proposed pad for the resort site would be created by removing up to 70 feet from the hilltop and placing fill up to 70 feet in depth. Manufactured slopes would occur between neighborhoods, at the rear of residential lots, and along Otay Lakes Road and the internal streets. To soften the manufactured appearance, large expanses of slopes would be landscaped with a mixture of drought-tolerant trees, shrubs, and groundcover. **Figure 1.0-2** depicts the Grading Concept Plan for the proposed Project.

Retaining walls may occur in rear yards; however, these walls would be guided by the Resort Village Design Plan and Resort Village Specific Plan Development Regulations which limit the height of such walls.

Geotechnical reports and soils evaluations have identified the Project site as suitable for development. These reports are included as **Appendices C-6, C-7, and C-8** to this EIR. Because of the underlying geology, blasting and rock crushing/processing will be required as part of the grading operations for the proposed Project. The rock crushing/processing operation would provide materials suitable for road base, pad leveling, and utility bedding. No concrete batch plant is proposed to be operated on-site. Blasting will occur in the northern and eastern portions of the Project site, consistent with the location of rock formations suitable for use as construction aggregate. Impacts associated with blasting, including impacts to air quality and noise, are evaluated throughout this EIR as part of the proposed Project.

Approximately 14.2 million cubic yards of cut and 14.2 million cubic yards of fill are proposed in a balanced grading operation. The project proposes retaining walls in the rear yard or side yards of residential lots. The heights range between one and six feet. The walls will follow San Diego Regional Standard Drawings C-1 through C-6. Larger retaining walls are proposed that range in height from 6.5 feet to as high as 25 feet. An example of these walls can be found in HOA Lot 13B-20 shown on Sheet 10 of Tentative Map 5361 (B) (**Figure 1.0-11B**). For a visual simulation of the tallest project retaining wall refer to **Figure 2.1-8B**. These walls may be a Mechanically Stabilized Earth (MSE)/Geogrid Retaining Wall or similar wall equivalent structural capacity.

Landscape Concept Plan

The Specific Plan includes a Landscape Concept Plan, depicted in **Figure 1.0-3**. This style includes flowing, informal, timeless forms, pedestrian scaled building masses, indoor/outdoor spaces, and use of warm, natural materials and colors. Maintenance of the various components of

the Landscape Concept Plan is detailed in the Specific Plan's Landscape Maintenance Plan. A "California friendly" landscape palette corresponds with the different landscape zones identified in **Figure 1.0-3** and is proposed to reduce water use and wildfire risk. This plant palette can also be found in the Resort Village Design Plan, Resort Village Fire Protection Plan, Resort Village Preserve Edge Plan, and Resort Village Water Conservation Plan.

Circulation Plan

Regional Circulation and Access

Regional access is provided by State Route 125 (SR-125), located approximately three miles west of the Project site. Located approximately six miles west of the Project site, Interstate 805 (I-805) provides secondary north/south access for traffic generated by buildout of the area, including Otay Ranch and other portions of the Chula Vista Eastern Territories. SR-54, located approximately six miles north of the Project site, connects to SR-125 and I-805, and provides regional east/west access. I-905, located approximately 6 miles south of the Project site, provides additional east/west access and connects to SR-125 and I-805.

Local Circulation and Access

The proposed Project would be served by a transportation system that uses existing routes and planned new or expanded facilities. The Specific Plan's proposed Circulation Plan incorporates vehicular and non-vehicular modes of transportation to create an integrated system of roads, bike lanes, trails, pathways, and sidewalks. Roads are arranged in a hierarchy, organized by function, to facilitate access within and around the Project site. The Circulation Plan includes a variety of street sections and other traffic-calming techniques to slow traffic, create a pleasant walking environment, and reduce urban "heat island" effects.

Primary local access to the Project site is provided from the west along Telegraph Canyon Road, a six-lane Prime Arterial in the City of Chula Vista. Telegraph Canyon Road transitions to Otay Lakes Road (a six-lane Prime Arterial) approximately 3.5 miles west of the Project site. The existing alignment of Otay Lakes Road along the northern edge of Lower Otay Lake would be retained by the proposed Project. This alignment is inconsistently depicted in the Otay SRP and the General Plan Mobility Element. The adopted Otay SRP depicts Otay Lakes Road bisecting the proposed Project away from the edge of the lake, while the adopted County General Plan Mobility Element depicts Otay Lakes Road traversing along the edge of the lake.

The Mobility Element of the County General Plan classifies Otay Lakes Road as a four-lane (4.1B) Major Road with Intermittent Turn Lanes, from the City/County boundary to the second Project entry (Strada Piazza), and transitions to a two-lane (2.1D) Community Collector with Improvement Options, to the east. The Project proposes an amendment to the County General Plan Mobility Element and an Otay SRP Amendment to reclassify Otay Lakes Road to a four-lane (4.2A) Boulevard with Raised Median from the City/County boundary to Strada Piazza; and transitions to a two-lane (2.2C) Community Collector with Intermittent Turn Lanes to the east. **Figure 1.0-4** shows that Otay Lakes Road maintains its current alignment as depicted by the

County General Plan Mobility Element. The Mobility Element roadway designations are shown by symbols 1, 1a, and 1b.

Internal Circulation

Figure 1.0-4 depicts the internal circulation concept for the proposed Project. The Circulation Concept Plan provides vehicular access via alternative routes to disperse traffic and avoid “through routes” within the residential neighborhoods. Internal circulation comprises approximately 39.0 acres of the Project site.

As noted above, the proposed Project provides three access points to and from the Project site from Otay Lakes Road. Strada Piazza (map symbol 2a) would serve as the primary access from Otay Lakes Road from the western portion of the Project site, continuing east toward residential neighborhood R-5 and the Resort planning area. A roundabout is proposed at the intersection with Otay Lakes Road and Strada Piazza to calm traffic and help establish the design theme and the pedestrian-oriented character of the community.

Strada Ravenna (map symbol 3b) would provide secondary access from Otay Lakes Road in the southeastern edge of the Project site to the easternmost residential neighborhood (R-5) and the Resort planning area. A roundabout is also proposed at the intersection of Otay Lakes Road and Strada Ravenna. Strada Sicilia (westernmost map symbol 3a) would provide access from Otay Lakes Road in the northwestern portion of the Project site to the westernmost R-1 residential neighborhood.

The internal circulation plan also includes a series of collectors and residential streets to provide access to the residential neighborhoods. Streets within the community are proposed for a maximum travel speed of 30 miles per hour (mph), which would allow bicycle travel on streets without designated travel lanes. Pathways and sidewalks are separated from travel lanes with a landscaped parkway to encourage walking.

Transit

Future bus service to the Resort Village may be provided by MTS. Currently, MTS Routes 703 and 709 serve the Otay Ranch Town Center via Olympic Parkway. Route 709 continues north on Eastlake Road and Lane Avenue to westbound Proctor Valley Road/East H Street. Route 707 travels eastbound on East H Street/Proctor Valley Road and Eastlake Road to the Otay Ranch Town Center. These routes provide service throughout the Chula Vista Eastern Territories, including the Eastlake Business Center and Southwestern College. Future expansion of transit service to the Resort Village may include a bus route to the Multiple-Use Planning Area.

Housing Plan

The Otay SRP requires the preparation of a Housing Plan to be included with the submittal of a Specific Plan. A Housing Plan is included in the Specific Plan. The Housing Plan describes how the proposed Project helps achieve the Otay SRP requirement to provide a diverse housing supply in Otay Ranch, and requires the preparation of an Affirmative Fair Marketing Plan.

Agricultural Plan

The Otay SRP requires the preparation of an Agricultural Plan to be included concurrent with the approval of any specific plan affecting on-site agricultural resources. The Agricultural Plan must indicate the type of agricultural activity allowed as an interim use, including buffering guidelines designed to prevent potential land use interface impacts related to noise, odors, dust, insects, rodents, and chemicals that may accompany agricultural activities and operations. The Agricultural Plan is included in the Specific Plan.

Public Facilities and Services Proposed By the Specific Plan

The Specific Plan calls for the provision of the public facilities and services described below. As required by the adopted Otay SRP, a Public Facilities Financing Plan (PFFP) has been prepared in conjunction with the Specific Plan to ensure facilities and services are available concurrent with need. The PFFP provides descriptions of the Specific Plan's public services and infrastructure, phasing thresholds, and financing mechanisms. Facilities are sized and designed to serve the Specific Plan land uses as depicted in **Figure 1.0-1**. The PFFP is included as Appendix IV in the Specific Plan.

Water Service

A Water Service Plan is provided as a separate facility plan. The Water Service Plan is summarized in the Overview of Water Service for Otay Ranch Village 13 (Overview of Water Service) and included as **Appendices C-17** to this EIR. Impacts associated with the provision of water service are evaluated in this EIR. The phasing and financing of water facilities are also addressed in the PFFP. If approved, it is anticipated that the Project site would be annexed into the service areas of the Otay Water District (OWD), the San Diego County Water Authority (SDCWA), and the Metropolitan Water District of Southern California (MWD). These subsequent annexations are governed by the San Diego County Local Agency Formation Commission (LAFCO).

As stated, OWD is identified as the water provider for the proposed Project. As of this writing, the Project area is not within the OWD service area or the OWD sphere of influence. Before the Project site may be annexed, an update of the sphere of influence, including the Project site, must first be approved by LAFCO. In addition, a Municipal Service Review may be required as part of the sphere update/annexation request.

The Specific Plan's total projected potable water demand is 1.42 million gallons per day (mgd), or approximately 1,590 acre-feet per year (afy). OWD's revised 2010 Urban Water Management Plan (2010 UWMP) anticipated that the proposed Project would use only potable water due to the historic constraints on use of recycled water use in close proximity to Lower Otay Lake, a drinking water reservoir for the City of San Diego. The water demand projections and supply requirements for the proposed Project are currently within OWD's 2010 UWMP and other water

resources planning documents of OWD.⁵ Because less development is proposed on the Project site than is allowed under the adopted Otay SRP (fewer hotel rooms, no golf course proposed), OWD also has acknowledged that the proposed Project's current water demand projections and supply requirements are less than those contained in the UWMP and other OWD planning documents.⁶

On May 7, 2014, the OWD Board of Directors approved an update to the proposed Project's Water Supply Assessment and Verification Report, originally approved in February 2009. This report is included as **Appendix C-18** to this EIR. The report identifies the water demand projections and supply requirements for the proposed Project and states that such requirements have been included in the water demand and supply forecasts contained in OWD's 2010 UWMP and other OWD planning documents. The proposed Project's Water Supply Assessment and Verification Report documents that sufficient water supplies are planned for and intended to be available over a 20-year planning horizon, in normal, single-dry, and multiple-dry years, to meet the proposed Project's projected water demand, in conjunction with all other existing and other planned development in OWD's service area.

Under the plan, the proposed Project's potable water would be provided by OWD, which relies on SDCWA, a member of MWD. MWD's water supply sources include the State Water Project (SWP) and the Colorado River Aqueduct (CRA). Upon annexation into OWD's service area, the proposed Project would be served by expanding OWD's existing 980 Zone within OWD's Central Service Area in the vicinity of the proposed Project. **Figure 1.0-5** illustrates the proposed Water Service Plan, including the major water facilities needed to serve the Project site. Annexation into OWD's service area is further discussed in Section 3.7 – Utilities and Service Systems, and is listed as a future discretionary action.

The proposed Project would require the extension of a 20-inch transmission line from the existing 24-inch transmission line within Otay Lakes Road, from just east of Hunte Parkway to a new reservoir in the 980 Pressure Zone. This new reservoir, referred to as the 980-4 Reservoir, will be located on the Project site and is planned to have a capacity of 5 million gallons. The 20-inch transmission line is proposed to extend to Strada Ravenna on the eastern end of the Project site. All other internal facilities would be sized for the proposed Project to meet OWD looping criteria and pressure requirements.

The Otay SRP establishes a goal for conserving water during and after construction of Otay Ranch, and requires the preparation of a Water Conservation Plan. Consistent with this requirement, a Residential Water Conservation Plan is included as **Appendix VI** to the Specific Plan. The plan identifies the proposed water conservation measures to be implemented in conjunction with the proposed Project. These measures are incorporated into this EIR, Section 3.7.1 – Water Supply.

⁵ See OWD's "Water Supply Assessment and Verification Report" for the proposed Project, found in **Appendix C-18** to this EIR, pp. 7–8.

⁶ See OWD's "Water Supply Assessment and Verification Report" for the proposed Project, found in **Appendix C-18** to this EIR, p. 8.

Sewer Service

A Sewer Service Plan is provided as a separate facility plan. The Sewer Service Plan is summarized in the Otay Ranch Resort Village Overview of Sewer Service (Overview of Sewer Service), provided as **Appendix C-16** to this EIR. Impacts associated with the provision of sewer service are evaluated separately in this EIR. The phasing and financing of wastewater facilities also are addressed in the PFPFP. The average sewage generation for the proposed Project area is estimated at approximately 0.51 mgd. The Project site is not currently within the boundary of a wastewater service district.

Based on the evaluation provided in the Overview of Sewer Services, the Project proposes wastewater facilities to be provided by the San Diego County Sanitation District (SDCSD) and City of Chula Vista by constructing facilities to convey flow to the Salt Creek Interceptor. The Salt Creek Interceptor has been sized to accommodate ultimate development in the service area, including the proposed Project. **Figure 1.0-6** illustrates the Specific Plan's recommended Sewer Service Plan to convey flows from the Project site to the Salt Creek Interceptor, three on-site permanent sewer lift stations, dual force mains, and off-site improvements would be required as described below.

Lift Station 1 would be sized with capacity for the entire Project site. The western portion of the proposed Project would flow to Lift Station 1 by gravity and the remainder of flow would be conveyed from Lift Station 2. The required capacity of Lift Station 1 is 1,000 gpm to accommodate peak gravity flows plus flows from Lift Station 2. Dual 10-inch force mains would convey this flow to the Salt Creek Interceptor.

Lift Station 2 would collect gravity flows from the central portion of the Project site as well as flows from Lift Station 3. Lift Station 2 would require a capacity of approximately 825 gpm to accommodate peak dry weather gravity flows and pumped flows. Dual 10-inch force mains would convey flow from Lift Station 2 to Lift Station 1.

Lift Station 3 would collect flows from the eastern portion of the Project site and pump them westerly along Otay Lakes Road to Lift Station 2. To accommodate peak dry weather flows, Lift Station 3 would require a capacity of approximately 300 gallons per minute (gpm). Dual 6-inch force mains would convey this flow.

From Lift Station 1, sewage flows would be conveyed to the existing Salt Creek Sewer Interceptor along Otay Lakes Road. Sewer mains would be installed within the existing right-of-way and be a combination of 10-inch dualforce mains and a 15-inch gravity main.

The County of San Diego does not have established detailed design standards for lift stations. On recent projects, the County has used City of San Diego Guidelines for lift stations as a reference. These lift stations would be designed to include redundant pumping units, standby power, odor control, overflow storage, and telemetry. The proposed design would also include adequate access to all equipment and fencing for security. These facilities would be owned by the County and operated by the County DPW, and would convey flows to the Salt Creek Interceptor.

Drainage and Stormwater Management

A Drainage Plan and a Stormwater Management Plan are provided as separate facility plans. The Drainage Plan is summarized in the Otay Ranch Resort Village Drainage Study (**Appendix C-13**), and the Stormwater Management Plan is contained in the Otay Ranch Resort Village Stormwater Management Plan (**Appendix C-14**). The phasing and financing of drainage and stormwater management facilities also are addressed in the PFFP.

Natural runoff from most areas north of the Project site will be separated from the developed site runoff via separate storm drain systems. Thus, runoff from natural (undeveloped) areas would continue to drain directly to the Lower Otay Reservoir, and not mix with runoff from the development until downstream of the proposed water quality basins (after low flows from the Project development areas have been treated). However, due to storm drain optimization, and to avoid a double storm drain system in many streets of the proposed development, some runoff from natural areas will mix with runoff from developed areas. **Figure 1.0-7** depicts the Project's proposed Drainage Plan. First flush and dry weather runoff from developed areas would be diverted to water quality basins prior to discharge into the Lower Otay Lake. These water quality basins are designed to protect the existing water quality in the Lower Otay Lake. **Figure 1.0-8** shows the locations of the seven water quality basins.

All runoff conveyed in the proposed Project's storm drain systems would be treated in compliance with RWQCB regulations and federal criteria prior to discharge into natural water courses. All structural BMPs for the proposed Project would be located to infiltrate, filter, or treat the required runoff volume or flow (based on first flush rainfall) prior to its discharge. The BMPs would be designed to reduce toxin, nutrient, and sediment loading of the first flush runoff from the Project site. Maintenance and monitoring of the BMPs would be the responsibility of an assessment district/mechanism or a Homeowners Association (HOA) if an assessment district/mechanism is not formed.

Schools

The proposed Project's residential component (1,938 homes) would generate approximately 794 elementary school students, 232 middle school students, and 437 high school students. The phasing and funding of school facilities are addressed in the PFFP.

The Project site is within the Chula Vista Elementary School District. The proposed Project reserves a 10.0-acre elementary school site to serve approximately 800 elementary students, which is located adjacent to the P-5 park in the Village Core. Until the school district is able to construct, staff, and operate the school, students would attend an elementary school in the area as determined by the school district.

The Project site also lies within the boundary of the Sweetwater Union High School District. Middle school students would be served by Eastlake Middle School, located approximately two miles west of the Project site, or other facilities as determined by the school district. High school students would be accommodated at either Eastlake High School, located approximately three miles west of the Project site; or other facilities as determined by the school district.

Fire Protection and Emergency Services

The Project site is within the boundaries of the San Diego County Rural Fire Protection District (RFPD). The proposed Project would increase demand for fire protection and emergency services in the area. As described in the Otay Ranch Resort Village Fire Protection Plan (FPP; **Appendix C-21** to this document), fire protection and emergency medical services would initially be provided from a temporary, on-site RFPD station in the Project's Western development area. Prior to the issuance of the first building permit within the Project's Central or Eastern development areas, a permanent station would be established on the Project's Public Safety Site. The proposed Project reserves a 2.1-acre Public Safety Site for the permanent fire station. Chapter 3.6 of this EIR further analyzes fire service and protection issues of the proposed project.

Law Enforcement

The County Sheriff's Department currently provides law enforcement services to the Project site and would continue to provide services in the area. The proposed Project would increase demand for law enforcement services. The proposed Project reserves a 2.1-acre public safety site within the Village Core that could be used to house a sheriff's storefront. Alternatively, a sheriff's storefront could be located in the multiple-use commercial area. In addition, the Specific Plan's development guidelines ensure that homes, recreational areas, and business facilities are designed in such a way as to deter crime. The Sheriff's office has confirmed that a facility within the proposed Project site would not be a permanently staffed space, but would give deputies responding to calls or patrolling in the area a place to conduct work. The facility could be co-located with the fire facility in a "public safety center" consisting of approximately 300 square feet.⁷ Chapter 3.6 of this EIR further analyzes law enforcement service issues of the proposed Project.

Parks, Recreation, Open Space, Preserve, and Trails

The Specific Plan describes the provision of parks and recreation facilities, open space, and Preserve land. In addition, the PFFP provides additional information regarding phasing and implementation of the facilities. Specifically, the proposed Project would provide 28.6 acres of public and private park and recreation facilities, ranging in size from 1.3 to 10.3 acres; approximately 144 acres of open space; and approximately 1,089.0 acres of Preserve land. **Figure 1.0-9** illustrates the locations of the proposed park facilities, Preserve land, and open space areas.

The Project site also proposes a system of trails and public pathways. The trails system would provide for meandering pathways adjacent to landscaped parkways and trails located in and adjacent to natural open space areas. Connections to the Otay Valley Regional Park trail would be provided at Project boundaries. Pathways along residential streets and private recreation lots would be maintained by an HOA or a similar community-serving entity. Dedicated pathways

⁷ See Sheriff's email to the County Department of Planning and Development Services, dated November 19, 2008.

along Otay Lakes Road would be maintained by the County, and existing trails within the Preserve would be maintained by the Otay Ranch Preserve Owner Manager.

Specific Plan Implementation

Project Phasing

The Project site would be constructed in multiple phases as shown in **Table 1.0-4**, to ensure construction of necessary infrastructure and amenities for each phase. **Figure 1.0-10** depicts the Conceptual Phasing Plan, which reflects anticipated absorption for the proposed land uses.

The Conceptual Phasing Plan is non-sequential to allow for adjustments in response to market changes, economic conditions, or regulatory constraints. Project development is divided into multiple phases, as shown with different colors in **Figure 1.0-10**. The PFFP imposes specific facilities requirements on each development phase to ensure the Otay SRP facility thresholds are met for each phase of development.

Construction and Maintenance Responsibilities

Table 1.0-5 summarizes the Specific Plan's anticipated construction and maintenance responsibilities for the proposed Project's facilities and infrastructure; it also provides details with respect to the anticipated responsibilities for acquisition, construction, maintenance, ownership, and access related to the Project components.

Development Regulations

The Specific Plan's Development Regulations provide the applicable zoning regulations for the proposed Project area. The regulations implement and integrate the goals and policies of the County General Plan, the Otay SRP, and the proposed Specific Plan by establishing land use districts and standards for each district. Specifically, the regulations provide for implementation of the proposed Project by setting forth the development and use standards for all property within the project site, and establishing setbacks, building heights, parking and landscaping requirements, use restrictions, development density limitations, lot sizes, fencing requirements, and signage regulations. Additionally, special uses and conditions are discussed and administrative procedures are set forth to implement the identified regulations. The Development Regulations, along with the other components of the Specific Plan, delineate the allowable use of the Project site. The Development Regulations are located in Chapter V of the Specific Plan.

Supporting Documents

The Specific Plan is supported by the documents described below.

Preserve Edge Plan (Appendix I of the Specific Plan)

In accordance with Policy 7.2 of the Otay Ranch RMP, a Preserve Edge Plan is required for all Specific Plans that contain areas adjacent to the Otay Ranch Preserve. The purpose of the

Preserve Edge Plan is to identify allowable uses within appropriate land use designations for areas adjacent to the Preserve. The Preserve Edge Plan identifies buffer techniques to be implemented within the 100' buffer adjacent to the Otay Ranch Preserve and is designed to complement and integrate the Otay Ranch Resort Village Fire Protection Plan. The Preserve Edge Plan addresses fuel modification, establishes a landscape palette within the buffer, and addresses other land use adjacency considerations at the development/preserve interface.

Energy Conservation Plan (Appendix III of the Specific Plan)

The Energy Conservation Plan is a requirement of the Otay SRP and identifies feasible methods to reduce the consumption of non-renewable energy sources, through transportation, building design and use, lighting, recycling, alternative energy sources, water use, and land use. This plan is in accordance with Appendix F – *Energy Conservation* of the CEQA Guidelines, which states that the goal of energy conservation is the wise and efficient use of energy through the following:

- decreasing overall per capita energy consumption,
- decreasing reliance on natural gas and oil, and
- increasing reliance on renewable energy sources.

Opportunities for energy conservation in the Resort Village development include the arrangement and intensity of land uses; programs to reduce vehicular trips; and building siting, design, and construction, which includes water conservation measures incorporated into landscape and irrigation system design. These Project design features also serve to reduce the emissions of greenhouse gases, enabling the Project to meet the goals of Assembly Bill (AB) 32. A summary of the key Project features of the Energy Conservation Plan is provided below:

- Design residential buildings to the USGBC LEED – New Home certification or the NAHB National Green Building standard;
- Through the site plan review and building permit process, the Project will incorporate solar panels on buildings to offset the Project's overall residential electricity usage by 30%;
- Construct residential and commercial structures to improve energy conservation by complying with the 2013 Building Energy Efficiency Standards in Title 24 of the California Code of Regulations, as well as the CALGreen building code;
- Require indoor residential appliances to carry the USEPA ENERGY STAR certification;
- Require indoor residential plumbing products to carry the USEPA Water Sense certification;
- Require high-efficiency irrigation equipment, such as evapotranspiration controllers, soil moisture sensors, and drip emitters, for all projects that install separate irrigation water meters;
- Limit natural turf in residential development to no more than 30 percent of the outdoor open space; and

- Use passive solar design and building orientation to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.

Further, EIR Section 3.8, Climate Change, evaluates energy usage as it relates to emissions of greenhouse gases and achieving the requirements of AB 32.

Public Facilities Financing Plan (Appendix IV of the Specific Plan)

The PFFP addresses the public facility needs associated with implementation of the Specific Plan. The PFFP is required by the Otay SRP to ensure the phased development of the Project is consistent with the overall goals and policies of the County General Plan and the Otay SRP. The PFFP provides an analysis of infrastructure facilities, such as water and sewer, and the provision of community services, law enforcement, libraries, schools, and parks. The PFFP also includes a Fiscal Impact Analysis, which evaluates the public costs and revenues generated by the proposed Project.

Resort Village Design Plan (Appendix V of the Specific Plan)

The Otay SRP requires the preparation of a Village Design Plan for each village at the Specific Plan level. The Resort Village Design Plan guides the design of sites, buildings, and landscapes within the village to ensure that the quality of the adopted architectural and landscape concepts established for the overall Otay Ranch community are maintained. The Resort Village Design Plan describes the setting for the village, land use plan, and design theme.

Fire Protection Plan (Appendix C-21)

The FPP demonstrates compliance with the County Building Code and the RFPD and San Diego County Fire Code requirements. The FPP also demonstrates compliance with requirements in Title 24, Part 2 (2010 California Building Code [CBC]) and Title 24, Part 9 (2010 California Fire Code [CFC]). It is also consistent with Title 14 of the California Code of Regulations (CCR) and the County's Consolidated Fire Code for fire protection plans and vegetation management plans.

Water Conservation Plan (Appendix VI of the Specific Plan)

The Water Conservation Plan identifies the proposed water conservation measures to be implemented in conjunction with the proposed Project to reduce potable water demand on private lots. The Water Conservation Plan includes both outdoor and indoor water conservation measures intended to reduce the overall outdoor water usage by an average of 78 gallons per day per single family home.

1.2.2.2 General Plan Amendment

As evaluated in Appendix B, the Project proposes to amend the County General Plan by amending the Land Use Element, Mobility Element, Otay SRP, and Otay Ranch RMP. The proposed GPA would (1) update the Otay SRP to reflect prior amendments made by the City of Chula Vista and (2) implement the proposed Otay Ranch Resort Village Specific Plan.

Amendments Associated with Prior Action by the City of Chula Vista

As noted above, the County Board of Supervisors and Chula Vista City Council jointly adopted the Otay SRP on October 28, 1993. Since that time, various amendments have been made by the jurisdictions to their respective versions of the Otay SRP. The Project proposes to amend the Otay SRP to align Chula Vista's version of the Otay SRP (also known as the Otay Ranch General Development Plan) with the County's version of the Otay SRP. Specifically, the Project proposes amendments to permit the Birch Family Estate parcel to be planned independently from the proposed Project, to provide performance criteria relative to residential and habitat noise mitigation, and to add a policy regarding habitat protection.

Amendments Associated with Adoption of the Resort Village Specific Plan

County General Plan and Otay Subregional Plan Land Use Designations

With respect to the Land Use Element, the Project proposes to amend the County Regional Categories Map to reflect the boundary between the areas proposed for development by the Otay Ranch Resort Village Specific Plan and the areas proposed as open space. Specifically, the Project would change the boundary of the Semi-Rural regional category to be consistent with the portion of the Project site that is proposed for development. The open space portions of the Project would show as a "No Jurisdiction" regional category, which is applied to public/semi-public lands such as the Project's proposed Open Space (Conservation) lands. In addition, the Project proposes to adjust the boundaries between the Specific Plan Area and the Open Space (Conservation) land use designations of the Otay Subregional Plan to conform to the proposed development footprint.

This map amendment would allow development in previously designated open space areas in order to preserve higher quality habitat within proposed Open Space (Conservation) areas. The adjustment to the County General Plan Otay Subregion map would protect high-quality vernal pool resources, enhance conservation of the Quino checkerspot butterfly (QCB) and its habitat, result in improved preserve design, and facilitate wildlife movement. The adjustment also would preserve more sensitive land, particularly QCB habitat and high-quality vernal pools (K8) not preserved in the existing MSCP.

With respect to the Mobility Element, the project proposes an amendment to reclassify Otay Lakes Road to a four-lane (4.2A) Boulevard with Raised Median from the City/County boundary to Strada Piazza, and transitioning to a two-lane (2.2C) Community Collector with Intermittent Turn Lanes to the east. **Figure 1.0-4** shows that Otay Lakes Road maintains its current alignment as depicted by the County General Plan Mobility Element. The Mobility Element roadway designations are shown by symbols 1, 1a, and 1b.

Otay SRP Volume 2 Amendments

The proposed Project would amend the text of Volume 2 of the Otay SRP, which is specific to Otay Ranch. The proposed text amendments would reflect the proposed Otay Ranch Resort Village development plan, land uses, densities, and circulation, as described below.

First, the Project proposes Otay SRP map amendments to adjust the land plan to maintain as open space areas previously slated for development, and to allow development in previously designated open space areas to preserve higher quality habitat in permanent open space areas. The adjustment to the land use plan would protect high-quality vernal pool resources, enhance conservation of the QCB and its habitat, result in improved preserve design, and facilitate wildlife movement. The adjustment also would preserve more sensitive land, particularly QCB habitat and high-quality vernal pools (K8) not preserved in the existing MSCP.

Second, the proposed Otay SRP map amendments would modify dwelling unit distributions (excluding the Birch Family Estate Parcel) to reduce the number of attached homes from 1,408 to 57 homes, and increase the number of single-family homes from 530 to 1,881 homes. The overall Project density would be 3.6 du/acre.

Third, the proposed Otay SRP map amendments would relocate the resort from a central location in the Project site to the eastern side of the Project site, on a prominent knoll. This relocated resort site would provide improved view opportunities from elevated areas on the eastern side of the Project site.

Fourth, the proposed Otay SRP map amendments would relocate the school site from Village 15 and locate a public safety site (consisting of a fire station and sheriff's storefront) within the Project site.⁸ These public facilities would accommodate school and emergency response needs on the Project site.

The proposed Otay SRP map amendments would allow Otay Lakes Road to be kept in its current physical location, immediately adjacent to the southern boundary of the Project site. By maintaining the current road alignment, Otay Lakes Road would no longer bisect the Project site, as reflected in the current Otay SRP.⁹ Maintaining the current alignment would also minimize grading through sensitive resource areas and generally follow the existing built road, creating a more cohesive village.

Finally, the proposed Project would delete the Sensitive Resource Study Area (SRS) designation in recognition that the K8 vernal pool complex is being preserved and the K6 complex is proposed to be within the development footprint.

The Project also proposes Otay SRP text/policy amendments to revise the Resort Village settings and description to reflect the proposed land plan, including adjusting the number of single-family and attached homes permitted on the Project site; deleting the reference to a golf course; and clarifying that allowable commercial uses include mixed uses (i.e., attached residential and

⁸ As originally drafted and as revised in 2001, the Otay SRP placed a fire station in Village 15; however, the Facility Implementation Plan depicted a fire station in Village 13, not Village 15. Thus, the Otay SRP and the Facility Implementation Plan are inconsistent. The proposed amendment would remedy this inconsistency.

⁹ The alignment of Otay Lakes Road currently runs along the northern edge of Lower Otay Lake. The alignment of Otay Lakes Road is not consistently depicted in the Otay SRP and the General Plan Circulation Element. The Otay SRP depicts Otay Lakes Road bisecting the proposed Project away from the edge of the lake, while the General Plan Circulation Element depicts Otay Lakes Road traversing along the edge of the lake.

retail/commercial). The proposed Otay SRP text/policy amendments would also revise the Resort Village policies calling for 2 du/acre in sloping high-elevation areas, to be increased to 3 du/acre. The density limitation of 3 du/acre at lower elevations is proposed to be eliminated. The proposed Otay Ranch SRP text/policy amendments would also reduce the maximum number of hotel rooms from 800 to 200 rooms. The proposed Otay SRP text/policy amendments would clarify the parks and open space policy to specify the 28.6 acres of local parks proposed by the Resort Village Specific Plan.

In addition, because the Project proposes to maintain Otay Lakes Road in its current alignment, the proposed Otay SRP text/policy amendments would delete the grading and landform policies calling for the abandonment and rehabilitation of Otay Lakes Road and its realignment. Consistent with the General Plan Amendment reclassifying Otay Lakes Road, the proposed Otay SRP text/policy amendments would revise text in the Otay SRP to reclassify Otay Lakes Road from a six-lane Prime Arterial to a four-lane Boulevard with Raised Median, from the western Project boundary south and east to the second access point into the proposed Project. From this point eastward, Otay Lakes Road would transition to a two-lane Community Collector.

The proposed Otay SRP text/policy amendments would also make minor revisions to the mitigation measures previously adopted in connection with the certified Otay Ranch PEIR, which also are included in Part IV of the adopted Otay SRP. The minor revisions to certain specified mitigation measures (landform alteration/aesthetics, cultural resources, vernal pools, and regional and local wildlife corridors) are proposed to recognize changes necessitated by the 2001 amendment to the Otay SRP, found in the General Plan Amendment Report (Appendix B). In conjunction with these proposed Otay SRP amendments, the applicants also request that the same amendments be included in the previously adopted Otay Ranch Mitigation Monitoring Program (adopted on October 28, 1993).

The Project also proposes to amend the Otay Ranch Phase 1 and Phase 2 RMP maps to reflect previously approved preserve boundary modifications and amendments to reflect the Preserve boundary resulting from the adoption of the proposed Resort Village Specific Plan, and to amend and adopt the Otay Ranch Phase 2 RMP, as described below in Section 1.2.2.5.

1.2.2.3 *Rezone*

The Specific Plan proposes to rezone certain areas currently designated S87 (Limited Control) to S88 (Specific Plan), and to rezone certain areas currently designated S88 and S87 to S80 (Open Space) to reflect the change in the development footprint. Please refer to Section 3.3 – Land Use and Planning of this EIR and Section II.B.3 of the Resort Village GPAR (Appendix B) for existing and proposed zoning.

The proposed Project Zoning Box includes a “D” Special Designator, which requires Site Plans to be prepared for the single-family, multiple-use, and resort neighborhoods. The Site Plans will demonstrate compliance with the Specific Plan and County development regulations.

1.2.2.4 Tentative Map(s)

The proposed Project includes the Tentative Maps (TM5361A and TM5361B) depicted in **Figures 1.0-11A and 1.0-11B**, prepared pursuant to the County Subdivision Ordinance. The TMs show a total of 1,881 single-family residential lots, the commercial/multi-family mixed-use site with up to 57 multi-family homes, resort site, nine park sites, the school site, and the public safety site. TM5361B also includes an option for the 57 multi-family to be lotted out and developed as single-family homes. The TMs also show HOA lots that border the Preserve open space that would be landscaped and managed for fire suppression.

1.2.2.5 Otay Ranch Resource Management Plan

The Otay Ranch RMP is a comprehensive plan for the preservation, enhancement, and management of sensitive natural and cultural resources within Otay Ranch. The Otay Ranch RMP is a support document to, and a part of, the Otay SRP. Furthermore, the Otay Ranch RMP is the regulatory document governing sensitive lands within Otay Ranch, and is to be applied in lieu of the County Resource Protection Ordinance (RPO). The Phase 1 RMP establishes the policy and framework for the Otay Ranch Preserve system and the Phase 2 RMP establishes the mechanisms for the management of the Preserve. Collectively, the two documents create the Otay Ranch Preserve, and establish the POM and the Preserve funding and conveyance mechanisms.

The Phase 1 RMP was adopted by the County of San Diego and the City of Chula Vista in October 1993, concurrent with the enactment of the Otay SRP. On March 6, 1996, the County adopted portions of the Phase 2 RMP (the Conveyance Schedule and Financing Plan), but not the entire document. The City of Chula Vista adopted the Phase 2 RMP on June 4, 1996, in its entirety. As discussed further below, the County adopted the County of San Diego MSCP Subarea Plan in 1997, which incorporated portions of the Phase 1 and Phase 2 RMPs. The MSCP Preserve boundaries and the RMP Preserve boundaries are not currently consistent.

As described in Biological Resources, Section 2.3.2.5 of this EIR, the Project proposes to establish consistency between the City and County versions of the Phase 2 RMP by amending the Phase 1 and Phase 2 RMP Preserve maps to reflect previously approved Preserve boundary modifications and amendments, and to reflect the Preserve boundary as proposed by the Resort Village Specific Plan. Additionally, the proposed Project seeks County approval of the Phase 2 RMP, which, to date, has not been adopted in its entirety by the County. This requires much of the Phase 2 RMP, adopted in 1996, to be updated to incorporate changes that have occurred since its adoption, including: (1) already approved policy decisions (conveyance amendment, coastal sage scrub restoration amendment, County cultural survey amendment, City of Chula Vista and County actions on the Financing Plan); (2) creation of Community Facilities District (CFD) 97-02 and corresponding tax rates and revenues; (3) actual performance related to conveyance, steep slopes preservation, and maritime succulent scrub restoration; (4) third-party acquisitions by conservation entities; (5) changes in the number of Otay SRP-authorized homes; (6) adoption of the MSCP Subarea Plans; (7) deletion of the Specific Plan Area (SPA) One-related tasks; and (8) updated financing plan including monitoring budgets.

1.2.2.6 County Multiple Species Conservation Program Subarea Plan South County Segment Boundary Adjustment

Otay Ranch is part of the County MSCP Subarea Plan South County Segment of the overall San Diego County MSCP. The MSCP is a comprehensive habitat conservation planning program for southwestern San Diego County. The MSCP preserves a network of habitat and open space to protect biodiversity and also provides for the issuance of federal and state permits and other authorizations under both the federal and state Endangered Species Acts (ESA) and the National Communities Conservation Planning (NCCP) Act of 1991. The MSCP Preserve boundaries and the County General Plan Otay Land Use Map Preserve boundaries are not currently consistent.

The QCB was not included as a covered species in the County MSCP adopted in 1997 because, at the time the butterfly was listed, the MSCP planning process was nearing completion and it was deemed unnecessary to delay adoption of the MSCP to include coverage for the butterfly. At that time, the U.S. Fish and Wildlife Service (USFWS) stated that the land already included in the MSCP Preserve would address the QCB and, therefore, future modifications to the MSCP to accommodate the QCB would not compromise MSCP hard-line development plans such as Otay Ranch. In response to that commitment by USFWS, the County initiated an MSCP amendment to provide “take” authorization for the QCB. This MSCP amendment reflects the proposed Project’s development footprint.

If the proposed Project is adopted before the pending County QCB Amendment, the applicants propose to secure take authorization for the QCB and its habitat through the Section 7 consultation process. Should adoption of the amendment occur before or soon after the proposed Project is approved, take authorization shall then comport with the County MSCP.

Surveys have identified the QCB and its habitat on portions of the Project site. Following extensive discussions with USFWS and the California Department of Fish and Game (CDFG), the Project applicants propose to adjust the existing MSCP boundaries within the Project site to create a more viable, connected, and contiguous Preserve system. By eliminating developable areas that were approved in the Otay SRP and County General Plan and moving those developable areas to areas of lesser biological importance, the adjusted Preserve boundaries would preserve more sensitive land, particularly QCB habitats and high-quality vernal pools (K8), not preserved in the existing MSCP. The result is an overall increase in species conservation compared to the existing MSCP Preserve design.

Because the Preserve boundaries in the MSCP and Otay Ranch RMP are not aligned, the proposed Project seeks to adjust the boundary of the South County Segment of the MSCP Subarea Plan to refine and align Preserve boundaries as they relate to the Resort Village.

1.2.3 Technical, Economic, and Environmental Considerations

The land uses proposed by the Project were contemplated as part of the Otay SRP. The Otay SRP identified the Project site as a “Specialty Village,” locating a Resort complex to maximize unique open space and lake views. The Otay SRP contemplated a higher percentage of multi-family to single-family on the Project site in part because the Resort Village and Village 15

(which was to be located south of Lower Otay Lake) were envisioned as complementary villages. Village 15 was to include significantly more single-family homes, as well as residential-services and facilities such as an elementary school and fire station. Subsequent to adoption of the Otay SRP, Village 15 (as well as portions of Village 14 and Planning Area 16 north of the Project site) was acquired by conservation agencies for open space. As a result, the Project site became an urban fringe community, which is better served by lower density and intensity uses than was approved in the Otay SRP. As such, the density and intensity of the Project site is proposed to be reduced by increasing the percentage of single-family homes to multi-family homes and reducing the number of rooms in the Resort area from 800 to 200 and eliminating the golf course. Engineering requirements have also been considered in the design of the proposed Project. The site's topographic conditions consist of steep slopes and natural drainage courses. The grading concept was also influenced by the economic value of maximizing the scenic view potential from the Project site.

The environmental considerations that influenced the Specific Plan design include the natural topography that constrains development on the steeper areas of the Project site, the open space preservation requirements of the Otay Ranch RMP, the requirements of the County MSCP Subarea Plan South County Segment, and the natural vegetation on the site. The proposed Project was designed to preserve a habitat connection between the MSCP preserve/wildlife refuge to the north and the City of San Diego's MSCP "Cornerstone Lands" to the south. The proposed design also preserves valuable natural habitats, including vernal pools (K8 series), a 10-acre thornmint preserve, and habitat for the QCB. Avoidance and mitigation of cultural resource impacts and compliance with local, state, and federal "clean water" statutes and best management practices are also proposed.

Lastly, the County General Plan requirement for fire service response times necessitated that the public safety site be located central to the Project such that all residences could be reached within a maximum of five minutes. As such, the public safety site is located just east of the middle of the western development area. This location ensures the 1,881 single-family homes, 57 multi-family homes, Multiple Use and Resort planning areas, and the elementary school can be reached within the required response time.

1.3 Project Location

The proposed Project site consists of approximately 1,869 acres located in southwestern San Diego County, within the Proctor Valley Parcel of the Otay SRP planning area. The Project site is approximately one-quarter mile east of Chula Vista and located entirely within unincorporated San Diego County. Regional access is provided by SR-125, which is located approximately three miles west of the Project site. Local access to the Project site is provided from the west by Telegraph Canyon Road, which transitions to Otay Lakes Road, an east/west arterial that forms the southern boundary of the Project site. **Figure 1.0-12** depicts the boundaries of the Project site in a regional and local context. **Figure 1.0-13** provides an aerial overview of the Project site and surrounding areas. **Figure 1.0-14** depicts the Project boundaries on a U.S. Geological Survey (USGS) quadrangle map.

1.4 Environmental Setting

The following discussion provides an overview of the environmental setting of the proposed Project. Detailed discussions of the environmental setting as it pertains to each environmental issue area are included in Chapters 2.0 and 3.0 of this EIR.

Existing land uses in the areas surrounding the Project site are varied. Existing development, including the Eastlake Vistas residential community and the U.S. Olympic Training Center, are located to the west of the Project site, Lower Otay Lake is located to the south of the Project site, Upper Otay Lake is located to the northwest, and an ultra-light gliding and parachuting airport is located at the east end of the Lower Otay Lake. In addition, the MSCP Preserve is located north of the Project site and the City of San Diego's MSCP "Cornerstone Lands" are located to the south.

The Project site is currently vacant, with vegetation consisting of native coastal sage scrub and grassland habitats disturbed by grazing, which terminated in 2001. There also is evidence that a portion of the Project site was dry farmed, but this has not occurred in recent decades. Some riparian vegetation occurs in drainages located within the Project site.

The topography of the Project site is characterized by a broad mesa sloping to the south, broken by several steep canyons draining from north to south. Portions of the relatively flat mesa extend north into the Jamul Mountains, becoming parts of steeper slopes. The Project site elevations, where development is proposed, range from approximately 500 feet AMSL at the southern end of the property to approximately 900 feet AMSL in the northeastern neighborhoods. Preserve areas within the Project site extend to elevations of approximately 1,600 feet AMSL. The Project site lies within the watershed of the Otay River, which drains an area of approximately 145 square miles. The Project site is located upstream of Savage Dam, which creates Lower Otay Lake. **Figure 1.0-13** depicts the physical characteristics of the site and the surrounding land uses.

1.5 Intended Uses of the EIR

This EIR is a project-level document that evaluates the potential environmental impacts of the proposed Project (i.e., Specific Plan, General Plan Amendments, Rezone, Tentative Map(s), proposed annexations, and other land use approvals). This EIR evaluates all elements of the Project, including the construction (short-term) and operational (long-term) impacts associated with development of the Project site. As explained above, the Otay Ranch Program EIR was previously prepared and certified for the entire Otay Ranch as part of the 1993 review and approval process for the Otay SRP. The certified PEIR evaluated the development of the entire Otay Ranch community, including the Project site. This EIR tiers from the previously certified PEIR, as permitted by sections 15152 and 15168 of the CEQA Guidelines.

This EIR is an informational document that will inform public agency decision-makers and the public of the significant environmental effects of the Project, identify ways to reduce the significant effects, and describe reasonable alternatives to the Project. The decision-makers will consider the information presented in this EIR, along with other information presented to the County, before taking action on the proposed Project.

The County is the lead agency for the proposed Project. For each significant environmental impact identified in the EIR, the County must make findings in accordance with CEQA Guidelines Section 15091 and, if the mitigation presented in this EIR would not reduce impacts to below a level of significance, must prepare a statement of overriding considerations in order to approve the Project. Responsible agencies for the Project are identified in **Tables 1.0-1** and **1.0-2**. **Table 1.0-2** also lists future discretionary actions that may rely upon this EIR, including but not limited to, site plans for future development of the resort, multiple-use development, single-family neighborhoods, park areas, and other land uses and improvements listed in Section 1.2.2 of this EIR.

1.5.1 Matrix of Project Approvals and Permits

The proposed Project would require a variety of discretionary actions, approvals, and permits by various agencies. It is anticipated that this EIR will be used by these agencies in their decision-making process. **Table 1.0-1** summarizes the anticipated discretionary actions, approvals, and permits required for the proposed Project, as well as identifying agencies that would be responsible for granting the approvals and permits. **Appendix B** describes the proposed General Plan Amendments associated with the proposed Project. **Table 1.0-2** summarizes future discretionary actions anticipated to be required as part of the future development of the Project site. The responsible agencies, identified in **Tables 1.0-1** and **1.0-2**, will use this EIR in their discretionary approval processes involving issuance of required permits or other approvals for the proposed Project.

1.5.2 Related Environmental Review and Consultation Requirements

All current discretionary project permit applications for which the Project is seeking approval are included in **Table 1.0-1**; all anticipated future discretionary actions are listed in **Table 1.0-2**. In addition, the Project applicants will consult with RFPD regarding the design of a public safety site. Site Plans approved by the Department of Planning and Development Services for the Resort, Multiple Use, and single family residential areas are required to be consistent with the provisions of this EIR and rely upon the findings herein for CEQA compliance.

1.6 Project Inconsistencies with Applicable Regional and General Plans

A number of adopted regional and general plans are applicable to the proposed Project. The plans were reviewed and a consistency analysis was conducted to determine whether the proposed Project was consistent with the plans. In particular, the San Diego County General Plan (2011), including the Otay SRP, were reviewed for all applicable land use designations, goals, and policies. Other plans were reviewed, including the San Diego County MSCP Subarea Plan South County Segment, the Otay Ranch Phase 1 RMP, the Otay Ranch Phase 2 RMP, the federal Clean Water Act, the State Implementation Plan (SIP), the San Diego County Air Pollution Control District (SDAPCD) Regional Air Quality Strategy (RAQS), the RWQCB Basin Plan, and SANDAG's Congestion Management Plan (CMP). The proposed Project's consistency with these plans is discussed further in Section 3.3, Land Use and Planning, of this EIR. Specific inconsistencies are noted below.

The proposed Project is consistent with all the above-mentioned plans, with the exception of the County General Plan, Otay SRP, the Otay Ranch RMP, the County Zoning Map, and the County MSCP Subarea Plan South County Segment. However, the Project applicants are proposing GPAs (summarized above and described in **Appendix B**) that, if approved, would result in Project compliance with the County General Plan and Otay SRP. In addition, the applicant is proposing a rezone, a boundary adjustment to the County MSCP Subarea Plan South County Segment, an amendment to the Otay Ranch Phase 1 RMP, and adoption/amendment of the Otay Ranch Phase 2 RMP. Approval of all such amendments and actions would result in Project consistency with all applicable adopted regional and general plans.

1.7 List of Past, Present, and Reasonably Anticipated Future Projects in the Project Area

CEQA Guidelines define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15335). The guidelines further state that the individual effects may be the various changes resulting from a single project or the changes resulting from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355). CEQA Guidelines Section 15130 requires that the EIR include either (a) a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to a cumulative impact.

For purposes of this EIR, the geographic scope of the cumulative analysis for each environmental topic in Chapters 2.0 and 3.0 includes a combination of growth projections and a project list. Population and employment data used for this analysis was developed for the San Diego County region by SANDAG for year 2050 (SANDAG 2010). As stated in Section 2.9.4 of the EIR, the traffic impact analysis used the SANDAG Series 11 Year 2025 Transportation Model for analysis of near-term impacts. The cumulative impact analysis for other environmental issues used the SANDAG 2050 Regional Growth Projections because it describes the impacts of growth from a long-term perspective based on adopted land use plans and is less subject to short-term fluctuations in economic conditions and land development cycles (SANDAG 2010). For long-term traffic impacts, the SANDAG Year 2030 Transportation Model was used. The SANDAG transportation models for various years are available at: <http://gis.sandag.org/tficsr11>. In addition to being used for assessing traffic impacts, the SANDAG model incorporates other projects including growth projections that are analyzed as part of Section 3.3 – Land Use and Planning and Section 3.5 – Population and Housing. **Table 1.0-6** identifies the list of approved/pending projects that were used for the near-term cumulative traffic impact analysis.

A detailed discussion of potential cumulative impacts also is included for each environmental issue in Chapters 2.0 and 3.0 of this EIR.

1.8 Growth-Inducing Impacts

CEQA requires an EIR discuss the growth-inducing impacts of a proposed project. Specifically, Section 15126.2, subdivision (d), of the CEQA Guidelines requires an EIR to discuss “the 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,” including projects that would remove obstacles to population growth. The guidelines also require that an EIR discuss “the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.”

This section discusses the characteristics of the proposed Project that have the potential to be growth-inducing, and the ways in which the Project may influence growth in the area.

The growth-inducing impacts of the overall development of Otay Ranch, which includes the proposed Project site, were analyzed in the previously certified PEIR (1993). As noted above, this EIR tiers from the previously certified PEIR prepared for the Otay SRP.¹⁰ The PEIR concluded that development of Otay Ranch would result in direct and indirect (cumulative) impacts related to growth inducement because it would increase the population, housing, and employment opportunities within the Otay SRP area in excess of the growth already occurring or projected for the area. Additionally, infrastructure would be provided in areas that did not previously have such infrastructure.

The following discussion is provided to evaluate the proposed Project’s potential growth-inducing effects, and to determine if such effects are consistent with the level of growth contemplated in the previously certified PEIR. To examine this issue, potential growth-inducing effects are examined below through the analysis of the following questions:

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

Under CEQA, growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (CEQA Guidelines Section 15126.2, subdivision [d]). The growth-inducing effects are discussed below to provide additional information on ways in which the Project could contribute to significant changes in the

¹⁰ The Otay Ranch PEIR is available for public inspection and review at the County of San Diego, Department of Planning and Development Services, 5510 Overland Avenue, San Diego, California.

environment, beyond the direct consequences of developing the land use plan examined in the subsequent sections of this EIR. While implementation of the proposed Project would result in the establishment of new homes, resort facilities, businesses, and public facilities, the associated increases in population, housing, and employment represent growth previously planned for, and anticipated to occur within, the Otay Ranch planning area.

1.8.1 Removal of Obstacles to Growth

Since the PEIR was certified in 1993, four significant changes to the Otay Ranch planning area have occurred that reduce the extent to which the proposed Project would be growth-inducing due to removal of obstacles to growth.

First, the Otay SRP's approved population, housing, and employment projections have been accounted for in regional projections. As a result, the Project's population, housing, and employment opportunities are consistent with the growth projected for the area and are not considered growth-inducing.

Second, conservation agencies have acquired developable portions of the San Ysidro Mountain Parcel for conservation purposes, including all of Village 15 south and east of the Project site (approximately 1,650 acres). Accordingly, the Otay SRP presumption that circulation, sewer, water, drainage facilities, and other utilities are needed to serve planning areas east of the Project site, including Village 15, is no longer applicable.

Third, the County MSCP has been adopted since the enactment of the 1993 Otay SRP. While the MSCP Preserve boundaries generally coincide with the RMP Preserve boundaries, the sanctioning of the MSCP by state and federal agencies as a means of implementing their respective ESA obligations has created greater certainty that the Preserve system will be fully implemented. Specifically, with respect to the proposed Project, it is significant to note that the proposed development footprint is essentially surrounded by Preserve lands. As a result of these conservation plans and the acquisition of Otay Ranch development areas by conservation agencies (e.g., Villages 15), roads and facilities needed to serve the proposed Project would no longer be used to extend services farther east in the Otay Ranch planning area.

Lastly, in 2001, the County adopted an amendment to the Otay SRP that reduced the developable area of the Project site by approximately 139 acres and reduced the number of homes proposed to be developed on the Project site by 346 homes (from 2,310 to 1,938 homes).¹¹ The proposed Project would increase the development footprint by approximately 21.6 acres from the Otay SRP as amended in 2001, and adjust the distribution of multi-family and single-family homes permitted under the Otay SRP as amended in 2001; however, the proposed Project development footprint and the total number of homes proposed for development are still less than were analyzed in the previously certified PEIR.

¹¹ See County General Plan Amendment 98-03, July 18, 2001.

Because of the changes to the Otay Ranch planning area discussed above, the growth-inducing effects of the proposed Project are considered less than was contemplated in the previously certified PEIR.

In addition, a project may result in growth-inducing impacts through revisions to land use policies, such as GPAs, annexations, and rezones. As discussed below, the proposed Project includes an application for GPAs to amend the Land Use Element and for a Rezone.

A GPA to the Land Use Element would adjust the boundary of the Semi-Rural designation of the Regional Category Map and would modify the boundaries between the “Specific Plan Area” and “Open Space (Conservation)” land use designations of the County General Plan and Otay Community Plan.

The Rezone application proposes to rezone certain areas in the Project site currently zoned S87 to S88, and rezone certain areas zoned S88 and S87 to S80 to reflect the change in the proposed development footprint. Project approval, including modifications of the existing Land Use Element and the Rezone, would generally be consistent with the land use designations and the projected growth previously analyzed in the Otay Ranch PEIR.

An additional component of the proposed Project is the inclusion of approximately 1,089 acres of Preserve land. This land is part of the RMP Preserve design that establishes an 11,375-acre Preserve in Otay Ranch. The Project’s Preserve design establishes an open space system around the eastern and northern boundaries of the site, limiting the growth-inducing impacts of the proposed Project. With development already existing to the west, Lower Otay Lakes to the south, and Preserve lands to the north and east, the potential growth-inducing impacts of the proposed Project land uses are further limited.

The Otay SRP Amendment would amend the classification of a portion of Otay Lakes Road as currently shown in the SRP, reducing it from a six-lane Prime Arterial to a four-lane Boulevard with Raised Median, transitioning to a two-lane Community Collector. The lower road classification would reduce the capacity of the road, which would lessen growth-inducing impacts that may otherwise be caused by a road oversized for the needs of the proposed Project. Because of its reduced carrying capacity, the proposed classification of Otay Lakes Road would result in fewer growth-inducing impacts than previously analyzed in the PEIR.

The proposed Project also would require the construction of roads to provide local access to the Project site and provide adequate internal circulation. These roads would not provide direct access to any off-site areas or increase the capacity of the overall regional circulation system.

1.8.2 Require Expansion of Public Services

Growth-inducing impacts may result from extension or expansion of public services to a proposed project site. The proposed Project includes plans to extend public services and utilities to the Project site, giving rise to the potential for growth-inducing impacts.

The proposed Project would require extension of water service to the Project site, which may require annexation into the service areas of OWD, SDCWA, and MWD. The proposed Project also requires extension of sewer service to the Project site. The water and sewer service providers (OWD and San Diego County Sanitation District) have indicated that capacity exists or is planned to serve the proposed Project's water and sewer demands Appendix C-19.

As described above in Section 1.8.1, since the 1993 adoption of the Otay SRP, conservation agencies have acquired developable portions of the Proctor Valley Parcel and the San Ysidro Mountain Parcel for conservation purposes, including most of Village 15 south and east of the Project site (approximately 1,650 acres), which was also served by Otay Lakes Road. Accordingly, circulation, sewer, water, drainage facilities, and other utilities are no longer needed to serve areas east of the Project site. For these reasons, potential off-site growth-inducing impacts associated with extension of water and sewer services and road improvements to the Project site are considered to have a less than significant growth-inducing impact.

The proposed Project also requires additional emergency fire service and law enforcement services to the Project site. The proposed Project reserves a public safety site to serve the Project site and the surrounding areas within the Otay SRP planning area. The provision of emergency fire service and a fire station was previously analyzed in the Otay Ranch PEIR and was anticipated to occur in Village 15. Because previous projected growth in the Proctor Valley and San Ysidro Mountain parcels will not occur, the additional provision of public services beyond that needed to serve the Project is not planned or anticipated.

Lastly, the proposed Project requires school services for the Project site. The proposed Project is expected to generate the need to accommodate approximately 794 elementary school students, 232 middle school students, and 437 high school students. The Project site reserves an elementary school site to serve approximately 800 students. Therefore, the elementary school site is planned to accommodate the needs of the Project site and would not include substantial additional capacity to accommodate the needs of the surrounding area.

1.8.3 Encourage or Facilitate Economic Activities

A project may result in growth-inducing impacts if the project encourages growth in surrounding areas through economic stimulus, including, for example, the construction of homes, golf courses, shopping centers, and industrial facilities. As homes are developed and occupied, residents of the Project site would seek shopping, entertainment, employment, and other economic opportunities in the surrounding area, including Chula Vista. In addition, the construction of the proposed Project's resort hotel component, which would consist of a hotel, resort, and recreation facilities, has the potential to impact growth by encouraging or facilitating economic activities in surrounding areas.

The growth-inducing impacts of the proposed Project were previously analyzed in the Otay Ranch PEIR, and the proposed Project would not foster growth beyond that already analyzed and planned for in the Otay Ranch planning area. In addition, the proposed Project does not include the golf course proposed in the Otay SRP and analyzed in the PEIR, it would reduce the number of hotel rooms in the resort from 800 rooms to 200 rooms, and it has 346 fewer residential units

than originally proposed. With development already existing to the west, Lower Otay Lake to the south, and Preserve lands to the north and east, the surrounding area where economic activities might be stimulated by the proposed Project would likely be limited to the urbanized area in the City of Chula Vista; therefore, impacts are considered less than significant.

1.8.4 Involve a Precedent-Setting Action

The Project does not propose any precedent-setting actions that, if approved, would specifically allow or encourage other projects and resultant growth to occur in the area.

1.8.5 Conclusion

The proposed Project includes the development of homes, commercial and resort uses, and public facilities at the Project site, which were previously analyzed in the certified PEIR. As contemplated in the Otay SRP, overall development of Otay Ranch, including the Project site, would remove regulatory obstacles to growth, including the extension of water and sewer services, which was considered growth-inducing in the previously certified PEIR. However, the Project proposes to develop fewer homes than contemplated in the Otay SRP as analyzed in the Otay Ranch PEIR, would not develop the golf course previously planned for the site, would reduce the number of hotel rooms, would reduce the overall development footprint, and is adjacent to Preserve lands to the north and east and Lower Otay Lake to the south. Because of this, all facilities and services have been sized to serve only the proposed Project site. Thus, the proposed Project accommodates the growth previously approved for the Project area.

Based on the discussion above, Project approval would remove obstacles to growth associated with the proposed Project through the construction of facilities and changes to existing regulations. However, this proposed and anticipated development results in a reduction of growth-inducing impacts identified in the previously certified PEIR. Because the proposed Project's population, housing, and employment projections are now included in SANDAG's Regional Growth Forecasts, and because the Project's growth-inducing impacts are less than previously identified in the PEIR, the proposed Project's growth-inducing impact associated with the removal of obstacles to growth is less than significant.

Although the proposed Project would encourage and facilitate economic activity in the area surrounding the Project site, it is anticipated that this would occur in the already developed areas of Chula Vista. Because the Otay Ranch PEIR identified potentially significant growth-inducing impacts and the project is now considered to have less contribution to those impacts, potential growth-inducing impacts do not need to be restated in this project-level EIR.

**Table 1.0-1
Proposed Discretionary Approvals and Permits**

Discretionary Approval/Permit	Agency Description	Agency Status	Notes/Explanation
General Plan Amendments	County of San Diego	Lead Agency	See Appendix B for a summary of General Plan Amendments.
Rezone	County of San Diego	Lead Agency	Rezone from S87 to S88 and from S88 and S87 to S80 to reflect change in development footprint. (Note: Zoning and development regulations for specific land uses are found in the Specific Plan.)
Otay Ranch RMP amendments/adoption	County of San Diego and City of Chula Vista	Lead Agency; Responsible Agency	Amend the Phase 1 RMP, amend portions of the Phase 2 RMP (previously adopted), and adopt portions of Phase 2 RMP not previously adopted. (Note: County previously adopted the RMP Financing Plan and Conveyance Schedule.)
Specific Plan	County of San Diego	Lead Agency	Specific Plan required by County Zoning and the Otay SRP. The Specific Plan addresses development of the proposed Project.
County MSCP Subarea Plan South County Segment Boundary Adjustment	County of San Diego	Lead Agency	Proposal is to adjust the boundary of the South County Subarea Plan to refine and align preserve boundaries as between the MSCP and the Otay Ranch RMP/Preserve in relation to the proposed Project.
Tentative Map(s)	County of San Diego	Lead Agency	Applicants propose two tentative maps covering the Project site.

**Table 1.0-2
Future Discretionary Approvals and Permits**

Discretionary Approval/Permit	Agency Description	Agency Status	Notes/ Explanation
Construction and Encroachment Permit(s)	County of San Diego	Lead Agency	Construction and encroachment permits are required for work performed within the County's road right-of-way (e.g., Otay Lakes Road).
Construction and Encroachment Permit(s)	City of Chula Vista	Responsible Agency	Construction and encroachment permits are required for work performed within the City's road right-of-way.
License, Easement, Entry Permit, Encroachment Permit, land sale, land exchange, or other similar action	City of San Diego	Responsible Agency	Approval to locate Otay Lakes Road improvements and/or other infrastructure (e.g., detention basins) on property currently owned by the City of San Diego
Grading Permit(s)	County of San Diego	Lead Agency	Estimated grading includes 14.2 million cubic yards of cut and 14.2 million cubic yards of fill.
Site Plans	County of San Diego	Lead Agency	Site plans for single-family residential, the multiple-use site, resort site, and park developments.
Annexations and associated Reorganizations, and Sphere of Influence Updates	LAFCO	Responsible Agency	Annexations to OWD, San Diego County Water Authority, and the Metropolitan Water District are anticipated for water service.
Section 401 Permit - Water Quality Certification	RWQCB	Responsible Agency	Action required for development projects affecting waters of the U.S.
Section 404 Permit - Clean Water Act	U.S. Army Corps of Engineers	Responsible Agency	Action required for development projects affecting waters of the U.S.
Section 1600, et seq. Streambed Alteration Agreement/ Memorandum of Understanding (MOU)	CDFG	Responsible Agency/Trustee Agency	Action required for development projects affecting jurisdictional streams/waters.
Section 7 Consultation or Section 10(a) Incidental Take Permit	USFWS	Responsible Agency	If it is determined that the proposed Project will jeopardize a listed endangered or threatened species not currently covered by the MSCP, a formal consultation with USFWS and an approved habitat conservation program will be required as a condition of Project approval. Specifically, a Section 7 consultation meeting may be provided in connection with take authorization of the QCB. The proposed Project may involve consultation with USFWS pursuant to Sections 7 or 10(a) of the Endangered Species Act.

**Table 1.0-2
Future Discretionary Approvals and Permits**

Discretionary Approval/Permit	Agency Description	Agency Status	Notes/ Explanation
Air Quality Permit to Construct/Permit to Operate	SDAPCD	Responsible Agency	Action required for construction and development projects using certain machinery, such as back-up or emergency generators.
National Pollutant Discharge Elimination System Permit (NPDES); General Construction Activity Storm Water Permit, including the Storm Water Pollution Prevention Plan (SWPPP)	RWQCB	Responsible Agency	Action required for development projects.
NPDES General Groundwater Extraction Waste Discharge Permit	RWQCB	Responsible Agency	Permit would be applicable if groundwater disposal is proposed during construction.
General Construction Storm Water Permit	RWQCB	Responsible Agency	Action required for development projects.
Subarea Master Plan (SAMP)	OWD	Responsible Agency	Reporting approval required from OWD for overall water availability, service connection, etc.
Water Supply Assessment and Verification Report	OWD	Responsible Agency	Approved by the OWD Board of Directors on February 4, 2009.
Chula Vista General Plan Amendment; Otay Ranch General Development Plan Amendment;	City of Chula Vista	Responsible Agency	Reconciliation of Chula Vista Land Use Regulations to be consistent with County adopted Land Use Plans.

**Table 1.0-3
Detailed Land Use Summary**

Single-family Residential	Acres	Units	Density
R-1	248.7	796	3.2
R-2	55.9	211	3.8
R-3	90.2	401	4.4
R-4	74.	263	3.5
R-5	55.8	210	3.8
Single-family Total¹	525.1	1,881	3.6
Mixed-use			
MU ²	14.1	57	4.0
Mixed-use Total	14.1	57	4.0
Residential Total	539.1	1,938	3.6
Parks			
P-1	2.9		
P-2	1.7		
P-3	2.3		
P-4	2.2		
P-5	10.3		
P-6	2.4		
P-7	2.9		
P-8	1.3		
P-9	2.6		
Parks Total	28.6		
Resort			
Resort ³	17.4		
Resort Total	17.4		
Public Uses			
Public Safety	2.1		
School	10.0		
Public Uses Total	12.1		
Open Space and Preserve			
Open Space ⁴	143.6		
Preserve	1,089.0		
Open Space and Preserve Total	1,232.9		
Circulation			
Circulation	39.1		
Circulation Total	39.0		
Total	1,869.0	1,938	1.04

¹ Residential Neighborhoods include Residential Streets and Residential Manufactured Slopes.

² Mixed-Use includes up to 20,000 square feet of commercial use.

³ Resort includes 200 rooms and up to 20,000 sq. ft. of commercial use.

⁴ Open Space includes large Manufactured Open Space outside of Neighborhoods and excludes Residential Manufactured Slopes.

Table 1.0-4
Conceptual Phasing Plan

	Blue		Gold		Copper		Green		Orange		Purple		Red		Silver		Tan		Yellow		Total	
	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres	DUs	Acres
Neighborhood																						
R-1			196		180		205		215												796	248.7
R-2	211																				211	55.9
R-3													401								401	90.2
R-4															263						263	74.5
R-5																	210				210	55.8
MU-1											57	14.1									57	14.1
Parks																						
P-1						2.9																2.9
P-2						1.7																1.7
P-3				2.3																		2.3
P-4								2.2														2.2
P-5														10.3								10.3
P-6														2.4								2.4
P-7																2.9						2.9
P-8																		1.3				1.3
P-9																		2.6				2.6
Land Use																						
Resort																			17.4			17.4
Elementary School														10.0								10.0
Public Safety Site								2.1														2.1
Open Space																						143.6
Preserve																						1,089.0
Circulation																						39.1
TOTAL	211		218	2.3	180	4.6	201	4.3	215		57	14.1	401		263	2.9	210	3.9		17.4	1,938	1,869

DUs = dwelling units

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Table 1.0-5
Construction and Maintenance Responsibilities for Facilities and Infrastructure

	Acquisition	Construction	Maintenance	Ownership	Access
Public Roads	Developers	Developers	County	County	Public
Private Roads	Developers	Developers	HOA	HOA	Private
Resort Private Driveway	Developers	Developers	Private	Private	Private
Off-Site Road Improvements	Developers and Fair Share Contribution	Developers and Fair Share Contribution	County/City of Chula Vista	County/City of Chula Vista	Public
On Site Trails/Pathways	Developers	Developers	HOA or County/District	HOA or County/District	Public
Existing Preserve Trails	Preserve Dedication	N/A	POM Assessment	POM	Public
Landscaped Parkways	Developers	Developer	HOA or County/District	HOA or County/District	Public/Private
Otay Ranch Preserve	Preserve Dedication	NA	POM Assessment	POM	Public
Internal Open Space (HOA)	Developers	Developers	HOA	HOA	Public/Private
Internal Open Space (Public)	Developers	Developers	County/District	County/District	Public
Public Parks	Developers	Developers	County District or HOA	County	Public
Private Parks	Developers	Developers	HOA	HOA	Private
Water System	Developers	Developers	OWD	OWD	NA
Sewer System	Developers	Developers	County/District	County/District	NA
Drainage System	Developers	Developers	County/District	County	NA
Fire Station	Developers/District	Developers/District	Fire District	Fire District	NA
Sheriff Storefront	Developers/Sheriff	Developers/Sheriff	Sheriff Dept.	Sheriff Dept.	NA
Schools	Developers/District	Developers/District	School District	School District	Public

Definitions:

Developer and Fair Share Contribution – Obligation will be satisfied through a combination of Developers' performance and payment of impact fees.

Preserve Dedication – Obligation will be satisfied through compliance with the RMP dedication requirements.

POM Assessment – Obligation will be satisfied through compliance with the RMP requirement to establish an assessment mechanism.

Developers/District – Acquisition and construction may be performed by the Developers but funded through an assessment mechanism such as a CFD.

County/District – Performance or title may be held by the County but funded through an assessment mechanism such as a CFD.

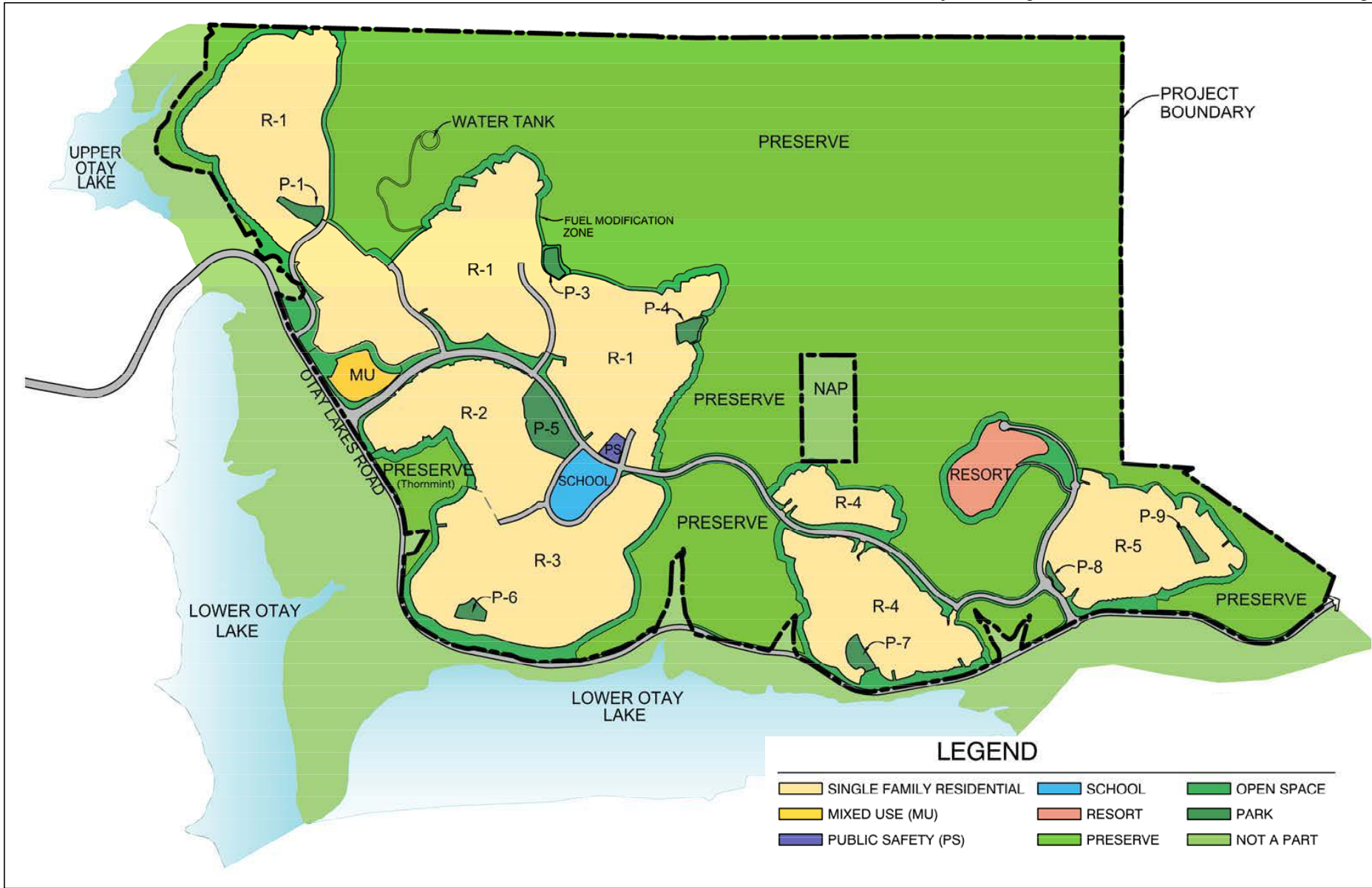
Table 1.0-6
List of Projects Included in Cumulative Traffic Analysis

No.	Project Name	Location	Description
County of San Diego			
1	National Enterprises Storage and Recycling Facility facility (MUP 98-001)	East and west side of Alta Road north of Old Otay Mesa Road	The project proposes to develop areas for interim use including automobile storage, scrap and recycling operations, and wood and green material recycling, and will include temporary office trailers of 720 s.f. each and 200 employee parking spaces. Project would provide space for approximately 11,000 vehicles.
2	Travel Plaza Truck Stop (TPM 20414; MUP 98-024)	East side of Enrico Fermi Drive, north of Airway Road, south of Old Otay Mesa Road	Four parcels, ranging from 7.35 to 42.16 acres each. Full-service truck stop travel plaza. Driver facilities, restaurant, convenience store, service bays, fuel sales, 122-room hotel, office building, parking.
3	Otay Tech Centre - Previously Sunroad Tech Centre (TM 5139)	Northeast of Otay Mesa Road and Harvest Road	Technology business park and commercial retail on 289.5 gross acres
4	Enrico Fermi Industrial (TM 5394)	Southwest corner of Old Otay Mesa Road and Enrico Fermi Drive	79.37 acres of industrial development
5	Aron Construction Auto Auction Park (MUP 00-012)	Northwest corner of Old Otay Mesa Road and Alta Road	38.2 acres
6	Airway Business Centre (Saeed Industrial TM 5304)	North side of Airway Road between Michael Faraday Drive and Pasea de las America	35 acres
7	PG&E Substation/Otay Mesa Generating Plant (TPM 2057)	East of Alta Road between Loop Road and Energy Centre Way	Natural gas-fired electric generating plan
8	Otay Mesa Generating Plant Industrial Lots	East of Alta Road, between Loop Road and Energy Centre Way	30.60 acres of industrial uses
9	Otay Hills Mineral Extraction (MUP 04-004/RP 04-001)	Eastern extension of Old Otay Mesa Road, 2.5 miles northeast of Otay Mesa crossing	Hard rock quarry on 110 acres
10	Rowland Property (MUP 03-001)	Northeast corner of Old Otay Mesa Road and Enrico Fermi Drive	Auto storage and wrecking yard on 40.44 acres
11	Otay Crossings Commerce Park	South of Old Otay Mesa Road, east of Alta Road	311 acres mixed industrial, rural residential , and SR11
12	Correctional Facility	West of Alta Road near existing prison	2,112-bed Correctional Detention Facility
13	Otay Business Park (Paragon)	South of Airway Road, east of Enrico Fermi Drive	2,202,800 sf ¹ business park on 161.6 gross acres
14	Otay Logistics Industrial Park	East of Enrico Fermi Dr, between Airway Road & Siempre Viva Road	277 ksf ² of warehousing
15	California Crossing (40 acres Commercial)	East of SR-1 25, north of Otay Mesa Road, west of Harvest Road	28.50 net acres of Community Shopping Center
16	Pilot Travel Centre	North quadrant of Piper Ranch and Otay Mesa Road	Construction of a 10,000-sq. ft. commercial center including Wendy's restaurant and driver amenities, gas station and parking (71 car and 139 truck spaces). 65 employees (18 – 20 per shift).
17	Piper Otay Park	Northeast quadrant of Piper Ranch and Otay Mesa Road	25 gross acres (19.8 net acres) of light industrial use
18	Donovan Health Facility	480 Alta Road	15 bed facility with approx 1,200 staff and 75-100 visitors anticipated per day
19	International Industrial Park (TM 5549)	The project site is located in the East Otay Mesa Specific Plan Area, part of the Otay Subregional Planning Area, within unincorporated San Diego County. Parcels 1–5 would be accessed via Vann Centre Blvd. Parcels 7–10 would take access off Enrico Fermi Road. intersection	133 acres of Technology/Business Park
20	RTX (S08-022)	Immediately south of Via de la Amistad, east of Enrico Fermi Drive	18.75 acres of Truck Park and Storage

Table 1.0-6
List of Projects Included in Cumulative Traffic Analysis

No.	Project Name	Location	Description
City of San Diego			
21	California Terraces	North of Otay Mesa Road, off of Ocean View Hills Parkway	Phase I = 644 MF dus ³ , Phase II = 1,585 dus, 2.4 acres commercial
22	La Media Truck Park site	Northeast corner of La Media Road & Lonestar	Industrial use (approx 70 acres)
23	Robinhood Ridge	West side of Otay Valley Road/Heritage Road north of Otay Mesa Road	3.8 acres of neighborhood commercial, 4.6 acres of light industrial
24	La Media Truck Park II	East side of La Media Road, north of Windstock Street	40 acres
25	World Petrol III	North of Otay Mesa Road, east of La Media Road	22 fueling stations, 3,632 sf market, 2,041 sf restaurant, 290 sf office
26	Ingalls Property	South of Vista Santo Domingo	13 dus, 130 MF, 19,700 sf office, 20,396 sf retail, 39,450 sf industrial
27	Otay Corporate Centre North; Otay Corporate Centre South	North and south of Otay Mesa Road, west of Heritage Road	Industrial park
28	San Ysidro High School (Expansion)	Southwest corner of Airway Road and Caliente Avenue	High school for 814 students
29	Semi-Trailer Storage Facility (Planned Development permit 12083)	Southwest corner of Otay Mesa Road and Innovation Drive	8.02 net acres
30	Southwestern Junior College	North of Airway Road, between Britannia & La Media	500 Students Higher Education Center
31	Sunroad Otay Park (TM 91-0394)	South of Otay Mesa Road, west of Piper Ranch Road	1,337,000 sf of small industrial park, 79.3 acres
32	Esplande	Northeast of Airway Road and La Media Road	1,337 SF dus on 77.6 Acres
33	Interstate Industrial Centre (TPM 98-0759)	East side of Piper Ranch Road, south of Otay Mesa Road	453,000 sf of warehousing
34	Handler Otay Mesa	South of Otay Mesa Road, west of Corporate Centre Drive	Mixed commercial/retail/office project
35	Pardee Commercial	Southeast corner of Otay Mesa Road/Palm Ave	16 acre commercial use
36	Candlelight Villas West	West side of Caliente Avenue, south of San Ysidro High School	223 MF dus on 23 acres
37	Southview	Southeast of Caliente Ave and Airway Road	553 MF dus
38	Candlelight	Southeast of Caliente Avenue and Airway Road	435 MF dus
39	Brownfield Tech park	South of Otay Mesa Rd, west of Britannia Blvd.	741180 SF of business park on 50 acres
40	Las Californias	South of Siempre Viva Road, between Britannia & La Media	374,300 sq ft small industrial park, 305,90 sq ft large industrial park

¹ sf = square feet² ksf = 1,000 square feet³ dus = dwelling units⁴ MF = multi-family



SOURCE: Hunsaker & Associates 2010

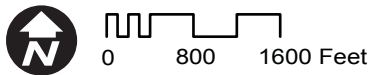


Figure 1.0-1
Land Use Plan



SOURCE: Hunsaker & Associates 2014

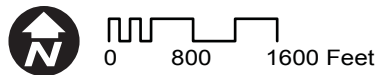
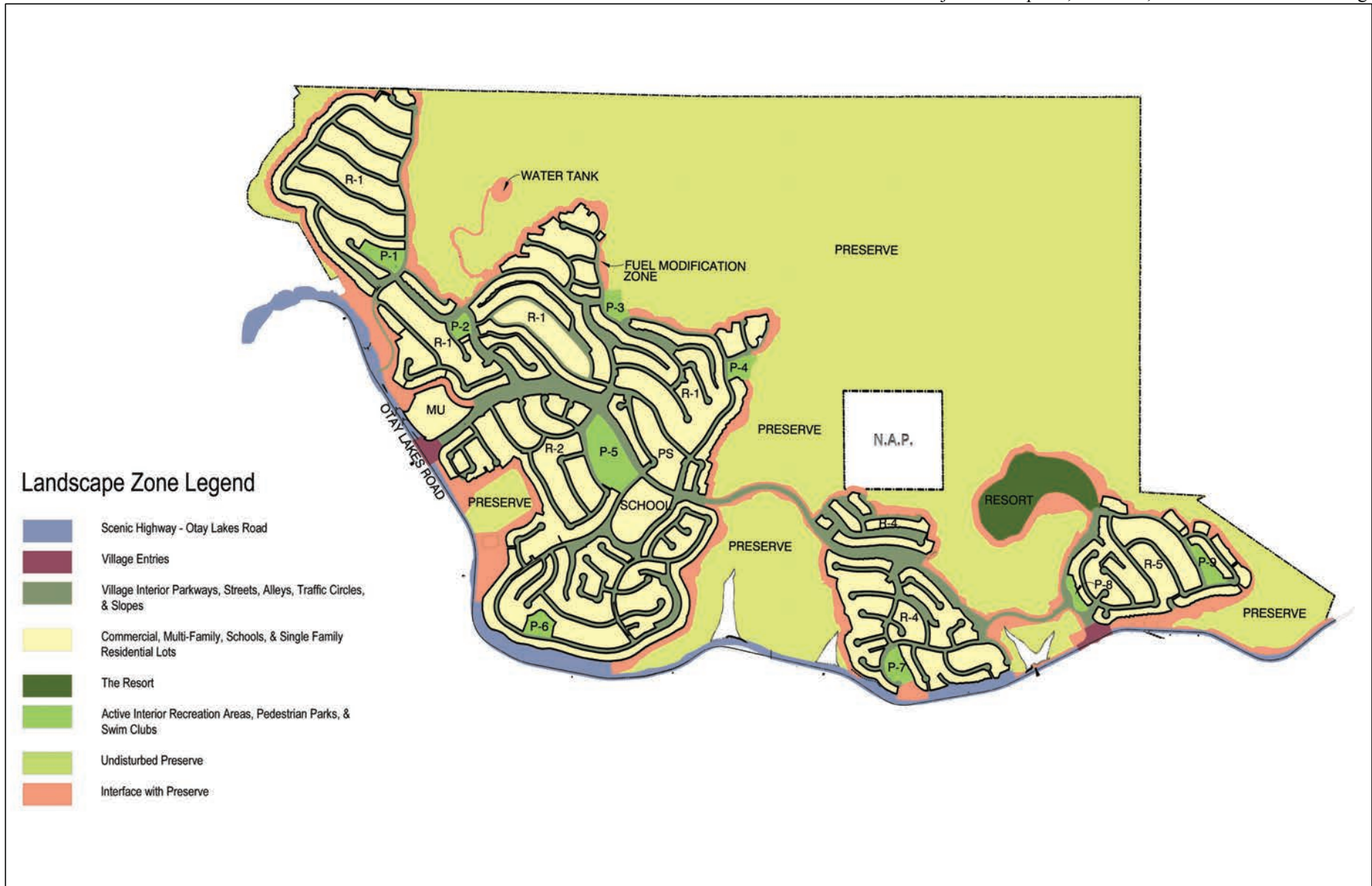


Figure 1.0-2
Grading Concept Plan Map



SOURCE: Hunsaker & Associates 2010

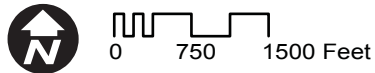
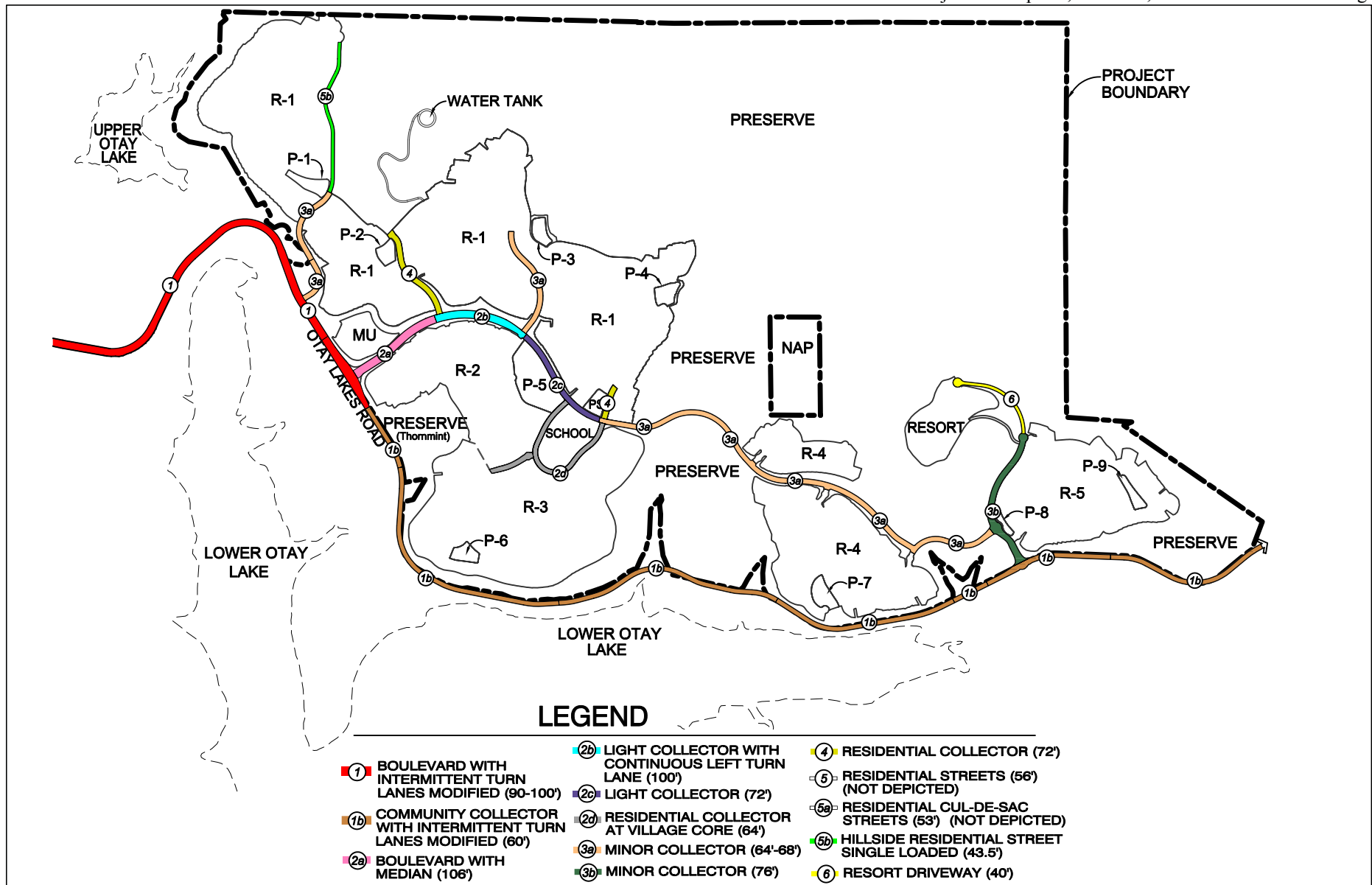


Figure 1.0-3
Landscape Concept Plan



SOURCE: Hunsaker & Associates 2010

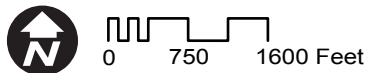
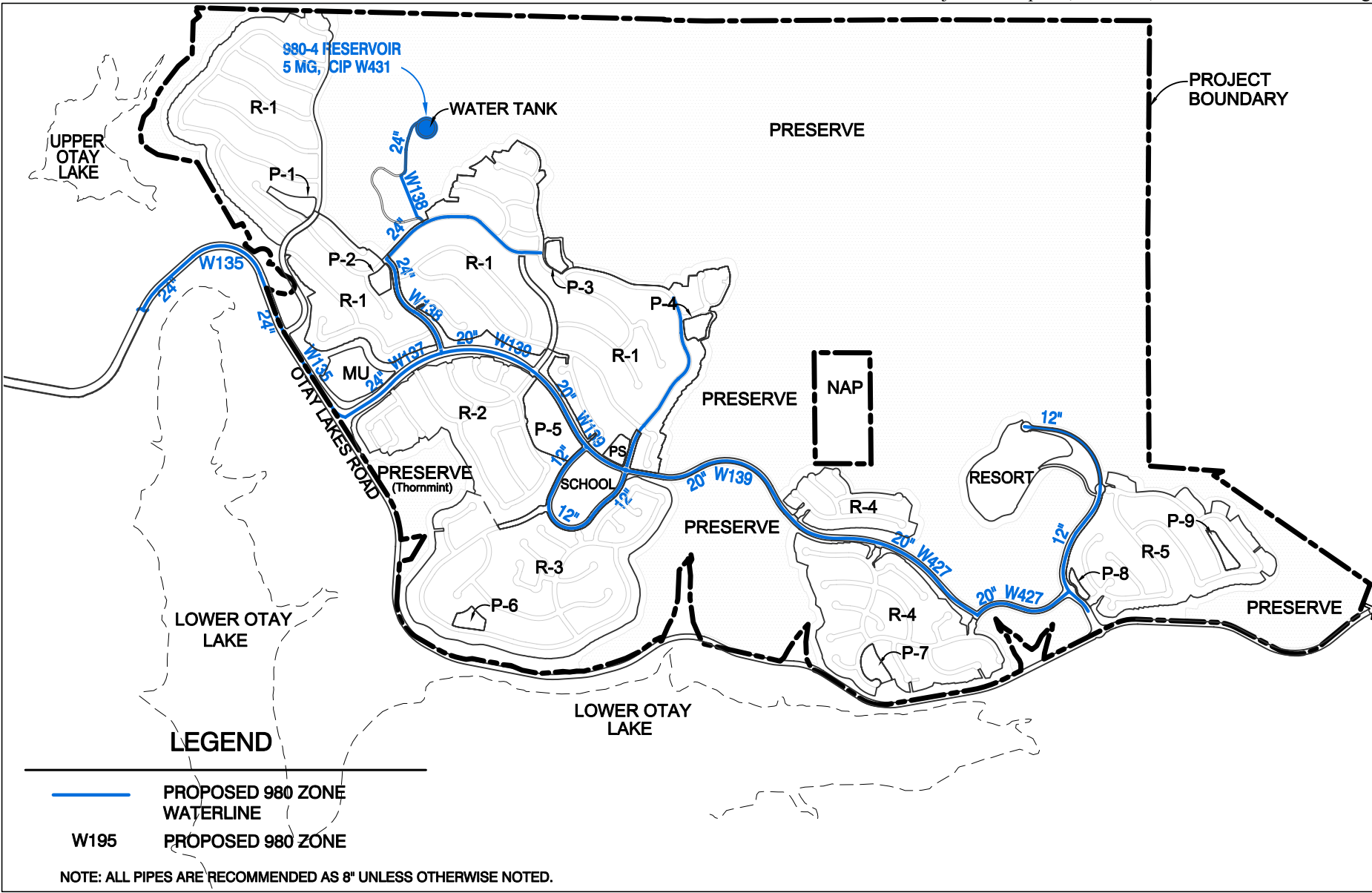


Figure 1.0-4
Circulation Concept Plan



SOURCE: Hunsaker & Associates 2010

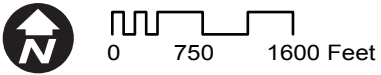
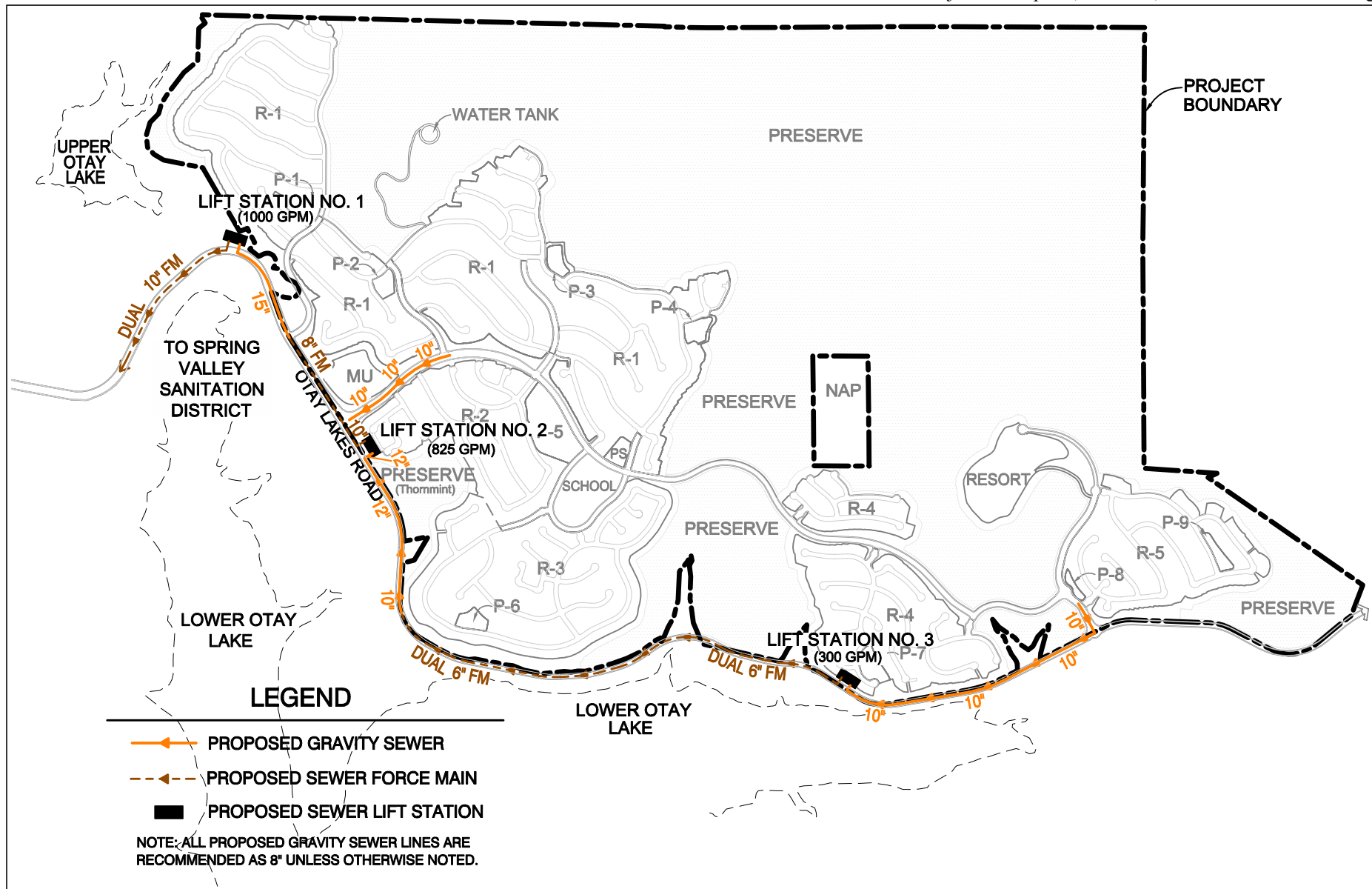


Figure 1.0-5
Water Service Plan



SOURCE: Hunsaker & Associates 2010

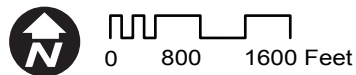
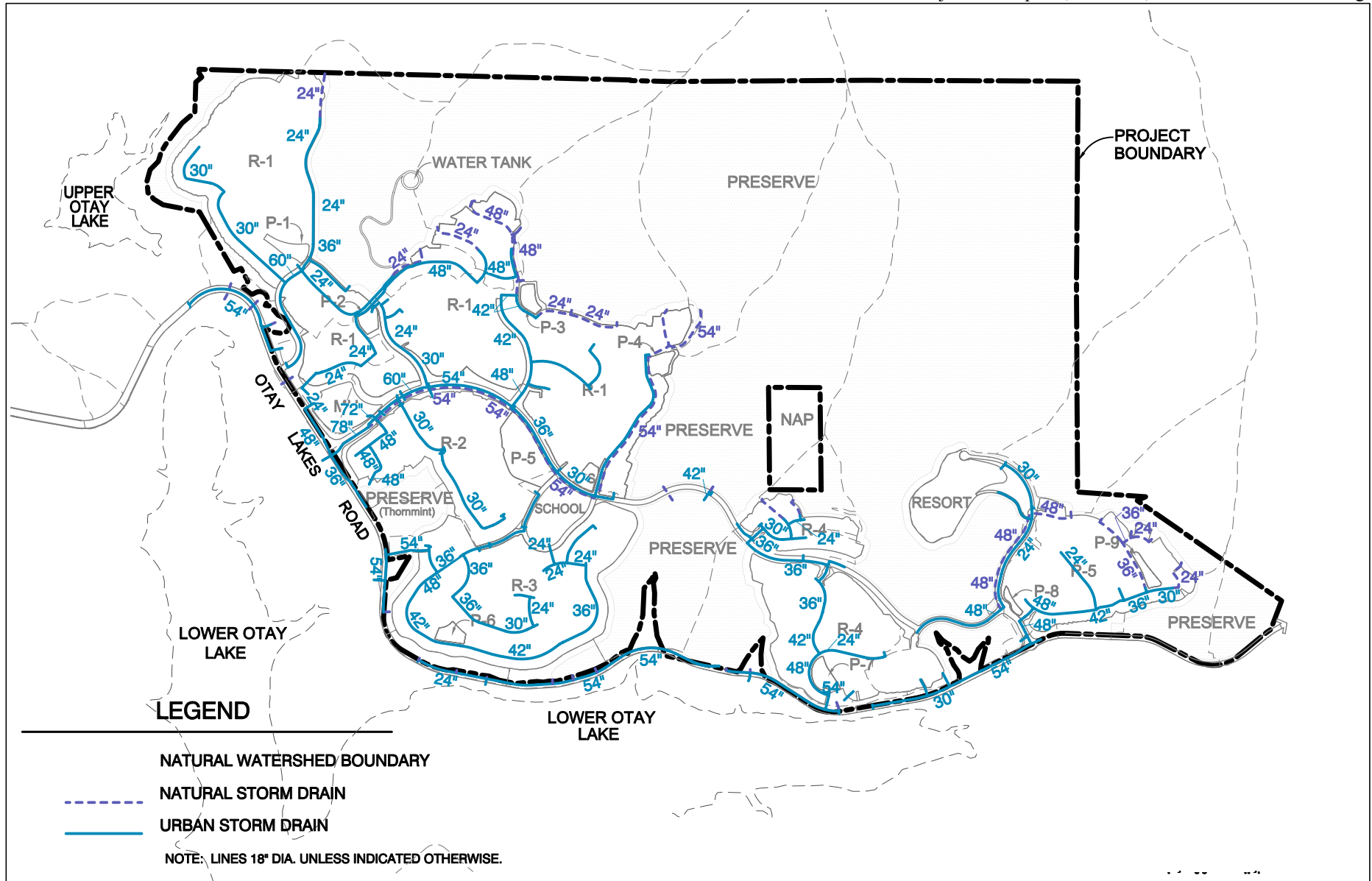
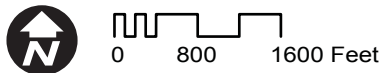


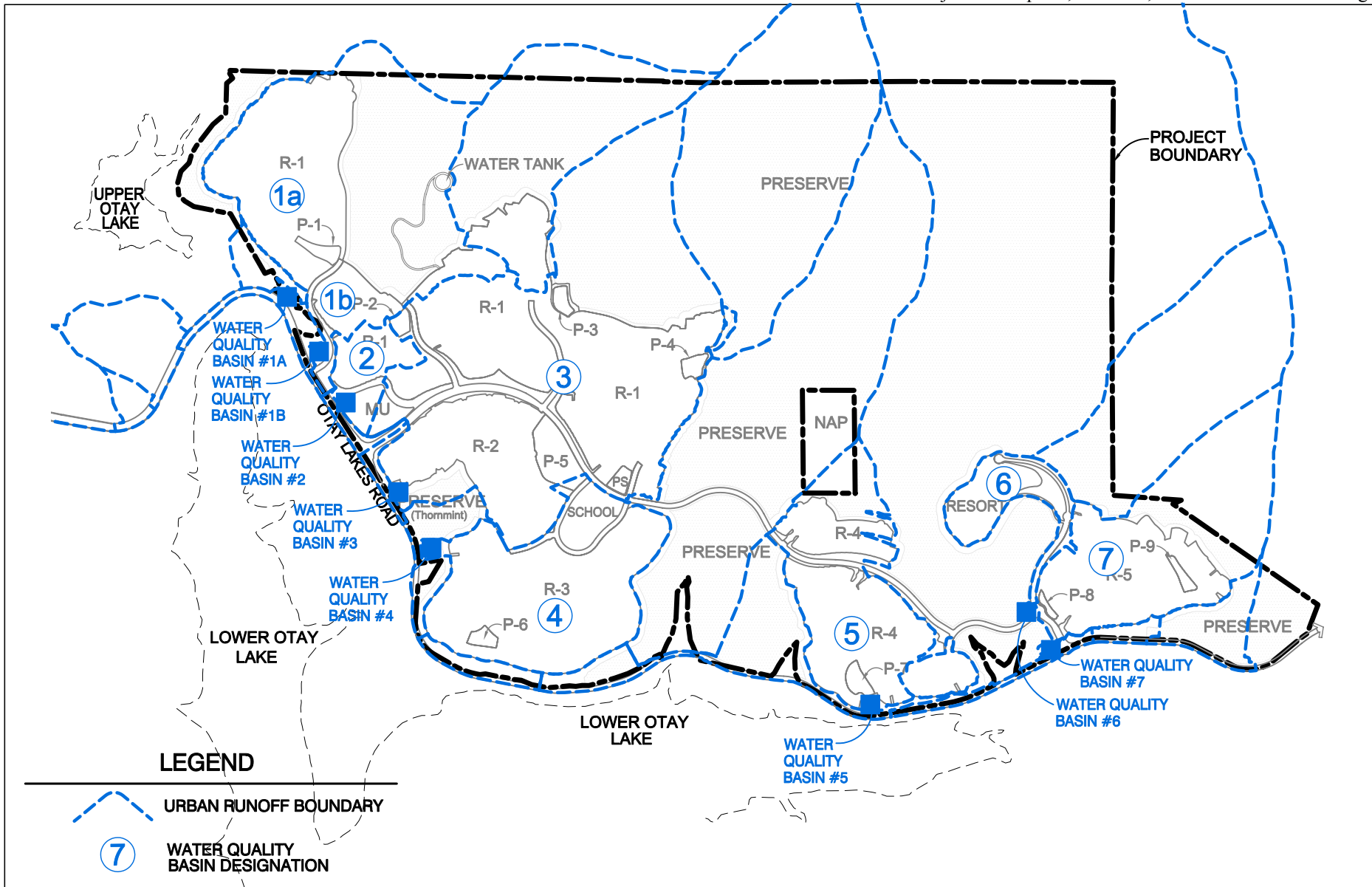
Figure 1.0-6
Sewer Service Plan



SOURCE: Hunsaker & Associates 2010



**Figure 1.0-7
Drainage Plan**



SOURCE: Hunsaker & Associates 2010

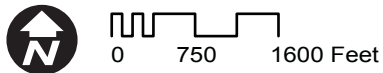
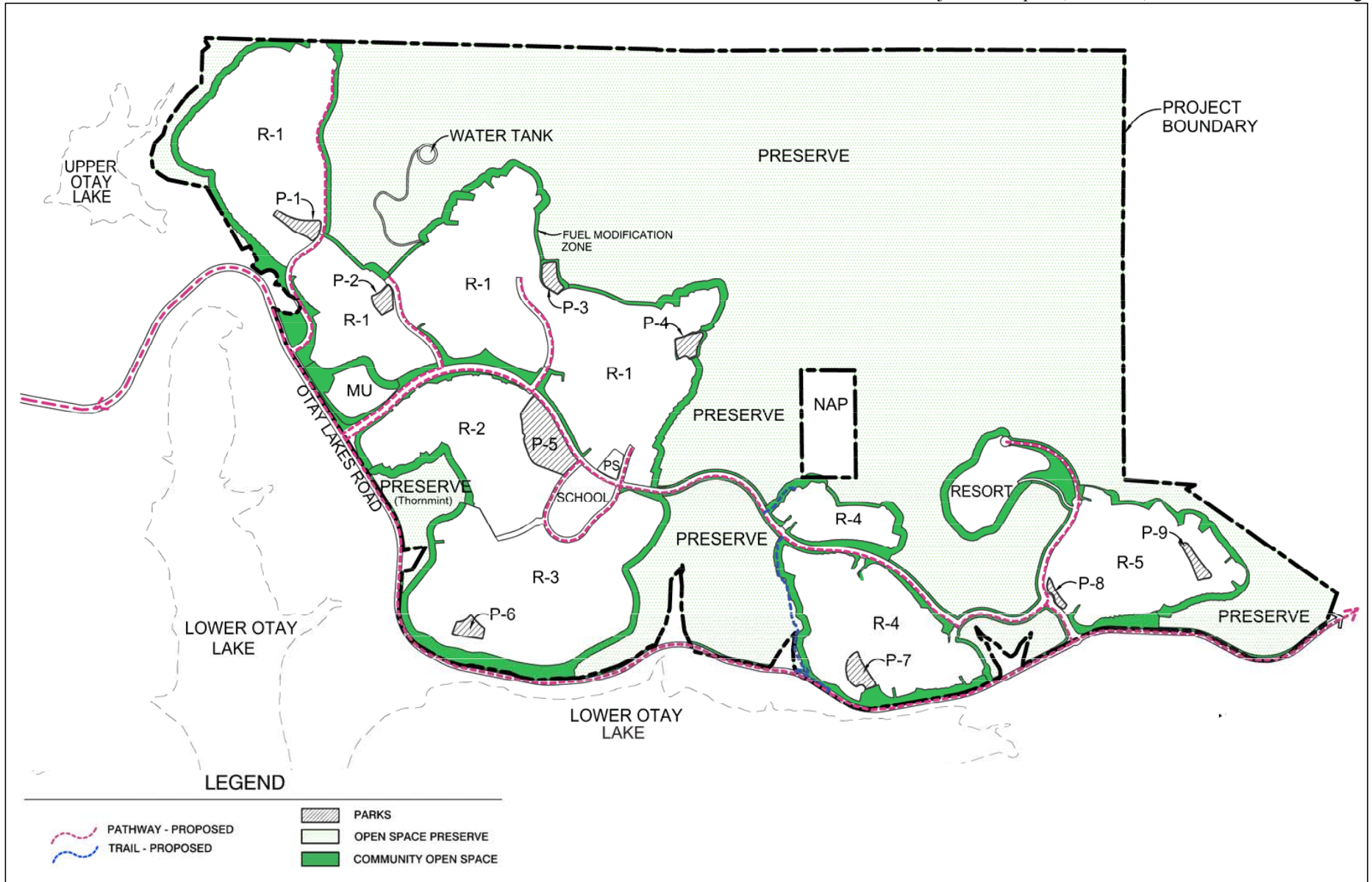


Figure 1.0-8
Stormwater Management Plan



SOURCE: Hunsaker & Associates 2010

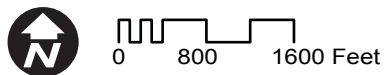
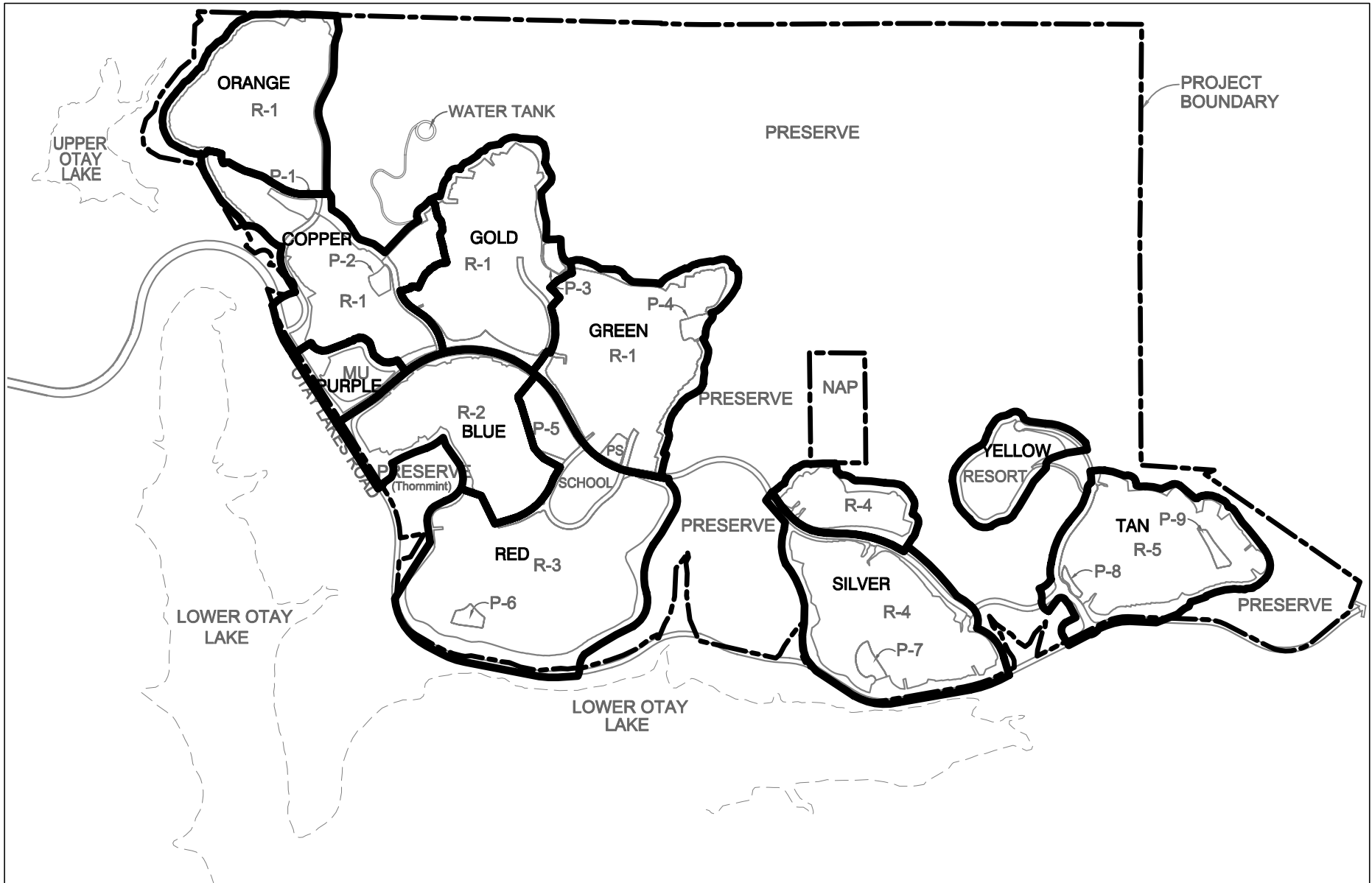


Figure 1.0-9
Preserve, Parks, Recreation, and Internal Open Space

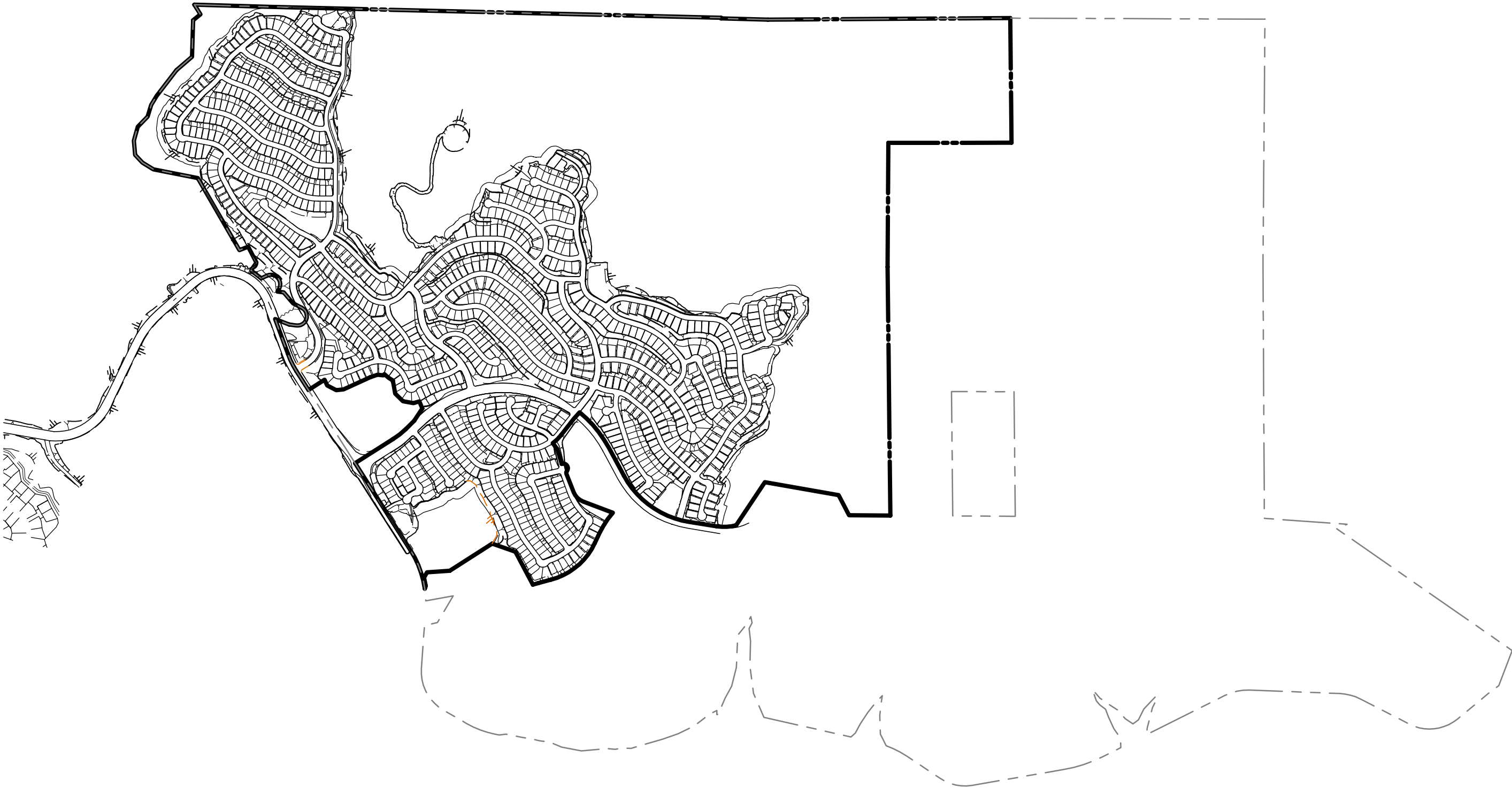


SOURCE:



**Figure 1.0-10
Phasing Plan**

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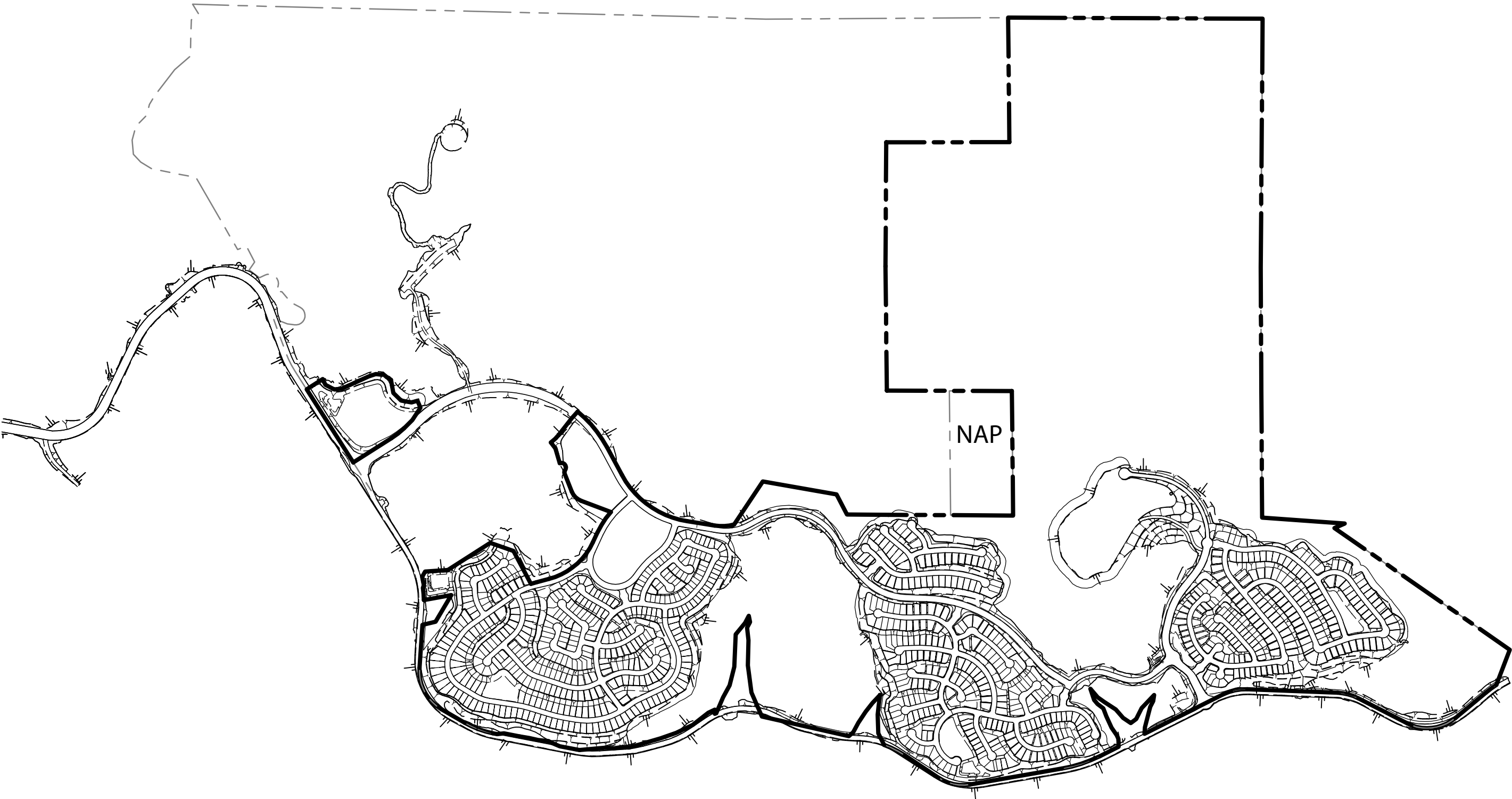


SOURCE: Hunsaker & Associates 2014



Figure 1.0-11A
Tentative Map A

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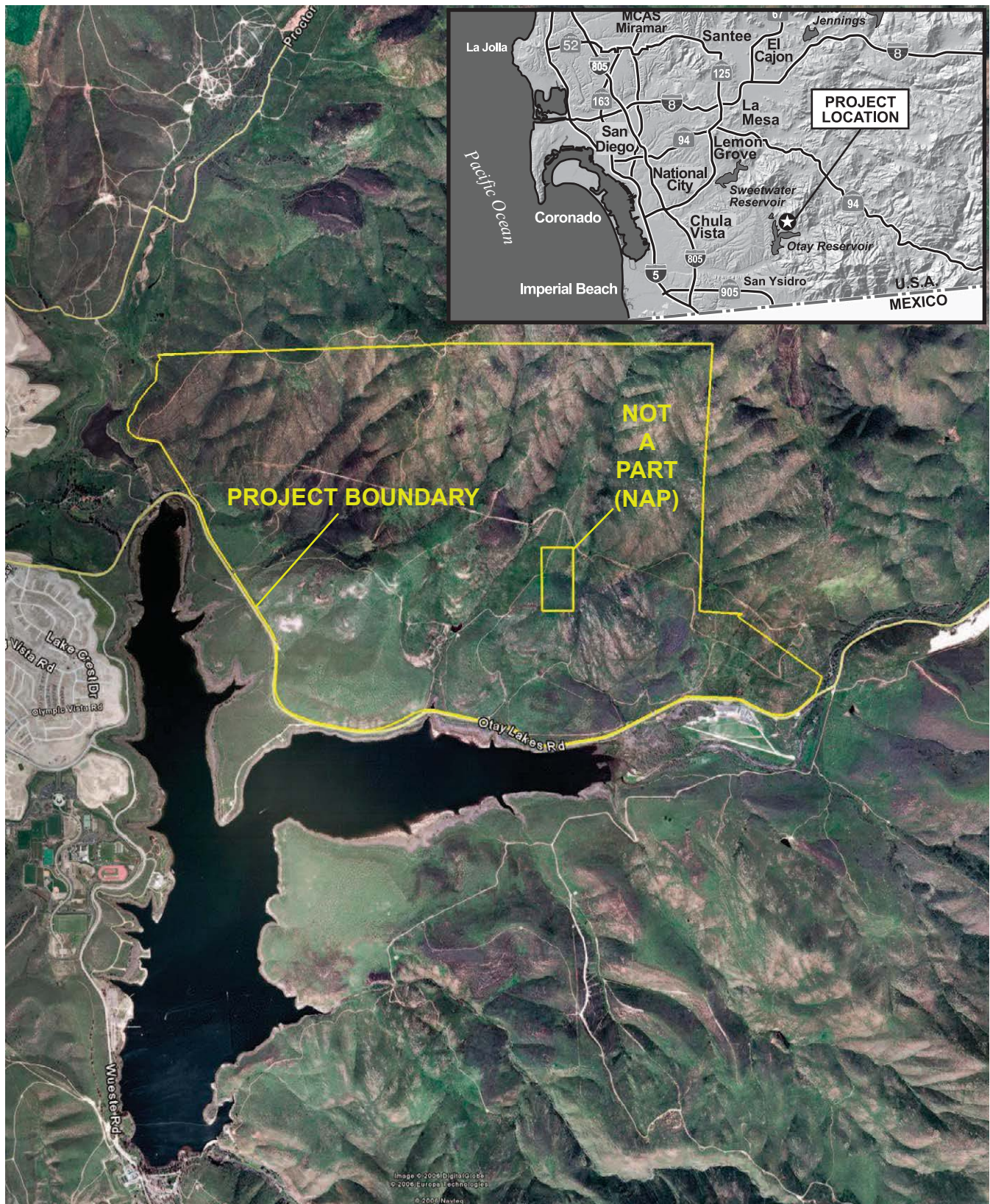
SOURCE: Hunsaker & Associates 2014



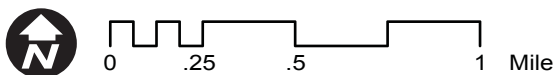
Figure 1.0-11B
Tentative Map B

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1.0 Project Description, Location, and Environmental Setting



SOURCE: Google Earth 2006



**Figure 1.0-12
Regional Location and
Project Vicinity Map**



SOURCE: Lenska Aerial Photos: Flown 2006



No Scale

Figure 1.0-13
Aerial Overview of Project Site and
Surrounding Uses

A detailed topographic map of the Otay Valley area. The map features contour lines indicating elevation, with major peaks like San Miguel Mountain and Mother Miguel Mtn. labeled. Key water bodies include the Sweetwater Reservoir, Otay Res, and Lower Otay Res. The project boundary is highlighted in yellow, and the NAP location is marked with a yellow dot. Other landmarks include the US Military Reservation, Brown Field, and various canyons and valleys. The map also shows roads, trails, and various geographical features like hills and mountains.

Otay Ranch Resort Village DSEIR
GPA04-003; SP04-002; REZ04-009; TM5361 A and B; ER LOG 04-19-005

County of San Diego
March 2015

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CHAPTER 2.0 SIGNIFICANT ENVIRONMENTAL EFFECTS

2.1 Aesthetics and Visual Resources

The following section provides a summary of the potential impacts caused by implementation of the proposed Project related to aesthetics and visual quality. The analysis presented in this section is based on the visual simulations prepared for the proposed Project by Development Design Services and Graphic Access, a County-certified visual analyst.

The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to aesthetics for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR identified potential significant direct and cumulative impacts related to aesthetics and included mitigation measures to reduce these impacts. However, the PEIR found that even with implementation of the proposed mitigation measures, the significant direct and cumulative impacts would not be fully mitigated. Additionally, the Otay Ranch PEIR determined that specific-plan-level visual impact studies are to be undertaken to determine if additional mitigation measures exist to avoid or reduce Project-level significant direct and cumulative impacts.

2.1.1 Existing Conditions

2.1.1.1 *Visual Character*

The Project site is located at the interface of existing urban development and undisturbed open spaces. The Project site is currently undeveloped; no buildings exist on-site. The Project site is characterized by rocky, low rolling hills covered with sparse, scrubby vegetation. The visual character of the Project site is undisturbed open space. Several different types of land uses exist in the vicinity of the Project site. The Eastlake Vistas and Eastlake Woods residential communities and the U.S. Olympic Training Center are located over one-half mile to the west and southwest of the Project site. Lower Otay Lake, a water and recreation reservoir owned and operated by the City of San Diego, is located south of the site. Upper Otay Lake is located northwest of the site. John Nichols Field, an ultra-light gliding and parachuting airport, is located at the east end of Lower Otay Lake, on City of San Diego property.

The Project site contains great scenic beauty and is highly visible from surrounding areas, including Eastlake, the Olympic Training Center, Otay Lakes Road, and, in certain locations, the south side of Lower Otay Lake. From the Project site, there are views to the Jamul Mountains to the north, and to Lower Otay Lake and Otay Mountain to the south. **Figure 2.1-0** shows the locations from which photographs were taken of the site's existing visual character and setting. **Figures 2.1-1a through 2.1-8a** show existing conditions from each of the viewpoints and **Figures 2.1-1b through 2.1-8b** provide simulations of the proposed Project from the same viewpoints.

Scenic Vistas

Scenic vistas are singular vantage points that offer unobstructed views of valued viewsheds, including County-designated visual resources and areas designated as official scenic vistas along major highways.

The County does not identify specific scenic vistas in its General Plan. However, the Otay SRP identifies Otay Mountain as a scenic resource. The following goals and policies of the San Diego General Plan's Conservation and Open Space Element are relevant to the project:

GOAL COS-11

Preservation of Scenic Resources. Preservation of scenic resources, including vistas of important natural and unique features, where visual impacts of development are minimized.

Policies

COS-11.1 Protection of Scenic Resources. Require the protection of scenic highways, corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.

COS-11.3 Development Siting and Design. Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following:

- Creative site planning;
- Integration of natural features into the project;
- Appropriate scale, materials, and design to complement the surrounding natural landscape;
- Minimal disturbance of topography;
- Clustering of development so as to preserve a balance of open space vistas, natural features, and community character;
- Creation of contiguous open space networks.

GOAL COS-12

Preservation of Ridgelines and Hillsides. Ridgelines and steep hillsides that are preserved for their character and scenic value.

Policies

COS-12.1 Hillside and Ridgeline Development Density. Protect undeveloped ridgelines and steep hillsides by maintaining semi-rural or rural designations on these areas.

COS-12.2 Development Location on Ridges. Require development to preserve the physical features by being located down and away from ridgelines so that structures are not silhouetted against the sky.

Characteristic scenic vistas of the Project site incorporating the scenic vistas discussed above are shown in **Figures 2.1-1a and 2.1-2a** and are simulated with the proposed Project in **Figures 2.1-1b and 2.1-2b**.

Point of View 1

Shown in **Figure 2.1-1a** is Point of View 1, located within Mountain Hawk Park in the Eastlake Vistas community of Chula Vista. This point of view looks northeast and is characterized by the tree-dotted lakeside of Lower Otay Lake and rolling hills in the lower portion of the Jamul Mountains. From this viewpoint, the lower slope of San Miguel Mountain is shown to the northwest of the Project site. Lower Otay Lake, Jamul Mountain, the western portion of the Project site, Otay Lakes Road, and the San Ysidro Mountains can also be seen from this viewpoint. Houses associated with the Eastlake Community would also be seen from northwestern views at this viewpoint. All of Lower Otay Lake and most of the Project site can be seen from this or other nearby vantage points within Mountain Hawk Park. This point of view is characteristic of views from the easternmost tracts of the Eastlake Community. A simulation of Point of View 1 for the proposed Project is shown in **Figure 2.1-1b**.

Point of View 2

Shown in **Figure 2.1-2a** is Point of View 2, located southwest of Otay Lakes Road, between the north and east arms of Lower Otay Lake. This point of view looks northeast and is characterized by a lakeside covered in sparse scrubby vegetation and rolling hills. From this viewpoint, the eastern arm of Lower Otay Lake, Otay Lakes Road, the western portion of the Project site, and the Jamul Mountains can be seen. This point of view is characteristic of views available to Otay Lake recreational users from the edge and surface of the lake. A simulation of Point of View 2 for the proposed Project is shown in **Figure 2.1-2b**.

Scenic Highways

The Conservation and Open Space Element of the San Diego County General Plan identifies scenic highways to create a network of the scenic highway corridors and to protect and enhance the scenic, historical, and recreational resources in those corridors. Otay Lakes Road is a “County Designated Scenic Highway.” (County of San Diego 2011a).

Characteristic existing views of the Project site from Otay Lakes Road, proceeding from west to east along the Project frontage, are shown in **Figures 2.1-3a through 2.1-8a** and described below.

Point of View 3

Shown in **Figure 2.1-3a** is Point of View 3, located along a curve in Otay Lakes Road between the Upper and Lower Otay Lakes. This point of view looks east and is characterized by a lakeside spotted with trees in the foreground and undeveloped rolling hills covered with low-lying vegetation in the background, including a peak of the Jamul Mountains that lies just north of the Project boundary. This area along the east side of the road is intermittently inundated

during high water conditions in Lower Otay Lake. From this viewpoint, Lower Otay Lake and the southern edge of the Project site can be seen. Houses within Eastlake can be seen from northwestern views at this vantage point. This point of view is characteristic of views looking east along the southern boundary of the Project site from Otay Lakes Road. A simulation of Point of View 3 for the proposed Project is shown in **Figure 2.1-3b**.

Point of View 4

Shown in **Figure 2.1-4a** is Point of View 4, located on Otay Lakes Road looking northwest along the north arm of Lower Otay Lake. This point of view is characterized by rolling hills covered in sparse, low-lying vegetation. From this viewpoint, the foothills of Jamul Mountain and the western edge of the Project site can be seen, with the peak of San Miguel Mountain and the lower peak of Mother Miguel Mountain in the background. This point of view is characteristic of views along the western edge of the Project site from Otay Lakes Road. A simulation of Point of View 4 for the proposed Project is shown in **Figure 2.1-4b**.

Point of View 5

Shown in **Figure 2.1-5a** is Point of View 5, located on Otay Lakes Road looking southeast along the north arm of Lower Otay Lake. This point of view toward the Project site is characterized by undeveloped rolling hills covered with low-lying vegetation. From this viewpoint, the western edge of the Project site and, in the background, peaks of the Jamul Mountains to the northeast and the San Ysidro Mountains to the southeast, can be seen. This point of view is characteristic of views looking east along the southwestern boundary of the Project site from Otay Lakes Road. A simulation of Point of View 5 for the proposed Project is shown in **Figure 2.1-5b**.

Point of View 6

Shown in **Figure 2.1-6a** is Point of View 6, located on Otay Lakes Road looking west along the north side of the east arm of Lower Otay Lake. This point of view is characterized by undeveloped rolling hills covered in sparse, low-lying vegetation. From this viewpoint, the lower foothill portion of the Jamul Mountains within the Project site can be seen. A natural drainage course that crosses under Otay Lakes Road from the Project site and flows into Lower Otay Lake is near this viewpoint and the off-site area to the south is intermittently inundated during high water conditions in Lower Otay Lake. Although houses within Eastlake cannot be seen in this photograph, existing residential development to the west can be seen from vantage points in the vicinity of Point of View 6. This point of view is characteristic of views looking west from near the middle of the Project site along Otay Lakes Road. A simulation of Point of View 6 for the proposed Project is shown in **Figure 2.1-6b**.

Point of View 7

Shown in **Figure 2.1-7a** is Point of View 7, located on Otay Lakes Road looking west adjacent to John Nichols Field, east of Lower Otay Lake. The Project site from this point of view is characterized by rocky hills covered in sparse, low-lying vegetation. From this viewpoint, a portion of John Nichols Field, a lower foothill of the Jamul Mountains, and the eastern edge of

the Project site can be seen. Although houses within Eastlake cannot be seen in this photograph, existing residential development to the west can be seen from vantage points in the vicinity of Point of View 7. This point of view is characteristic of views looking west from the easternmost edge of the Project site along Otay Lakes Road. A simulation of Point of View 7 for the proposed Project is shown in **Figure 2.1-7b**.

Point of View 8

Shown in **Figure 2.1-8a** is Point of View 8, located on Otay Lakes Road looking northwest along Otay Lakes Road. The project site at this point is characterized by undeveloped rolling hills covered in sparse, low-lying vegetation. This point of view is characteristic of views looking west and northwest from the southern boundary of the Project site along Otay Lakes Road. A simulation of Point of View 8 for the proposed Project is shown in **Figure 2.1-8b**.

Light and Glare

The Project site is located at the interface of existing urban development and undisturbed open spaces. As shown in **Figures 2.1-1a through 2.1-8a**, there are no street lights along Otay Lakes Road. No lighting exists on the Project site and no glare-producing materials are located on the Project site. Most of the surrounding area is undeveloped. The Eastlake community, located within the City of Chula Vista, 0.5 mile from the Project site, is the closest residential development. Streets in this community are lit by standard street lights and are visible from the Project site.

Pursuant to the State of California Outdoor Lighting Zones regulations (2003) and the United States Census (2000), the Project site is considered to be within Lighting Zone 2, which is composed of rural areas that are not government-designated parks, recreation areas, or wildlife preserves. Areas within this zone designation are characterized as having low ambient illumination.

The Conservation and Open Space Element of the San Diego County General Plan provides Goals and Policies for preservation of Astronomical Dark Skies in the County by limiting light pollution and maintaining low levels of sky brightness in the vicinity of the Palomar and Mount Laguna observatories (County of San Diego 2011). Both of these sites are considered to be among the best locations for astronomical research in the United States. The following Goal and Policies of the Conservation and Open Space Element are relevant to the Project:

GOAL COS-13

Dark Skies. Preserve dark skies that contribute to rural character and are necessary for the local observatories.

Policies

COS-13.1 Restrict Light and Glare. Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.

COS-13.2 Palomar and Mount Laguna. Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies which are vital to these two world-class observatories by restricting exterior light sources within the impact areas of the observatories.

The County of San Diego Light Pollution Code divides the night sky into two zones: Zone A, all areas within a 15-mile radius of either Palomar Mountain or Mt. Laguna; and Zone B, all remaining portions of San Diego County. The Project site is located in Zone B, approximately 50 miles from the Palomar Observatory and 30 miles from the Mt. Laguna Observatory.

2.1.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines are based on the Guidelines for Determining Significance and Report and Content Requirements for Visual Resources approved by PDS on July 30, 2007. A significant aesthetics and visual quality impact would occur if the Project would do the following:

- Introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines.
- Result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings.
- Substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from:
 - *a public road,*
 - *a trail within an adopted County or state trail system,*
 - *a scenic vista or highway, or*
 - *a recreational area.*
- Not comply with applicable goals, policies, or requirements of an applicable County Community Plan, Subregional Plan, or Historic District Zoning.

2.1.2.1 Consistency with Visual Character, Quality, and Design Guidelines

Guideline for the Determination of Significance

A significant aesthetics and visual quality impact would occur if the Project would do the following:

- Introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines.

Rationale for Selection of Guideline

The significance guideline for consistency with visual character, quality, and applicable local design guidelines is intended to avoid adverse changes or contrasts and to ensure that the community and/or neighborhood surrounding the project will maintain its particular character. The visual quality is based on the viewers' responses to changes in the character and quality of views of the project site, and whether the project contributes or detracts from the existing character and quality of the area.

Analysis

The proposed Project would alter the existing visual character of the site in a manner that would be similar to existing development in the Eastlake community. The Project proposes patterns of land alteration, residential styles, architecture, density, and massing that are similar to existing development west of Lower Otay Lake. The proposed Project also places approximately 1,090 acres of undeveloped lands into preserve area within the Project site.

The proposed Project includes a Specific Plan which establishes Development Regulations for the future land uses including single family homes, multi-family homes and the Resort site. Implementation of the Development Regulations will occur through the building permit process. A Site Plan is required for all development in the proposed Project and must demonstrate consistency with the Development Regulations. The Specific Plan's Development Regulations include requirements related to setbacks, density, building size, massing, lot coverage, and scale. These regulations are required by the Otay SRP and will keep the proposed Project from exceeding the significance threshold because the regulations ensure future construction is consistent with the applicable guidelines and the development is consistent with the character of the proposed Project as well as the existing built portions of Otay Ranch. The requirements from the Development Regulations have been included in the photo simulations described below and thus the visual impacts are analyzed as part of this document.

The proposed Project also includes a Village Design Plan that provides guidelines for theme, style, color, architecture, and building materials. Similar to the Development Regulations, the Village Design Plan is required by the Otay SRP and implementation of the guidelines will keep the proposed Project from exceeding the significance threshold because the guidelines ensure that future construction is consistent with the visual character of the existing portion of Otay Ranch.

Included in the Village Design Plan are specifications for light fixtures and street lights within the Project site and along Otay Lakes Road. The Village Design Plan requires light fixtures to be fully shielded in compliance with Sections 6322, 6324, and 6236 of the County Zoning

Ordinance and the San Diego County Public Road Standards, which would minimize light and glare impacts to nearby neighborhoods and communities. Furthermore, the nearest community to the proposed Project is approximately 3,000 feet to the west of the Project site. At this distance and using shielded street lights, there would not be a significant impact due to light and glare. The proposed Project's consistency with the Otay SRP, Specific Plan Development Regulations, and Village Design Plan results in *less than significant impacts* to the existing visual character and quality of the Otay Ranch community, including impacts associated with light and glare.

2.1.2.2 *Damage to Visual Resources*

Guideline for the Determination of Significance

A significant aesthetics and visual quality impact would occur if it does the following:

- Result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings.

Rationale for Selection of Guideline

The significance guideline for avoiding potential damage to visual resources is intended to preserve visual features that represent or characterize a community or neighborhood. Loss or damage to one or more of these particular resources can change the visual character and may also degrade the visual quality. The effect of the change is determined by the viewer response to the changes.

Analysis

While the existing Project site does not include any designated landmarks, historic resources or trees, the site does contain a significant rock outcropping and ridgelines. The Resort component of the Project is proposed just east of, and above the rock outcropping shown in **Figure 2.1-0**; however, the project has been designed to preserve the rock outcropping and retain views of the rocky canyon this rock outcropping creates. The Project also proposes development along the lower ridgelines in the southern and western portion of the Project site; however, the higher elevation ridgelines are proposed to be dedicated to the Otay Ranch Preserve. As a result, the Project would not result in structures being silhouetted against the sky.

As discussed above, seven points of view were used to develop the visual simulations. These points of view were deemed to best represent views of the Project site from the developed areas and parklands to the west and from Otay Lakes Road. These points of view are described in Section 2.1.1 and are shown in **Figures 2.1-1a through 2.1-8a**.

As shown in these figures and the simulations from each of the points of view, development of the proposed Project would result in the conversion of undeveloped land to residential units, resort facilities, school facilities, parks, and roads, and would include graded slopes, retaining

walls, and fire/noise walls. This would substantially change the visual character and quality of the Project site, moving from an undeveloped natural setting to urban development. This change would result in a *significant adverse impact* to visual resources (**Impact AE-1**).

2.1.2.3 Scenic Vistas

Guidelines for the Determination of Significance

A significant aesthetics impact would occur if it does the following:

- Substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from:
 - *a public road,*
 - *a trail within an adopted County or state trail system,*
 - *a scenic vista or highway, or*
 - *a recreational area.*

Rationale for Selection of Guideline

The significance guideline for avoiding impacts to scenic vistas is directed at potentially substantial adverse effects that would be viewed from roadways or recreational areas. Public vantage points, such as roads and trails, allow scenic views to be seen by many people. Scenic views are so important to people that highways and viewpoints are sometimes designated as scenic by the County for County routes or Caltrans for state routes. Adverse changes to these resources could be significant, depending on the degree and nature of the change, particularly if the view is obstructed.

Analysis

Scenic Vistas from Recreational Areas

The Project's location in the Jamul Mountain foothills provides scenic vistas from areas surrounding the Project site.

Figures 2.1-1a and 2.1-2a depict views of these scenic vistas without the proposed Project; **Figures 2.1-1b and 2.1-2b** depict views of these scenic vistas with the proposed Project. The following describes the altered views from these two recreational viewpoints as a result of implementation of the proposed Project.

As shown in **Figure 2.1-1b**, the proposed Project would result in changes to views from west of the Project site. Residential buildings and graded landscaped slopes would be visible in views looking east toward the Project site. This would include views from Mountain Hawk Park, a recreation area located in Chula Vista.

As shown in **Figure 2.1-2b**, the proposed Project would result in changes to views seen by recreational users of Otay Lakes and trail users within the Otay Ranch Preserve and Otay Valley

Regional Park, south of the Project site. Residential buildings and graded landscaped slopes would be visible in the foreground and a portion of the resort buildings would be visible in the background of views looking north toward the Project site.

Development of the proposed Project would result in the permanent alteration of views to scenic resources, changing from an undeveloped natural state to urban development. The proposed Project would result in graded slopes, buildings, retaining walls, noise walls, and landscaping. These changes would result in a *significant impact* to scenic vistas from recreational areas (**Impact AE-2**).

Scenic Routes

As stated above, Otay Lakes Road is a County Designated Scenic Highway in the Conservation and Open Space Element of the County General Plan. **Figures 2.1-3a through 2.1-8a** depict views of the Project site from Otay Lakes Road without the proposed Project; **Figures 2.1-3b through 2.1-8b** depict views from Otay Lakes Road with the proposed Project.

As shown in **Figures 2.1-3b through 2.1-8b**, the proposed Project would result in the alteration of the existing landform to accommodate proposed Project development. This development would result in substantial changes to views from Otay Lakes Road to the Project site, changing from an undeveloped natural setting to urban development. These changes would result in a *significant adverse impact* to views from a scenic route (**Impact AE-3**).

2.1.2.4 Consistency with Adopted Goals, Policies, and Ordinances

Guidelines for the Determination of Significance

A significant aesthetics impact would occur if it does the following:

- Not comply with applicable goals, policies, or requirements of an applicable County Community Plan, Subregional Plan, or Historic District Zoning.

Rationale for Selection of Guideline

The significance guideline for consistency with adopted goals, policies, and ordinances has been developed to maintain the visual character and quality of communities and neighborhoods in the County as currently regulated by the County General Plan or zoning. Projects that substantially deviate from County regulations may result in significant adverse effects, depending on the degree and nature of the variation.

Analysis

As described above in Section 2.1.1, Table 2.1-1 below summarizes the applicable General Plan goals and policies related to visual resources and analyzes the proposed Project's consistency as required by the threshold.

Table 2.1-1
Summary of Visual Resources Applicable General Plan Goals and Policies

GOAL COS-11 Preservation of Scenic Resources. Preservation of scenic resources, including vistas of important natural and unique features, where visual impacts of development are minimized.	
Policies	
COS-11.1 Protection of Scenic Resources. Require the protection of scenic highways, corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.	<p>Otay Lakes Road is a County-designated Scenic Highway that runs adjacent to Lower Otay Reservoir. To protect this scenic resource, the project includes design criteria regulating landscaping, building heights, and setbacks of buildings. Otay Lakes Road is proposed to be maintained in its current alignment adjacent to Lower Otay Reservoir. Development adjacent to the road, on the east and north sides, is buffered by landscaped slopes. Where the project is adjacent to undeveloped open space areas, views to the Jamul Mountains are provided through wildlife corridors.</p> <p>In addition, the size of the resort complex has been reduced from 800 rooms to 200 rooms, while maintaining the rock canyon and outcropping in the eastern portion of the project site.</p>
COS-11.3 Development Siting and Design. Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following: <ul style="list-style-type: none"> • Creative site planning; • Integration of natural features into the project; • Appropriate scale, materials, and design to complement the surrounding natural landscape; • Minimal disturbance of topography; • Clustering of development so as to preserve a balance of open space vistas, natural features, and community character; • Creation of contiguous open space networks. 	<p>The project includes design criteria regulating landscaping, building heights, and setbacks of buildings. The Resort Village Development Regulations and Zoning requires site plan review prior to building permit issuance.</p> <p>Otay Lakes Road is proposed to be maintained in its current alignment adjacent to Lower Otay Reservoir. Development adjacent to the road, on the east and north sides, is buffered by landscaped slopes. Where the project is adjacent to undeveloped open space areas, views to the Jamul Mountains are provided through wildlife corridors.</p> <p>In addition, the size of the resort complex has been reduced from 800 rooms to 200 rooms, while maintaining the rock canyon and outcropping in the eastern portion of the project site.</p>
GOAL COS-12 Preservation of Ridgelines and Hillsides. Ridgelines and steep hillsides that are preserved for their character and scenic value.	
Policies	
COS-12.1 Hillside and Ridgeline Development Density. Protect undeveloped ridgelines and steep hillsides by maintaining semi-rural or rural designations on these areas.	The proposed Project maintains the semi-rural designation. Most of the proposed Project is clustered on the lower mesa tops.
COS-12.2 Development Location on Ridges. Require development to preserve the physical features by being located down and away from ridgelines so that structures are not silhouetted against the sky.	The proposed Project locates the majority of the development on the lower mesa tops and avoids sighting structures on ridges.
Dark Skies. Preserve dark skies that contribute to rural character and are necessary for the local observatories.	

Policies	
COS-13.1 Restrict Light and Glare. Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.	The Resort Village Design Plan requires all lighting to be shielded downward such that no light is transmitted across a property line. The Preserve Edge Plan further restricts lighting adjacent to the Preserve to reduce indirect impacts.
COS-13.2 Palomar and Mount Laguna. Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies, which are vital to these two world-class observatories, by restricting exterior light sources within the impact areas of the observatories.	The proposed Project would comply with the County's Astronomical Dark Skies ordinance.

Approval of the proposed Project and the concurrent amendments to the County General Plan and Otay SRP discussed above would establish consistency between the Specific Plan, the County General Plan, and the Otay SRP, and there would be ***no impact*** to applicable goals, policies, or requirements of the Otay SRP.

In addition to the applicable subregional plan, the proposed Project is also subject to the following mitigation measures from the Otay Ranch PEIR Landform Alteration/Aesthetics section. A discussion of how the proposed Project is consistent with each is provided below.

- a. *Buildings shall be visually compatible, in terms of height, scale, and bulk, and shall be set back from the edge of the mesa and composed of low-rise structures, no more than three stories in height with an occasional four-story building or iconic architectural element within the Resort and Mixed-Use land use designations approved pursuant to a Site Plan.*

The Project complies with this requirement through the provisions contained in the Resort Village Specific Plan, Development Regulations, Village Design Plan and Preserve Edge Plan. Specifically, the Development Regulations limit building heights of single family and multi-family homes and the Resort complex. The height limit for single family homes is 35 feet. Multi-family homes are limited to 45 feet. The resort land use designation is limited to 45 feet with architecture treatments up to 75 feet permitted through the Site Plan review process.

- b. *Contour grading shall be used to transition graded slopes into the natural topography of surrounding hillsides.*

The Village Design Plan establishes guidelines for sensitive grading techniques where the project transitions from development to natural topography, including variable slope and contour grading.

- c. *Manufactured slopes shall be revegetated upon completion of grading activities.*

The Preserve Edge Plan establishes a plant palette and hydroseed mix for all manufactured slopes to be revegetated. Additionally, the Village Design Plan includes a similar plant palette for interior manufactured slopes.

- d. *Color schemes shall be limited to natural colors that blend with the existing environment and surrounding hillsides. Buildings shall maximize the use of nonreflective/nonglare surfaces.*

The Village Design Plan includes a color palette which requires natural colors and limits where reflective surfaces may be permitted.

- e. *Roadways shall be designed to follow the natural contours of hillsides and minimize visibility of road cuts and manufactured slopes.*

With the conversion of the project from a project comprised mostly of multi-family homes to one comprised mostly of single-family homes, streets are able to better conform to the existing contours of hillsides and the visibility of road cuts and manufactured slopes are reduced because individual homes sites can pick up elevation changes much more sensitively than the larger multi-family building pads previously planned for the Project site.

- f. *Excessive use of manufactured slopes shall not be permitted.*

With the conversion of the project from a project comprised mostly of multi-family homes to one comprised mostly of single-family homes, manufactured slopes are greatly reduced because individual home sites can pick up elevation changes much more sensitively than the larger multi-family building pads previously planned for the Project site.

- g. *Natural buffering shall be provided between development and significant landforms.*

The Project includes a transition area between development and Preserve open space areas. This Preserve Edge is managed through implementation of the Preserve Edge Plan and the requirements of the Fire Protection Plan Fuel Modification Zones.

- h. *Eighty-three percent of the steep slopes (greater than 25 percent) shall be preserved in Otay Ranch.*

The Phase 2 RMP estimates that Village 13, including the Birch Estate Parcel, would impact 184 acres of steep slopes. The proposed Project results in impacts to 166.2 acres of steep slopes, which is consistent with the Phase 2 RMP.

- i. *View corridors shall be integrated at the terminus or periodically along the length of streets paralleling or intersecting undeveloped open space.*

View corridors are integrated along the length of streets paralleling undeveloped open space. Specifically, the entire length of Otay Lakes Road provides for views over the lake. Internal to the Project, Strada Piazza provides two major view corridors as it crosses open space areas. Strada Ravenna in the east and Guida Sicilia in the west are north/south oriented collectors which parallel undeveloped open space.

- j. *Walls, including acoustical barriers, shall be integrated into the architectural theme and scale of the villages.*

The Village Design Plan sets guidelines for all walls, including acoustical barriers, to ensure they are integrated into the overall architectural theme and scale of the village.

- k. *Landscape themes shall be used to define village character and blend with adjacent existing development.*

The Village Design Plan establishes 8 landscape zones throughout the Project site, which integrate the overall design theme while respecting the different character of each zone.

- l. *Naturalizing and native plantings shall be integrated into revegetation plans for manufactured slopes adjacent to open space areas.*

The Preserve Edge Plan includes a plant palette which has been reviewed by a biologist for consistency with Preserve adjacency requirements.

- m. *Scale and architectural treatments (i.e., rooflines, building materials) of all residential and non-residential village buildings shall be diverse and yet compatible.*

The Project complies with this requirement through the provisions contained in the Resort Village Specific Plan, Development Regulations, and Village Design Plan, and implementation of the Specific Plan “Check List”.

- n. *Signage shall be controlled and designed to fit into the pedestrian environment.*

The Resort Village Development Regulations establish requirements for size and scale of signs.

- o. *Architectural colors for development adjacent to open space areas shall incorporate natural tones and shades.*

The Village Design Plan includes a color palette which requires natural colors.

2.1.3 Cumulative Impact Analysis

Consistent with the analysis in the PEIR, implementation of the proposed Project would contribute to cumulative impacts to aesthetic resources within Otay Ranch and southeastern San Diego County. The PEIR generally identified the cumulative study area as the area east of I-805, South of SR-54, south and west of SR-94 and north of SR-905. Since the approval of the PEIR, portions of the cumulative study area, including portions of the Proctor Valley Parcel and San Ysidro Mountain Parcel in Otay Ranch, have been acquired by conservation agencies for open space. The cumulative study area for impacts to aesthetics and visual resources is limited to the viewshed visible from the viewpoints identified in **Figure 2.1-0**.

Figures 2.1-1b through 2.1-8b illustrate the Project-level changes that would occur in relation to views of scenic vistas and from scenic roadways. These figures also illustrate the changes that would occur to the visual character of the area as a result of the proposed Project. Additionally, acquisition of Village 15, portions of Village 14, and Planning Area 16 has led to changes to the cumulative visual setting since certification of the PEIR. The changes will reduce the level of cumulative development in this area. However, these changes are not of a degree that would change the PEIR’s conclusion of a significant and unavoidable impact to aesthetic resources in the Project area.

The Final EIR (FEIR) for the County General Plan Update (County of San Diego 2011) identified potentially significant impacts to aesthetics related to scenic vistas, scenic resources, visual character or quality, and light or glare. Mitigation measures were included in the FEIR that would reduce cumulative impacts to scenic vistas and scenic resources to less than significant. The FEIR also determined that General Plan Update policies and mitigation measures would reduce cumulative impacts to visual character or quality, but not to below a level of significance. Consistent with the findings of the FEIR, the proposed Project would contribute to a ***cumulatively significant impact*** related to visual character or quality (**Impact AE-4**). With regard to impacts to light and glare, the analysis provided in Section 2.1.2.1, above, states that the proposed Project's Village Design Plan includes specifications for light fixtures and street lights within the Project site and along Otay Lakes Road. The Village Design Plan light fixtures are required to be fully shielded in compliance with the County Zoning Ordinance and the San Diego County Public Road Standards, which would minimize light and glare impacts to nearby neighborhoods and communities and would result in a ***less than significant impact*** due to light and glare.

2.1.4 Significance of Impacts Prior to Mitigation

The following impacts were identified in the analysis of the Project's aesthetic impacts:

<u>Impact Number</u>	<u>Description of Project's Effect</u>	<u>Significance of Impact</u>
AE-1	Substantial adverse change in the visual character and visual quality of the Project site caused by building an urban development in an undeveloped natural setting	Potentially significant direct impact
AE-2	Permanent alteration to views of scenic resources caused by graded hills, buildings, and landscaping	Potentially significant direct impact
AE-3	Permanent alteration to views of the Project site from Otay Lakes Road—a designated scenic route	Potentially significant direct impact
AE-4	Contribution to cumulative aesthetic resources impacts within Otay Ranch and southeastern San Diego County, including impacts to views from scenic vistas and scenic highways and impacts to the visual character of the area	Potentially significant, cumulative impact

2.1.5 Mitigation

The following mitigation measures are proposed to reduce the significant visual character or quality impacts of the proposed Project (AE-1 through AE-4):

- M-AE-1** All grading plans, landscape plans, and improvement plans for the proposed Project shall be evaluated for Project compliance with the aesthetic design mitigation measures of this EIR, the Resort Village Specific Plan (Development Regulations), the Resort Village Design Plan, and the Resort Village Preserve Edge Plan.
- M-AE-2** Pursuant to Chapter IV, Implementation, of the Otay Ranch Resort Village Specific Plan, Site Plans (“D” Designator) shall be evaluated for Project compliance with the Resort Village Design Plan, the Resort Village Preserve Edge Plan, and the provisions of the Specific Plan related to colors, materials, and other architectural characteristics of adjacent buildings, building massing, siting of buildings and structures, including setbacks from tops of slopes, architectural colors adjacent to open space, height, use of non-reflective/non-glare surfaces, and other aesthetic design measures of this EIR.

Mitigation measures M-AE-1 and M-AE-2 require that grading, landscape improvements, and plot plans (Site Plans), and Major Use Permits for the proposed Project be prepared in accordance with the approved Otay Ranch Resort Village Specific Plan, Resort Village Design Plan, Resort Village Preserve Edge Plan, and Tentative Maps. The Resort Village Specific Plan includes a “Check List” (see Table 2.1-2) that identifies the requirements of the D-Designator to demonstrate compliance with these documents and fulfillment of Mitigation Measures M-AE-1 and M-AE-2.

As analyzed above and consistent with the PEIR, mitigation included for the proposed Project would reduce cumulative visual impacts by requiring that design guidelines from the Otay SRP, the Otay Ranch Resort Village Specific Plan, and the Village Design Plan be implemented during the processing of individual grading, landscaping, and building permits to require that the proposed Project implement measures to reduce the aesthetic impact of the development. However, adherence to the mitigation measures would not fully mitigate Project-related impacts. No mitigation exists that would avoid or reduce these impacts to a less-than-significant level.

Even with implementation of Mitigation Measures M-AE-1 and M-AE-2, impacts to visual resources would remain significant, including the Project’s contribution to cumulative impacts to aesthetic resources and views from scenic vistas and scenic highways within Otay Ranch and to the visual character of southeastern San Diego County. No other feasible mitigation measures exist that would avoid or further reduce this significant impact. **Therefore, impacts to aesthetics and visual resources remain significant and unmitigable.**

2.1.6 Conclusion

As stated above, impacts due to light and glare resulting from the proposed Project would be less than significant because standard street and yard lighting and lights from windows, parks, and parking areas would be consistent with existing lighting conditions within Otay Ranch and Eastlake to the west.

**Table 2.1-2
Resort Village Site Plan Checklist**

County Zoning Box (Specific Plan Page 99, Exhibit 47; Page 100)

- Use Regulation- S-88: Specific Plan Area
- Animal Designation –
- Density – 1,881DU
- Minimum Lot Size – 4,000 SF
- Building Type – L
- Height – H (35', 3 stories)
- Setback – V-designator, See Table 9 (Page 102)
- Open Space – M (600' sq. ft. private open space and 0 sq. ft. group open space)

Permitted Uses (Specific Plan Page 101, Table 8)

- Residential District
 - Does the use comply with those uses listed in Table 8 as permitted or has the appropriate permit been applied for (Site Plan, Major Use, etc.)?
- Non-Residential Districts
 - Does the use comply with those listed on pages 108 (Multiple Use District), 110 (Resort District) and/or 111 (Open Space District) as permitted or has the appropriate permit been applied for (Site Plan, Major Use, etc.)?

Setbacks (Specific Plan Page 102, Table 9)

- Do the setbacks meet the minimum setbacks established in Table 9 of the Resort Village Specific Plan Development Regulations?

Accessory Uses (see Pages 104-105 Accessory Use Table)

- Second Dwelling Units
 - Permitted subject to requirements listed on Page 106 of the Resort Village Specific Plan Development Regulations

Temporary Uses

- Permitted subject to Zoning Ordinance Section 6100 *et seq.*

Walls and Fences

- Side and Rear Yard – permitted up to 8' in height (per Otay Ranch Resort Village Noise Impact Report requirements)
- Front Yard – permitted up to 3.5' in height

Landscaping

- Required
- Comply with Resort Village Plant Palette from Water Conservation Plan (Appendix VI)

Signage (Specific Plan 112 – 115)

- On-site Signs
 - Subdivision Signs
 - Temporary Construction Signs
 - Real Estate Signs for Residential Sale
- Off-site Signs

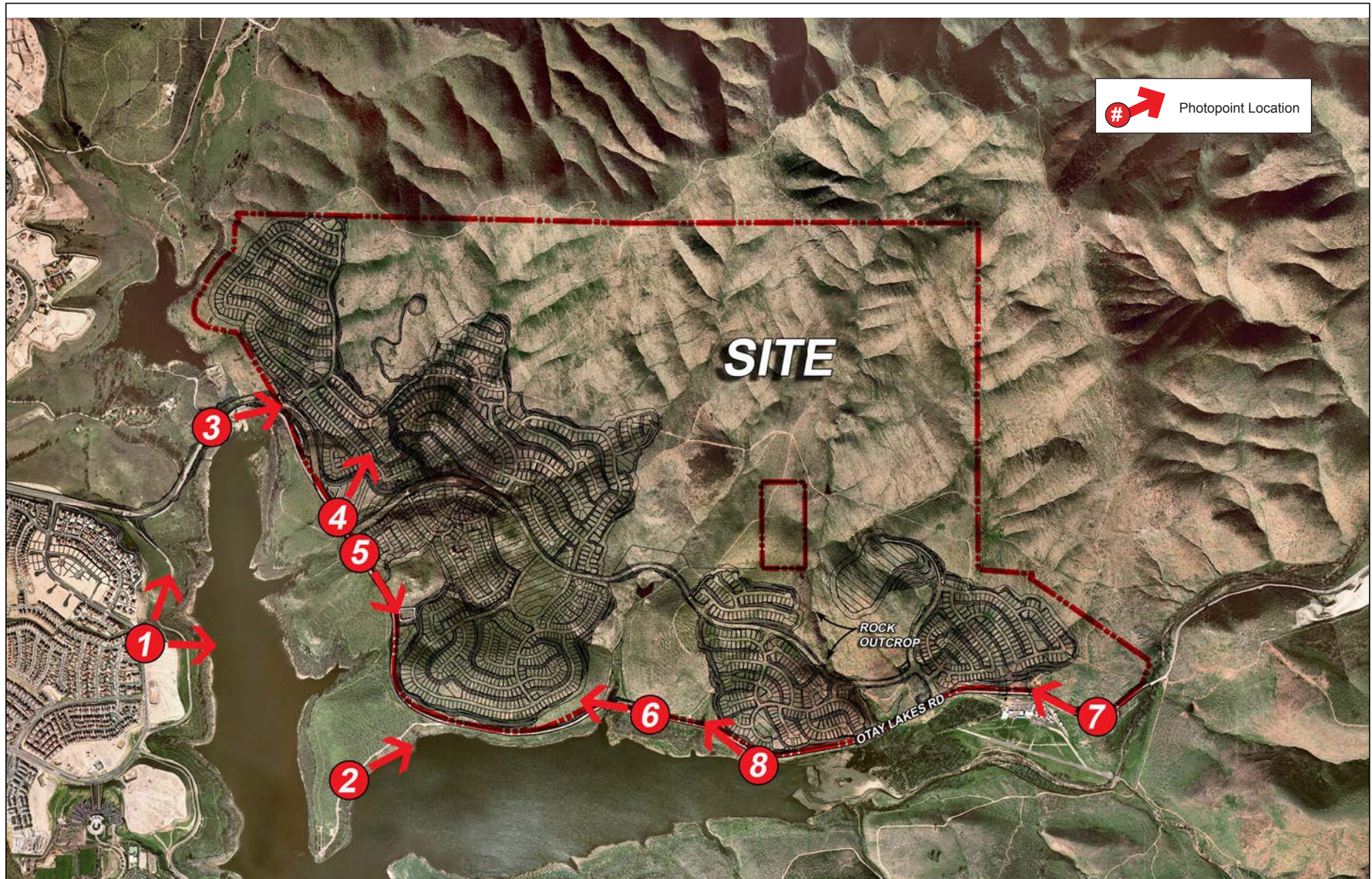
Site Plan Requirements

- Legal description, legend, scale, north arrow, vicinity map, and identification of designer/preparer.
- The boundary lines of subject property fully dimensioned together with the name and dimensions of adjoining streets.
- Existing topography and proposed grading plan showing slope; retaining walls; pad elevations; and percent of slope on streets, driveways, and other graded areas.
- Existing and proposed streets, utilities, and easements.
- Proposed location, height, and dimensions of buildings, including colors and materials on all elevations. The floor area, number of stories, number of units, and bedrooms shall be identified.
 - Colors to match Village Design Plan, page 72
 - Materials to match Village Design Plan, page 72
- Landscape concepts including the proposed method of irrigation.
- Pedestrian and vehicular ingress and egress, with driveway locations and dimensions.
- Walls and/or fences (including height).
 - Wall type to match Village Design Plan, pages 56–58
- Location, height, and size of signs proposed on the property.
- Lighting, including the location, type, and hooding devices to shield adjoining properties.
 - Lighting to match Village Design Plan, pages 59-62

Impacts to scenic vistas, scenic highways, and visual character as a result of the proposed Project are significant. These impacts, described above, will remain significant after implementation of the mitigation measures listed above. There are no mitigation measures available that would avoid this significant impact. Additionally, cumulative impacts to scenic vistas, scenic highways, and visual character as a result of the proposed Project are also significant. There are no mitigation measures available that would avoid this cumulatively significant impact.

Impacts related to aesthetics resulting from implementation of the proposed Project would remain significant and unmitigable. This conclusion is consistent with the Otay Ranch PEIR and

no substantial change in the proposed Project has been made, nor are additional mitigation measures available that would avoid the aesthetic impact from conversion to urban use of an undeveloped natural site located in a scenic area.



SOURCE: Hunsaker & Associates 2014

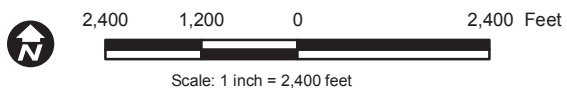


Figure 2.1-0
Photo Locations Map



SOURCE: Hunsaker & Associates 2014

Figure 2.1-1A
Point of View 1



SOURCE: Hunsaker & Associates 2014

Figure 2.1-1B
Simulation From Point of View 1



SOURCE: Hunsaker & Associates 2014

Figure 2.1-2A
Point of View 2



SOURCE: Hunsaker & Associates 2014

Figure 2.1-2B
Simulation From Point of View 2



SOURCE: Hunsaker & Associates 2014

Figure 2.1-3A
Point of View 3



SOURCE: Hunsaker & Associates 2014

Figure 2.1-3B
Simulation From Point of View 3



SOURCE: Hunsaker & Associates 2014

Figure 2.1-4A
Point of View 4



SOURCE: Hunsaker & Associates 2014

Figure 2.1-4B
Simulation From Point of View 4



SOURCE: Hunsaker & Associates 2014

Figure 2.1-5A
Point of View 5



SOURCE: Hunsaker & Associates 2014

Figure 2.1-5B
Simulation From Point of View 5



SOURCE: Hunsaker & Associates 2014

Figure 2.1-6A
Point of View 6



SOURCE: Hunsaker & Associates 2014

Figure 2.1-6B
Simulation From Point of View 6



SOURCE: Hunsaker & Associates 2014

Figure 2.1-7A
Point of View 7



SOURCE: Hunsaker & Associates 2014

Figure 2.1-7B
Simulation From Point of View 7



SOURCE: Hunsaker & Associates 2014

Figure 2.1-8A
Point of View 8



SOURCE: Hunsaker & Associates 2014

Figure 2.1-8B
Simulation From Point of View 8

2.2 Air Quality

This section summarizes potential air quality impacts resulting from implementation of the proposed Project. This air quality analysis includes a description of existing air quality conditions, an evaluation of potential air quality impacts associated with Project construction and operation, identification of feasible mitigation measures, and discussion of the potential air-quality-related cumulative impacts of the proposed Project. The analysis presented in this section is based on the Otay Ranch Resort Village Air Quality Impact Report (Air Quality Report, SRA/AECOM 2014), provided as **Appendix C-1** to this EIR.

The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to air quality for the entire Otay Ranch area, including the Project site. The PEIR concluded that implementation of the Otay Ranch Project would result in significant air quality impacts associated with the implementation of SIP regulations and emissions of nitrogen oxide (NO_x), reactive organic gas (ROG), carbon monoxide (CO), and respirable particulate matter (PM₁₀) from vehicular and stationary sources. Impacts associated with construction of the Otay Ranch Project would be reduced to a level less than significant with implementation of Project design features and the mitigation measures found in the PEIR. The Otay Ranch PEIR is incorporated by reference in this EIR.

2.2.1 Existing Conditions

2.2.1.1 *Climate and Meteorology*

Air quality is affected by the rate and location of pollutant emissions and by meteorological conditions, which influence the movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

Regional Climate

The proposed development is located in the San Diego Air Basin (SDAB), which is contiguous with San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild winters. One of the main determinants of the climatology is a semi-permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9 to 14 inches annually. The mean temperature is 62.2 degrees Fahrenheit (°F), and the mean maximum and mean minimum temperatures are 75.7°F and 48.5°F.

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as

descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the layers of air represents a temperature inversion, which is located approximately 2,000 feet AMSL during the months of May through October and approximately 3,000 feet AMSL during the winter months (November through April). Inversion layers are important determinants of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

Local Microclimate

Average high temperatures at the nearest operating climate monitoring station, which is located in Chula Vista, California, approximately 7.6 miles west of the Project site range from 74.2°F in July to 64.2°F in January. Average low temperatures average 43.8°F in January to 64.2°F in July. Annual precipitation is approximately 9.73 inches, which occurs mostly between November and April (WRCC 2014).

2.2.1.2 Regulatory Setting

Federal and State Air Quality Standards

The Federal Clean Air Act (CAA) requires the adoption of National Ambient Air Quality Standards (NAAQS) to protect the public health, safety, and welfare from the known or anticipated effects of air pollution. The NAAQS are revised when scientific evidence indicates a need. Current standards are set for sulfur dioxide (SO₂), CO, nitrogen dioxide (NO₂), ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead (Pb). These pollutants are collectively referred to as criteria pollutants. The California Air Resources Board (ARB) also established standards for these criteria pollutants (California Ambient Air Quality Standards [CAAQS]). The ARB standards are generally more restrictive than the NAAQS. The ARB also established standards for additional pollutants. Federal and state standards are shown in **Table 2.2-1**.

Regional Air Quality Standards

In San Diego County, the San Diego Air Pollution Control District (SDAPCD) is the agency responsible for protecting the public health and welfare through the administration of federal and state air quality laws and policies. SDAPCD is responsible for monitoring air pollution, preparing the San Diego County portion of the SIP, and publicize rules and regulations. The SIP includes strategies and tactics to attain and maintain acceptable air quality in the County. SDAPCD's RAQS addresses State requirements for attainment while the San Diego portion of the California SIP includes strategies to achieve attainment of federal standards. The rules and regulations include procedures and requirements to control the emission of pollutants and prevent significant adverse impacts. The SDAPCD rules and regulations that are applicable to the proposed Project are:

- Rule 10 (Permits Required)
- Rule 50 (Visible Emissions)
- Rule 51 (Nuisance)

- Rule 52 (Particulate Matter)
- Rule 54 (Dust and Fumes)
- Rule 55 (Fugitive Dust Control)
- Rule 66.1 (Miscellaneous Surface Coating Operations and Other Processes Emitting VOCs)
- Rule 67.1 (Architectural Coatings)
- Rule 67.7 (Cutback and Emulsified Asphalts)
- Rule 69.5 (Natural Gas Fired Water Heaters)

2.2.1.3 *Existing Air Quality Conditions*

Specific geographic areas are classified as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with federal and state standards. If an area is redesignated from nonattainment to attainment, the CAA requires a revision to the SIP, called a maintenance plan, to demonstrate how the air quality standard will be maintained for at least 10 years.

The SDAB currently meets the NAAQS for all criteria air pollutants except O₃, and meets the CAAQS for all criteria air pollutants except O₃, PM₁₀, and PM_{2.5}. For the 8-hour O₃ standard, the SDAB is currently designated as a marginal nonattainment area for the NAAQS. The SDAB is currently an unclassifiable/attainment area for CO. The SDAB is currently classified as a state “serious” O₃ nonattainment area and a state nonattainment area for PM₁₀ and PM_{2.5}. The SDAB currently falls under a federal “maintenance plan” for CO, following a 1998 redesignation as a CO attainment area.

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by SDAPCD. The closest SDAPCD air quality monitoring station to the Project site is the Chula Vista monitoring station, located at 80 East J Street, approximately 7.6 miles west of the Project site. The Chula Vista station is in an urbanized area and, therefore, may not completely represent the existing conditions at the Project site, especially for CO, PM₁₀, and PM_{2.5}, which are pollutants attributable to local emission sources. Levels of SO₂ are not a regional concern; data for this pollutant have not been recorded at the Chula Vista station since before 2005.

Table 2.2-2 presents the most recent available data from the Chula Vista monitoring station as summaries of the exceedances of standards and the highest pollutant levels recorded for years 2010 through 2013. As shown, ambient air concentrations of CO and NO₂ at the Chula Vista monitoring station have not exceeded the CAAQS in the past 4 years. The PM₁₀ and PM_{2.5} concentrations have not exceeded the federal standards for the past 4 years. Concentrations of O₃ registered at the monitoring station exceeded the 1-hour CAAQS once, in 2010, and the 8-hour NAAQS twice in 2010 and once in 2012

2.2.1.4 *Toxic Air Contaminants*

The public’s exposure to toxic air contaminants (TACs) is a significant public health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of

TACs and reduce exposure of these contaminants to protect the public health (AB 1807; Health and Safety Code Sections 39650–39674). Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. Sources of diesel PM emissions include off-road diesel-powered construction equipment for site grading and earthmoving, trenching, asphalt paving, and other construction activities; and from area sources such as industrial parks, warehousing districts, and shipping terminals where there are heavy volumes of diesel-powered trucks on local roads.

2.2.2 Analysis of Project Effects and Determination as to Significance

The Guidelines for the Determination of Significance presented in this section are based on the Final Thresholds of Significance and Analysis Methods document prepared specifically for the proposed Project by the County and subsequent modifications to that document. In the County, a project would be considered to have a significant adverse effect on air quality if any of the following would occur as a result of a project-related component:

- Conflict with or obstruct the implementation of the RAQS and/or applicable portions of the SIP; or
- Result in emissions that would violate any federal or state ambient air quality standards or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable increase of emissions of any criteria pollutant for which the project region is in nonattainment under applicable federal or state ambient air quality standards; or
- Expose sensitive receptors, including, but not limited to, schools, hospitals, residential care facilities, or day care centers, to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

SDAPCD has not established screening level thresholds of significance for regional pollutant emissions from development projects. To provide guidance for project analysis under CEQA, the County has established screening level thresholds (SLT) of significance as shown in **Table 2.2-3** (County of San Diego 2007c), which are based on the thresholds for requiring an Air Quality Impact Analysis for stationary source permitting. A project with emission rates below these thresholds is considered to have a less-than-significant effect on regional and local air quality throughout the SDAB.

In the event that project emissions exceed these SLTs, specific modeling is required for NO₂, SO₂, CO, and Pb to demonstrate that the project's ground-level concentrations, including appropriate background levels, do not exceed the NAAQS and CAAQS. For ozone precursors (volatile organic compounds [VOC] and NO_x), PM₁₀ and PM_{2.5}, exceedance of the applicable SLT results in a significant impact due to the nonattainment status of the SDAB for these pollutants. The pounds per day standards apply to the proposed Project since daily SLTs are most applicable for construction and operational emissions (County of San Diego 2007c).

2.2.2.1 Project Conformity with the San Diego Regional Air Quality Strategy

Guidelines for the Determination of Significance

A significant air quality impact would occur if implementation of the Project would do the following:

- Conflict with or obstructs implementation of the San Diego Regional Air Quality Strategy (RAQS) and/or applicable portions of the SIP, which would lead to increases in the frequency or severity of existing air quality violations.

Rationale for Selection of Guideline

The RAQS outlines SDAPCD's plans and control measures designed to attain state air quality standards for ozone. In addition, SDAPCD relies on the SIP, which includes SDAPCD's plans and control measures for attaining the ozone NAAQS. The RAQS relies on information from ARB and SANDAG, including projected growth in the County and all other source emissions, to project future emissions and identify the strategies necessary for the reduction of stationary source emissions through regulatory controls. ARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by general plans would be consistent with the RAQS.

Analysis

The RAQS was developed pursuant to California Clean Air Act requirements, and identifies feasible emission control measures to provide expeditious progress in San Diego County toward attaining the state O₃ standard. The pollutants addressed are VOCs and NO_x, precursors to the photochemical formation of O₃, the primary component of smog. The RAQS does not address emissions of CO or particulate matters (SDAPCD 2009); however, the 2007 SIP includes a CO maintenance plan for the region. The RAQS control measures focus on emission sources under the authority of SDAPCD, specifically, stationary emission sources and some areawide sources. The RAQS indicates that areawide sources mostly derive from residences, including from water heaters, furnaces, architectural coatings, and consumer products, but not including fireplaces. Assumptions for land use development used in the RAQS are taken from local and regional planning documents, including general plan land use designations and zoning.

Consistency with the RAQS is determined by analyzing a project with the assumptions in the RAQS. Thus, the emphasis of this criterion is to evaluate if a proposed project's land uses would be consistent with or less than the emission forecasts for the project site contained in the RAQS. Forecasts used in the RAQS are developed by SANDAG and are based on local general plans and other related documents that are used to develop population projections and traffic projections.

As discussed above, the County General Plan includes the Otay SRP, which encompasses the Project and allows for the development of up to 2,066 residences (including the Birch Family

Estate parcel), hotel uses with up to 800 rooms, shops, restaurants, and conference facilities. The proposed Project would require a GPA to refine the types of uses planned for the Project site. The proposed Project would develop 1,938 residences, a 200-room resort, and commercial uses, all of which are anticipated uses under the existing General Plan. Therefore, although the proposed Project would require a GPA, the amendments would not increase or intensify the land uses that have been previously planned for in the RAQS. Therefore, the emissions associated with implementation of the proposed Project have been accounted for in the emissions modeling for the current RAQS and will be accounted for in the future RAQS. Accordingly, implementation of the proposed Project would not exceed the assumptions used to develop the current RAQS and SIP and would not obstruct or conflict with SDAPCD's attainment plans; this impact would be *less than significant*.

2.2.2.2 Conformance to Federal and State Ambient Air Quality Standards

Guidelines for the Determination of Significance

A significant air quality impact would occur if a proposed project exceeds the screening-level thresholds established by the County of San Diego.

Rationale for Selection of Guideline

The County of San Diego Planning and Development Services Department (PDS) has established quantitative CEQA screening-level significance thresholds to evaluate the potential significance of air quality impacts. Table 2.2-3 presents the quantitative thresholds for air emissions. For CEQA purposes, these trigger levels can be used to demonstrate that a project's construction and operational emissions would not result in a significant impact to air quality.

Analysis

Construction Impacts

Construction emissions associated with development of the proposed Project were quantified using the CalEEMod Model, Version 2012.2.2. Construction emissions were modeled using Project-specific construction information when available. Where Project-specific information was not available, default assumptions contained in CalEEMod were used to estimate construction emissions (see **Appendix C-1** for details). Daily construction vehicle trip generation was estimated in the Project's Traffic Impact Study and the Project's Construction Related Traffic Analysis provided as **Appendix C-12** to this EIR.

Blasting operations would also be required for site preparation. It is anticipated that blasting operations would occur during the grading phase; however, actual blasting operations would occur independently from grading activities. The applicants provided information for blasting operations, listed below, regarding the types of explosives used, total pounds of explosives used, number of blasts per day, and total number of blasts for the entire construction period. In addition to blasting emissions, emissions associated with rock crushing were quantified in a separate calculation, as the CalEEMod Model does not account for rock crushing. Emissions

were calculated based on estimated amounts of rock generated from blasting (4,784,960 pounds), assuming tertiary crushing with water spray for control of fugitive dust. It was also assumed that the rock crusher would be powered by an on-site generator. Emissions associated with the rock crushing operation were included in the analysis.

Detailed assumptions and model input and output data for the construction emissions analysis are included in **Appendix C-1**.

As discussed above, construction activities would be subject to several control measures per the requirements of the County, SDAPCD rules, and the ARB air toxic control measures (ATCM). The following required control measures were incorporated into the modeling for the unmitigated construction emissions.

- Per the County's Grading, Clearing, and Watercourses Ordinance, Section 87.428, the applicants shall implement one or more of the following measures during all grading activities:
 - Water actively disturbed surfaces at least twice daily.
 - Water sprayers shall be installed on the rock crushing equipment to control particulate emissions during crushing operations.
 - Apply non-toxic soil stabilizers to inactive, exposed surfaces when not in use for more than 3 days. Non-toxic soil stabilizers shall also be applied to any exposed surfaces immediately (i.e., less than 24 hours) following completion of grading activities if the areas will not be in use for more than 3 days following completion of grading.
 - Remove soil track-out from paved surfaces daily, or more frequently as necessary.
 - Minimize the track-out of soil onto paved surfaces by installation of wheel washers.
- Per SDAPCD Rule 67, the applicants shall use regulated low-VOC coatings for all architectural coating activities.
- Per ARB's ACTM 13 (CCR Chapter 10 Section 2485), the applicants shall not allow idling time to exceed 5 minutes unless more time is required per engine manufacturers' specifications or for safety reasons.

The required dust control measure cited above would include the control of particulate matter emissions from the proposed rock crusher, during transport of crushed rock on conveyor belts, and during loading of haul trucks.

Unmitigated emissions from construction equipment were quantified and the results are presented in **Table 2.2-4**. As shown in **Table 2.2-4**, construction-related emissions of VOCs, NO_x, CO, PM₁₀, and PM_{2.5} would exceed the County's SLTs. The project therefore has the potential to result in air quality violations. The number of future daily exceedances of the CAAQS or NAAQS attributable to emissions from any singular project are difficult, if not

impossible, to predict at this time because of the many variables influencing air pollutant concentrations (e.g., background concentrations, meteorology and weather patterns, effectiveness of regulatory programs, and availability of predictive computer models). Therefore, construction emissions would be considered a *significant direct impact* to regional air quality (**Impact AQ-1**).

Operational Impacts

The operation of the proposed Project would result in emissions from mobile and area sources. The assumptions used to estimate the operational emissions are presented below.

Regional pollutant emissions were quantified using the CalEEMod Model, Version 2013.2.2. Daily vehicle trip generation of 27,191 ADT was estimated for the proposed Project's buildout development in the 2014 Traffic Impact Study (**Appendix C-12**).

CalEEMod defaults were used for vehicle fleet mix and trip lengths. Area sources associated with the proposed Project would include natural gas for heating, hot water, and other uses in the new buildings; periodic repainting of the new buildings; and gasoline-powered equipment used for landscape maintenance. CalEEMod estimates these emissions based on the types and amounts of land uses entered by the user. Land-use types and amounts were obtained from the Project description.

From these assumptions, area- and mobile-source emissions were estimated using CalEEMod. Daily operational emissions associated with the proposed Project buildout development were estimated using trip generation rates provided in the traffic study and land-use types and amounts provided in the Project description. **Table 2.2-5** presents the maximum daily operational emissions associated with buildout development. As shown, the proposed Project's full buildout development would exceed the County's SLT for VOC, CO, and PM₁₀. The project therefore has the potential to result in air quality violations. The number of future daily exceedances of the CAAQS or NAAQS attributable to emissions from any singular project are difficult, if not impossible, to predict at this time because of the many variables influencing air pollutant concentrations (e.g., background concentrations, meteorology and weather patterns, effectiveness of regulatory programs, and availability of predictive computer models). Operational emissions would result in a *significant direct impact* to regional air quality (**Impact AQ-2**).

2.2.2.3 Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Guidelines for the Determination of Significance

A significant air quality impact would occur if implementation of a proposed project would do the following:

- Projects that would site sensitive receptors near potential CO hotspots (i.e., exceedance of CO CAAQS or NAAQS) or would contribute vehicle traffic to local intersections where a CO hotspot could occur would be considered as having a potentially significant impact; or

- Projects that would result in exposure to TAC resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics Best Available Control Technology or a health hazard index greater than 1 would be considered as having a potentially significant impact.

Rationale for Selection of Guideline

Air quality regulators typically define sensitive receptors as schools (preschool to 12th grade), hospitals, residential care facilities, day care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, for the purposes of CEQA analysis for County projects, the definition of a sensitive receptor also includes residents. The two primary emissions of concern regarding health effects for land development projects are diesel particulate matter (diesel PM) and carbon monoxide.

SDAPCD Rule 1200 establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1200, permits to operate may not be issued when emissions of TACs result in an incremental cancer risk greater than 1 in 1 million without application of Toxics-BACT (T-BACT), or an incremental cancer risk greater than 10 in 1 million with application of T-BACT, or a health hazard index (chronic and acute) greater than one. The County uses these risk limits to assess human health risk impacts under CEQA.

Analysis

Construction Impacts

Carbon Monoxide

Sensitive air quality receptors are land uses with persons who are especially sensitive to elevated pollutant concentrations, such as older adults, the young, and the sick. Thus, sensitive land uses include residences, schools, hospitals, resident health care facilities, and day care centers. The closest sensitive receptor to the project site is a residence located approximately 518 meters (1,700 feet) northwest of the project site. However, the proposed Project includes a school site and the development of one or more day care centers is permitted by the Specific Plan Development Regulations. Both of these facilities are considered sensitive land uses.

Roadway segments and intersections are rated by a level of service (LOS) standard ranging from LOS A to F depending on the amount of typical traffic flow measured in average daily trips (ADT). Currently, intersections and roadway segments that would be affected by the proposed Project operate at LOS D or better, which is the generally accepted region-wide goal. Construction traffic is not anticipated to significantly impact the LOS rating due to the intermittent and temporary nature of construction traffic. The construction vehicle trips correspond to approximately 135 daily vehicle trips at peak hour. When compared to maximum peak hour traffic volumes (i.e., 2,000 to 5,000 peak hour trips at various intersections on Otay Lakes Road and Heritage Road/Olympic Parkway), it can be inferred that the construction-related contribution to local CO concentrations is minimal and transitory. The proposed Project would be developed in

phases, which would limit the daily volume of construction workers on local roads associated with the proposed Project. Thus, construction-related traffic is not expected to impact local intersections and cause an exceedance of the CO CAAQS. This impact would be *less than significant*.

Toxic Air Contaminants – Diesel Particulate Matter

Construction of the proposed Project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. Project construction would result in the generation of diesel PM emissions from the use of off-road diesel-powered construction equipment for site grading and earthmoving, trenching, asphalt paving, and other construction activities. Other construction-related sources of diesel PM include material delivery trucks and construction worker vehicles; however, these sources are minimal relative to construction equipment.

Generation of diesel PM from construction projects typically occur in a single area for a short period. The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed amount of emissions would result in a higher health risks for the Maximally Exposed Individual (MEI). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRA) used to determine the exposure of sensitive receptors to TAC emissions should be based on a 70-year exposure period; however, such assessments should also be limited to the period/duration of activities associated with the proposed Project. Although construction activities are anticipated to last approximately 11 years, the longest period that construction activities would occur at a distance reasonably considered to have an effect on a sensitive receptor would be approximately 1 year. It is anticipated that as construction phases are complete, construction activities and emissions would occur at increasingly further distances from existing sensitive receptors. New receptors associated with the proposed Project could then potentially be exposed for approximately one year before construction activities continue to move further away. Nevertheless, a worst-case scenario was developed assuming an 11-year exposure period. The methodology of the health risk assessment is described further below.

The following best management practices shall be implemented to reduce diesel PM emissions during construction:

- All Project construction equipment, diesel trucks, and generators shall be equipped with Toxics Best Available Control Technology (T-BACT) for emission reductions of diesel PM; and
- All Project construction equipment shall meet ARB's most recent certification for off-road heavy-duty diesel engines.

This potential exposure assumes a worst-case scenario where each construction phase after residential occupancy of an earlier phase occurs in the portion of the proposed Project site closest to on-site existing sensitive receptors. It should be noted that the construction phasing for the Project is proposed to be non-sequential. In other words, the portion of the Project site closest to existing on-site residential receptors could be constructed as the second phase, the last phase, or anytime during the 11-year construction period. Construction activities would not necessarily

occur from a west-to-east linear pattern. The purpose of this conservative assumption is to disclose the health risk impacts on existing residential receptors using the highest level of construction emission rates (i.e., the earlier the construction year, the higher the rates of TAC emissions would occur due to less turnover in older construction equipment equipped with older emissions control technology and a longer exposure period).

The OEHHA Guidance Manual for Preparation of Health Risk Assessments (HRA Guidance) allows a 9-year exposure period to represent the first 9 years of a child's life, which physiologically and behaviorally result in higher exposure levels. However, the HRA Guidance does not support an HRA for exposures less than 9 years. For cases where exposure would last less than 9 years, OEHHA suggests assuming a minimum exposure of 9 years.

As described above, construction activities would occur for approximately 11 years. Therefore, the HRA assumed that the nearest exposures of sensitive receptors to construction emissions would be those who occupy their homes during year one of the 11-year construction period, and which would be located less than 518 meters (1,700 feet) from the nearest source of construction emissions. The first potential residents, which would be considered the MEIs of the proposed Project, could be exposed to a maximum of 10 years of construction emissions. However, as mentioned above, the duration of construction activities in close enough proximity to affect sensitive receptors would not be anticipated to last more than 1 year, based on the location of the activities to the receptors. In addition, grading operations, which are the construction activities that would require the most diesel-fueled construction equipment, would be completed for a large area before the first phase of home sales begin. Therefore, the year of construction emissions that the MEI would be exposed to would likely occur from building construction, asphalt paving, and/or architectural coatings, which would emit a much lower level of diesel PM than grading activities. However, to ensure that the potential impact is not underestimated, the analysis assumed that the nearest exposures of sensitive receptors to construction emissions would occur over the full 11-year construction period and has used emission factors from the first year of grading, which had the highest equipment emission rates.

Following completion of adjacent construction, it is anticipated that future construction activities would occur at increasingly farther distances from the MEI. In addition, these distances would reach a point where construction emissions would not be reasonably expected to affect the MEI due to the dispersive properties of diesel PM (Zhu et al. 2002). Therefore, the MEI could be exposed to one year of emissions from adjacent construction activities, but a majority of the remaining 10 years would involve construction activities far enough away to minimize any TAC exposure. Taking this into consideration, an 11-year HRA using the one year of adjacent construction emissions would grossly overestimate health risks.

As described in the Otay Ranch Air Quality Impact Report, it was determined that the excess cancer risk at the nearest sensitive receptor would be 4.97 in one million, which would not exceed the County's significance threshold of 10 in a million excess cancer risk with implementation of T-BACT. In addition to the potential cancer risk, diesel PM has chronic (i.e., long-term) non-cancer health impacts. As described in the Otay Ranch Air Quality Impact Report, the chronic hazard index for the nearest sensitive receptor would be 0.020, which is less than the County's significance threshold of 1 for non-cancer health impacts; thus, the proposed Project would not exceed the hazard index threshold. Based on the conservative nature of the risk

analysis, the actual risks are anticipated to be lower and, therefore, TAC impacts would be *less than significant*.

Operational Impacts

Carbon Monoxide

Following construction of the proposed Project, Project-related traffic would contribute vehicle trips at existing and future intersections. The addition of these trips could degrade the LOS of intersections to a level where a CO “hotspot” could occur. The County’s Air Quality Guidelines state that intersections that are likely to result in a CO hotspot would operate at LOS E or worse and would include peak-hour trips exceeding 3,000 vehicle trips. All intersections would operate at LOS D or better during year 2030 conditions with the proposed Project, except for the intersection of Wueste Road and Otay Lakes Road, which would decline to LOS F without additional improvements. However, the intersection would experience only 2,533 vehicle trips during the PM peak hour, which are fewer than the 3,000 vehicles per hour screening level recommended by the County. In addition, the project includes mitigation for this intersection, which would result in LOS A.

The SDAPCD has ceased monitoring CO at most of the monitoring stations within San Diego County as it does not consider the region to have a substantial problem with CO concentrations. Furthermore, vehicle CO emissions are anticipated to decrease in future years due to continuing vehicle fleet turnover and more stringent vehicle emissions control standards coming into effect.

Therefore, the operation of the proposed Project would not expose sensitive receptors to substantially high concentrations of CO or contribute traffic volumes to intersections that would exceed the CO CAAQS; this impact would be *less than significant*.

Toxic Air Contaminants – Diesel Particulate Matter and other TACs

The proposed Project would primarily consist of residential and resort development and would not include industrial uses or other potential sources of diesel particulate matter and TACs (such as loading docks, distribution centers, and commercial grills). Therefore, the operational impact would be *less than significant*.

2.2.2.4 Odors

Guidelines for the Determination of Significance

A significant air quality impact would occur if implementation of a proposed project would do the following:

- Either generate objectionable odors or place sensitive receptors next to existing objectionable odors, which would affect a considerable number of persons or the public.

Rationale for Selection of Guideline

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code Section 41700 prohibit the emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public. Projects required to obtain permits from SDAPCD, typically industrial and some commercial projects, are evaluated by SDAPCD staff for potential odor to prevent occurrence of a public nuisance. Odor issues are subjective since, by the nature of odors themselves, their measurements are difficult to quantify. As a result, this guideline is qualitative and evaluation of impact would focus on the existing and potential surrounding uses and locations of sensitive receptors.

Analysis

Construction Impacts

During Project construction, diesel equipment operating at the site may generate some nuisance odors; however, as explained in Section 2.2.2.3 of the EIR, construction emissions in proximity to particular sensitive receptors would only occur for about 1 year. As discussed in Section 2.2.2.3, construction of the proposed Project would occur in a nonsequential phasing pattern. For example, construction activities could occur adjacent to sensitive receptors for 1 year and then not occur adjacent to sensitive receptors for a year or more. Therefore, odor emissions from construction activities affecting sensitive receptors would occur intermittently due to the phasing and location of construction activities. In addition, construction activities are inherently intermittent as heavy-duty construction equipment is used on and off depending on the activities for each day. Furthermore, the use of a large portion of construction equipment, and diesel PM and odor emission generation, occurs during the site grading phase, which is one phase of overall construction activities.

The grading phases are described above in Section 2.2.2.3. However, for the purposes of this analysis, it was conservatively assumed that construction activities would occur at a location closest to the nearest existing sensitive receptors to determine health impacts. Building construction activities could generate odor emissions associated with VOCs from architectural coatings. However, compliance with local VOC content limits would minimize any impact from architectural coating activities. In addition, architectural coatings, similar to site grading, are only one phase of total construction and, therefore, VOC odor emissions would not occur throughout construction activities. Therefore, even when construction activities are in proximity to sensitive receptors, odor emissions would occur intermittently and not with regularity like other odor-causing sources such as landfills, wastewater treatment plants, or manufacturing plants. Therefore, diesel and VOC odors associated with Project construction would be *less than significant*.

Operational Impacts

The proposed Project would not include the operation of any odor sources with the exception of three on-site sewer lift stations (see Figure 3.7-2) that could potentially generate objectionable odors. However, these lift stations would be permitted by SDAPCD and operated and maintained

by the County DPW and would, therefore, be subject to odor control during operation and maintenance consistent with the County's Zoning Ordinance. Because odor control would be incorporated into the Project design, operation and maintenance of the sewer lift stations would not subject nearby sensitive receptors to odor emissions. Therefore, odor impacts to nearby sensitive receptors from the operation of sewer lift stations would be *less than significant*.

2.2.3 Cumulative Impact Analysis

2.2.3.1 Cumulatively Considerable Net Increase of Criteria Pollutants

Guidelines for the Determination of Significance

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of PM₁₀, PM_{2.5}, NO_x, CO, SO₂, and/or VOC would also have a significant cumulatively considerable net increase.

Rationale for Selection of Guideline

In analyzing cumulative impacts from a proposed project, the analysis must specifically look at the project's contribution to the cumulative increase in pollutants for which the SDAB is listed as "non-attainment" for the NAAQS and CAAQS. Of the seven federal criteria pollutants, only ozone occurs in concentrations high enough to violate federal standards in San Diego County. Of the seven criteria pollutants for California that have a federal counterpart, ozone, PM₁₀, and PM_{2.5} occur in concentrations high enough to violate state standards in the County.

Analysis

Construction Impacts

As shown in **Table 2.2-4**, construction-related emissions of NO_x, PM₁₀ and PM_{2.5} would exceed the County's SLT for construction. The health effects attributed to criteria air pollutants emitted by any singular project cannot be accurately predicted at this time because of the numerous variables that influence public health (e.g., background air pollutant concentrations, meteorology and weather patterns, diet, preexisting conditions, genetic predispositions, and personal habits such as smoking). Nonetheless according to the County's Air Quality Guidelines, the proposed Project's construction emissions would be considered a *significant cumulatively considerable net increase in emissions (Impact AQ-3)*.

Operational Impacts

Although the proposed Project is considered consistent with the current RAQS, area-source and mobile-source emissions from buildout of the proposed Project would exceed the County's SLT for PM₁₀, CO, and VOC as shown in **Table 2.2-5**. Therefore, the proposed Project would cause a significant direct impact on air quality with respect to operational emissions. The health effects attributed to criteria air pollutants emitted by any singular project cannot be accurately predicted at this time because of the numerous variables that influence public health (e.g., background air

pollutant concentrations, meteorology and weather patterns, diet, preexisting conditions, genetic predispositions, and personal habits such as smoking). Nonetheless, because the proposed Project would cause a significant direct impact on air quality with respect to emissions of PM₁₀, CO, and VOC, it would be considered to have a *significant cumulatively considerable net increase in emissions* (Impact AQ-4).

2.2.3.2 Cumulative Impacts of Local Pollutants (CO and TACs) and Odors on Sensitive Receptors

Localized pollutant impacts (i.e., CO and TAC emissions) and odors are described in Sections 2.2.2.3 and 2.2.2.4. Because there is no local CO and TAC guidance within the RAQS, guidance from ARB and the Bay Area Air Quality Management District (BAAQMD) was used to develop buffer zone distances between CO, TAC, and odor sources and sensitive receptors.

Analysis

Carbon Monoxide

The cumulative impacts of all construction and operational activities (related to the proposed Project and other projects in the Project area) on traffic volumes and LOS in the Project area at buildout (2030) are described in Sections 2.2.2.2 and 2.2.2.3. As identified in Chapter 2.9 of the EIR, construction and operation of the Project, when considered with construction and operation of all other anticipated projects within the Project area, would cause only the intersection of Otay Lakes Road and Wueste Road to operate at LOS F (PM peak hour). Mitigation Measure M-TR-9 requires the Project to install a traffic signal or roundabout at Otay Lakes Road and Wueste Road, which would improve PM peak hour operations at this intersection to LOS A (see Table 2.9-66). With implementation of Mitigation Measure M-TR-9, the Project would not result in localized CO violations (hotspots) from vehicles idling at intersections operating at LOS E or F. Therefore, the cumulative impact of construction and operation of the proposed Project would not expose sensitive receptors to substantially high concentrations of CO or contribute traffic volumes to intersections that would exceed the CO ambient air quality standards (NAAQS or CAAQS); and this impact would be *less than significant*.

TACs

Construction Impacts

Construction of the proposed Project would result in less than significant TAC exposures from operation of heavy earth-moving equipment for grading of subsequent Project development phases following occupancy of earlier phases. Due to the size of the Project and the lack of other construction projects in the immediate vicinity of the Project, it is unlikely that combined emissions would result in an impact from TACs that would exceed 10 in a million excess cancer risk. In the case that construction-related TAC emissions from earth-moving could impact sensitive receptors within the Project site, the BAAQMD has identified that a buffer zone of at least 900 meters would be needed for development of 1,000 to 2,000 dwelling units to be considered a less than significant non-cancer and cancer risk (BAAQMD 2010). It is not feasible

to implement a buffer zone because of the need to construct the Project in phases and the design of the Project; however, due to the requirement to implement T-BACT (Tier 2 and Tier 3 equipment) and the transient nature of construction, impacts to residences within the development would not be expected to exceed the impacts predicted for the nearest off-site receptor based on the analysis in the Air Quality Technical Report (SRA 2014). Therefore, this impact would be a *less than cumulatively considerable impact*.

Operational Impacts

Operation of the proposed Project would result in less than significant TAC emissions or exposure from off-site sources. Most of the surrounding properties are intended to remain as open space or recreational use and no land uses exist or are planned that would generate high levels of TAC emissions, such as would occur from distribution centers or roadways with high proportions of diesel vehicles. Therefore, TAC exposure to on- and off-site sensitive receptors would be a *less than cumulatively considerable impact*.

Odors

Construction Impacts

As discussed in the project-level analysis, it is not anticipated that the proposed Project's construction operations would cause significant direct odor impacts. Construction emissions would cease following completion of the proposed Project and therefore would not be long-term and contribute to the local long-term odor profile. In addition, there are no large odor sources in proximity of the proposed Project that in combination with construction odor emissions would cause a cumulative odor impact. Therefore, the Project would result in a *less than cumulatively considerable significant impact* from odors during construction.

Operational Impacts

As discussed above in Section 2.2.2.4 of the EIR, the three proposed sewage lift stations would be permitted by SDAPCD and operated and maintained by the County DPW and would, therefore, be subject to odor control during operation and maintenance consistent with the County's Zoning Ordinance. No other significant odor-generated land uses such as landfills, wastewater treatment plants, agricultural or confined animal feeding operations, rendering plants, or commercial grills or smokers are known to exist or be proposed in the nearby Project area. Therefore, Project residents *would not be subject to significant operational impacts* from odor emissions.

2.2.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project's effect on air quality:

<u>Impact Number</u>	<u>Description of Project's Effect</u>	<u>Significance of Impact</u>
AQ-1	VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} emissions during Project construction	Potentially significant direct impact
AQ-2	Operational emissions of VOC, CO, and PM ₁₀	Potentially significant direct impact
AQ-3	VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} emissions during Project construction	Potentially significant, cumulative impact
AQ-4	Cumulative operational emissions of PM ₁₀ , CO, and VOC	Potentially significant, cumulative impact

2.2.5 Mitigation

The following mitigation measures would be incorporated into implementation of the proposed Project to reduce the air quality impacts to the maximum extent feasible.

2.2.5.1 Construction Emissions

- M-AQ-1** The applicants shall implement all of the following measures during construction of the proposed Project:
- Water actively disturbed surfaces at least three times daily;
 - On-site dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. The use of approved nontoxic soil stabilizers shall be incorporated according to manufacturers' specifications to all inactive construction areas;
 - Water sprayers shall be installed on the rock crushing equipment to control particulate emissions during crushing operations;
 - Approved chemical soil stabilizers shall be applied according to the manufacturers' specifications to all inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas;
 - Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom permitted) if soil material has been carried onto adjacent paved, public thoroughfares from the Project site;
 - Traffic speeds on all unpaved surfaces shall be reduced to 15 mph or less, and unnecessary vehicle traffic shall be reduced by restricting access. Appropriate training to truck and equipment drivers, on-site enforcement, and signage shall be provided;

- The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained before and for the duration of on-site operation;
- Termination of grading shall occur if winds exceed 25 mph;
- Hydroseeding of graded pads shall occur if development will not occur within 90 days;
- Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions;
- All construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. A copy of each unit's BACT documentation shall be provided at the time of mobilization of each applicable unit of equipment;
- All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications;
- All diesel-fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible;
- The use of electrical construction equipment shall be employed where feasible;
- The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible;
- The use of injection timing retard for diesel-powered equipment shall be employed where feasible; and
- Construction diesel fuel shall be composed of at least 25 percent biodiesel.

The provided mitigation measures were evaluated to determine their effectiveness to reduce construction emissions. The results are presented in **Table 2.2-6**.

2.2.5.2 Operational Emissions

M-AQ-2 Project permittees shall implement the following mitigation measures to reduce the air pollutant emissions associated with mobile sources and on-site gas combustion (CAPCOA 2010):

- Plant low-maintenance, drought-resistant plant species that reduce gas-powered landscape maintenance equipment usage and water consumption;
- Equip residential structures with electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.

- All single-family residences shall be constructed with connections for solar water heaters and solar and/or wind renewable energy systems.
- Use regulated low-VOC coatings for all architectural coating activities.
- Incorporate pedestrian trails, paths and sidewalks, and bicycle trails to encourage reduction in vehicle usage and trips.

2.2.6 Conclusion

2.2.6.1 Conformance to Federal and State Ambient Air Quality Standards

Construction Emissions

Implementation of M-AQ-1 would reduce site grading fugitive PM₁₀ and PM_{2.5} dust emissions during construction activities. However, as shown in **Table 2.2-6**, construction-related emissions of VOCs NO_x, CO, PM₁₀, and PM_{2.5} would continue to exceed the County's SLT with implementation of mitigation (Impact AQ-1). Therefore, construction emissions would remain a ***significant and unavoidable direct impact*** to regional air quality.

Operational Emissions

Implementation of the mitigation measures and design considerations in mitigation measure M-AQ-2 would be expected to reduce air pollutant emissions associated with the proposed Project. However, at the time of this writing, there are no established methods to accurately quantify the emission reductions achieved by these measures. Furthermore, the emission reductions required to reduce operational emissions to below the County's SLT would require substantial reductions (e.g., 87 percent for VOC, 76 percent for CO, and 83 percent for PM₁₀) that would not be expected to be achievable even with full implementation of the measures described above. Therefore, the proposed Project's operational emissions (Impact AQ-2) would continue to exceed the County's SLT after implementation of mitigation and would remain a ***significant and unavoidable direct impact*** to regional air quality.

2.2.6.2 Cumulatively Considerable Net Increase of Nonattainment Pollutants

Construction Emissions

Net increases of emissions (Impact AQ-3) during construction of the proposed Project would be considered cumulatively considerable (Impact AQ-3). Application of M-AQ-1 would reduce construction-related dust and exhaust. Because construction dust and exhaust would not be fully mitigated after application of the construction-related mitigation measures (i.e., M-AQ-1), Impact AQ-3 would remain ***significant and unavoidable***.

Operational Emissions

Implementation of the mitigation measures and design considerations in mitigation measure M-AQ-2 would be expected to reduce air pollutant emissions associated with the proposed

Project and therefore reduce cumulatively considerable impacts. Because the measures proposed in M-AQ-2 are not quantifiable, the proposed Project's cumulative operational emissions (Impact AQ-4) would be cumulatively considerable, and would remain *a significant and unavoidable cumulative impact* to regional air quality.

Table 2.2-1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	National ^a		California ^b
		Primary ^{c, d}	Secondary ^{c, e}	Concentration ^c
Ozone	1 hour	—	Same as primary standard	0.09 ppm (180 µg/m ³)
	8 hour	0.075 ppm (147 µg/m ³)		0.070 ppm (137 µg/m ³)
Respirable particulate matter	24 hour	150 µg/m ³	Same as primary standard	50 µg/m ³
	Annual arithmetic mean	—		20 µg/m ³
Fine particulate matter	24 hour	35 µg/m ³	Same as primary standard	No separate state standard
	Annual arithmetic mean	12.0 µg/m ³	15 µg/m ³	12 µg/m ³
Carbon monoxide	8 hour	9 ppm (10 mg/m ³)	None	9.0 ppm (10 mg/m ³)
	1 hour	35 ppm (40 mg/m ³)		20 ppm (23 mg/m ³)
	8 hour (Lake Tahoe)	—	—	6 ppm (7 mg/m ³)
Nitrogen dioxide	Annual arithmetic mean	0.053 ppm (100 µg/m ³)	Same as primary standard	0.030 ppm (57 µg/m ³)
	1 hour	0.100 ppm	None	0.18 ppm (339 µg/m ³)
Sulfur dioxide	Annual arithmetic mean	0.030 ppm (80 µg/m ³) ^h	—	—
	24 hour	0.14 ppm (365 µg/m ³) ^h	—	0.04 ppm (105 µg/m ³)
	3 hour	—	0.5 ppm (1,300 µg/m ³)	—
	1 hour	75 ppb (196 µg/m ³)	—	0.25 ppm (655 µg/m ³)
Lead ^f	30-day average	—	—	1.5 µg/m ³
	Calendar quarter	1.5 µg/m ³	Same as primary standard	—
	Rolling 3-month average ^g	0.15 µg/m ³		—
Visibility-reducing particles	8 hour	No national standards		Extinction coefficient of 0.23 per kilometer —visibility of 10 miles or more (0.07 to 30 miles for Lake Tahoe) because of particles when the relative humidity is less than 70%. Method: Beta attenuation and transmittance through filter tape.
Sulfates	24 hour			25 µg/m ³
Hydrogen sulfide	1 hour			0.03 ppm (42 µg/m ³)
Vinyl chloride ^f	24 hour			0.01 ppm (26 µg/m ³)

Notes: mg/m³ = milligrams per cubic meter; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; µg/m³ = micrograms per cubic meter.

Notes: mg/m³ = milligrams per cubic meter; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; µg/m³ = micrograms per cubic meter.

^a National standards (other than those for ozone and particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. Environmental Protection Agency for further clarification and current federal policies.

^b California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility-reducing particles—are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^f The California Air Resources Board has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^g National lead standard, rolling 3-month average: final rule signed October 15, 2008.

^h For certain areas 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Source: ARB 2014a

Table 2.2-2
Ambient Air Quality Summary-Chula Vista Monitoring Station

Pollutant Standards	2010	2011	2012	2013
Carbon Monoxide (CO)				
National maximum 8-hour concentration (ppm)	1.56	*	*	*
State maximum 8-hour concentration (ppm)	1.56	*	*	*
State maximum 1-hour concentration (ppm)	2.1	*		*
<u>Number of Days Standard Exceeded</u>				
NAAQS 8-hour (>9.0 ppm)	0	*	*	*
CAAQS 8-hour (>9.0 ppm)	0	*	*	*
CAAQS 1-hour (>20.0 ppm)	0	*	*	*
Nitrogen Dioxide (NO₂)				
State maximum 1-hour concentration (ppm)	0.050	0.057	0.057	0.057
Annual Average (ppm)	0.012	0.012	0.011	0.011
<u>Number of Days Standard Exceeded</u>				
CAAQS 1-hour	0	0	0	0
Ozone (O₃)				
State maximum 1-hour concentration (ppm)	0.107	0.083	0.085	0.073
National maximum 8-hour concentration (ppm)	0.083	0.057	0.078	0.062
<u>Number of Days Standard Exceeded</u>				
CAAQS 1-hour (>0.09 ppm)	1	0	0	0
NAAQS 8-hour (>0.075 ppm)	2	0	1	0
Particulate Matter (PM₁₀)^a				
National maximum 24-hour concentration (µg/m ³)	43.0	45.0	37.0	38.0
State maximum 24-hour concentration (µg/m ³)	45.0	46.0	38.0	40.0
State annual average concentration (µg/m ³)	24.6	21.9	21.5	23.7
<u>Estimated Number of Days Standard Exceeded</u>				
NAAQS 24-hour (>150 µg/m ³)	0	0	0	0
CAAQS 24-hour (>50 µg/m ³)	0	0	0	0
Particulate Matter (PM_{2.5})^a				
National maximum 24-hour concentration (µg/m ³)	22.7	27.9	34.3	21.9
State maximum 24-hour concentration (µg/m ³)	22.7	27.9	34.3	21.9
National annual average concentration (µg/m ³)	*	*	10.2	9.4
State annual average concentration (µg/m ³)	*	*	*	9.5
<u>Estimated Number of Days Standard Exceeded</u>				
NAAQS 24-hour (>65 µg/m ³)	0.0	0.0	0.0	0.0

Notes:

* Data unavailable or insufficient data to determine the value.

^a State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on *local* conditions; national statistics are based on *standard* conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

^b This data point was designated as “exceptional event” data due to wildfires.

ppm = parts per million; µg/m³ = micrograms per cubic meter

Source: ARB 2014b

Table 2.2-3
Regional Pollutant Emissions Screening Level
Thresholds of Significance

Units	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	Pb
Pounds per hour	–	25	100	25	–	–	–
Pounds per day	75 ^a	250	550	250	100	55 ^b	3.2
Tons per year	13.7 ^c	40	100	40	15	10 ^b	0.6

Notes:

^a Threshold for volatile organic compounds (VOC) based on the threshold of significance for VOC from South Coast Air Quality Management District (SCAQMD) for the Coachella Valley.

^b USEPA “Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards” published September 8, 2005. Also used by the SCAQMD.

^c 13.7 Tons Per Year threshold based on 75 pounds per day multiplied by 365 days per year and divided by 2,000 pounds per ton.

VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide;

SO_x = oxides of sulfur; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter;

Pb = lead

Source: County of San Diego 2007c

Table 2.2-4
Maximum Daily Construction Emissions, without dust controls¹

Construction Year	VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO₂ (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)
Blasting Emissions ²	-	660.15	3184.78	-	4715.61	435.44
Rock Crushing Emissions ²	1.45	19.16	5.78	0.03	2.22	0.66
Year 1	51.25	344.97	341.50	0.33	33.25	23.32
Year 2	65.38	335.42	382.71	0.34	31.83	22.29
Year 3	66.19	320.60	412.06	0.36	32.71	21.49
Year 4	62.77	277.82	387.54	0.36	30.18	19.23
Year 5	61.68	260.89	378.73	0.37	29.14	18.18
Year 6	94.70	250.31	439.89	0.44	32.41	18.19
Year 7	61.51	210.34	353.24	0.36	26.84	15.91
Year 8	67.58	192.43	389.35	0.38	27.03	15.09
Year 9	55.88	172.12	329.11	0.36	24.39	14.04
Year 10	27.40	141.37	221.91	0.30	20.59	12.63
Year 11	33.13	67.87	111.44	0.21	6.89	3.89
Maximum Daily Emissions	96.15	1,024.28	3,630.45	0.47	4,742.94	455.27
Screening Level Thresholds (SLT)	75	250	550	250	100	55
<i>Significant Impact?</i>	Yes	Yes	Yes	No	Yes	Yes

Notes:

¹ Maximum daily emissions calculated using the CalEEMod Model. CalEEMod identifies the maximum for each pollutant. Maximum ROG emissions occur during overlap of architectural coatings application, building construction, and paving for all construction years. Maximum daily emissions of other pollutants occur during overlap of grading, trenching, and building construction.

² Blasting and rock crushing would occur for approximately 49 days during construction. It is anticipated that blasting and rock crushing could occur over the first 10 years of construction. Maximum daily emissions for blasting and rock crushing have been included in the table. Construction emissions without blasting are shown for informational purposes because these are the levels of emissions that would occur on a majority of the days.

All emissions have been modeled assuming compliance with the County's Grading, Clearing and Watercourses Ordinance and SDAPCD Rule 67.

VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: SRA 2014

**Table 2.2-5
Area Source/Motor Vehicle Emissions, Unmitigated**

Phase/Emissions Source	VOC (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO ₂ (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
Maximum Daily Emissions, Summer						
Area Sources	157.42	1.84	160.03	0.008	3.49	3.46
Energy Use	2.10	18.24	9.80	0.11	1.45	1.45
Motor Vehicles	64.93	110.04	604.46	2.16	147.39	40.86
Total	224.45	130.12	774.28	2.29	152.32	45.77
Screening Level Thresholds	75	250	550	250	100	55
Significant Impact?	Yes	No	Yes	No	Yes	No
Maximum Daily Emissions, Winter						
Area Sources	157.42	1.84	160.03	0.008	3.49	3.46
Energy Use	2.10	18.24	9.80	0.11	1.45	1.45
Motor Vehicles	68.65	117.09	637.92	2.06	147.39	40.86
Total	228.17	137.17	807.75	2.18	152.33	45.77
Screening Level Thresholds	75	250	550	250	100	55
Significant Impact?	Yes	No	Yes	No	Yes	No

Notes:

Emissions shown represent the maximum daily area source, energy use, and motor vehicles emissions that would occur from summertime and wintertime operations calculated by CalEEMod. Totals are not exact due to rounding.

VOC =volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: SRA 2014

Table 2.2-6
Maximum Daily Construction Emissions, with Dust Controls¹

Construction Year	VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO₂ (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)
Blasting Emissions ²	-	660.15	3184.78	-	4715.61	435.44
Rock Crushing Emissions ²	1.45	19.16	5.78	0.03	2.22	0.66
Year 1	51.25	344.97	341.50	0.33	25.11	19.17
Year 2	65.38	335.42	382.71	0.34	24.09	18.21
Year 3	66.19	320.60	412.06	0.36	23.86	17.24
Year 4	62.77	277.82	387.54	0.36	21.33	14.98
Year 5	61.68	260.89	378.73	0.37	20.28	13.93
Year 6	94.70	250.31	439.89	0.44	23.12	13.88
Year 7	61.51	210.34	353.24	0.36	17.96	11.65
Year 8	67.58	192.43	389.35	0.38	17.76	10.78
Year 9	55.88	172.12	329.11	0.36	15.56	9.79
Year 10	27.40	141.37	221.91	0.30	12.56	8.49
Year 11	33.13	67.87	111.44	0.21	6.89	3.89
Maximum Daily Emissions	96.15	1,024.28	3,630.45	0.47	4,742.94	455.27
Screening Level Thresholds (SLT)	75	250	550	250	100	55
<i>Significant Impact?</i>	Yes	Yes	Yes	No	Yes	Yes

Notes:

¹ Maximum daily emissions calculated using the CalEEMod Model. CalEEMod identifies the maximum for each pollutant. Maximum ROG emissions occur during overlap of architectural coatings application, building construction, and paving for all construction years. Maximum daily emissions of other pollutants occur during overlap of grading, trenching, and building construction.

² Blasting and rock crushing would occur for approximately 49 days during the first year of construction. Year 1 construction emissions without blasting are shown for informational purposes because these are the levels of emissions that would occur on a majority of the days.

All emissions have been modeled assuming compliance with the County's Grading, Clearing and Watercourses Ordinance and SDAPCD Rule 67.

VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: SRA 2014

**Table 2.2-7
Area Source/Motor Vehicle Emissions, Mitigated**

Phase/Emissions Source	VOC (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO ₂ (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
Maximum Daily Emissions, Summer						
Area Sources	128.11	1.83	158.88	0.008	3.48	3.45
Energy Use	1.85	16.06	8.62	0.10	1.28	1.28
Motor Vehicles	62.64	100.54	555.86	1.93	131.35	36.43
Total	192.60	118.43	723.36	2.04	136.11	41.16
Screening Level Thresholds	75	250	550	250	100	55
Significant Impact?	Yes	No	Yes	No	Yes	No
Maximum Daily Emissions, Winter						
Area Sources	128.11	1.83	158.88	0.008	3.48	3.45
Energy Use	1.85	16.06	8.62	0.10	1.28	1.28
Motor Vehicles	66.42	106.91	593.42	1.84	131.36	36.44
Total	196.37	124.80	760.92	1.95	136.11	41.16
Screening Level Thresholds	75	250	550	250	100	55
Significant Impact?	Yes	No	Yes	No	Yes	No

Notes:

Emissions shown represent the maximum daily area source, energy use, and motor vehicles emissions that would occur from summertime and wintertime operations calculated by CalEEMod.

VOC =volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: SRA 2014

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2.3 **Biological Resources**

The analysis of biological resources contained in this section is based on the Otay Ranch Resort Village Biological Resources Technical Report (Dudek 2014) located in **Appendix C-3** of this EIR. This section:

- describes, at a project-level, the existing biological resources on and adjacent to the Project site and the governing plans and policies (e.g., Otay Ranch RMP and County of San Diego MSCP) relating to biological resources;
- identifies guidelines for determining the significance of biological impacts;
- evaluates potential Project effects (including cumulative effects) on biological resources; and
- identifies feasible mitigation measures.

Existing conditions, potential effects, and mitigation measures related to biological resources associated with the Project were previously analyzed at a programmatic level in the Otay Ranch PEIR, which covered the entire Otay Ranch area consisting of approximately 23,000 acres in the County of San Diego, the City of Chula Vista, and the City of San Diego. The Otay Ranch PEIR identified significant unavoidable impacts to biological resources in Otay Ranch due to loss of raptor foraging habitat. Subsequent to the certification of the PEIR and adoption of the Otay SRP, the County of San Diego adopted the MSCP Subarea Plan, which is described in more detail in this section. The MSCP planning program provided for mitigation of impacts on sensitive species and their habitats on a regional basis. Such mitigation was not available at the time the PEIR was certified. Because of the level of conservation provided for habitats that support raptor foraging on a regional basis, new feasible mitigation for the impacts identified in the PEIR to raptor foraging habitat is now available to mitigate project-level impacts. The Otay Ranch PEIR (Ogden 1992a) is incorporated by reference and available for public inspection and review at the County of San Diego, Planning and Development Services, 5510 Overland Avenue, Suite B, San Diego, California.

2.3.1 **Existing Conditions**

Generally, the Project site consists of a broad mesa sloping to the south, broken by several steep canyons draining from north to south toward Lower Otay Lake. The Project site is traversed by several dirt roads, and has been subject to historic cattle grazing in certain portions. The current biological resources database for the Project site and adjacent off-site areas was accumulated through review of studies performed between 1989 and 1991 (prior to the adoption of the Otay SRP), and more recent Project-specific surveys conducted between 1998 and 2014. Detailed information, including survey methodologies, is in the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR. The following subsections summarize existing biological conditions and applicable resource planning programs.

2.3.1.1 *Vegetation Communities*

Vegetation communities were mapped within the Project site and a 100-foot perimeter surrounding the Project site. In addition, vegetation communities were mapped off-site along Otay Lakes Road where improvements are proposed. Consistent with the requirements of the County of San Diego (County of San Diego 2010a), vegetation communities were classified in accordance with Holland (1986) and Oberbauer (1996).

The 1,869-acre Project site is dominated by coastal sage scrub, with substantial amounts of grassland and chaparral. In total, 16 distinct vegetation communities or land covers were mapped within the Project site: coastal sage scrub, disturbed coastal sage scrub, chamise chaparral, disturbed chamise chaparral, southern mixed chaparral, scrub oak chaparral, disturbed valley needlegrass grassland, nonnative grassland, cismontane alkali marsh, disturbed cismontane alkali marsh (equivalent to Holland Code 11200 [disturbed wetland]), mulefat scrub, open water, southern willow scrub, stock pond, disturbed habitat, and developed land (**Table 2.3-1**).

Areas associated with the off-site proposed improvements to Otay Lakes Road, a total of 40.06 acres, consist of the following 12 communities: coastal sage scrub, disturbed coastal sage scrub, disturbed valley needlegrass grassland, nonnative grassland, freshwater marsh, disturbed mulefat scrub, open water, southern willow scrub, eucalyptus woodland, ornamental, disturbed habitat, and developed land. Developed land (i.e., existing Otay Lakes Road) is the predominant land cover type within the off-site area.

As depicted in **Table 2.3-1**, coastal sage scrub, chamise chaparral, cismontane alkali marsh, and mulefat scrub were subdivided as non-disturbed versus disturbed depending on the percent native shrub cover and dominance of nonnative species. The distribution of mapped vegetation communities is depicted in **Figure 2.3-1**. **Appendix C-3** provides details regarding distribution and species composition of mapped vegetation communities.

2.3.1.2 *Special-Status Species*

For the purposes on this EIR, special-status species include the following:

- Species listed (or proposed for listing) under the FESA or CESA
- Species protected under other state or federal regulations (e.g., California Fish and Game Code Sections 3503 and 3512, MBTA)
- Wildlife species identified by CDFW as Species of Special Concern (SSC)
- Plant species ranked by the California Native Plant Society (CNPS)
- Species considered sensitive by the County of San Diego (i.e., plants included on County Lists A through D and wildlife included in County Groups 1 or 2)
- Species covered by the Final Multiple Species Conservation Program MSCP Plan (see Table 3-5 of the MSCP Plan [MSCP 1998])

Focused surveys for special-status plant and wildlife species were conducted per appropriate protocols from 1999 to 2009, as described in **Appendix C-3** to this EIR.

Special-Status Plant Species

Sixteen special-status plant species were recorded on the Project site during surveys conducted from 1999 through 2009, as summarized in **Table 2.3-2** and depicted in **Figure 2.3-2**. Two additional species (little mouselink [Myosurus minimus ssp. apus] and California adder's-tongue [Ophioglossum californicum]) were detected during previous studies but were not found during more recent survey efforts. These species may no longer be present.

The site supports one federally and state-listed plant species: San Diego thornmint (*Acanthomintha ilicifolia*). Other special-status plant species detected were California adolphia (*Adolphia californica*), small-flowered morning-glory (*Convolvulus simulans*), western dichondra (*Dichondra occidentalis*), variegated dudleya (*Dudleya variegata*), San Diego barrel cactus (*Ferocactus viridescens*), Palmer's grapplinghook (*Harpagonella palmeri*), San Diego marsh-elder (*Iva hayesiana*), southwestern spiny-rush (*Juncus acutus* spp. *leopoldii*), small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*), San Diego goldenstar (*Muilla clevelandii*), golden-flowered pentachaeta (*Pentachaeta aurea*), Coulter's matilija poppy (*Romneya coulteri*), Munz's sage (*Salvia munzii*), and San Diego County viguiera (*Viguiera laciniata*).

Nuttall's scrub oak (*Quercus dumosa*) was documented on-site. More recent information challenges the identification of this species on-site due to the inland location of the site and general coastal distribution of Nuttall's scrub oak. In fact, most records of Nuttall's scrub oak are restricted to areas of low elevation within sight of the ocean (Fryer 2012). Generally, occurrences of scrub oak in the Project's region would more likely be the common, inland species (i.e., California scrub oak [*Quercus berberidifolia*]), which was also documented on-site. However, without more concrete documentation, the current conclusion that Nuttall's scrub oak occurs on-site is assumed to be correct.

Appendix F of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR includes a list of potentially occurring special-status plant species that were not recorded during focused plant surveys. Twenty-one additional special-status plant species were determined to have moderate potential to occur on the Project site, although many of these species are conspicuous species that would likely be detected during the extensive focused plant surveys performed for the Project.

Special-Status Wildlife Species

Forty-one special-status wildlife species were recorded on the Project site during focused surveys conducted from 1999 through 2009 or have moderate to high potential to occur based on range and habitat requirements, as summarized in **Table 2.3-3** and **Figure 2.3-3**. The site supports three federally listed animal species: California gnatcatcher (*Poliopitila californica*), Quino checkerspot butterfly (*Euphydryas editha quino*), and San Diego fairy shrimp (*Branchinecta*

sandiegensis). Two CDFW fully protected species use the Project site for foraging purposes only: golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*).

A number of other sensitive bird and reptile species occur on the site or have a moderate to high likelihood to occur on-site due to their distribution and the presence of suitable habitat. These include the following CDFW SSC: western spadefoot toad (*Spea hammondi*), southwestern pond turtle (*Actinemys marmorata pallida*), orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), San Diego (coast) horned lizard (*Phrynosoma coronatum blainvillii* population), coast patch-nosed snake (*Salvadora hexalepis virgulata*), two-striped garter snake (*Thamnophis hammondi*), northern red diamond rattlesnake (*Crotalus ruber ruber*), grasshopper sparrow (*Ammodramus savannarum*), northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), western burrowing owl (*Athene cunicularia*), summer tanager (*Piranga rubra*), Dulzura California pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Townsend's western big-eared bat (*Coryorhinus townsendii townsendii*), spotted bat (*Euderma maculatum*), western red bat (*Lasiurus blossevillii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

CDFW Watch List species found on-site are Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), ferruginous hawk (*Buteo regalis*), California horned lark (*Eremophila alpestris actia*), and prairie falcon (*Falco mexicanus*).

Species considered sensitive by the County of San Diego only (i.e., species identified by the County of San Diego as Group 1 or Group 2 and not identified with special status by USFWS or CDFW) are coastal rosy boa (*Charina trivirgata roseofusca*), coastal western whiptail (*Aspidoscelis tigris multiscutatus*), San Diego banded gecko (*Coleonyx variegatus abbotti*), San Diego ringneck snake (*Diadophis punctatus similis*), red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), western bluebird (*Sialia Mexicana*), barn owl (*Tyto alba*), and mountain lion (*Puma concolor*).

The Project site is occupied by a wide variety of avian species. Nearly all of these species are afforded protection by the MBTA. The MBTA generally protects all native species regardless of whether they are considered to be special status. A total of 81 species of birds (including special-status species noted in **Table 2.3-3**) were observed on-site or immediately off-site during recent Dudek surveys (see Appendix B of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR). The following species were commonly observed on the Project site: California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), greater roadrunner (*Geococcyx californianus*), Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), California towhee (*Pipilo crissalis*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Carduelis psaltria*). Other bird species less commonly seen included red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), white-throated swift (*Aeronautes saxatalis*), Bewick's wren (*Thryomanes bewickii*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and western meadowlark (*Sturnella neglecta*). A variety of

raptor species likely use the site for foraging. Suitable nesting locations for tree-nesting raptors were minimal on-site. Cliff- and ground-nesting raptors may nest within the Project site.

2.3.1.3 *Jurisdictional Wetlands and Waterways*

Wetlands or other “waters” under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) or CDFW were mapped for the 1,869-acre Project site and the 40.06-acre off-site road improvement area. There are several vegetated and unvegetated waters under the jurisdiction of ACOE, CDFW, the Regional Water Quality Control Board (RWQCB), and the County of San Diego. Only wetlands and waters on San Diego County lands are purview to County of San Diego jurisdiction. Jurisdictional waters, including wetlands, are depicted in **Figure 2.3-4**. **Table 2.3-4** provides a summary of the wetland habitat acreages on the Project site by jurisdiction, and the acreage of unvegetated waters.

In general, stream channels on the Project site drain from north to south. Drainages are dammed artificially in three areas to create stock ponds. Most of the drainages are relatively steep and narrow and do not hold water most of the year. A few areas exhibit less rapid flow and have, thus, developed more extensive hydrophytic vegetation and hydric soils. These areas occur intermittently along the stream channels and are typically represented by cismontane alkali marsh vegetation. Acreages of this community are presented in **Table 2.3-1**.

The drainages on the Project site generally flow into 12- to 36-inch-diameter culverts that flow under Otay Lakes Road and eventually drain into Lower Otay Reservoir. Jurisdictional waters, including wetlands, within the off-site mapping areas are generally extensions of the on-site stream channels.

Vernal pool complexes were mapped on two mesas in the southern part of the Project site (K6 and K8 mesas) (**Figure 2.3-5**). A third, the K9 mesa, is located on the relatively flat area approximately 2,000 feet east of the K8 mesa and was investigated for potential inundation repeatedly over a number of years during survey visits conducted for fairy shrimp in other locations on-site. No basins, signs of ponding, or indicator species were observed in the K9 mesa during the 1999, 2000, and 2008 surveys of the other vernal pools on the site.

A total of 34 potential vernal pools were studied during current surveys. In general, vernal pools on the Project site contain vernal pool indicator plant species, including wooly marbles (*Psilocarphus brevissimus*), graceful hairgrass (*Deschampsia danthonioides*), soft chess (*Bromus hordeaceus*), narrow-leaved filago (*Filago gallica*), broad-leaved filaree (*Erodium botrys*), fascicled tarplant (*Deinandra [Hemizonia] fasciculata*), and doveweed (*Eremocarpus setigerus*). In addition to some of the species listed above, pools that held water during most of the survey period were found to contain America pillwort (*Pilularia americana*), long-stalk water-starwort (*Callitriche longipedunculata*), pale spike-sedge (*Elocharis macrostachya*), wild heliotrope (*Heliotropium curvassavicum*), and aquatic crassula (*Crassula aquatica*). The surrounding vegetation on the western mesa (K6) consists of valley needlegrass grassland, and sparse coastal sage scrub is found on the eastern mesa (K8).

None of the vernal pools in the Project site have been confirmed to be connected to jurisdictional waters of the U.S. Based on observations of the site, it appears that water is collected on the mesa following rain events and eventually either percolates into the ground or evaporates. Because the vernal pools on the mesa may not be connected to any other waters of the U.S., they may not be under the jurisdiction of the ACOE, however, that decision has not yet been made by the ACOE. The pools are not under the jurisdiction of CDFW because the California Fish and Game Code only regulates stream channels (i.e., areas with a defined bed and bank) and adjacent wetlands. An RWQCB jurisdictional determination with regard to the vernal pools has not yet been made due to unclear guidance from RWQCB regarding its jurisdictional reach, as well as uncertainty in the law regarding the extent to which the Porter-Cologne Act extends to vernal pools.

Based on inundation records, fairy shrimp surveys, and floral inventory, the following potential vernal pools meet the previously applied ACOE jurisdictional criteria:

- K6 – Vernal Pools 1, 3, 5, 6, 7, 8, 9, 10, 12, and 13 (0.112 acre – total basin area)
- K8 – Vernal Pools 1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, A1, and A4 (0.263 acre – total basin area)

2.3.1.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability by (1) ensuring the continual exchange of genes between populations, which helps maintain genetic diversity; (2) providing access to adjacent habitat areas, representing additional territory for foraging and mating; (3) allowing for a greater carrying capacity; and (4) providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires).

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage represents a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat “islands” that function as “stepping stones” for dispersal.

Ogden (1992b) conducted a comprehensive study of wildlife corridors within Otay Ranch. The study identified one regional corridor on the Project site: Jamul Mountains to Dulzura Creek, Regional Corridor R2 (**Figure 2.3-6**). The corridor currently allows animal movement between Dulzura Creek and the Jamul Mountains through the topographically steep drainage in the eastern portion of the Project site. A portion of the R2 linkage for animals following Dulzura Creek and connecting to the Jamul Mountains traverses the eastern portion of the Project site, continues off-site across Otay Lakes Road to the south, and then continues east along Dulzura Creek. The discussion of this linkage focuses on movement within Dulzura Creek and the resources located within Dulzura Creek, which are off-site and east of the Project site. This

regional corridor is connected to other off-site regional corridors that are located along the southern side of Lower Otay Lake (R5), and other corridors much farther away from the Project site that connect the east-facing slope of the Jamul Mountains with Dulzura Creek and continue north toward the San Miguel Mountains and south into the San Ysidro Mountains. Currently there are no culverts or other means for terrestrial wildlife species to safely move across Otay Lakes Road between the Project site and other habitat areas south of the site.

There are also local corridors for mammal movement that were designated in the Ogden study, including a corridor along the ridgeline north of the Project site (L3) and one that connects Dulzura Creek with the San Ysidro Mountains (L8). Additional local corridors farther away from the Project site are located in the streambed in the southern portion of Proctor Valley and within a drainage of the San Ysidro parcel. Habitat connectivity between the Project site and open space immediately surrounding Otay Lakes and south to Otay River and Otay Mountain is not identified in the Ogden study (1992b).

Based on the discussion provided by Ogden (1992), the general area may function to convey large and small mammals. Evidence of this is observation of bobcat, mule deer, and mountain lion sign. These species may use the path of least resistance, which, in this document, is assumed to be the drainage that is located within the eastern portion of the Project site. However, wildlife will also likely use ridgelines and the numerous dirt roads that are on-site, depending on time of day. It is unlikely that this R2 linkage functions specifically for winged species, such as coastal California gnatcatcher or Quino checkerspot butterfly, since these species would be able to move freely over the entire site. The entire area currently functions as a block of habitat and is not constrained to only function as a wildlife corridor between two larger blocks; therefore, the designation of a specific linkage is premature.

2.3.1.5 Regional Conservation Planning Context

The regional resource planning of the Project site and surrounding area has mainly been conducted through the Otay SRP and MSCP processes. These plans are important to the evaluation of impacts to biological resources because the loss of resources is anticipated by these plans and will be compensated through the assemblage of a preserve that will conserve Covered Species. The Otay SRP and the Otay Ranch RMP establish the mechanism for mitigation of overall impacts related to Otay Ranch, and provide for conservation and management of the entire Otay Ranch Preserve. Planning for the Otay Ranch RMP has been incorporated into the MSCP. The Otay Ranch Preserve represents an important part of the MSCP Subarea Plan South County Segment.

Otay SRP and Otay Ranch RMP

On a region-wide basis, the Otay SRP and Otay Ranch RMP are implemented through the RMP requirements of preserve conveyance and preserve management funding. These requirements have resulted in offers for conveyance of preserve land within Otay Ranch and the establishment of the Preserve Owner Manager (POM) to monitor, manage, and maintain these preserve areas. The conveyance and management of the preserve is being actively

coordinated between the City of Chula Vista and the County of San Diego (as the POM) in consultation with the resource agencies.

Based on preservation of the most sensitive resources known at the time and on development feasibility, the Village 13 site plan, as adopted in the Otay SRP (Otay Ranch 1993), preserved the northern portion of the Project site as preserve open space and identified the southern portion for development. The vernal pools located within the K6 and K8 mesas were within the development area; separate permits would be required for take of these resources.

Specific to the Project site, the Otay Ranch RMP identifies certain sensitive resources, including vernal pools, San Diego thornmint, and a corridor between the Jamul Mountains and the San Ysidro Mountains. The preservation requirements of these resources are summarized in the Mitigation Monitoring and Reporting Program (MMRP) for the Otay SRP DEIR. The requirements of the MMRP and the contribution that the Otay Ranch Resort Village makes to these requirements are provided in Appendix G of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR.

The 3.3-acre patch of San Diego thornmint located in the western portion of the Project site was designated as preserve area in the Otay Ranch RMP. In addition, a 100-foot buffer was required around the patch of San Diego thornmint to provide protection from indirect effects. Changes in the Otay Ranch RMP preserve boundary would be subject to analysis and findings pursuant to the boundary modification provisions of the Otay Ranch RMP.

MSCP

Subsequent to adoption of the Otay SRP and Otay Ranch RMP, development plans for Otay Ranch, including Village 13, were incorporated into the MSCP as implemented by the MSCP Subarea Plan, with some alterations. With respect to the Project site, the most significant of these alterations was the re-designation of approximately 139.7 acres in the southeastern quarter of the site, adjacent to Otay Lakes Road, as preserve open space rather than development as part of the Baldwin Letter Agreement, which provided that the property owner amend the 1993 Otay SRP to designate this area as open space. The County MSCP South County Subarea Plan (County 1997) designated the area as “Otay Ranch areas where no ‘Take Permits’ will be issued.” The Baldwin Letter Agreement was incorporated into the MSCP. In 2001, the County of San Diego adopted GPA 98-03, which converted the eastern areas from developable to open space. This distinction is shown on the current Preserve boundary (**Figure 2.3-1**); however, the San Diego County General Plan was not updated accordingly, as shown in **Figures 3.3-2** and **3.3-3**. This change was made to achieve greater conservation in the eastern portions of Otay Ranch and to concentrate development in the western portions. Additionally, the preservation of the eastern portion of the Resort Village site was thought to aid in the establishment of a corridor between the Jamul and San Ysidro Mountains. The result was a total preserve size of approximately 1,115 acres for the Village 13 Project site.

In terms of permitting development of the site under the MSCP Subarea Plan, the portion of the Project site outside of the preserve boundary is identified as “Developable Area” and is an authorized take area. The portion of the Project site within the preserve is where no take is

authorized, and any proposed impacts in these areas would need to be permitted, consistent with the requirements of the MSCP Subarea Plan, through a boundary adjustment and equivalency analysis.

City of San Diego MSCP Cornerstone

The City of San Diego Water Department owns four large areas of land within the MSCP that contain valuable biological resources. They total 10,400 acres and are commonly referred to as the Cornerstone Lands because they are considered essential building blocks for creating the City of San Diego preserve system. Cornerstone lands within the vicinity of the Project site include the lands surrounding portions of Upper and Lower Otay Lakes. These Cornerstone Lands are known for high-quality coastal sage scrub, with a riparian forest area present where Dulzura Creek empties into Lower Otay Lake.

The San Diego City Charter restricts the use and disposition of Water Department utility assets and, thus, the Water Department must be compensated for any title restrictions placed on the Cornerstone Lands. To meet the policy objectives of the MSCP and comply with the San Diego City Charter, the City of San Diego entered into a Conservation Land Bank Agreement with the wildlife agencies for the Cornerstone Lands.

Specific to the Project site, the improvements to Otay Lakes Road, as required by the County of San Diego, would affect portions of Cornerstone Lands. These impacts have been minimized to the maximum extent possible through iterative site designs, and are quantified below. Coordination is ongoing with the City of San Diego on the permits and approvals that are required for the proposed widening of Otay Lakes Road.

2.3.2 Analysis of Project Effects and Determination as to Significance

This section describes the potential impacts to sensitive biological resources resulting from Project implementation. The Project has been designed around an extensive open space system in close coordination with USFWS and CDFW. Development areas have been moved specifically to preserve important wildlife corridors, species, and habitat, including vernal pools, San Diego fairy shrimp and the Quino checkerspot butterfly. As a result, potential impacts to sensitive biological resources have been greatly avoided and minimized. Nonetheless, potential impacts to sensitive biological resources are expected to occur as a result of Project implementation.

Biological resources may be either directly or indirectly impacted, and these impacts may be either permanent or temporary in nature. These key terms are defined below.

Direct: Direct impacts are caused by a project and occur at the same time and place as the project.

Indirect: Indirect impacts occur later in time or are farther removed in distance but are still reasonably foreseeable and attributable to project-related activities.

Permanent (Long-term): All impacts that result in irreversible effects or removal of biological resources are considered permanent. For the purposes of this analysis, long-term impacts are synonymous with permanent impacts.

Temporary: Any impacts considered to have reversible effects on biological resources may be viewed as temporary. As a general rule, impacts are considered temporary only if timely efforts would ensure that the impact is corrected to conditions equal to or superior to the conditions that existed prior to impact and if a monitoring program is implemented to ensure that the efforts are successful within a reasonable time frame.

Guidelines to determine the significance of each potential impact to sensitive biological resources are listed below. These significance guidelines are consistent with the County of San Diego's *Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources* (County Biology Guidelines) (County 2010) and Appendix G of the CEQA Guidelines. For organizational and presentation purposes, the order of the guidelines presented below differs slightly from the order presented in the County Biology Guidelines and CEQA Guidelines.

In accordance with these guidelines, a significant impact to biological resources would result if the Project would do the following:

1. Have a substantial adverse effect on riparian habitat or other sensitive natural communities (including riparian habitats) identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
2. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means.
3. 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 CDFW or USFWS.
4. Interfere substantially with the movement of a 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.
5. Conflict with one or more local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The following discussion of potential effects to sensitive biological resources is divided into five subject areas based on the significance guidelines outlined above: (1) riparian habitat and other sensitive natural communities; (2) federally protected wetlands; (3) special-status species; (4) wildlife movement and nursery sites; and (5) local policies, ordinances, and adopted plans. The analysis described herein for each of these subject areas considers the information presented in the County Biology Guidelines for each significance guideline. In addition to consideration of the criteria outlined in the County Biology Guidelines, the analysis below considers performance

relative to the biological requirements of the Otay Ranch RMP, particularly preservation goals for sensitive vegetation communities and special-status species (see Appendix G of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) when assessing significance of potential impacts.

As described in the following subsections, the Project would result in significant impacts to biological resources. However, significant impacts can be mitigated to a level below significance. Section 2.3.5 provides mitigation measures that reduce each significant impact to a level below significance.

2.3.2.1 *Riparian Habitat and Other Sensitive Natural Communities*

Guidelines for the Determination of Significance

A significant impact to riparian habitat and other sensitive natural communities would occur if the Project would do the following:

- Have a substantial adverse effect on riparian habitat or another sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Rationale for Selection of Guidelines

This significance threshold is based on Appendix G of the CEQA Guidelines. Sensitive vegetation communities (including riparian communities) were mapped within the Project site and on off-site areas along Otay Lakes Road (see Section 2.3.1.1). In addition, jurisdictional wetlands and waterways were delineated on the Project site and on off-site areas (see Section 2.3.1.3). This guideline requires evaluation of the Project's impacts on these sensitive vegetation communities and jurisdictional wetlands and waterways.

Analysis

The analysis of direct and indirect impacts to riparian habitat and other sensitive natural communities considers the criteria outlined in the County Biology Guidelines. Each criterion is listed below, followed by a discussion of the potential effects associated with the Project relative to the criterion.

Criterion A: Project-related grading, clearing, construction, or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as listed in Table 5 of the County Biology Guidelines, excluding those without a mitigation ratio) on or off the Project site.

On-Site Removal of Sensitive Vegetation Communities

Permanent and temporary direct impacts to sensitive vegetation communities within the Project site are summarized in **Table 2.3-5** and depicted in **Figure 2.3-7**. Permanent removal of sensitive

vegetation communities would total 786.8 acres and result from grading, fuel management, and installation of a water tank and detention basins. Permanent impacts to sensitive vegetation communities resulting from grading and fuel management would total approximately 778.8 acres outside of the proposed Otay Ranch Preserve; permanent impacts to sensitive vegetation communities resulting from installation of the water tank (including an access road) and detention basins would total approximately 8.1 acres inside the proposed Otay Ranch Preserve. Infrastructure such as the water tank, access road for the water tank, and detention basins are allowable land uses within the Otay Ranch Preserve per the Otay Ranch RMP.

Temporary removal of sensitive vegetation communities would total approximately 19 acres and result from slope manufacturing outside neighborhoods and installing an underground water line. These impacts would occur within the Otay Ranch Preserve and would be restored following construction of the Project.

Proposed preserve vegetation community acreages are shown in **Table 2.3-6** and includes those areas not impacted by grading or fuel modification zones, as well as areas proposed to be restored and areas that are considered to be allowable as a land use within the preserve (i.e., detention basins, the water tank, and the road that provides access to the water tank). The proposed preserve totals approximately 1,089 acres, of which 1,083 acres would support sensitive vegetation communities (**Table 2.3-6**). The remaining 6 acres would consist of non-sensitive vegetation communities and land cover types (i.e., developed land, disturbed habitat, and stock pond).

A trail is proposed as part of the Project. However, the location of the trail is entirely within the impact area/project development footprint and will be separated from the preserve by protective fencing. Thus, no biological impacts (including impacts to sensitive vegetation communities) would result from the construction or use of the trail that are not already included in the impact analysis for the Project.

Project design features would reduce and avoid on-site impacts to sensitive vegetation communities to the extent feasible, and the Project would establish a large preserve supporting a variety of sensitive vegetation communities. However, impacts to disturbed and non-disturbed coastal sage scrub (**Impact BI-1a**), disturbed and non-disturbed chamise chaparral (**Impact BI-1b**), scrub oak chaparral (**Impact BI-1c**), southern mixed chaparral (**Impact BI-1d**), valley needlegrass grassland (**Impact BI-1e**), nonnative grassland (**Impact BI-1f**), disturbed and non-disturbed cismontane alkali marsh (**Impact BI-1g**), mulefat scrub (**Impact BI-1h**), southern willow scrub (**Impact BI-1i**), and open water (**Impact BI-1j**) are considered *significant* absent mitigation. Temporary impacts to sensitive upland vegetation communities that are adjacent to the existing Otay Ranch Preserve and consist of manufactured slopes that are appropriate to restore are also considered *significant* absent mitigation (**Impact BI-1k**).

Off-Site Removal of Sensitive Vegetation Communities

Implementation of the Project would result in the permanent removal of sensitive vegetation communities off-site along Otay Lakes Road. Off-site impacts to sensitive vegetation communities would total approximately 19 acres and would occur within City of San Diego

Cornerstone Lands, County of San Diego lands (Otay Lakes right-of-way), lands within the City of Chula Vista, and areas within Otay Ranch but outside of the Project site (i.e., off-site Otay Ranch lands). **Table 2.3-7** summarizes the impacts to these off-site areas based on vegetation community type and location of the off-site impact; **Figure 2.3-7** depicts impacts to off-site areas. The significance of off-site impacts to sensitive vegetation communities is addressed for each jurisdiction below.

- City of San Diego MSCP Cornerstone Lands – Otay Lakes Road is currently adjacent to City of San Diego MSCP Cornerstone Lands around Lower Otay Lake. Direct impacts to City of San Diego Cornerstone Lands as a result of the widening of Otay Lakes Road total 11.09 acres. Of this total, 9.47 acres would occur to sensitive upland communities, 0.82 acre would occur to wetlands, and 0.80 acre would occur to non-sensitive communities. The Project includes a General Plan Amendment to reclassify Otay Lakes Road as a “Boulevard with Raised Median,” which would reduce impacts to Cornerstone Lands by 48.5% compared to a “Four-Lane Major Road.” Regardless, impacts to Cornerstone Lands are considered *significant* absent mitigation (**Impact BI-2**).
- Lands within City of Chula Vista – Direct impacts to lands within the City of Chula Vista as a result of the widening of Otay Lakes Road total 3.70 acres. Of this total, 1.51 acres of impacts are to sensitive upland communities and 2.19 acres of impacts are to non-sensitive communities. The off-site impact areas within the City of Chula Vista are consistent with the city’s planning guidelines and do not conflict with the goals or standards of the city’s Subarea Plan since the impacts are for the road improvements. However, compliance with the City of Chula Vista’s Habitat Loss and Incidental Take (HLIT) Ordinance would require conformance with several standard measures to address habitat loss. Vegetation communities considered sensitive under the City of Chula Vista’s Subarea Plan are those listed as Tier I through Tier III (rare uplands to common uplands), as well as wetlands. Therefore, impacts to nonnative grassland (Tier III) and disturbed and non-disturbed coastal sage scrub (Tier II) on lands within the City of Chula Vista are considered *significant* absent mitigation (**Impact BI-3**). Impacts to Tier IV habitats (other uplands) on lands within the City of Chula Vista, consisting of disturbed land and developed land, are considered *less than significant*.
- County of San Diego Lands – Direct impacts to lands within the County of San Diego (Otay Lakes Road right-of-way) as a result of the widening of Otay Lakes Road total 20.82 acres. Of this total, 3.34 acres would occur to sensitive upland communities and 17.47 acres would occur to non-sensitive communities, including 17.21 acres of existing Otay Lakes Road. This off-site area is located outside of the Otay Ranch boundary and is within the jurisdiction of the County of San Diego. All of the impacts are within the right-of-way of Otay Lakes Road. Impacts are required to comply with the regulations set forth by the County of San Diego. In compliance with the MSCP Subregional Plan and the County of San Diego Subarea Plan (County MSCP) (County 1997), the County of San Diego established the Biological Mitigation Ordinance (BMO) (San Diego County Code Title 8, Division 6, Chapter 5) to provide the requirements and mitigation measures necessary for projects within the plan area. Certain areas within the County MSCP were designated as “take areas” within the South County Segment of the MSCP. The take areas designated in the County MSCP were developed through

a comprehensive planning effort with the affected jurisdictions, and describe areas that are not subject to further mitigation because direct and cumulative impacts to MSCP Covered Species were considered in the overall MSCP planning effort. The County of San Diego specifically exempted the take areas from the BMO in Section 86.503, Exemptions, (a)(4), which states that “the chapter shall not apply to any Take Authorization Area approved by the Board of Supervisors and the Wildlife Agencies as part of the County Subarea Plan, as shown on Attachment B of Document No. 0769999 on file with the Clerk of the Board or any approved Habitat Loss Permit issued pursuant to 16 U.S.C. Sec. 1533(d).” The right-of-way for Otay Lakes Road is located within the South County Segment, and the proposed impact area is designated as “take authorized.” As such, and in accordance with the County MSCP and BMO, no additional biological mitigation is required for development to occur. The “take” as defined by the Endangered Species Act already has been adequately mitigated for in the form of land set aside as “Hard Line” preserves during the negotiations between the landowners, wildlife agencies, and County of San Diego during preparation of the Subarea Plan. The off-site impact areas are consistent with the requirements for the road improvements per the County of San Diego, and do not conflict with the goals or standards of the County’s Subarea Plan. Thus, impacts are considered *less than significant*.

- Off-Site Otay Ranch Lands – Direct impacts to areas within Otay Ranch but outside of the Project site total 4.45 acres and result from widening Otay Lakes Road. Of this total, 3.75 acres would occur to sensitive upland communities and 0.70 acre would occur to non-sensitive communities. This off-site area is located outside of the Otay Ranch Resort Village boundary but within Otay Ranch. Impacts to these off-site Otay Ranch lands are subject to the requirements of the Otay Ranch RMP. Because the impacts to off-site Otay Ranch lands are associated with road improvements as required by the County of San Diego, conveyance per the Otay Ranch RMP is not required, and no mitigation is required. Thus, impacts to vegetation communities within Otay Ranch are considered *less than significant*.

Criterion B: Any of the following will occur to or within jurisdictional wetlands and/or riparian habitats as defined by ACOE, CDFW, and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

On-Site Impacts to Jurisdictional Waters and Wetlands

Permanent and temporary impacts to 0.24 acre of wetlands would occur on-site as a result of the Project (**Table 2.3-5**). Approximately 0.03 acre of the total 0.24 acre of wetland impacts is under the jurisdiction of CDFW only; the remaining 0.21 acre is under the jurisdiction of ACOE, CDFW, and RWQCB. Impacts to jurisdictional wetlands are depicted in **Figure 2.3-8**.

In addition, the Project would permanently and temporarily impact jurisdictional waters. These jurisdictional waters were mapped within upland vegetation communities and, thus, are not

included in **Table 2.3-8**. Permanent impacts to jurisdictional waters within the Project site would total approximately 1.03 acres (i.e., approximately 0.99 acre of ephemeral waters and 0.04 acre of intermittent waters) (**Table 2.3-8**). Temporary impacts to jurisdictional waters (ephemeral waters) within the Project site would total approximately 0.07 acre (**Table 2.3-8**). Impacts to jurisdictional waters are depicted in **Figure 2.3-8**. Permanent and temporary impacts to on-site jurisdictional waters and wetlands are considered *significant* absent mitigation (**Impact BI-4**).

The Project would also result in permanent impacts to potential jurisdictional vernal pool habitat. A definitive jurisdictional determination with regard to vernal pools has not yet been made due to unclear guidance from RWQCB regarding its jurisdictional reach, as well as uncertainty in the law regarding the extent to which the Porter-Cologne Act extends to vernal pools. However, potential jurisdiction over vernal pools was determined by applying the previously applied ACOE jurisdictional criteria (i.e., inundation, occupied by a vernal pool plant indicator species, or occupied by a vernal pool branchiopod species). The Project includes development on the K6 mesa, resulting in the destruction of approximately 4,576 square feet (0.11 acre) of potentially jurisdictional vernal pool habitat. The K6 vernal pools were last studied in 2008, and have been documented to not become inundated. Thus, these pools would be considered low to moderate quality. Nevertheless, permanent impacts to potential jurisdictional vernal pools are considered *significant* absent mitigation (**Impact BI-5**). Potential jurisdictional vernal pools on the K8 mesa (a total of approximately 0.26 acre) would be preserved as part of the Project. **Figure 2.3-5** depicts the locations of vernal pools.

In addition to these direct impacts, the Project would result in indirect impacts to jurisdictional waters and vernal pools. Potential indirect impacts to jurisdictional waters include runoff, sedimentation, erosion, exotics introduction, and habitat-type conversion in the short and long term, particularly within waterways that drain into Otay Lakes and vernal pools located on the K8 mesa. Potential indirect impacts to jurisdictional waters and vernal pools are considered *significant* absent mitigation (**Impact BI-6**).

Off-Site Impacts to Jurisdictional Waters and Wetlands

Permanent and temporary impacts to 0.83 acre of jurisdictional wetlands would occur off-site as a result of Project implementation (**Table 2.3-7**). In addition, approximately 0.02 acre of permanent impacts to ephemeral waters under the jurisdiction of ACOE, CDFW, and RWQCB would occur off-site (**Table 2.3-8**). These jurisdictional ephemeral waters were mapped within upland vegetation communities and, thus, are not included in **Table 2.3-7**.

Off-site impacts would occur within City of San Diego Cornerstone Lands and County of San Diego lands (Otay Lakes right-of-way). The significance of off-site impacts to jurisdictional wetlands and waters is addressed for each jurisdiction below.

- City of San Diego MSCP Cornerstone Lands – Direct impacts to jurisdictional features within City of San Diego Cornerstone Lands as a result of the widening of Otay Lakes Road total 0.82 acre of wetlands (**Table 2.3-7**) and 0.02 acre of ephemeral waters (**Table 2.3-8**). The City of San Diego requires projects to demonstrate that they avoid or reduce impacts to Cornerstone Lands to the maximum extent feasible. The Project includes a

General Plan Amendment to reclassify Otay Lakes Road to a “Boulevard with Raised Median,” which reduces impacts to Cornerstone Lands by 48.5% compared to a “Four-Lane Major Road.” Impacts to wetlands specifically are reduced from 2.01 acres to 0.82 acre per the General Plan Amendment. Regardless, wetland impacts on Cornerstone Lands are considered *significant* absent mitigation (*Impact BI-7*).

- County of San Diego Lands – Direct impacts to jurisdictional wetlands within the County of San Diego (Otay Lakes Road right-of-way) as a result of the widening of Otay Lakes Road total 0.1 acre (**Table 2.3-7**). This off-site area is located outside of the Otay Ranch boundary and is subject to the County of San Diego Resource Protection Ordinance. The off-site impact areas are consistent with the requirements for the road improvements per the County of San Diego, and do not conflict with the goals or standards of the County of San Diego’s Subarea Plan; however, compliance with the County of San Diego’s Resource Protection Ordinance would require conformance with several standard measures to address habitat loss. Impacts to wetland habitats and ephemeral waters are considered *significant* absent mitigation (*Impact BI-8*).

Criterion C: The Project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

The regional groundwater table is at least 300 feet below the surface. During the rainy season, perched water conditions may develop within the drainage areas where none previously existed due to the permeability characteristics of the surficial geologic units encountered; however, this seepage is dependent on seasonal precipitation and varies as a result. The Project is not proposing any grading or other feature that would disturb the regional groundwater table, and *no impact* would occur.

Criterion D: The Project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term.

Indirect impacts are difficult to identify and quantify, but are presumed to occur as a result of the Project. Indirect effects primarily result from adverse “edge effects”: either short-term indirect impacts related to construction or long-term chronic indirect impacts associated with urban development in proximity to biological resources within natural open space.

During construction of the Project, edge effects to vegetation communities may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term indirect impacts on vegetation communities most likely would occur as a result of trampling of vegetation by humans and domestic pets, invasion by exotic species, alteration of the natural fire regime, and exposure to urban pollutants. Potential indirect impacts to vegetation communities are considered *significant* absent mitigation (*Impact BI-9*).

Criterion E: The Project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

The Project site is not subject to the RPO (see Section 86.605 of the RPO); thus, County of San Diego guidelines for wetland buffers do not apply to the Project site. However, the Otay Ranch RMP does provide for buffers from certain sensitive habitat. The Project would establish a 100-foot buffer around the development in accordance with the Preserve Edge Plan (**Appendix C-23**). In addition, the Project would establish a 100-foot buffer around the watershed of preserved vernal pools on the K8 mesa. The 100-foot buffers associated with the Project would be adequate to protect the functions and values of wetlands that would not be permanently impacted by the Project.

2.3.2.2 Federally Protected Wetlands

Guidelines for the Determination of Significance

A significant impact to federally protected wetlands would occur if the Project would do the following:

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Rationale for Selection of Guidelines

This significance threshold is based on Appendix G of the CEQA Guidelines. Federally protected wetlands and waters were delineated within the Project site and on off-site areas along Otay Lakes Road (see Section 2.3.1.3). This guideline requires evaluation of the Project impacts on these federally regulated wetlands and waterways.

Analysis

In accordance with the County Biology Guidelines, the analysis of direct and indirect impacts to federally protected wetlands considers Criteria B, C, and E for riparian habitats and other sensitive vegetation communities. The Project would result in *significant* direct and indirect impacts to federally protected wetlands absent mitigation (**Impact BI-4 – BI-8**). Refer to Criteria B, C, and E in Section 2.3.2.1 for a discussion of impacts to federally protected wetlands resulting from Project implementation.

2.3.2.3 Special-Status Species

Guidelines for the Determination of Significance

A significant impact to special-status species would occur if the project would do the following:

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 CDFW or USFWS.

Rationale for Selection of Guidelines

This significance threshold is based on Appendix G of the CEQA Guidelines. This guideline requires evaluation of the Project's impacts on species afforded protections or otherwise identified as sensitive by federal, state, and/or local agencies.

Analysis

Impacts to special-status plant and wildlife species are summarized in **Table 2.3-9** and **Table 2.3-10**, respectively. Generally, impacts to special-status species include destruction of occupied or suitable habitat and potential removal, injury, or mortality of individuals. Habitat destruction would occur as result of grading, fuel management, installation of a water tower (including access road) and detention basins, and improvements to Otay Lakes Road. Removal, injury, or mortality of special-status plant and wildlife species may result during grading and other construction-related activities within occupied habitat.

The following analysis of direct and indirect impacts to special-status species considers the criteria outlined in the County Biology Guidelines. Each criterion in the County Biological Guidelines is listed below, followed by a discussion of the potential effects associated with the Project relative the criterion. The requirements of the Otay Ranch RMP (see Appendix G of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) were considered when determining significance of impacts to special-status species. Criteria D, J, and K of the County Biology Guidelines are not applicable to the Project, given that impacts to suitable and occupied habitat for arroyo toad (*Anaxyrus californicus*), coastal cactus wren (*Campylorhynchus brunneicapillus*), and Hermes copper butterfly (*Lycaena hermes*) are not anticipated to result from implementation of the Project; therefore, these criteria are not addressed in detail below.

Criterion A: The Project would impact one or more individuals of a species listed as federally or state endangered or threatened.

Federally and State Listed Plants

The Project would result in permanent impacts to the federally endangered and state threatened San Diego thornmint (*Acanthomintha ilicifolia*) (**Table 2.3-9; Figure 2.3-9**). Two populations of this species were mapped within the Project site, covering approximately 0.1 acre and 3.3 acres. The 0.1-acre population of San Diego thornmint would be permanently impacted by the Project. The 3.3-acre population of San Diego thornmint would be avoided and preserved as part of the Project, resulting in preservation of 97% of the occupied acreage on-site. This preservation level exceeds the requirement of the Otay Ranch RMP (i.e., 95% preservation), thus, impacts to the 0.1-acre population of San Diego thornmint are considered *less than significant*.

Two additional federally and state-listed plants were determined to have moderate potential to occur on-site based strictly on their distribution, habitat, and soils requirements: the federally listed endangered San Diego ambrosia (*Ambrosia pumila*) and federally listed threatened and state-listed endangered Otay tarplant (*Deinandra [Hemizonia] conjugens*) (see Appendix F of

the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR). Potential impacts to these species are considered *less than significant* because the potential for impact is low given that these species were not detected on-site despite extensive surveys.

Federally and State Listed Wildlife

The Project would result in impacts to three federally listed wildlife species: San Diego fairy shrimp (*Branchinecta sandiegonensis*; federally endangered), Quino checkerspot butterfly (*Euphydryas editha quino*; federally endangered), coastal California gnatcatcher (*Polioptila californica californica*; federally threatened) (**Table 2.3-10**). Impacts to each of these species are discussed and quantified below.

Ten vernal pool basins within the Project site were confirmed occupied by San Diego fairy shrimp. Of these 10 basins, one occupied basin totaling approximately 0.005 acre would be permanently impacted by the Project. The remaining nine basins would be preserved as part of the Project, resulting in preservation of 97% of the occupied vernal pool basins on-site. Although this preservation level exceeds the requirements of the Otay Ranch RMP (i.e., 95% preservation), impacts to San Diego fairy shrimp are considered *significant* absent mitigation because this species is not covered by the Otay Ranch RMP or the MSCP Subarea Plan (**Impact BI-10**).

A total of 127 individual Quino checkerspot butterflies were recorded over 4 years of surveys on the Project site. The species was observed most frequently along ridgelines and hilltops in the northern and eastern portions of the Project site. Twenty of the 127 total observation locations would be permanently impacted by the Project, which is approximately 16% of the total number of individuals observed on-site during 4 years of surveys (**Table 2.3-10; Figure 2.3-10**). The remaining 107 observation locations would be preserved as part of the Project, resulting in preservation of 84% of observation locations. The Project would also permanently impact 483 acres of suitable Quino checkerspot butterfly habitat, which overlaps a portion of the Otay Unit of designated critical habitat for the species (**Figure 2.3-11 and Figure 2.3-12**). The total acreage of critical habitat within the Otay Unit is 1,782 acres; the Project would impact approximately 27% of this critical habitat unit. The proposed MSCP Subarea Plan Quino Checkerspot Butterfly Amendment (Quino Amendment), which has been used as guidance for this analysis, would require 2:1 preservation of suitable habitat for impacts to the Quino checkerspot butterfly, for a total of 966 acres. The Project proposes to include 962 acres of suitable or occupied coastal sage scrub and 4 additional acres of Quino checkerspot butterfly habitat restoration equaling 966 acres of total habitat mitigation, meeting the proposed Quino Amendment mitigation ratio. This acreage is available on-site within the proposed Preserve. Because the proposed Quino Amendment has not been adopted, impacts to Quino checkerspot butterfly individuals and potentially occupied habitat are considered *significant* absent mitigation (**Impact BI-11**).

A total of 32 coastal California gnatcatcher locations were recorded during Project surveys; 29 locations were documented on the Project site and three were documented off-site on Cornerstone Land. Of these 32 locations, 14 locations would be impacted by the Project (**Figure 2.3-10**). The remaining locations would be preserved as part of the Project, resulting in

preservation of 56% of documented coastal California gnatcatcher locations. In addition, the Project would permanently impact 483 acres of suitable coastal California gnatcatcher habitat. This represents approximately 33% of the total amount of suitable habitat within the Project site; the remaining potentially occupied habitat (approximately 962 acres) would be preserved as part of the Project. Preservation of 56% of coastal California gnatcatcher observations and suitable habitat would exceed the level required by the Otay Ranch RMP (i.e., 52%); thus, impacts are considered *less than significant*.

Criterion B: The Project would impact an on-site population of a County List A or B plant species, or a County Group I animal species, or a species listed as a state Species of Special Concern.

County List A and List B Plants

The Project would result in impacts to eight plant species on either County List A or List B: San Diego thornmint (List A), variegated dudleya (*Dudleya variegata*; List A), San Diego goldenstar (*Bloomeria clevelandii*; List A), Nuttall's scrub oak (*Quercus dumosa*; List A), California adolphia (*Adolphia californica*; List B), San Diego barrel cactus (*Ferocactus viridescens*; List B), San Diego marsh-elder (*Iva hayesiana*; List B), and Munz's sage (*Salvia munzii*; List B) (**Table 2.3-9; Figure 2.3-9**). The significance of impacts to San Diego thornmint is addressed above under Criterion A, given that the species is federally and state listed.

As shown in **Table 2.3-9**, the Project achieves the Otay Ranch RMP preservation requirements for Munz's sage and variegated dudleya. Thus, these impacts are considered *less than significant*. For San Diego marsh-elder, the Otay Ranch RMP indicates that 75% must be preserved. The Project would preserve 47% of the species on-site site, thereby contributing to the ranch-wide RMP goal. Thus, impacts to San Diego marsh-elder are considered *less than significant*. Impacts to San Diego barrel cactus and San Diego goldenstar, species adequately covered in the MSCP Subarea Plan, are mitigated by following the provisions set out in the Otay Ranch RMP and MSCP Subarea Plan. Impacts to California adolphia, however, are considered *significant* absent mitigation (**Impact BI-12**).

As noted in Section 2.3.1.2, recent information challenges the identification of Nuttall's scrub oak on-site. Due to the atypical location, the small area (6.2 acres) and isolated number of plants proposed to be impacted, and the potential that individuals are the more common California scrub oak, impacts to Nuttall's scrub oak are considered *less than significant*.

Eighteen additional County List A and List B plants were determined to have moderate potential to occur on-site based strictly on their distribution, habitat, and soils requirements: San Diego ambrosia (addressed above under Criterion A), Otay tarplant (addressed above under Criterion A), Dean's milk-vetch (*Astragalus deanei*), coast salt-scale (*Atriplex pacifica*), south long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Lakeside ceanothus (*Ceanothus cyaneus*), Campo clarkia (*Clarkia delicata*), summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), Tecate cypress (*Hesperocyparis forbesii*), Tecate tarplant (*Deinandra floribunda*), San Diego gumplant (*Grindelia hallii*), felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*), snake cholla (*Cylindropuntia californica* var. *californica*), Moreno currant (*Ribes*

canthariforme), San Miguel savory (*Clinopodium chandleri*), Parry's tetracoccus (*Tetracoccus dioicus*), San Diego bur-sage (*Ambrosia chenopodiifolia*), and purple stemodia (*Stemodia durantifolia*) (see Appendix F of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR). Potential impacts to these species are considered ***less than significant*** because the potential for impact is low given that these species were not detected on-site despite extensive surveys.

County Group I Wildlife and State Species of Special Concern

The Project would result in impacts to 22 species listed as a County Group I species and/or a CDFW SSC (**Table 2.3-10**). Of these 22 species, the significance of impacts to San Diego fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher are addressed under Criteria A, given that they are federally listed as endangered or threatened.

Impacts to the 19 remaining County Group I species and CDFW SSC are considered ***less than significant***. Conservation provided through the Otay Ranch RMP and MSCP Subarea Plan conformance/equivalency would provide mitigation for direct impacts to four species: orange-throated whiptail (*Aspidoscelis hyperythra*), San Diego [coast] horned lizard (*Phrynosoma blainvillii*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and burrowing owl (*Athene cunicularia*). Impacts to the remaining 15 species are considered ***less than significant*** due to limited sensitivity, limited amount of impacts, or the lack of use of the Project site for breeding. In addition, the Project's contribution to the MSCP and Otay Ranch RMP Preserve would provide suitable habitat in a configuration that preserves genetic exchange and species viability.

Criterion C: The Project would impact the local long-term survival of a County List C or D plant species or a County Group II animal species.

County List C and D Plants

Impacts to County List C plants are not anticipated. The Project would result in impacts to six County List D species: western dichondra (*Dichondra occidentalis*), Palmer's grappling hook (*Harpagonella palmeri*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*), golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*), and San Diego County viguiera (*Viguiera laciniata*) (**Table 2.3-9**). Impacts to these species are considered ***less than significant*** because these species are of low sensitivity, and the on-site populations are not significant in terms of the ability for each of these species to persist. In addition, the species either do not occur on-site in a population that is considered regionally significant or are very common on-site and have adequate preservation.

County Group II Wildlife

The Project would result in impacts to 12 County Group II wildlife species (**Table 2.3-10**). Of these 12 species, the significance of impacts to eight species are addressed under Criteria B given that they are listed as SSC by CDFW: orange-throated whiptail, San Diego [coast] horned lizard, coast patch-nosed snake (*Salvadora hexalepis virgultea*), red-diamond rattlesnake (*Crotalus*

ruber), Dulzura California pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*). Impacts to the remaining four County Group II wildlife species are considered ***less than significant*** because these species are of low sensitivity, and the on-site populations are not significant in terms of the ability for each of these species to persist. In addition, the species either do not occur on-site in a population that is considered regionally significant or are very common on-site and have adequate preservation.

Criterion E: The Project would impact golden eagle habitat.

Golden eagle (*Aquila chrysaetos*) was observed in 2008 in the eastern and north-central portion of the Project site. The Project site is located within a mapped primary foraging area for a known territory, located more than 3 miles from the site. A total of 1,660 acres of suitable golden eagle foraging habitat is present on the Project site. The Project would result in impacts to approximately 620 acres of suitable golden eagle foraging habitat (**Table 2.3-10**). A total of 1,015 acres of foraging habitat would be preserved on-site as part of the Project, representing 61% of the foraging habitat on-site. With implementation of the Otay Ranch RMP and associated conveyance of preserve land, impacts to golden eagle foraging habitat are considered ***less than significant*** due to the 1,015 acres of suitable foraging habitat preserved on-site.

Criterion F: The Project would result in the loss of functional foraging habitat for raptors.

Golden eagle, sharp-shinned hawk (*Accipiter striatus*), turkey vulture (*Cathartes aura*), and other raptors likely use the site for foraging (see Appendix B of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR for complete list of raptors recorded on-site). Impacts to golden eagle foraging habitat are discussed above under Criterion E. Loss of foraging habitat is quantified for special-status raptor species in **Table 2.3-10**, and impacts to vegetation communities (particularly open scrub and grassland habitats) within the Project site that provide foraging habitat for the other raptors that occur on-site are summarized in **Table 2.3-5**.

The Otay Ranch Raptor Management Study (Ogden Environmental and Energy Services 1992), prepared in accordance with the Otay Ranch RMP (Phase 2), provides the framework and guidelines for how raptor resources (including foraging habitat) will be preserved ranch-wide. The Otay Ranch Raptor Management Study provides a discussion on the species composition, identification of important habitat areas, a description of area-use by specific species, and management recommendations. Recommendations include monitoring of populations, revegetation of the Otay River Valley and portions of Proctor Valley with large trees for nesting and perching, designation of buffer zones for nesting locations of specific species, and development of environmental awareness programs.

The significance of impacts to raptor foraging habitat is based on consistency with the Otay Ranch Raptor Management Study. The Project would comply with applicable recommendations of the Otay Ranch Raptor Management Study and would preserve a significant amount of space that provides potential foraging habitat for a variety of raptor species (i.e., approximately 1,083

acres). Therefore, the loss of functional raptor foraging habitat associated with the Project is considered *less than significant*.

Criterion G: The Project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to Project boundaries, although smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species.

Totaling approximately 1,869 acres, the Project site is large enough to be considered a core wildlife area per the County Biology Guidelines. Approximately 786.1 acres of potential wildlife habitat (i.e., all vegetation communities within the Project site except developed land) would be permanently impacted with implementation of the Project. Approximately 1,089 acres of potential wildlife habitat would be preserved on-site as natural open space, in part, for the benefit of wildlife species. These 1,089 acres are expected to be sufficient to support viable populations of common and sensitive wildlife species known to occur on the Project site. Therefore, impacts to this core wildlife area are considered *less than significant*.

Criterion H: The Project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

Most of the indirect impacts to vegetation communities cited above under Section 2.3.2.1, Criterion D can also affect sensitive plants. Of particular sensitivity is the preserved population of San Diego thornmint, adjacent to the Otay Lakes Road, in the west-central portion of the site. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality). Indirect impacts to sensitive plant species are considered *significant* absent mitigation (**Impact BI-13**).

Short-term indirect impacts to sensitive wildlife species, particularly nesting bird species, include construction noise impacts. Species potentially affected by such activities include, but are not limited to, coastal California gnatcatcher and nesting raptors. Indirect impacts to sensitive bird species may occur if construction is conducted during the breeding season for coastal California gnatcatcher (February 15 to August 15) and raptors (January 15 to July 31). Long-term indirect impacts to sensitive wildlife species would also occur as a result of the project. Potential long-term indirect impacts would consist of lighting, human activity in the preserve, noise, and domestic animal predation. Indirect impacts to sensitive wildlife species are considered *significant* absent mitigation (**Impact BI-14**).

Criterion I: The Project would impact occupied burrowing owl habitat.

A total of 190 acres of suitable burrowing owl (*Athene cunicularia*) habitat was identified within the Project site. Although burrowing owls have not been observed recently (most recent

observation in 2000), the species may occupy suitable portions of the Project site in the future. Approximately 137 acres of suitable, potentially occupied burrowing owl habitat would be permanently impacted by the Project (**Table 2.3-10**). The remaining acreage of suitable burrowing owl habitat within the Project site (approximately 51 acres or 27% of the total suitable habitat on-site) would be preserved as part of the Project. The Project contributes to ranch-wide conservation goals of the Otay Ranch RMP for burrowing owl. Therefore, impacts to burrowing owl habitat would be considered *less than significant*.

Criterion L: The Project would impact nesting success of the following sensitive bird species through grading, clearing, fire fuel modification, and/or other noise-generating activities such as construction: coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, tree-nesting raptors, ground-nesting raptors, golden eagle, and light-footed clapper rail.

Of the sensitive avian species included in this criterion, coastal California gnatcatcher and raptors may nest within the Project site. With respect to raptors, tree-nesting raptors are not expected, as no suitable nesting locations were identified; however, cliff-nesting and ground-nesting raptors may nest within the Project site. The Project may result in *significant* impacts to nesting sensitive bird species if construction is conducted during the breeding season (**Impact BI-15**).

2.3.2.4 Wildlife Movement and Nursery Sites

Guidelines for the Determination of Significance

A significant impact to wildlife movement and nursery sites would occur if the Project would do the following:

- Interfere substantially with the movement of a 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.

Rationale for Selection of Guidelines

This significance threshold is based on Appendix G of the CEQA Guidelines. Currently, the Project site functions as part of a large habitat block within which wildlife movement occurs (see Section 2.3.1.4). This guideline requires evaluation of the Project's impacts on wildlife movement, including access to areas necessary for reproduction.

Analysis

The analysis of direct and indirect impacts to wildlife movement and nursery sites considers the criteria outlined in the County Biology Guidelines. Each criterion is listed below, followed by a discussion of the potential effects associated with the Project relative to the criterion.

Criterion A: The Project would impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

The Project would prevent wildlife access to foraging habitat, breeding habitat, water sources, and other areas necessary for their reproduction. Specifically, the Project would result in the permanent removal of approximately 786.1 acres of wildlife habitat (i.e., all vegetation communities within the Project site except developed land; see **Table 2.3-5**) that supports various life-cycle functions such as foraging and breeding habitat. The Project would preserve 1,089 acres of potential wildlife habitat on-site, and would incorporate four wildlife culverts to convey animals from preserved open space in the northern portion of the Project site to the City of San Diego Cornerstone Lands south of Otay Lakes Road. Regardless, impacts associated with removal of sensitive vegetation communities providing wildlife habitat are considered *significant* absent mitigation (**Impact BI-1a-1j**).

Criterion B: The Project would substantially interfere with connectivity between blocks of habitat, or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

The Project site functions as part of a large habitat block and is not considered a discrete habitat linkage or wildlife corridor (see Section 2.3.1.4). Nevertheless, wildlife movement is expected to occur through the broader habitat block and permanent impacts to wildlife movement are considered *significant* absent mitigation (**Impact BI-16**).

The Project site is surrounded by a variety of public lands: at least 22,000 acres of the Otay Ranch Preserve, BLM, and USFWS lands to the north; at least 9,000 acres of the Otay Ranch Preserve, USFWS, MSCP Preserve, BLM, and CDFW lands to the east; and at least 31,000 acres of the Otay Ranch Preserve, MSCP Preserve, CDFW, and BLM lands to the south. Combined, this is 62,000 acres of open space in the form of preserves and public lands. The Project is designed with the goal to convey the focal species, including mountain lion, mule deer, bobcat, and coyote, across the internal roads and Otay Lakes Road; maintain suitable dimensions for the movement of these species; and enable movement of Quino checkerspot butterfly to resources within the Project site and to off-site areas.

Proposed open space in the northern portion of the Project site would preserve an east/west movement corridor and habitat linkage across the northern portion and ridgelines of the site. To allow for north/south movement, two primary linkages are proposed on the Project site (**Figure 2.3-13**). First, the previously identified R2 corridor follows the steeply sloped canyon and ridgeline west of the prominent hilltop. This corridor includes the south face of the prominent hilltop, and steep slopes along the northeast border of the Project site. Within this proposed corridor, the steep canyon west of the prominent hilltop narrows to approximately 600 feet wide and is crossed by one proposed local two-lane roadway, as well as the existing Otay Lakes Road.

The second north/south movement corridor occurs within the middle portion of the Project site and is proposed to function as a local corridor. This corridor narrows to approximately 1,200 feet and is crossed by one, two-lane local roadway, as well as the existing Otay Lakes Road.

Currently there is no culvert under Otay Lakes Road to facilitate movement of large animals. To convey animals from the open space Preserve areas in the north portion of the Project site to the City of San Diego Cornerstone Lands south of Otay Lakes Road, the Project proposes four wildlife culverts (see Criterion C, below).

Additionally, an approximately 300-foot-wide swath along the far eastern boundary of the Project site continues off-site in a large area of open space lands and is proposed for inclusion in the Otay Ranch Preserve; this would contribute to the preservation of north/south wildlife movement across that portion of the site. The 300-foot-wide swath narrows at the property limits; however, it is situated directly adjacent to USFWS lands, and the rest of the length is situated adjacent to other Preserve lands.

Criterion C: The Project would create artificial wildlife corridors that do not follow natural movement patterns.

Natural movement patterns are expected to be maintained through the preservation of existing corridors on-site. Thus, the Project is not expected to create wildlife corridors that do not follow natural movement patterns. Criterion B, above, describes the existing corridors that would be maintained. As noted under Criterion B, above, permanent impacts to wildlife movement are considered *significant* absent mitigation (**Impact BI-16**) despite preservation of existing movement corridors.

In addition to preserving natural corridors on-site, the Propose proposes four wildlife culverts to convey animals from the open space Preserve areas in the north portion of the Project site to the City of San Diego Cornerstone Lands south of Otay Lakes Road (**Figure 2.3-14**). Requirements for culverts or wildlife undercrossings, according to the MSCP Subarea Plan, include minimizing roads that cross wildlife corridors, installing fencing that channels wildlife to underpasses or culverts, designing the underpass such that the length-to-width ratio is less than two, using bridges rather than tunnels, installing sound insulation, including a natural substrate that is vegetated, providing line-of-sight through the tunnel, and including low-level illumination if needed.

The proposed wildlife crossings/culverts have adequate configuration, bottom surface, size, and openness ratios to accommodate the movement of focal wildlife species. A detailed analysis of the proposed wildlife crossings is provided in detail in Section 4.3 of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR. The Otay Ranch Resort Village Biological Resources Technical Report also includes figures illustrating size and shape of proposed crossings. In general, the design of the wildlife culverts has been developed to be consistent with the MSCP Subarea Plan and also to be consistent with the scientific literature to the maximum extent practical.

Criterion D: The Project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels likely to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

The resort, single-family housing, and roadways associated with the Project would generate long-term noise and nighttime lighting that may disrupt wildlife movement. Impacts to wildlife movement (including impacts resulting from noise and nighttime lighting) are considered *significant* absent mitigation (**BI-16**). Implementation of the Preserve Edge Plan (**Appendix C-23**) would avoid and minimize effects of noise and nighttime lighting on wildlife movement. Specifically, the Preserve Edge Plan requires a 100-foot buffer between development and preserved open space, and includes measures to address noise and lighting.

Criterion E: The Project does not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

As noted in Criterion B, above, the Project site currently functions as part of a large habitat block and is not considered a habitat linkage or wildlife corridor. Although not considered a linkage or corridor, wildlife movement is expected to occur through the broader habitat block, and impacts to wildlife movement are considered *significant* absent mitigation (**Impact BI-16**). Criterion B, above, describes how movement would be maintained within the Project site despite these impacts.

Criterion F: The Project does not maintain adequate visual continuity (i.e., long lines-of-site) within wildlife corridors or linkage.

The Project would maintain adequate visual continuity to allow for wildlife movement. Criteria B and C, above, discuss how movement would be maintained through natural and artificial corridors.

2.3.2.5 Local Policies, Ordinances, and Adopted Plans

Guidelines for the Determination of Significance

A significant impact to local policies, ordinances, and adopted plans would occur if the Project would do the following:

- Conflict with one or more local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Rationale for Selection of Guidelines

This significance threshold is based on Appendix G of the CEQA Guidelines. A variety of regional resource planning efforts are applicable to the Project site and vicinity (see Section 2.3.1.5). This guideline requires evaluation of the Project's impacts and/or conformance with these applicable local policies, ordinances, and other adopted plans (e.g., NCCPs).

Analysis

The analysis of impacts to local policies, ordinances, and adopted plans considers the criteria outlined in the County Biology Guidelines. Each criterion is listed below, followed by a discussion of the potential effects associated with the Project relative the criterion.

Criterion A, B, F, H, and L of the County Biology Guidelines are not applicable to the Project. Specifically, the Project site is located within the County of San Diego MSCP and, therefore, Criteria A and B do not apply. In addition, the Project site, while located within the County of San Diego MSCP Subarea, is not subject to the County of San Diego's BMO. Instead, the Otay Ranch RMP guides preservation, enhancement, and management of sensitive biological resources within Otay Ranch (including the Project site). Thus, criteria that address the BMO are not applicable. Lastly, golden eagles are not known to nest within the Project site (nearest known nest location is greater than 3 miles away), and direct impacts to golden eagle individuals (including eggs) are not expected. Impacts to golden eagle foraging habitat are discussed under Criterion E in Section 2.3.2.3. Because these criteria are not applicable to the Project, they are not addressed further below.

Criterion C: The Project will impact any amount of wetlands or sensitive habitat lands as outlined in the Resource Protection Ordinance (RPO).

Otay Ranch is exempt from the RPO (see Section 86.605 of the RPO); thus, on-site impacts to sensitive habitats and wetlands discussed in Criteria A and B in Section 2.3.2.1 are not applicable. However, off-site impacts on County of San Diego lands resulting from widening of Otay Lakes Road are subject to the RPO. As described under Criteria A and B in Section 2.3.2.1, off-site impacts to wetlands on County of San Diego lands are considered *significant* absent mitigation (*Impact BI-8*).

Criterion D: The Project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Communities Conservation Planning Process (NCCP) Guidelines.

Section 4.3 of the Southern California Coastal Sage Scrub NCCP Process Guidelines require project designs to be consistent with the Conservation Guidelines and with any guidelines adopted by the subregion, and project designs to be approved by CDFW and USFWS. Projects must, to the maximum extent practicable, minimize habitat loss. Any impacts to coastal sage scrub habitat and target species must be mitigated to insignificant levels as required by CEQA by using one or more of the following options:

- Acquisition of habitat
- Dedication of land
- Management agreements
- Restoration
- Payment of fees
- Transfer of development rights
- Other mitigation measures approved in writing by CDFW and USFWS

The Project is consistent with the Southern California Coastal Sage Scrub NCCP Process Guidelines. Specifically, the Project would preserve approximately 848 acres of coastal sage scrub habitat within the Otay Ranch Preserve, which would be included as part of the County of San Diego MSCP Subregional Preserve.

Criterion E: The Project does not conform to the goals and requirements as outlined in any applicable Habitat Conservation Plan (HCP), Habitat Management Plan (HMP), Special Area Management Plan (SAMP), Watershed Plan, or similar regional planning effort.

The Project proposes a boundary adjustment to the MSCP Subarea Plan and the Otay Ranch RMP. The primary goal of the boundary adjustment is to respond to the agencies' request to provide for greater conservation of Quino checkerspot butterfly, vernal pools (in particular the K8 complex), and San Diego fairy shrimp. The Project applicants redesigned the Project to achieve these conservation goals, but also to reflect the changed nature of development in the eastern portions of Otay Ranch, specifically third-party acquisitions that have reduced the amount of development, including the amount of lower-density, large-lot single-family homes, in Villages 14 and 15, and Planning Area 16. The following subsections summarize the Project's conformance with the MSCP Subarea Plan and Otay Ranch RMP.

County of San Diego MSCP Subarea Plan

The County MSCP Subarea Plan identifies a "hard line" preserve/development boundary for the Otay Ranch Resort Village. The MSCP Subarea Plan originally designated approximately 1,115 acres for the Preserve and approximately 754 acres for development on the Project site. The Project proposes a boundary adjustment to the MSCP Subarea Plan that would decrease the size of the on-site Preserve to approximately 1,089 acres (**Figure 2.3-15**). A detailed functional equivalency analysis of the Project's proposed Preserve configuration relative to the previously approved Preserve is provided in Section 4.0 of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR. The functional equivalency analysis considered effects on significantly and sufficiently conserved habitats, effects on Covered Species, effects on habitat linkages, effects on Preserve configuration and management, effects on ecotones or other conditions affecting species diversity, and effects on species of concern not on the Covered Species list. A summary of the functional analysis is provided below.

Generally, the proposed boundary adjustment would result in greater impacts to certain sensitive vegetation types—coastal sage scrub and chaparral—and reduced impacts to other sensitive vegetation types—disturbed coastal sage scrub, disturbed chamise chaparral, southern mixed chaparral, disturbed native grassland, and nonnative grassland—when compared to the existing MSCP hardline development footprint for the Project site. The decrease in preservation of coastal sage scrub and chaparral is offset by both the preservation of rarer habitats (e.g., vernal pools) and by improvements in overall Preserve design resulting from the modifications to better accommodate Quino checkerspot butterfly. Habitat restoration of approximately 19 acres would also be incorporated into the long-term maintenance and management plans for the Preserve, and includes preparation of conceptual restoration plans with management and monitoring and success criteria. These restoration efforts would further increase the function and value of the

habitat within the Preserve with improved species conservation and establishment of effective habitat corridor and linkage connectivity.

The principal focus of the redesign is for Quino checkerspot butterfly. The modified Preserve boundary provides for significantly enhanced conservation of Quino checkerspot butterfly and dot seed plantain (*Plantago erecta*) habitat, one of the host plants for the species. Seventeen additional Quino checkerspot butterfly sighting locations are proposed to be added to the Preserve, with only four sighting locations being converted to development, for a net increase of 13 locations. In addition, Quino checkerspot butterfly host plant populations are preserved on the ridgelines proposed to be incorporated into the Preserve. Based on the overall surveys conducted on the site, approximately 83% of the population would be preserved in the proposed boundary-adjusted Preserve. In general, the ridgelines and hilltops in the northern and eastern portion of the site where Quino checkerspot butterfly has been observed most frequently would be preserved.

Within the approved MSCP Preserve boundary, development is shown in areas containing the K6 and K8 vernal pool resources. The proposed boundary adjustment incorporates the K8 vernal pool series, including nine pools occupied by San Diego fairy shrimp, into a large, intact Preserve that conserves the entire watershed area and provides a 100-foot buffer. Impacts to the K6 vernal pools would remain the same under the existing and proposed MSCP Preserve boundaries. With the proposed Preserve, there would be increased preservation of vernal pools occupied by San Diego fairy shrimp. The revised MSCP Preserve would also result in an increase in preservation of nonnative grassland, which is considered a sensitive upland habitat, within which the K8 pools occur.

Other features that are included with the boundary adjustment are wildlife linkages that are improved over the approved MSCP and culverts under Otay Lakes Road. The originally designated R2 regional linkage would be preserved as a new configuration with the proposed MSCP Preserve. In addition, a new linkage would be provided in the central portion of the site, including a culvert under Otay Lakes Road. This new central linkage was not originally analyzed or anticipated with the wildlife movement studies conducted for Otay Ranch because of the lack of data on use of the region by Quino checkerspot butterfly. The new central linkage is especially important for Quino checkerspot butterfly, since individuals of the species use this area, which includes the preservation of a ridgeline that contains populations of dot seed plantain, a host plant for Quino checkerspot butterfly. A linkage along the eastern edge of the Project site would also be maintained, and would connect with off-Preserve areas to the east, including Dulzura Creek. The Otay Lakes Road crossings are designed to achieve openness ratios prescribed by Donaldson (2005) for large animals. These culverts are costly to build, do not currently exist under Otay Lakes Road, and were not originally considered by the MSCP. The culverts would provide for increased wildlife movement from the Preserve lands north of the proposed Project to other preserved lands to the south, including Lower Otay Lake and City of San Diego Cornerstone Lands.

Finally, as part of the proposed boundary adjustment, the Project applicants are proposing a 10.2-acre parcel north of the Project site to be added as MSCP Preserve. This 10.2-acre parcel consists of chaparral, grassland, and coastal sage, and is adjacent to other Preserve lands. The agencies

have reviewed this parcel and concur that it is acceptable for the proposed boundary adjustment. Thus, the Project would result in the equivalent of 1,099.5 acres of Preserve.

The resulting Preserve design is shown in **Figure 2.3-16**. Although smaller than the original Preserve envision by the MSCP Subarea Plan, the proposed Preserve design is equivalent or improved over the approved MSCP Preserve. Therefore, the Project would have a *less than significant* impact on the County of San Diego MSCP Subarea Plan.

Otay Ranch Resource Management Plan

The Otay Ranch RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch Preserve. The Otay Ranch RMP establishes an obligation for each new development to convey its fair share of the Otay Ranch Preserve. Fair share contribution requirements are established in the RMP as a proportion of ranch-wide development to ranch-wide preserve land. The RMP established a fair share contribution to the creation of the Preserve as a ratio of 1.188 acres of preserve conveyance required for every one (1.000) acre of development. Accordingly, the conveyance ratio for all development is 1.188 acres for each 1 acre of project development area, excluding development areas that include “common uses,” such as schools, parks, and arterial roadways. These “common use” areas are excluded from the required mitigation/conveyance. The Otay Ranch RMP was incorporated into the County’s MSCP Subarea Plan. A project’s compliance with the Otay Ranch RMP constitutes its compliance with the County’s MSCP. The proposed Project would have significant impacts related to biological resources unless the Otay Ranch Preserve is assembled proportionally and concurrently with development in accordance with provisions of the County’s MSCP Subarea Plan via compliance with the Otay Ranch RMP.

The Project would permanently impact approximately 778.8 acres (excluding temporary impacts to slopes, which would be revegetated, and infrastructure uses permitted within the Preserve). Of this amount, common uses include 20.7 acres of public parks, the 10-acre elementary school, and the 2.1-acre public safety site. Thus, the overall number of developable acres subject to the Otay Ranch RMP preserve conveyance ratio of 1.188 is 747.2. Therefore, the 747.2 acres of developable land within the Resort Village is subject to a conveyance obligation of 887.7 acres ($747.2 \text{ acres} \times 1.188 = 887.7 \text{ acres}$). Conveyance of the required amount of RMP preserve land will be achieved through discussions and consultations with the resource agencies. The Otay Ranch RMP does not require that conveyance of preserve land occur within the Specific Plan boundaries, as it is a ranch-wide obligation, and the Otay Ranch RMP allows for conveyance of land anywhere within the Otay Ranch Preserve. Nevertheless, the Project will meet its RMP preserve conveyance obligation onsite. In fact, the Project’s MSCP hardline boundary would ultimately establish a preserve area of 1,089 acres in size.

In summary, the Otay Ranch RMP conveyance obligation is the required fair-share mitigation based on the Otay Ranch RMP and the MSCP. The total acreage of the Resort Village Preserve is a function of the boundaries of the Specific Plan Area. Upon conveyance of 887.7 acres to the Otay Ranch Preserve, the Project will be consistent with the Otay Ranch RMP conveyance requirement. The difference between the conveyance requirement (887.7 acres) and the Project’s

MSCP hardline boundary (1,089 acres), approximately 201.3 acres, is available to meet conveyance or other preserve mitigation obligations for other Otay Ranch impacts.

The Otay Ranch RMP also established required preservation ratios for the entire Otay Ranch. Based on the on-site and cumulative Otay Ranch conservation of selected species, the Project is consistent with the requirements of the Otay Ranch RMP. Therefore, the Project would have a *less than significant* impact related to conformance with the Otay Ranch RMP.

Criterion G: The Project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.

The Project would result in *significant* impacts to coastal sage scrub absent mitigation (*Impact BI-1a*). However, the Project would preserve approximately 828 acres of coastal sage scrub habitat and would not preclude connectivity between areas of high habitat values.

Criterion I: The Project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.

The following MSCP narrow endemic species would be impacted with implementation of the Project: San Diego thornmint and variegated dudleya. Mitigation for impacts to these MSCP narrow endemic species would be achieved through compliance with species-specific mitigation in accordance with the Otay Ranch RMP. The proposed impact to San Diego thornmint is 3% of the on-site population, resulting in 97% preservation of the species, including a 100-foot buffer around the population of the plant. The Otay Ranch RMP requires preservation of 95% of San Diego thornmint, which the Project achieves. Thus, impacts to San Diego thornmint are considered *less than significant*.

The proposed impact to variegated dudleya is 19%, resulting in 81% preservation of the species. The Otay Ranch RMP requires preservation of 75% of variegated dudleya, which the Project achieves. Thus, impacts to variegated dudleya are considered *less than significant*.

Criterion J: The project would reduce the likelihood of survival and recovery of listed species in the wild.

The Project would result in direct impacts to four species listed by USFWS and/or CDFW: San Diego thornmint, San Diego fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher (see Criterion A under Section 2.3.2.3). However, the Project is not expected to reduce the likelihood of survival and recovery of these species. Conservation of these species would be provided through the Otay Ranch RMP and MSCP Subarea Plan conformance/equivalency. For Quino checkerspot butterfly, if mitigation is not pursued under the proposed MSCP Subarea Plan Quino Checkerspot Butterfly Amendment, take of this species would be addressed through a Section 7 Consultation or Section 10 incidental take permit. These processes would ensure that impacts would not affect the likelihood of survival or recovery of the species. Moreover, because the Quino Checkerspot Amendment has not yet been adopted, the Project applicant has independently proposed mitigation that would preserve 966 acres of Quino

checkerspot butterfly habitat (962 acres of preservation on-site and 4 acres of restoration on-site) and result in a net gain of 13 Quino checkerspot butterfly sighting locations. Therefore, impacts related to reducing the likelihood of survival and recovery of listed species in the wild are considered *less than significant*.

Criterion K: The Project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (Migratory Bird Treaty Act).

The Project site is occupied by a wide variety of migratory avian species afforded protection under the MBTA. The Project could result in injury to or mortality of migratory birds (including eggs) or the destruction of active nests if construction occurs during the breeding season. Injury or mortality to migratory birds resulting from construction most frequently occurs during vegetation clearing and involves eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Direct impacts to migratory birds would be considered *significant* absent mitigation (*Impact BI-15*).

2.3.3 Cumulative Impact Analysis

The geographic extent of the Project's cumulative impact analysis includes the South County Segment of the MSCP. Implementation of the proposed Project would contribute to the cumulative loss of biological resources within Otay Ranch and the County of San Diego MSCP Subarea Plan. Impacts to sensitive resources are all identified and addressed by the Otay Ranch RMP and MSCP Subarea Plan for Covered Species and species addressed in the Otay Ranch RMP. The exceptions to these are Quino checkerspot butterfly, vernal pools, and San Diego fairy shrimp, which are not Covered Species.

Both the Otay Ranch RMP and the MSCP Subarea Plan provide mitigation for cumulative impacts to biological resources. The Otay Ranch RMP and MSCP were specifically designed to ensure that cumulative impacts to biological resources from development in this area, including the proposed Project site, are reduced to a less-than-significant level. The Otay Ranch RMP specifically provides the outline of the CEQA mitigation required by the Otay SRP Program EIR. Although portions of the Project would designate open space in addition to existing planned Preserves, encroachment into both the Otay Ranch RMP and MSCP Subarea Plan Preserves requires a demonstration that the modified Preserve would provide for an equal or higher level of biological value. As analyzed in Section 4.0 of the Otay Ranch Resort Village Biological Resources Technical Report (**Appendix C-3**), the proposed reconfiguration of the Preserve provides for an improved preservation of biological value and Preserve design compared to the original Preserve; therefore, significant cumulative impacts related to losses of habitats and species covered by the MSCP Subarea Plan and Otay Ranch RMP would be reduced to *less than significant*.

Cumulative impacts to non-Covered Species are not addressed by the MSCP or the Otay Ranch RMP. Hence, the significant impacts to Quino checkerspot butterfly, vernal pools, and San Diego fairy shrimp may result in cumulatively significant impacts. A review of projects within the MSCP Subarea Plan South County Segment was conducted to evaluate the cumulative impact of the proposed Project on these resources.

San Diego Fairy Shrimp

Absent mitigation, the Project would result in significant impacts to the San Diego fairy shrimp and its habitat (refer to Criterion B in Section 2.3.2.1 and Criterion A in Section 2.3.2.3). One past, present, or foreseeable future projects within the cumulative study area that include vernal pools: Otay Ranch Villages 14, 16, and 19 (**Figure 2.3-17**). Village 14 is designated for 829 acres of development; Village 16 is designated for 1,117 acres of development and Village 19 is designated for 20 acres of development. These villages contain vernal pools and also a population of fairy shrimp that has not been surveyed or quantified as yet. The impact and mitigation also has not been defined. The Project will result in impacts to vernal pools and San Diego fairy shrimp, however the cumulative impact cannot be defined at this time since there is no information available for the cumulative projects. In addition, the Otay Ranch RMP requires preservation of 95% of vernal pools. The overall Otay Ranch Project area, including the Project site, is achieving a 97.8% conservation ratio for vernal pools. The required mitigation measures listed below in Section 2.3.5.3 and Section 2.3.5.5 would address the direct impacts to these resources, and would provide not only for no-net-loss of vernal pool habitat, but would increase the total acreage of restored vernal pools and would provide for increased habitat for San Diego fairy shrimp. Thus, potential cumulative impacts to vernal pools and the San Diego fairy shrimp are considered *less than significant*.

Quino Checkerspot Butterfly

Absent mitigation, the Project would result in significant impacts to the Quino checkerspot butterfly and its habitat (refer to Criterion A in Section 2.3.2.3). This same impact, if not mitigated, would constitute a cumulatively considerable contribution to cumulative effects on Quino checkerspot butterfly. As shown below, however, proposed mitigation measures will preserve 966 acres of Quino checkerspot habitat, including 962 acres of preservation on-site 4 acres of restoration on site, and will result in a net gain of 13 Quino checkerspot sighting areas. Regardless of whether and when the County adopts a Quino Checkerspot Butterfly Amendment to the MSCP Subarea Plan South County Segment, these measures will reduce the Project's contribution to cumulative impacts on Quino checkerspot butterfly to *less than cumulatively considerable*, as that term is defined and used in CEQA Guidelines section 15130.

The Project would result in significant impacts to the Quino checkerspot butterfly and its habitat (refer to Criterion A in Section 2.3.2.3). Cumulative impacts to Quino checkerspot butterfly were evaluated by reviewing past, present, and future projects within the MSCP Subarea Plan South County Segment that included impacts to Quino checkerspot butterfly. Projects with proposed Quino checkerspot butterfly impacts include the Otay Tech Center, Otay Mesa Generating Project, East Otay Mesa Landfill, Otay Hills Quarry, Otay Ranch Villages 14, 16, and 19, and Otay Business Park (**Figure 2.3-17**).

- The Otay Tech Center is a 171-acre project northeast of Otay Mesa Road and State Route 905. This project was required to purchase 5.4 acres of native grassland and 48.6 acres of nonnative grassland.

- The Otay Mesa Generating Project is a 46-acre site on the east side of Altra Road north of Otay Mesa Road. Mitigation includes purchase of 35.9 acres of Quino checkerspot butterfly habitat.
- The Otay Business Park is a 162-acre site southeast of the intersection of Alta Road and Airway Road. The mitigation required for Quino checkerspot butterfly was identified in the project SEIR; however, Section 7 consultation has not yet taken place.
- East Otay Mesa Landfill is a 450 acre site in the East Otay Mesa area approximately two miles east of the Siempre Viva Road exit from Interstate 905. Impacts are to 340 acres that were not identified as to habitat type. Mitigation required for the Quino checkerspot butterfly was not identified but will likely be required.
- Otay Hills Quarry is a 210 acre site that includes a 112 acres impact area of which 99.2 acres is composed of sensitive vegetation communities. Quino checkerspot butterfly is known to be present on the site. The mitigation required for the impacts to Quino checkerspot butterfly has not yet been identified but will likely be required.
- Otay Ranch Villages 14, 16, and 19 includes three development areas within the Proctor Valley Parcel of the Otay Ranch. The villages are located along Proctor Valley Road between Chula Vista and Jamul. Village 14 is designated for 829 acres of development; Village 16 is designated for 1,117 acres of development and Village 19 is designated for 20 acres of development. Quino checkerspot butterfly has been recorded within Proctor Valley however focused surveys have not been conducted and the population size and impact to the species is unknown at this time. The mitigation required for the impacts to Quino checkerspot butterfly has not yet been identified but will likely be required.

Like the proposed Project, the cumulative projects discussed above provide project-specific mitigation to reduce impacts to less than significant on an individual basis; where applicable, they must contribute to the achievement of planning goals for the MSCP, including preservation of sensitive resources. The Otay Ranch Resort Village, as it is proposed in this document, especially meets that goal, since it was designed to minimize impacts to Quino checkerspot butterfly.

The County has prepared a draft Quino Checkerspot Butterfly Amendment that addresses the conservation needs of Quino checkerspot butterfly in the context of projected growth and future and known projects within the MSCP. The MSCP and associated environmental documentation address projected cumulative and growth-inducing impacts to Covered Species and their habitats. The County, however, has yet to adopt the Quino Checkerspot Amendment. Therefore, the Project applicant has proposed mitigation measures that (i) would be consistent with the stated goals identified of the draft Quino Amendment, and (ii) would independently avoid or mitigate project-level biological impacts to Quino checkerspot butterfly and its occupied habitat. Therefore, the Project's contribution to cumulative impacts on Quino checkerspot would be mitigated to less than cumulatively considerable in one of two ways – either (a) the County will adopt the Quino Checkerspot Amendment, in which case all cumulative impacts on Quino checkerspot butterfly within the MSCP area will be deemed mitigated to a less than significant level, or (b) the Project applicant will implement the preserve design and other mitigation

measures described herein and independently reduce to less than cumulatively considerable the Project's contribution to cumulative impacts on Quino checkerspot butterfly.

The applicable mitigation measures for reducing the Project's contribution to cumulative impacts on Quino checkerspot butterfly are **M-BI-9a** and **M-BI-9b**, described below.

2.3.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project's effect on biological resources:

<u>Impact Number</u>	<u>Description of Project's Effect</u>
BI-1a–k	Potential permanent and temporary impacts to sensitive vegetation communities on-site
BI-2	Potential permanent impacts to sensitive vegetation communities on City of San Diego Cornerstone Lands
BI-3	Potential permanent impacts to sensitive vegetation communities on City of Chula Vista lands
BI-4	Potential permanent and temporary impacts to jurisdictional waters and wetlands on-site
BI-5	Potential permanent impacts to jurisdictional vernal pools on-site
BI-6	Potential indirect impacts to jurisdictional waters and vernal pools
BI-7	Potential permanent impacts to jurisdictional waters and wetlands on Cornerstone Lands
BI-8	Potential permanent impacts to jurisdictional waters and wetlands on County of San Diego lands
BI-9	Potential indirect impacts to vegetation communities.
BI-10	Potential permanent impacts to San Diego fairy shrimp
BI-11	Potential permanent impacts to Quino checkerspot butterfly
BI-12	Potential permanent impacts to California adolphia
BI-13	Potential indirect impacts to sensitive plant species
BI-14	Potential indirect impacts to sensitive wildlife species
BI-15	Potential direct and indirect impacts to nesting migratory birds
BI-16	Potential direct and indirect impacts to wildlife movement

2.3.5 Mitigation

The following mitigation measures are recommended to reduce the proposed Project's potentially significant, long-term direct and indirect impacts on biological resources to less-than-significant levels.

2.3.5.1 *Vegetation Communities*

Significant impacts to sensitive upland habitats (**Impact BI-1a–1k**) would be mitigated to a **less-than-significant** level with conformance of the Project to the requirements of the Otay Ranch RMP and MSCP Subarea Plan, and with implementation of the following mitigation measures.

M-BI-1a Conveyance. Prior to the approval of the first Final Map for the Project, the Project applicants shall coordinate with the County of San Diego to establish and annex the Project site into a county-administered Community Facilities District to pay for the on-going management and maintenance of the Otay Ranch Preserve. Prior to the recordation of the first Final Map within each Tentative Map, the Project applicants shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager or its designee at a 1.188 acre for each “Developable Acre” impacted at Final Map as define by the Otay Ranch RMP. The total required conveyance for this project is 887.7 acres.

M-BI-1b Biological Monitoring. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits for any areas adjacent to the Preserve and the off-site facilities located within the Preserve, the Project applicants shall provide written confirmation that a county-approved biological monitor has been retained and will be on-site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area, including trenches, stockpiles, storage areas, and protective fencing. The biological monitor shall also be responsible for implementing the monitoring as required and specified in the restoration plans. The biological monitor shall be authorized to halt all associated activities that may be in violation of the county's MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the Project.

Before construction activities occur in areas adjacent to preserve areas containing sensitive biological resources, all workers shall be educated by a county-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

M-BI-1c Temporary Fencing. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the Project applicants shall install prominently colored fencing and signage wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during

all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence to the satisfaction of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation, that work was conducted as authorized under the approved land development permit and associated plans.

M-BI-1d Upland Restoration. Restoration areas may incorporate salvaged materials such as seed collection and translocation of plant materials as determined to be appropriate. The project biologist shall review the plant materials prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. Prior to grading, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) shall be submitted to and receive approval from the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

The Conceptual Upland Restoration Plan shall include the following to ensure the establishment of the restoration objectives: a 24- by 36-inch map showing the restoration areas, site preparation information, type of planting materials (species ratios, source, size of container), planting program, 80% success criteria, 5-year monitoring plan, and detailed cost estimate. The cost estimate shall include planting, plant materials, irrigation, maintenance, monitoring, and report preparation. The report shall be prepared by a county-approved biologist and a state of California licensed landscape architect. The habitat created pursuant to the Conceptual Upland Restoration Plan must be placed within an open space easement dedicated to the County of San Diego prior to or immediately following the approval of the Conceptual Upland Restoration Plan.

M-BI-1e Limited Building Zone (LBZ) Easement. In order to protect sensitive biological resources in the adjacent preserve, a Limited Building zone (LBZ) easement will be granted to the County, as shown on the Tentative Map. The purpose of this easement is to limit the need to clear or modify vegetation for fire protection purposes within the preserve, restrict unauthorized access, prohibit landscaping with exotic pest plants that may invade the preserve, and prohibit artificial lighting and focal use areas that would alter wildlife behavior in the preserve. This easement requires the landowner to maintain permanent fencing and signage. The easement precludes 1) placement, installation, or construction of habitable structures, including garages or accessory structures designed or intended for occupancy by humans or animals; 2) landscaping with exotic pest plants; 3) artificial lighting except low-pressure sodium fixtures shielded and directed away from the preserve; and 4) focal use areas including arenas, pools, and patios.

- M-BI-1f Fencing and Signage.** In order to protect the preserve from entry upon completion of construction, an open space fence or wall will be installed along all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan and Proposed Fencing, Preserve signage, and Fuel Modification Zones (see map pocket). The barrier must be a minimum construction of vertical metal fencing, but may be other suitable construction material, as approved by Department of Planning and Development Services and the Director of Parks and Recreation. In order to protect the preserve from entry, informational signs will be installed, where appropriate, along all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan. The signs must be corrosion resistant, a minimum of 6 inches by 9 inches in size, on posts not less than three (3) feet in height from the ground surface, and state “Sensitive Environmental Resources Protected by Easement. Entry without express written permission from the County of San Diego is prohibited.”
- M-BI-1g Habitat Manager for the Offsite 10.2-acre Parcel.** In order to provide for the long-term management of the proposed 10.2-acre parcel that will be added to the MSCP Preserve, a habitat manager shall be designated either privately selected, a non-profit organization, or a government agency. If a private or non-profit organization is selected as the habitat manager, a Resource Management Plan (RMP) will be prepared and implemented. The final RMP will be completed to the satisfaction of the Director of Department of Planning and Development Services, as follows: 1) the plan will be prepared and approved pursuant to the most current version of the County of San Diego Biological Report Format and Content Requirements; 2) the habitat land to be managed will be owned by a land conservancy or equivalent; 3) open space easements will be dedicated in perpetuity; 4) a resource manager will be selected and approved, with evidence provided demonstrating acceptance of this responsibility; 5) the RMP funding mechanism will be identified and adequate to fund annual costs for implementation; and 6) a contract between the applicant and County will be executed for the implementation of the RMP, and funding will be established with the County as the third party beneficiary. In lieu of providing a private habitat manager as noted above, the applicant may contract with a federal, state, or local government agency with the primary mission of resource management to take fee title and manage the 10.2-acre parcel of land. Evidence of satisfaction must include a copy of the contract with the agency, and a written statement from the agency that (1) the land contains the specified acreage and the specified habitat, or like functioning habitat; and (2) the land will be managed by the agency for conservation of natural resources in perpetuity.

Implementation of the following mitigation measure would reduce significant impacts to City of San Diego Cornerstone Lands (**Impact BI-2**) to a *less-than-significant* level.

M-BI-2 Prior to widening Otay Lakes Road, the Project applicants shall mitigate for the 11.09 acres of impacts to Cornerstone Lands and complete an MHPA Boundary Adjustment to the satisfaction of the City of San Diego Development Services Director (or his/her designee). Replacement of MHPA lands within Cornerstone Lands is proposed to be at a 1:1 ratio for lands replaced inside the MSCP Preserve. For replacement lands that are located outside of the MSCP Preserve, the mitigation is at a 4:1 ratio. Mitigation for impacts to the various vegetation communities shall be based on the tier of the impacted lands in accordance with the mitigation ratios provided by the MSCP. The mitigation and MHPA Boundary Adjustment may be implemented within the Otay Ranch Preserve on property surrounding the existing Cornerstone Lands, north of Otay Lakes Road, or may be off-site at a location determined to be acceptable by the City of San Diego.

Compliance with the Chula Vista HLIT through implementation of the following mitigation measure would reduce significant impacts to sensitive habitats on City of Chula Vista lands (*Impact BI-3*) to a *less-than-significant* level.

M-BI-3 Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the Project shall be required to obtain a HLIT permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and II vegetation communities as shown in **Table 2.3-11** and in accordance with Table 5-3 of the Chula Vista MSCP Subarea Plan. Mitigation for off-site impacts outside of Otay Ranch shall be in accordance with the Chula Vista MSCP Subarea Plan and the Chula Vista HLIT Ordinance.

Prior to issuance of any land development permits, the Project applicants shall mitigate for direct impacts pursuant to Section 5.2.2 of the City of Chula Vista MSCP Subarea Plan. In compliance with the Subarea Plan, the applicants shall secure mitigation credits within a City- and wildlife-agency-approved conservation bank or other approved location offering mitigation credits consistent with the ratios specified in **Table 2.3-11** herein.

The Project applicants shall be required to provide verification of purchase to the City of Chula Vista prior to issuance of any land development permits.

In the event that Project applicants are unable to secure mitigation through an established mitigation bank approved by the City of Chula Vista and the wildlife agencies, the Project applicants shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City of Chula Vista's MSCP Subarea Plan or MSCP Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City of Chula Vista's MSCP Subarea Plan and subject to wildlife agency concurrence.

Prior to issuance of any land development permit for the widening of Otay Lakes Road, and to the satisfaction and oversight of the city's Development Services

Director (or his/her designee), the Project applicants shall secure the parcel(s) that would be permanently preserved for in-kind habitat impact mitigation, if a mitigation bank purchase is unavailable, prepare a long-term management and monitoring plan for the mitigation area, secure an appropriate management entity to ensure that long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity.

The long-term management and monitoring plan shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the management and monitoring plan. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the wildlife agencies as being sufficient to ensure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the wildlife agencies shall be recorded prior to issuance of any land development permits.

2.3.5.2 Jurisdictional Waters and Wetlands

Implementation of the following mitigation measures would ensure no net loss of jurisdictional wetlands within the watershed, and would reduce significant direct impacts to jurisdictional waters and wetlands (**Impact BI-4, Impact BI-7, and Impact BI-8**) to a *less-than-significant* level.

M-BI-4 Prior to impacts occurring to waters and wetlands under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 2.15 acres of wetlands shall be created (1:1 creation-to-impact ratio). An additional 4.30 acres of wetlands shall be enhanced (2:1 enhancement-to-impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) approved by the County of San Diego and appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the

Director of Planning and Development Services (or his/her designee), the Director of Parks and Recreation, ACOE, RWQCB, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to original their conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanent impacted wetlands.

M-BI-5

Prior to impacts occurring to waters and wetlands within the City of San Diego Cornerstone Lands, under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 2.15 acres of wetlands shall be created (1:1 creation-to-impact ratio). An additional 4.30 acres of wetlands shall be enhanced (2:1 enhancement to impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to original conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanent impacted wetlands.

M-BI-6

Prior to impacts occurring to waters within the County of San Diego under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts

shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 0.01 acre of waters of the U.S. shall be created (1:1 creation-to-impact ratio). An additional 0.02 acre of waters of the U.S. shall be enhanced (2:1 enhancement-to-impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to their original conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanently impacted wetlands.

2.3.5.3 Vernal Pools

The Otay Ranch RMP contains guidelines for preservation and, when applicable, mitigation for impacts to vernal pools. The Otay Ranch RMP was written to mitigate for biological resource impacts to satisfy CEQA, and includes the requirement for providing a 100-foot buffer around the watershed but does not identify mitigation ratios. The County of San Diego provides a mitigation ratio of 2:1 for Tier 1 habitat (includes vernal pools), but also indicates that 5:1 mitigation is required for areas outside of the MSCP (County of San Diego 2010b). Because the K6 vernal pools impacted by the proposed Project are characterized as having low to moderate value, the proposed mitigation will use a 2:1 mitigation ratio for the pools not occupied by San Diego fairy shrimp, and a 5:1 mitigation ratio for the occupied pool. Thus, 0.025 acre will mitigate for impacts to the occupied pool, and 0.214 acre will mitigate for the impacts to the unoccupied pools, for a total mitigation of 0.239 acre of vernal pool basin area.

Implementation of either of the following mitigation options would reduce direct impacts to 0.11 acre of potential jurisdictional vernal pools (**Impact BI-5**) to a *less-than-significant* level by ensuring that there would be no net loss of vernal pool basin area within the region.

M-BI-7

Option No. 1: This option consists of mitigation in the form of restoration of vernal pools within the Resort Village Project site. This option shall involve restoration and reconfiguration of the K8 vernal pool group. These vernal pools are proposed to be preserved, and a 100-foot minimum buffer is provided for protection of the pools and their watershed. Mitigation shall involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species. A Conceptual Vernal Pool Mitigation Plan shall be prepared that outlines the location and activities of the restoration (Appendix J of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR). The plan will be submitted to, and be to the satisfaction of, both the Directors of the Departments of Planning & Development Services and of Parks and Recreation. A ratio of at least 1:1 restoration shall include the establishment of new vernal pool basins within the K8 vernal pool group. The balance of the mitigation ratio shall include enhancement of the existing pools. There is a total of 0.26 acre available for enhancement within the existing pools. The additional restoration mitigation requirement (a total of 0.112 acre) shall be directed toward establishing new basins within the K8 vernal pool group to the greatest extent feasible. An additional area of potential vernal pool restoration is located within the K9 mesa, if needed. This area is also composed of suitable soils for vernal pools. These soils are present on the K6 and K8 mesas. This additional area is composed of nonnative grass species, is of relatively flat topography, and exhibits some mounding characteristics similar to mima mounds.

Based on the inundation records, fairy shrimp surveys, and floral inventory, the following potential vernal pools meet the previously applied ACOE jurisdictional criteria:

- K6 – Vernal Pools 1, 3, 5, 6, 7, 8, 9, 10, 12, and 13 (0.11 acre – total basin area)
- K8 – Vernal Pools 1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, A1, and A4 (0.26 acre – total basin area)

Assuming all of K6 is impacted and the mitigation requirement is a combination of 2:1 and 5:1, as outlined above, a total mitigation of 0.239 acre shall be required. This is typically satisfied by providing at least 1:1 as restoration and the balance as enhancement. Enhancement within the K8 pools will likely be restricted by the resource agencies to those pools not containing fairy shrimp. **Table 2.3-12** summarizes the existing conditions of the pools within the K8 mesa.

Option No. 2: This option consists of mitigation in the form of purchase of vernal pool mitigation bank credits for a total of 0.239 acre at a combined 2:1 and 5:1 mitigation ratio.

2.3.5.4 Sensitive Plant Species

Direct impacts to most sensitive plant species would be mitigated to a *less-than-significant* level with conformance of the Project to the requirements of the Otay Ranch RMP and MSCP Subarea Plan, as well as mitigation measures **M-BI-1a through 1g**. However, direct impacts to California adolphia are considered significant (**Impact BI-12**). This San Diego County List B species is not covered under the MSCP and requires species-specific mitigation. Implementation of the following measure would reduce impacts to California adolphia to a *less-than-significant* level. Alternatively, documentation of preservation of this species would provide mitigation to reduce the impact to a *less-than-significant* level.

M-BI-8 Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable California adolphia, the Project applicants may prepare a Resource Salvage Plan if seed collection is considered to be warranted. As described above in **M-BI-1d**, the project biologist shall review the California adolphia (approximately 20 plants) proposed to be impacted prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. If determined that salvage is appropriate, a Resource Salvage Plan shall be prepared by a county-approved biologist to the satisfaction of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

The Resource Salvage Plan shall, at a minimum, evaluate options for seed collection within the Preserve or from the plants proposed to be impacted. The Resource Salvage Plan shall include collection methods and timing. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site within the slope restoration areas and will be based on the most reliable methods of successful restoration. The plan shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success; identification of receptor locations; discussion of the goals of the plan; maintenance activities during the monitoring period; monitoring plan; and inclusion of performance standards, reporting schedules, and long-term management. As an alternative, the California adolphia may be included within planting palettes for the slope revegetation areas that shall receive monitoring and shall be required to meet restoration goals and success criteria. Prior to grading the project, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR), as noted in **M-BI-1d**, will be submitted to and receive approval from the Director of the Department of Planning and Development Services (or their designee) and the Director of Parks and Recreation. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight

of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

2.3.5.5 *Sensitive Wildlife Species*

Potential permanent impacts to San Diego Fairy Shrimp and Quino checkerspot butterfly are considered significant due to the very limited number of extant occurrences of these species in San Diego County (**Impact BI-10** and **Impact BI-11, respectively**). Because these species are federally listed as endangered, take would be addressed either by compliance with the MSCP Subarea Plan Quino Amendment being prepared by the County of San Diego, or a Section 7 Consultation or Section 10 incidental take permit. Mitigation for direct impacts to Quino checkerspot butterfly individuals requires development and implementation of a long-term Quino Checkerspot Butterfly Management/Enhancement Plan until such time that the Quino Amendment is approved or individual take is authorized through either the Section 7 Consultation process or a Section 10 Incidental Take permit is issued. Mitigation for direct impacts to San Diego fairy shrimp and the loss of habitat for the species requires development and implementation of a Conceptual Vernal Pool Mitigation Plan. It should be noted that 97% of the San Diego fairy shrimp would be preserved, which exceeds the requirements of the Otay Ranch RMP to preserve 95%.

Since it is likely that all of the coastal sage scrub and disturbed coastal sage scrub in the proposed Resort Village Preserve (962 acres of preserved upland habitat) is occupied by the Quino checkerspot butterfly, a sufficient amount of habitat is provided on-site to ensure the long-term conservation of the species. There is additional upland habitat also within the Preserve (87 acres of chaparral and grassland communities) that may be used by Quino checkerspot butterfly as well. The Preserve design includes significant larval host plant populations, known occurrences of Quino checkerspot butterfly from multiple years of surveys, suitable habitat for the species, and ridgelines and hilltops where the species has been recorded. There also is connectivity to off-site occupied areas to the north, east, and south, and provisions are included in the Project design to provide for connectivity within the site and to off-site areas. Thus, the Project includes preservation of occupied Quino checkerspot butterfly habitat within the same region as the impact at both on-site and off-site locations. Implementation of the following measures would reduce direct impacts to Quino checkerspot butterfly and its critical habitat (**Impact BI-11**) to a *less-than-significant* level.

M-BI-9a Take Authorization: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) it has secured the necessary take authorization for Quino checkerspot butterfly through either the Section 7 Consultation, Section 10 incidental take permit requirements, or the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment, if/when approved. The Project shall provide preservation of 962 acres of the required mitigation of 966 acres (2 x 483 acres). The Project is required to provide an additional 4 acres of occupied habitat. This mitigation is proposed to be accomplished by restoration of unsuitable habitat within the Preserve to suitable coastal sage scrub. **Figure 2.3-18** illustrates the location of

these potential restoration areas. A total of 6.3 acres is designated as potential restoration of which 4 acres will be needed.

- M-BI-9b** Quino Management/Enhancement Plan: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall prepare a long-term Quino Checkerspot Butterfly Management/Enhancement Plan that shall, at a minimum, include a survey methodology for on-site preserve areas pre- and post-construction to monitor effects on Quino checkerspot butterfly population health. This plan will be submitted to, and be to the satisfaction of, both the Directors of the Departments of Planning & Development Services and of Parks and Recreation. The Quino Checkerspot Butterfly Management/Enhancement Plan shall be superseded or unnecessary upon completion and adoption of the County of San Diego Quino Checkerspot Butterfly MSCP Amendment. Adaptive management techniques shall be developed within the plan with contingency methods for changed circumstances. These measures shall ensure that the potential loss of individuals and the loss of habitat for the species related to the proposed development are adequately offset by measures that will enhance the existing preserved population, and shall provide data that will help the species recover throughout its range.

Mitigation for impacts to San Diego fairy shrimp habitat is addressed in **M-BI-7**. Implementation of mitigation measures **M-BI-7** and **M-BI-10** (below) would reduce direct impacts to San Diego fairy shrimp (*Impact BI-10*) to a *less-than-significant* level.

- M-BI-10** Prior to the issuance of the first grading permit that impacts the K6 vernal pool complex, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) that the Project has secured take authorization of San Diego fairy shrimp through Section 7 Consultation, a Section 10 incidental take permit, or as may be incorporated into the provisions of the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment to achieve the best results toward the survival and recovery of the species.

The Project site is occupied by a wide variety of migratory avian species afforded protection under the MBTA. The Project could result in injury or mortality of migratory birds (including eggs) or the destruction of active nests. Direct impacts to migratory birds would be considered a significant impact (*Impact BI-15*). Implementation of the following mitigation measure would reduce potential impacts to raptors and/or any migratory birds protected under the MBTA to a *less-than-significant* level.

- M-BI-11** To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance shall occur outside of the breeding season for these species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project applicants shall retain a County-of-San-Diego-approved biologist to conduct a pre-construction survey to determine the presence

or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction, and the results shall be submitted to the County of San Diego for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the County of San Diego, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the County of San Diego for review and approval, and implemented to the satisfaction of the Director of Planning and Development Services (or his/her designee). The County of San Diego's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

2.3.5.6 *Habitat Linkages/Movement Corridors*

Implementation of the following mitigation measure, combined with the proposed preserve configuration, would reduce significant impacts to wildlife movement (**Impact BI-16**) to a *less than significant* level.

M-BI-12 Four wildlife culverts shall be constructed to provide and improve habitat linkages and movement corridors (**Figure 2.3-14**). In general, the design of the wildlife culverts has been developed to be consistent with the MSCP Subarea Plan, where feasible. The wildlife culverts shall have fencing to funnel wildlife movement, shall have a natural bottom with native vegetation at either end, and shall be of size and height of opening so there is direct line of site from one end to the other. Because there is natural light within the culverts, low level illumination is not included. Traffic is generally of low volume on the internal crossings hence the sound insulation is of little benefit. The details of each wildlife culvert or crossing that shall be provided are presented below.

Internal Wildlife Crossing No. 1 (214 feet long × 28.83 feet wide × 13.17 feet tall = openness ratio of 0.44)

This arch culvert structure shall be situated internal to the project site along Strada Piazza, which connects the central portion of the open space to the lake. The 150-foot length is augmented by wing walls on either side of the crossing structure. This is beneficial as it effectively visually decreases the length of the culvert.

Otay Lakes Road Wildlife Crossing No. 1 (95 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 0.68)

This structure shall be located south of Internal Wildlife Crossing no. 1 along Otay Lakes Road. The culvert is sized appropriately and should function as intended. It is well below the grade of Otay Lakes Road to prevent wildlife movement up to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

Internal Wildlife Crossing No. 2 (248 feet long × 43.00 feet wide × 16.18 feet tall = openness ratio of 0.63)

This structure shall be situated along Strada Piazza, which is a single non-split roadway at this location. The culvert slopes 12% to the south. This culvert conveys wildlife to a location just east of Lower Otay Lake to quality riparian habitat and lands to the east. Wing walls occur at both ends of the culvert. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

Otay Lakes Road Wildlife Crossing No. 2 (58 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 1.12)

This structure shall be located south of Internal Wildlife Crossing no. 2 under Otay Lakes Road. This crossing is also located below the grade of Otay Lakes Road to prevent wildlife from gaining access to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

2.3.5.7 Indirect Impacts

The Project would potentially result in significant indirect impacts to vernal pools and jurisdictional waters (**Impact BI-6**), vegetation communities (**Impact BI-9**), sensitive plant species (**Impact BI-13**), sensitive wildlife species (**Impact BI-14**), and wildlife movement (**Impact BI-16**). This section outlines mitigation measures that would reduce these indirect impacts to a level below significance. Measures for significant indirect impacts to vegetation communities, sensitive plant species, and wildlife corridors and habitat linkages are identical.

The Project site drainage basins would be designed to provide effective water quality control measures, as outlined in the Water Quality Technical Report. Design and operational features of the drainage basins would include design features to maximize infiltration; maximize detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris. The following measure would reduce indirect impacts to vernal pools and jurisdictional waters (**Impact BI-6**) near the impact areas to a *less-than-significant* level by ensuring no hydrologic change related to the proposed development:

M-BI-13 Prior to issuance of grading permits for development areas adjacent to the Preserve, the Project applicants shall develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Project's Preserve Edge Plan (**Appendix C-23**) shall be implemented to avoid the release of toxic substances associated with urban runoff:

- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.

- Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled “No Dumping–Drains to Ocean.” Storm drains shall be regularly maintained to ensure their effectiveness.
- Parking lots shall be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
- Permanent energy dissipaters shall be included for drainage outlets.
- The BMPs contained in the SWPPP shall include silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding.

The following measure would reduce indirect impacts to vegetation (**Impact BI-9**), sensitive plant species near the impact areas (**Impact BI-13**), and wildlife movement (**Impact BI-16**) to a *less-than-significant* level by ensuring no change related to the proposed development:

M-BI-14

- During construction, material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive plant communities. During grading and construction, graded areas shall be periodically watered to minimize dust affecting adjacent vegetation.
- During Project operation, all recreational areas that use chemicals or animal by-products, such as manure, that are potentially toxic or impactive to sensitive habitats or plants shall incorporate methods on-site to reduce impacts caused by the application and/or drainage of such materials into Preserve areas.
- No invasive nonnative plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat.
- During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
- Dewatering shall be conducted in accordance with standard regulations of RWQCB. A National Pollutant Discharge Elimination System (NPDES) permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of construction. This will minimize erosion, siltation, and pollution within sensitive communities.
- Design of drainage facilities shall incorporate long-term control of pollutants and storm water flow to minimize pollution and hydrologic changes. An Urban Runoff Plan and operational BMPs shall be approved by the San Diego County Department of Planning and Development Services prior to construction.

- Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.
- A hydroseed mix that incorporates native species, is appropriate to the area, and is without invasives shall be used for slope stabilization in transitional areas.
- Peruvian pepper trees and other invasive vegetation would not be planted in streetscapes, or within 50 feet of the Preserve, where they could impact native habitat.

The following measure would reduce indirect impacts to sensitive wildlife species near the impact areas (**Impact BI-14**) to a *less-than-significant* level by ensuring no change related to the proposed development:

M-BI-15

- No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for coastal California gnatcatcher (February 15 to August 15, annually). If construction occurs during the breeding season, a nesting survey for California gnatcatcher shall be conducted prior to the onset of construction and construction may occur if active nests can be avoided and provided an adequate buffer or noise levels are documented to be below 60 dBA L_{eq} at the nest site.
- When clearing, grading, or grubbing activities occur during the breeding season for raptors (January 15 to July 31, annually), nesting bird surveys shall be conducted by a qualified biologist for the San Diego County Department of Planning and Development Services to identify active nest locations. Construction activities shall be restricted or modified such that noise levels related to those activities are below 60 dBA L_{eq} , or other Wildlife Agency approved restrictions, in the vicinity of the active nest site.
- Lighting of all developed areas adjacent to the preserve shall be directed away from the preserve, wherever feasible and consistent with public safety. Where necessary, development shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the preserve and sensitive species from night lighting. Consideration shall be given to the use of low-pressure sodium lighting.
- Uses in or adjacent to the preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise-reduction measures or be curtailed during the breeding season of sensitive bird species.

- Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.

2.3.5.8 Cumulative Impacts to Quino Checkerspot Butterfly

This impact would be mitigated by the County's anticipated adoption of the draft Quino Amendment, the goals of which guided the design of the proposed project. However, in the event that the County does not finalize and adopt the Quino Amendment, this project's contribution to cumulative impacts on the Quino checkerspot butterfly would still be reduced to less than cumulatively considerable through implementation of MM-BIO-9a and MM-BIO-9b, as described above. Thus, this cumulative impact would be mitigated to *less than significant*.

2.3.6 Conclusions

The Project would result in *significant* direct and indirect impacts to the following biological resources: sensitive vegetation communities, jurisdictional waters and wetlands (including vernal pools), sensitive plant and wildlife species, and wildlife movement corridors. With implementation of Project design features to avoid potential impacts, and with mitigation measures M-BI-1 through M-BI-15, all identified significant impacts to biological resources would be reduced to a *less-than-significant* level.

Table 2.3-1. Acreages of Vegetation Communities

Vegetation Community Type	Holland Code	Project Site	Off-Site*	Total Acres
<i>Sensitive Upland Communities</i>				
Coastal Sage Scrub	32500	1,121.51	7.61	1,129.12
Disturbed Coastal Sage Scrub	32500	348.62	4.99	353.61
Chamise Chaparral	37210	143.14	—	143.14
Disturbed Chamise Chaparral	37210	15.67	—	15.67
Scrub Oak Chaparral	37900	22.45	—	22.45
Southern Mixed Chaparral	37121	4.95	—	4.95
Disturbed Valley Needlegrass Grassland	42110	110.58	0.03	110.61
Nonnative Grassland	42200	78.96	5.44	84.40
<i>Subtotal</i>		<i>1,845.88</i>	<i>18.07</i>	<i>1,863.95</i>
<i>Sensitive Wetland Communities (ACOE, RWQCB, CDFW, unless otherwise noted)</i>				
Cismontane Alkali Marsh	52310	6.39	—	6.39
Disturbed Cismontane Alkali Marsh	11200	0.17	—	0.17
Freshwater Marsh	52410	—	0.17	0.17
Mulefat Scrub, all jurisdictions		0.02		0.02
Mulefat Scrub, CDFW only	63310	0.06	—	0.06
Disturbed Mulefat Scrub, all jurisdictions			0.10	0.10
Disturbed Mulefat Scrub, CDFW only	63310	—	0.03	0.03
Open Water	64140	0.17	0.49	0.66
Southern Willow Scrub	63320	1.19	0.04	1.23
<i>Subtotal</i>		<i>8.00</i>	<i>0.83</i>	<i>8.83</i>
<i>Non-Sensitive Communities and Land Covers</i>				
Developed Land	12000	0.88	19.23	20.10
Disturbed Habitat	11300	13.46	0.38	13.85

Table 2.3-1. Acreages of Vegetation Communities

Vegetation Community Type	Holland Code	Project Site	Off-Site*	Total Acres
Eucalyptus Woodland	79100	—	0.61	0.61
Ornamental	11000	—	0.94	0.94
Stock Pond	18000	0.79	—	0.79
<i>Subtotal</i>		<i>15.13</i>	<i>21.16</i>	<i>36.29</i>
Total Acres		1,869.01	40.06	1,909.07

* Includes proposed off-site improvement to Otay Lakes Road and any improvements that are required within City of San Diego-owned Cornerstone Lands.

Table 2.3-2. Summary of Special-Status Plant Species Detected

Scientific Name Common Name	Status Federal/ State CRPR MSCP Coverage County List	Locations and Population Size on Site		
		<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
<i>Acanthomintha ilicifolia</i> San Diego thornmint	FT/SE 1B.1 Covered Narrow Endemic List A	Michael Brandman Associates (MBA) 1989/1991	Observed in all recent surveys	Identified in two disturbed areas with heavy clay soils. Associated vegetation consists of nonnative grasses and annuals. Populations cover approximately 0.1 and 3.3 acres each. Because the population is densely distributed in these locations, the actual number of individuals was not quantified. Analysis of this plant is based on the acreage over which it occurs.
<i>Adolphia californica</i> California adolphia	None/None 2B.1 Not Covered List B	Not observed	Observed in 1999	Identified in two locations in the western portion of the site within sparse coastal sage scrub (<20 individuals).
<i>Convolvulus simulans</i> Small-flowered morning-glory	None/None 4.2 Not Covered List D	Not observed	Observed in 2000	Three locations in western part of Project site in clay soil grasslands; approximately 120 total individuals.
<i>Dichondra occidentalis</i> Western dichondra	None/None 4.2 Not Covered List D	MBA 1989/1990	Observed in 1999 and 2000	Recorded in eight locations on the central ridges of the site. A total of 30 patches were recorded that vary from 1 to 500 square feet. Recorded based on patch size due to low-growing dense form of the species. The species covers approximately 0.50 acre total over the 30 patches.
<i>Dudleya variegata</i> Variegated dudleya	None/None 1B.2 Covered – Narrow Endemic List A	MBA 1989/1990	Observed in 1999 and 2000	Identified in 40 locations throughout the site. Estimated population size on-site is approximately 5,833 individuals. Generally in clay soils and west-facing slopes, ridge lines, or margins of mesas.

Table 2.3-2. Summary of Special-Status Plant Species Detected

Scientific Name Common Name	Status Federal/ State CRPR MSCP Coverage County List	Locations and Population Size on Site		
		<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
<i>Ferocactus viridescens</i> San Diego barrel cactus	None/None 2B.1 Covered List B	MBA 1989/1990	Observed in all recent surveys	Identified in approximately 50 locations throughout the Project site, generally on south-facing slopes. Occurrences usually consist of <5 individuals; large stands contain 10–15 individuals. Approximately 217 individuals were recorded. Habitat association is generally open coastal sage scrub.
<i>Harpagonella palmeri</i> Palmer's grapplinghook	None/None 4.2 Not Covered List D	Not identified	Observed in 1999 and 2000	Identified in three areas in the eastern and western portions of the site within disturbed coastal sage scrub, dirt road margins, and nonnative grassland with heavy clay soils. Approximately 114 individuals were recorded.
<i>Iva hayesiana</i> San Diego marsh-elder	None/None 2B.2 Not Covered List B	MBA 1989/1990	Observed in 1999 and 2000	Abundant within narrow drainages throughout the site. Total on-site population in the thousands. Generally associated with cismontane alkali marsh or sparsely vegetated, rocky stream channels. Due to densely occurring populations within these drainages, this plant was recorded by area rather than number of individuals. A total of 5.4 acres of this species was recorded on-site.
<i>Juncus acutus</i> ssp. <i>leopoldii</i> Southwestern spiny rush	None/None 4.2 Not Covered List D	MBA 1989/1990	Observed in 1999 and 2000	Identified in 11 locations within cismontane alkali marsh. Occurrences typically contain <10 individuals within each location. Approximately 30 individuals present on-site.
<i>Microseris douglasii</i> ssp. <i>platycarpha</i> Small-flowered microseris	None/None 4.2 Not Covered List D	Not observed	Observed in 2000	Six locations identified in the western part of the site in open nonnative grassland/coastal sage scrub. Approximately 1,270 individuals recorded on the site.

Table 2.3-2. Summary of Special-Status Plant Species Detected

Scientific Name Common Name	Status Federal/ State CRPR MSCP Coverage County List	Locations and Population Size on Site		
		<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
<i>Bloomeria [Muilla] clevelandii</i> San Diego goldenstar	None/None 1B.1 Covered List A	MBA 1989/1990	Observed in 1999 and 2000	Identified in 21 locations in western and eastern portions of the site on mesic slopes containing sparse coastal sage scrub/native grassland. Approximately 1,146 individuals in western part of site and 1,400 individuals in eastern part in 2000. 1999 observations were fewer in number of individuals than 2000 observations, presumably due to rainfall differences.
<i>Myosurus minimus</i> ssp. <i>apus</i> Little mousetail	None/None 3.1 Not Covered List C	MBA 1989/1990	Not observed in recent surveys	Number of individuals was not recorded. Was not detected in recent focused surveys and is no longer considered to be present in K6 vernal pools.
<i>Ophioglossum californicum</i> California adder's- tongue	None/None 4.2 Not Covered List D	MBA 1989/1990	Not observed	Two locations described near Otay Lakes Road in west and south-central portions of the site. Location was not mapped by MBA. Not identified during recent surveys; may no longer be present since it was not recorded during the rare plant surveys conducted in 2000.
<i>Pentachaeta aurea</i> ssp. <i>aurea</i> Golden-rayed pentachaeta	None/None 4.2 Not Covered List D	Not observed	Observed in 2000	Four locations identified in western portion of site; approximately 91 individuals occur in coastal sage scrub/grassland.
<i>Quercus dumosa</i> Nuttall's scrub oak (Possible mis- identification)*	None/None 1B.1 Not Covered List A	Not observed	Observed in all recent surveys	Occurs as a major component in areas mapped as scrub oak chaparral (approximately 200 individuals per acre). The acreage encompassed by this species is approximately 6.2 acres, including additional small patches within chaparral in the western portion of the site.
<i>Romneya coulteri</i> Coulter's matilija poppy	None/None 4.2 Not Covered List D	Not observed	Observed on-site	Number or location not mapped. Single location described as being adjacent to a drainage in eastern part of site.

Table 2.3-2. Summary of Special-Status Plant Species Detected

Scientific Name Common Name	Status Federal/ State CRPR MSCP Coverage County List	Locations and Population Size on Site		
		<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
<i>Salvia munzii</i> Munz's sage	None/None 2B.2 Not Covered List B	MBA 1989/1990	Observed in all recent surveys	Occurs throughout the site, but most densely in the northwestern quarter. Also occurs on K9 mesa. Most areas containing dense coastal sage scrub in this area contain approximately 50%–80% vegetation cover of <i>S. munzii</i> . Because the population is densely distributed in these locations, the actual number of individuals was not quantified. Analysis of this plant is based on the acreage over which it occurs, approximately 295 acres.
<i>Viguiera laciniata</i> San Diego County viguiera	None/None 4.2 Not Covered List D	MBA 1989/1990	Observed in all recent surveys	Occurs throughout the site, but most densely in the northern portion. Encompasses approximately 1,071 acres of the site. Comprises between 5% and 30% of vegetation cover in coastal sage scrub.

* More recent information challenges the identification of Nuttall's scrub oak on-site due to the inland location of the site and general coastal distribution of the species (see Section 2.3.1.2). However, without more concrete documentation, the current conclusion will be assumed to be correct.

Federal Designations:

FE Federally Listed as Endangered

FT Federally Listed as Threatened

State Designations:

SE State-listed as Endangered

ST State-listed as Threatened

California Native Plant Society (CNPS) Designations:

CRPR = California Rare Plant Rank

CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere

CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

CRPR 3: Plants About Which More Information is Needed – A Review List

CRPR 4: Plants of Limited Distribution – A Watch List

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

MSCP Designations:

Covered: Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

Not Covered: Not Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

County Designations:

List A: Plants rare, threatened, or endangered in California and elsewhere (corresponds to CRPR 1B)

List B: Plants rare, threatened, or endangered in California but more common elsewhere (corresponds to CRPR 2)

List C: Plants that may be quite rare, but need more information to determine their rarity status (corresponds to CRPR List D)

List D: Plants of limited distribution and are uncommon, but not presently rare or endangered (corresponds to CRPR 4)

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	USFWS: FE CDFW: None MSCP: Covered County: Group 1	Small, shallow vernal pools, occasionally ditches and road ruts	Not observed	Observed in 2000, 2004, and 2008	A total of nine basins on K8 and one basin on K6 are confirmed occupied by this species. Within off-site areas, a total of five road rut basins are occupied by this species.
Quino checkerspot butterfly (<i>Euphydryas editha quino</i>)	USFWS: FE CDFW: None MSCP: Not Covered County: Group 1	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant dot seed plantain (<i>Plantago erecta</i>) and nectar plants must be present	Not observed (known from 1970s P. Ehrlich research)	Observed in 1999, 2000, 2004, and 2008	Focused surveys of the entire site in 1999 and 2000 resulted in the observation of 48 individuals. 2004 surveys of the open space area resulted in observation of 1 individual in the northwestern corner. Focused surveys of the entire site in 2008 resulted in the observation of 71 individuals after duplicates were removed. Observations were concentrated in the northern portion and along a ridgeline within the central portion of the site and were generally in either coastal sage scrub or disturbed coastal sage scrub habitat. A number of additional observations were scattered throughout the rest of the site.
Monarch butterfly (<i>Danaus plexippus</i>)	USFWS: None CDFW: None MSCP: Not Covered. County: Group 2	Overwinters in eucalyptus groves	Not observed	Observed	This species occurs on-site on occasion as single individuals in flight over the area; however, there are not sufficient resources available to make this a significant overwintering site.
Western spadefoot toad (<i>Spea hammondi</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats	Not observed	Observed in 2000	Tadpoles incidentally observed in a single depression on K8 mesa. Could occur within pools that inundate.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
Rosy boa (<i>Charina trivirgata</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Rocky chaparral, coastal sage scrub, oak woodlands, desert and semi-desert scrub	Not observed	Observed in 2008	Observed in northeastern portion of the project site.
Western pond turtle (<i>Emys marmorata</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 1	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter	Not observed	Observed in 2000	Incidentally observed laying eggs in a dirt road in northwestern corner of site. Another observation of an individual crossing Otay Lakes Road immediately south of the site.
Orangethroat whiptail (<i>Aspidoscelis hyperythra</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 2	Coastal sage scrub, chaparral, grassland, juniper, and oak woodland	MBA 89	Observed in 2000 and 2008	Observed in coastal sage scrub. Probably occurs elsewhere within open patches of coastal sage scrub and grassland.
Coastal whiptail (<i>Aspidoscelis tigris stejnegeri</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Coastal sage scrub, chaparral	Not observed	Observed in 2000	Observed in sparse coastal sage scrub on-site. Probably resident in open areas and sparse coastal sage scrub and chaparral throughout the site.
San Diego banded gecko (<i>Coleonyx variegatus abbotti</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops	Not observed	Not observed	Moderate potential to occur on-site based on the availability of rock outcrops and suitable vegetative components.
San Diego ringneck snake (<i>Diadophis punctatus similis</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Open, rocky areas in moist habitats near intermittent streams: marsh, riparian woodland, sage scrub	Not observed	Observed on-site	Observed in the main eastern drainage. Moderate potential to occur within deeper canyons on-site and under debris on-site.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
San Diego (coast; Blainville's) horned lizard (<i>Phrynosoma blainvillii</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 2	Coastal sage scrub, nonnative grassland, chaparral, oak and riparian woodland, coniferous forest	MBA 89	Observed in 1999, 2000, and 2008	Observed within undisturbed coastal sage scrub and chamise chaparral.
Coast patch-nosed snake (<i>Salvadora hexalepis virgultea</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Chaparral, washes, sandy flats, rocky areas	Not observed	Not observed	Probably occurs on-site.
Red-diamond rattlesnake (<i>Crotalus ruber</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Variety of shrub habitats where there is heavy brush, large rocks, or boulders	Not observed	Observed in 1999, 2000, and 2008	Observed throughout the site within dense and sparse coastal sage scrub and chaparral.
Two-striped garter snake (<i>Thamnophis hammondi</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 1	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not observed	Not observed	Probably occurs on-site.
Cooper's hawk (<i>Accipiter cooperii</i>)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Riparian and oak woodlands, montane canyons	Not observed	Observed in 2000	Observed flying over site; potential for nesting on-site is low due to lack of developed forest or woodland habitats.
Sharp-shinned hawk (<i>Accipiter striatus</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 1	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	Not observed	Not observed	None observed on-site; does not nest in coastal San Diego, but likely forages on-site during winter.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops	MBA 89	Observed in 1999, 2000, and 2008	Observed throughout the site and highly likely to nest on-site.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 1	Open grassland and prairie, especially native grassland with a mix of grasses and forbs	MBA 89	Observed in 2000 and 2008	Observed mainly in southwestern and central portions of the project site.
Bell's sage sparrow (<i>Artemisiospiza belli belli</i>) (taxonomy was changed to Bell's sparrow <i>Artemisiospiza belli</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 1	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys	MBA 89	Observed in 1999, 2000, and 2008	Identified in eastern and western portions of site in sparse coastal sage scrub.
Golden eagle (<i>Aquila chrysaetos</i>)	USFWS: BCC CDFW: P, WL, Golden Eagle Protection Act MSCP: Covered County: Group 1	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest	Not observed	Observed in 1999, 2000, and 2008	Observed in eastern and north-central portion of the site. Site is in mapped primary foraging area for known golden eagle territory. Nearest known nest site is >3 miles from project site. No nesting observed; could forage.
Red-shouldered hawk (<i>Buteo lineatus</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	Riparian and woodland habitats, eucalyptus	Not observed	Observed on- site	Observed foraging over the site near the southern portion and within adjacent riparian habitat. Moderate potential to also occur on-site as a breeding bird.
Ferruginous hawk (<i>Buteo regalis</i>)	USFWS: BCC CDFW: WL MSCP: Covered County: Group 1	Open, dry country, grasslands, open fields, agriculture	Not observed	Not observed	Moderate potential to occur on-site occasionally during the winter migration. Would not breed on-site.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
Turkey vulture (<i>Cathartes aura</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting	Not observed	Observed in flight over site	Occasionally flies over the Project site as a possible foraging flight. No breeding potential.
Northern harrier (<i>Circus cyaneus</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 1	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub	Not observed	Observed in 1999, 2000, and 2008	Observed foraging over grassland areas in the K6 and K8 mesas. Could nest on-site but is more likely a winter visitor.
White-tailed kite (<i>Elanus leucurus</i>)	USFWS: None CDFW: P MSCP: Not Covered County: Group 1	Open grasslands, savanna- like habitats, agriculture for foraging; wetlands, oak woodlands, riparian for breeding.	Not observed	Observed in 1999 and 2000	Observed foraging in grassland areas; nesting is unlikely due to lack of forest or woodlands although a small amount of riparian is located on the project site.
California horned lark (<i>Eremophila alpestris actia</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 2	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields	Not observed	Observed in 1999, 2000, and 2008	Observed within sparse coastal sage scrub and grasslands on the project site.
Prairie falcon (<i>Falco mexicanus</i>)	USFWS: BCC CDFW: WL MSCP: Not Covered County: Group 1	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not observed	Observed in 2000	Observed within coastal sage scrub and grasslands. Likely is a wintering visitor and could forage on the project site.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	USFWS: BCC CDFW: CSC MSCP: Not Covered County: Group 1	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, open woodland	MBA 89	Observed in 2000	Likely to nest on-site, individuals observed in grassland and sparse coastal sage scrub.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
Summer tanager (nesting) (<i>Piranga rubra</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Nests in riparian woodland; winter habitats include parks and residential areas	Not observed	Not observed	Moderate potential. Suitable habitat exists near the project site.
Coastal California gnatcatcher (<i>Polioptila californica californica</i>)	USFWS: FT CDFW: CSC MSCP: Covered County: Group 1	Coastal sage scrub, coastal sage scrub–chaparral mix, coastal sage scrub–grassland ecotone, riparian in late summer	MBA 89	Observed in 1999, 2000, and 2008	Observed nesting in coastal sage scrub and chamise chaparral throughout the site. Based on previous and currently mapped locations, approximately 17 locations occur on-site and 3 additional locations have been recorded within the Cornerstone Lands and could occur onsite (MSCP data).
Western bluebird (<i>Sialia mexicana</i>)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Open forests of deciduous, coniferous or mixed trees, savanna, edges of riparian woodland saltmarsh, riparian habitats	Not observed	Observed during winter	This species once did not breed on the coastal plain; however, in recent years it has begun to do so. The only breeding opportunities for this species would be within wooded habitats which are not present on-site.
Burrowing owl (<i>Athene cunicularia</i>)	USFWS: BCC CDFW: CSC MSCP: Covered County: Group 1	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	MBA 89	Observed in 2000	Previously identified on eastern slope of K6 mesa as an incidental observation of single individual in central portion of site.
Barn owl (<i>Tyto alba</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Open forests of deciduous, coniferous or mixed trees, savanna, riparian habitats, abandoned structures, mines	Not observed	Observed flying over site	This species has abundant foraging opportunities but limited nesting opportunities on-site. It is unlikely that there is enough cover on-site to support nesting by this species.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
Dulzura California pocket mouse (<i>Chaetodipus californicus femoralis</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Coastal sage scrub, chaparral, riparian–scrub ecotone; more mesic areas	Not observed	Not observed	Very likely to occur on-site.
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Coastal sage scrub, grassland, sage scrub–grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams	Not observed	Not observed	Likely to occur on-site.
Townsend’s western big-eared bat (<i>Corynorhinus townsendii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Mesic habitats, gleans from brush or trees or feeds along habitat	No bat surveys conducted	No bat surveys conducted	Likely to occur on-site.
Spotted bat (<i>Euderma maculatum</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Rock crevices, riparian forest, woodland, and scrub, ponds, lakes, grassland	No bat surveys conducted	No bat surveys conducted	Moderate potential to occur on-site. Suitable habitat is present nearby.
Western red bat (<i>Lasiurus blossevillii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Prefers edges with trees for roosting and open areas for foraging. Feeds over grasslands, shrublands, woodlands, forests, and croplands.	No bat surveys conducted	No bat surveys conducted	Moderate potential to occur on-site.
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands	Not observed	Incidentally observed.	Observed throughout the site.

Table 2.3-3. Summary of Sensitive Wildlife Species Detected On- or Off-Site or with Moderate to High Potential to Occur

Species (Scientific Name)	Regulatory Status: Federal; State; MSCP; County Group	General Habitat Association	Status		
			<i>Previous Studies</i>	<i>Current Surveys</i>	<i>Comments</i>
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth	Not observed	Nests incidentally observed.	Middens were observed within chaparral areas on-site.
Mountain lion (<i>Puma concolor</i>)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Coastal sage scrub, chaparral, riparian, woodlands, forest; rests in rocky areas, and on cliffs and ledges that provide cover	MBA 89	Not observed	Signs of movement through eastern portion of site.

Federal Designations:

BCC U.S. Fish and Wildlife Service (USFWS) Bird of Conservation Concern

FE Federally Listed as Endangered

FT Federally Listed as Threatened

State Designations:

CSC California Special Concern Species

P California Department of Fish and Wildlife (CDFW) Protected and Fully Protected Species

SE State-listed as Endangered

ST State-listed as Threatened

WL Watch List

Multiple Species Conservation Program (MSCP) Designations:

Covered Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

Not Covered Not Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

County Designations:

Group 1: High level of sensitivity, either because listed as threatened or endangered or because species has very specific natural history requirements that must be met

Group 2: Species is becoming less common, but is not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

Table 2.3-4. Jurisdictional Waters – Acreages and Linear Feet

	On-Site		Off-Site		Total	
	<i>Acre</i>	<i>Linear Feet</i>	<i>Acre</i>	<i>Linear Feet</i>	<i>Acre</i>	<i>Linear Feet</i>
Total COE/CDFW/RWQCB/ County of San Diego Wetlands*	7.94	—	0.80	—	8.74	—
Total CDFW Wetlands*	0.06	—	0.03	—	0.09	—
Total ACOE/CDFW/RWQCB Ephemeral Waters	2.90	61,685	0.12	2,679	3.02	64,364
Total ACOE/CDFW/RWQCB Intermittent Waters	0.04	1,711	—	—	0.04	1,711
Total	10.94	63,396	0.95	2,679	11.89	66,075

* See Table 2.3-1 for the acreage of specific wetland communities

ACOE = U.S. Army Corps of Engineers

CDFW = California Department of Fish and Wildlife

RWQCB = Regional Water Quality Control Board

Table 2.3-5. On-Site Impacts by Habitat Type

Vegetation Community Type	Existing On-Site* (Acres)	Total On-Site Impacts (Acres)							Acreage Not Impacted
		Outside Preserve			Inside Preserve				
		Permanent		Total Development Impacts	Permanent Impacts		Temporary Impacts		
		Fuel Modification Zone	Development		Water Tank	Detention Basins	Slope	Water Line	
Sensitive Upland Communities									
Coastal Sage Scrub	1,121.51	20.68	255.89	276.57	2.26	1.22	13.02	0.23	828.21
Disturbed Coastal Sage Scrub	348.62	4.41	202.05	206.46	0.73	2.35	4.17	—	133.91
Chamise Chaparral	143.14	0.87	112.34	113.21	—	0.07	0.74	—	29.12
Disturbed Chamise Chaparral	15.67	—	11.36	11.36	—	—	—	—	4.31
Scrub Oak Chaparral	22.45	—	22.10	22.10	—	—	0.01	—	0.34
Southern Mixed Chaparral	4.95	0.94	1.92	2.86	—	—	—	—	2.09
Disturbed Valley Needlegrass Grassland	110.58	0.80	76.21	77.01	0.27	0.06	0.25	—	32.99
Nonnative Grassland	78.96	1.65	58.40	60.05	0.08	0.92	0.16	—	17.75
Subtotal	1,845.88	29.35	740.23	769.58	3.34	4.62	18.35	0.23	1,048.72
Sensitive Wetland Communities*									
Cismontane Alkali Marsh	6.39	—	0.01	0.01	—	—	—	—	6.38
Disturbed Cismontane Alkali Marsh	0.17	—	0.01	0.01	0.01	—	0.01	—	0.14
Mulefat Scrub (CDFW jurisdiction only)	0.08	—	0.03	0.03	—	—	—	—	0.05
Open Water	0.17	—	0.17	0.17	—	—	—	—	—
Southern Willow Scrub	1.19	—	—	--	—	—	—	—	1.19
Subtotal	8.00	—	0.22	0.22	0.01	—	0.01	—	7.76
Non-Sensitive Communities and Land Covers									
Developed Land	0.88	—	0.82	0.82	0.05	—	—	—	0.01
Disturbed Habitat	13.46	0.22	7.90	8.12	0.03	0.06	0.25	—	5.00
Stock Pond	0.79	—	—	--	—	—	—	—	0.79
Subtotal	15.13	0.22	8.75	8.97	0.08	0.06	0.25	—	5.80
Totals	1,869.01	29.57	749.25	778.78	3.43	4.68	18.61	0.23	1,062.28

* Sensitive wetland communities are under the jurisdiction of the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board unless noted otherwise.

Table 2.3-6. Proposed Preserve Lands

Vegetation Community Type	Preserve (not impacted)* On-Site (acres)	Preserve Purchased for Boundary Adjustment (acres)	Preserve (Impacted Acres)				Total Preserve (Acres)
			Permanent Impacts	Temporary Impacts			
			Allowable Uses (Water Tank and associated road grading)	Detention Basins	Slopes	Water	
Sensitive Upland Communities							
Coastal Sage Scrub	828.21	3.18	2.26	1.22	13.02	0.23	848.12
Disturbed Coastal Sage Scrub	133.91	—	0.73	2.35	4.17	—	141.16
Chamise Chaparral	29.12	—	—	0.07	0.74	—	29.93
Disturbed Chamise Chaparral	4.31	—	—	—	—	—	4.31
Scrub Oak Chaparral	0.34	—	—	—	0.01	—	0.35
Southern Mixed Chaparral	2.09	4.28	—	—	—	—	6.37
Disturbed Valley Needlegrass Grassland	32.99	—	0.27	0.06	0.25	—	33.57
Nonnative Grassland	17.75	2.74	0.08	0.92	0.16	—	21.65
Subtotal	1,048.72	10.20	3.34	4.62	18.35	0.23	1,085.46
Sensitive Wetland Communities							
Cismontane Alkali Marsh	6.38	—	—	—	—	—	6.38
Disturbed Cismontane Alkali Marsh	0.14	—	0.01	—	0.01	—	0.16
Mulefat Scrub	0.05	—	—	—	—	—	0.05
Open Water	—	—	—	—	—	—	—
Southern Willow Scrub	1.19	—	—	—	—	—	1.19
Subtotal	7.76	—	0.01	—	0.01	—	7.78
Non-Sensitive Communities and Land Covers							
Developed Land	0.01	—	0.05	—	—	—	0.06
Disturbed Habitat	5.00	—	0.03	0.06	0.25	—	5.34
Stock Pond	0.79	—	—	—	—	—	0.79
Subtotal	5.80	—	0.08	0.06	0.25	—	6.19
Total	1,062.28	10.20	3.43	4.68	18.61	0.23	1,089.28

* Mapping within the majority of open space areas is regional scale as opposed to Project-level mapping, which is sufficient for purposes of this biological resources analysis since these areas are not proposed to be impacted.

Table 2.3-7. Off-Site Impacts by Habitat Type Within Various Ownerships

Vegetation Community Type	Permanent Off-Site Impacts (acres)			
	<i>City of San Diego Cornerstone Lands</i>	<i>County of San Diego</i>	<i>City of Chula Vista</i>	<i>Off-Site Otay Ranch</i>
<i>Sensitive Upland Communities</i>				
Coastal Sage Scrub	5.63	1.24	0.06	0.68
Disturbed Coastal Sage Scrub	3.22	1.70	0.07	---
Disturbed Valley Needlegrass Grassland	—	0.03	---	---
Nonnative Grassland	0.62	0.37	1.38	3.07
<i>Subtotal</i>	<i>9.47</i>	<i>3.34</i>	<i>1.51</i>	<i>3.75</i>
<i>Sensitive Wetland Communities*</i>				
Freshwater Marsh	0.17	—	---	---
Disturbed Mulefat Scrub – ACOE/CDFW/RWQCB/County of San Diego	0.09	0.01	---	---
Disturbed Mulefat Scrub – CDFW	0.03			
Open Water	0.49	—	---	---
Southern Willow Scrub	0.04	—	---	---
<i>Subtotal</i>	<i>0.82</i>	<i>0.01</i>	<i>0.00</i>	<i>0.00</i>
<i>Non-Sensitive Communities and Land Covers</i>				
Eucalyptus Woodland	0.27	0.11	---	0.23
Developed Land	0.01	17.21	1.97	0.04
Disturbed Habitat	0.27	0.11	---	---
Ornamental	0.25	0.04	0.22	0.43
<i>Subtotal</i>	<i>0.80</i>	<i>17.47</i>	<i>2.19</i>	<i>0.70</i>
Total	11.09	20.82	3.70	4.45

* Sensitive wetland communities are under the jurisdiction of the ACOE, CDFW, and RWQCB unless noted otherwise.

ACOE = U.S. Army Corps of Engineers

CDFW = California Department of Fish and Wildlife

RWQCB = Regional Water Quality Control Board

Table 2.3-8. Jurisdictional Waters Impacts*

Jurisdictional Water type	Permanent Impacts (acres)				Temporary Impacts (acres)				Total Impacts (acres)
	Fuel Modification		Development		Detention Basin		Slope Revegetation		
	On-Site	Off-Site	On-Site	Off-Site (Cornerstone Lands)	On-Site	Off-Site	On-Site	Off-Site	
Total ACOE/CDFW/RWQCB Ephemeral Waters	0.02	—	0.97	0.02	<0.01	—	0.07	—	1.08
Total ACOE/CDFW/RWQCB Intermittent Waters	—	—	0.04	—	—	—	—	—	0.04
Total	0.02	—	1.01	0.02	<0.01	—	0.07	—	1.12

* Impacts to jurisdictional wetlands are summarized by vegetation community type in Table 2.3-5 and Table 2.3-7. Jurisdictional waters summarized in this table were mapped within upland vegetation communities and, thus, are not included in Table 2.3-5 and Table 2.3-7.

ACOE = U.S. Army Corps of Engineers

CDFW = California Department of Fish and Wildlife

RWQCB = Regional Water Quality Control Board

Table 2.3-9. Impacts to Sensitive Plant Species Present On-Site

Species Scientific Name	Regulatory Status Federal/State CRPR MSCP Coverage County List	Basis for Impact Evaluation	Number/ Acre(s) impacted	Percent impacted	Number/ Acre(s) preserved	Percent Preserved	Otay Ranch RMP Percent Preservation Required
San Diego thornmint (<i>Acanthomintha ilicifolia</i>)	FT/SE 1B.1 Covered Narrow Endemic List A	A total of 3.4 acres of the species have been mapped on-site.	0.1 acre	3	3.3 acres	97	95
California adolphia (<i>Adolphia californica</i>)	None/None 2.1 Not Covered List B	A total of <20 individuals present at two locations. For purposes of evaluation, it is assumed that a total of 20 are currently present on-site.	20 individuals	100	0	0	75
Small-flowered morning-glory (<i>Convolvulus simulans</i>)	None/None 4.2 Not Covered List D	A total of 120 individuals observed on-site.	0 individuals	0	120 individuals	100	N/A
Western dichondra (<i>Dichondra occidentalis</i>)	None/None 4.2 Not Covered List D	A total of 0.5 acre occupied by this species on-site.	0.3 acre	60	0.2 acre	40	50
Variegated dudleya (<i>Dudleya variegata</i>)	None/None 1B.2 Covered – Narrow Endemic List A	A total of 5,833 individuals observed on-site.	925 individuals	16	4,908 individuals	84	50

Table 2.3-9. Impacts to Sensitive Plant Species Present On-Site

Species Scientific Name	Regulatory Status Federal/State CRPR MSCP Coverage County List	Basis for Impact Evaluation	Number/ Acre(s) impacted	Percent impacted	Number/ Acre(s) preserved	Percent Preserved	Otay Ranch RMP Percent Preservation Required
San Diego barrel cactus (<i>Ferocactus viridescens</i>)	None/None 2.1 Covered List B	A total of 217 individuals observed on-site.	115 individuals	53	102 individuals	47	75
Palmer's grapplinghook (<i>Harpagonella palmeri</i>)	None/None 4.2 Not Covered List D	A total of 114 individuals observed on-site.	114 individuals	100	0 individuals	0	75
San Diego marsh-elder (<i>Iva hayesiana</i>)	None/None 2B.2 Not Covered List B	A total of 5.4 acres occupied by this species on-site.	2.9 acres	53	2.5 acres	47	75
Southwestern spiny rush (<i>Juncus acutus ssp. leopoldii</i>)	None/None 4.2 Not Covered List D	A total of 30 individuals observed on-site.	12 individuals	40	18 individuals	60	50
Small-flowered microseris (<i>Microseris douglasii ssp. platycarpa</i>)	None/None 4.2 Not Covered List D	A total of 1,270 individuals observed on-site.	270 individuals	21	1,000 individuals	79	None
San Diego goldenstar (<i>Bloomeria clevelandii</i>)	None/None 1B.1 Covered List A	A total of 2,546 individuals observed on-site.	1,497 individuals	59	1,049 individuals	41	54

Table 2.3-9. Impacts to Sensitive Plant Species Present On-Site

Species Scientific Name	Regulatory Status Federal/State CRPR MSCP Coverage County List	Basis for Impact Evaluation	Number/ Acre(s) impacted	Percent impacted	Number/ Acre(s) preserved	Percent Preserved	Otay Ranch RMP Percent Preservation Required
Little mouseltail (<i>Myosurus minimus</i> <i>spp. Apus</i>)	None/None 3.1 Not Covered List C	Although observed in 1990, this species has not been observed recently.	0	0	0	0	N/A
California adder's- tongue (<i>Ophioglossum</i> <i>californicum</i>)	None/None 4.2 Not Covered List D	Has not been observed in recent years and likely is not present.	0	0	0	0	N/A
Golden-rayed pentachaeta (<i>Pentachaeta aurea</i> <i>spp. aurea</i>)	None/None 4.2 Not Covered List D	A total of 91 individuals observed on-site.	51 individuals	56	40 individuals	44	None
Nuttall's scrub oak (<i>Quercus dumosa</i>)	None/None 1B.1 Not Covered List A	A total of 6.2 acres are occupied by this species on- site.	6.2 acres	100	0 acres	0	None
Coulter's matilija poppy (<i>Romneya coulteri</i>)	None/None 4.2 Not Covered List D	Single location observed.	0	0	1 individual	100	N/A
Munz's sage (<i>Salvia munzii</i>)	None/None 2B.2 Not Covered List B	A total of 295 acres are occupied by this species on- site.	102 acres	35	193 acres	65	46

Table 2.3-9. Impacts to Sensitive Plant Species Present On-Site

Species Scientific Name	Regulatory Status Federal/State CRPR MSCP Coverage County List	Basis for Impact Evaluation	Number/ Acre(s) impacted	Percent impacted	Number/ Acre(s) preserved	Percent Preserved	Otay Ranch RMP Percent Preservation Required
San Diego County viguiera (Viguiera laciniata)	None/None 4.2 Not Covered List D	A total of 1,071 acres of coastal sage scrub dominated with San Diego County viguiera.	160 acres	15	911 acres	85	75

Federal Designations:

FE Federally Listed as Endangered

FT Federally Listed as Threatened

State Designations:

SE State-listed as Endangered

ST State-listed as Threatened

California Native Plant Society (CNPS) Designations:

CRPR = California Rare Plant Rank

CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere

CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

CRPR 3: Plants About Which More Information is Needed – A Review List

CRPR 4: Plants of Limited Distribution – A Watch List

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

MSCP Designations:

Covered: Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

Not Covered: Not Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

County Designations:

List A: Plants rare, threatened, or endangered in California and elsewhere (corresponds to CRPR 1B)

List B: Plants rare, threatened, or endangered in California but more common elsewhere (corresponds to CRPR 2)

List C: Plants that may be quite rare, but need more information to determine their rarity status (corresponds to CRPR List D)

List D: Plants of limited distribution and are uncommon, but not presently rare or endangered (corresponds to CRPR 4)

Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present On- or Off-Site or with Moderate to High Potential to Occur

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	USFWS: FE CDFW: None MSCP: Not Covered County: Group 1	A total of nine basins on K8 mesa and one basin on K6 mesa are confirmed occupied by this species. Within off-site areas, a total of five road rut basins are occupied by this species.	1 basin/ 0.005 acre	3	Nine basins / 0.145 acre	97%
Quino checkerspot (<i>Euphydryas editha quino</i>)	USFWS: FE CDFW: None MSCP: Not Covered County: Group 1	Over 4 years of surveys, a total of 127 individuals have been observed; 71 observed in 2008. Coastal sage scrub and disturbed coastal scrub communities were considered potential habitat. Because there are Quino checkerspot butterfly observations within 0.6 mile of the entire property, no areas where Quino checkerspot butterfly have not been observed can be excluded. A total of 1,470 acres of potential habitat are located on-site.	20 individuals (inclusive over 4 years of surveys); 12 of the 2008 survey. A total of 483 acres of potential occupied habitat	16% of observations; 33% of potential habitat	107 individuals (inclusive over 4 years of surveys); 59 of the 2008 survey. A total of 962 acres of upland habitat that would be considered to be occupied is preserved.	84% of observations; 66% of potential habitat.

**Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present
On- or Off-Site or with Moderate to High Potential to Occur**

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Monarch butterfly (<i>Danaus plexippus</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Incidental observation of single individuals. There are no suitable eucalyptus groves within which the species might overwinter.	0 acre	0	0	0
Western spadefoot toad (<i>Spea hammondi</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Based on observation and potential for inundated vernal pools on-site; 0.26 acre total.	0 acre	0	0.26 acre	100
Rosy boa (<i>Charina trivirgata</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Western pond turtle (<i>Emys marmorata</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 1	One observed laying eggs. No suitable open water habitat on-site.	0	0	1 individual	100
Orangethroat whiptail (<i>Aspidoscelis hyperythra</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 2	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Coastal whiptail (<i>Aspidoscelis tigris stejnegeri</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60

**Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present
On- or Off-Site or with Moderate to High Potential to Occur**

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
San Diego banded gecko (<i>Coleonyx variegatus abbotti</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	Based on moderate potential to occur. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
San Diego ringneck snake (<i>Diadophis punctatus similis</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 8 acres of suitable habitat.	0.3 acre	3	7.7 acres	97
San Diego [coast; Blainville's] horned lizard (<i>Phrynosoma blainvillii</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 2	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Coast patch-nosed snake (<i>Salvadora hexalepis virgultea</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Based on moderate potential to occur. Impact based on 190 acres of suitable habitat.	137 acres	72	51 acres	27
Two-striped garter snake (<i>Thamnophis hammondi</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 1	Based on moderate to high potential to occur. Impact based on 8 acres of suitable habitat.	0.3 acre	3	7.7 acres	97
Red-diamond rattlesnake (<i>Crotalus ruber</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60

Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present On- or Off-Site or with Moderate to High Potential to Occur

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Cooper's hawk (<i>Accipiter cooperii</i>)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Incidental observation. Impact based on 1.2 acres of suitable habitat. Foraging and nesting habitat are assumed to be the same for suitable habitat.	<0.1 acre	<0.1	1.2 acres	100
Sharp-shinned hawk (<i>Accipiter striatus</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 1	Likely to occur on-site for winter or migration but would not nest on- site. Foraging habitat is assumed to be the same as foraging habitat for Cooper's hawk.	<0.1 acre	<0.1	1.2 acres	100
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 1	Incidental observation. Impact based on 190 acres of suitable habitat.	137 acres	72	51 acres	27
Bell's sage sparrow (<i>Artemisiospiza belli belli</i>) (taxonomy was changed to Bell's sparrow <i>Artemisiospiza belli</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 1	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60

**Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present
On- or Off-Site or with Moderate to High Potential to Occur**

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Golden eagle (<i>Aquila chrysaetos</i>)	USFWS: BCC CDFW: P, WL, Golden Eagle Protection Act MSCP: Covered County: Group 1	No impacts would occur to nesting habitat. Observed flying over site; likely forages on-site. Impact based on 1,660 acres of suitable foraging habitat. Nests are recorded in San Diego County Bird Atlas as 3 to 6 miles away.	620 acres	37	1,015 acres	61
Red-shouldered hawk (<i>Buteo lineatus</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	Incidental observation. Impact based on 1.2 acres of suitable nesting and foraging habitat.	<0.1 acre	<0.1	1.2 acres	100
Ferruginous hawk (<i>Buteo regalis</i>)	USFWS: BCC CDFW: WL MSCP: Covered County: Group 1	Likely to occur on-site for winter or migration but would not nest on-site. Impact based on 79 acres of suitable foraging habitat.	60 acres	76	18 acres	23
Turkey vulture (<i>Cathartes aura</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 1	No nesting locations observed; foraging may occur but is more dependent on carrion so cannot evaluate based on acreage.	Cannot be evaluated		Could forage in entire preserve	

**Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present
On- or Off-Site or with Moderate to High Potential to Occur**

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Northern harrier (<i>Circus cyaneus</i>)	USFWS: None CDFW: CSC MSCP: Covered County: Group 1	Could nest on-site, but is more likely to occur on-site for winter or migration. Impact based on 79 acres of suitable foraging habitat.	60 acres	76	18 acres	23
White-tailed kite (<i>Elanus leucurus</i>)	USFWS: None CDFW: P MSCP: Not Covered County: Group 1	Observed flying over site; likely forages on-site, but may nest in southern willow scrub. Impact based on 1.2 acres of suitable nesting habitat and 1,660 acres of suitable foraging habitat.	Nesting: <0.1 acre; Foraging: 620 acres	Nesting: <0.1; Foraging: 37	Nesting: 1.2 acres; Foraging: 1,015 acres	Nesting: 100; Foraging: 61
California horned lark (<i>Eremophila alpestris actia</i>)	USFWS: None CDFW: WL MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 190 acres of suitable habitat.	137 acres	72	51 acres	27
Prairie falcon (<i>Falco mexicanus</i>)	USFWS: BCC CDFW: WL MSCP: Not Covered County: Group 1	Likely to occur on-site for winter or migration but would not nest on-site. Impact based on 79 acres of suitable foraging habitat.	60 acres	76	18 acres	23

Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present On- or Off-Site or with Moderate to High Potential to Occur

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Loggerhead shrike (<i>Lanius ludovicianus</i>)	USFWS: BCC CDFW: CSC MSCP: Not Covered County: Group 1	Incidental observation. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Summer tanager (nesting) (<i>Piranga rubra</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Could occur on-site as a winter visitor periodically or during migration but would not nest on-site.	—	—	—	—
Coastal California gnatcatcher (<i>Polioptila californica</i> <i>californica</i>)	USFWS: FT CDFW: CSC MSCP: Covered County: Group 1	Coastal sage scrub, coastal sage scrub– chaparral mix, coastal sage scrub–grassland ecotone, riparian in late summer; 29 locations are recorded on-site and 3 additional locations are recorded for Cornerstone Land for a total of 32 locations recorded; 1,470 acres of suitable habitat.	483 acres; 14 locations	33% of acreage; 44% of point locations	962 acres; 18 locations	66% of acreage; 56% of point locations
Western bluebird (<i>Sialia mexicana</i>)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Likely to occur on-site for winter or migration for foraging but would not nest on-site due to lack of trees.	—	—	—	—

Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present On- or Off-Site or with Moderate to High Potential to Occur

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Burrowing owl (<i>Athene cunicularia</i>)	USFWS: BCC CDFW: CSC MSCP: Covered County: Group 1	Incidental observation. Impact based on 190 acres of suitable habitat.	137 acres	72	51 acres	27
Barn owl (<i>Tyto alba</i>)	USFWS: None CDFW: None MSCP: Not Covered County: Group 2	No impacts to nesting habitat; foraging is opportunistic and can forage throughout much of the site where habitat is relatively open. Assuming foraging occurs in open habitat, 190 acres are present on-site.	137 acres	72	51 acres	27
Dulzura California pocket mouse (<i>Chaetodipus californicus femoralis</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Based on moderate potential to occur. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Based on moderate potential to occur. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Townsend's western big- eared bat (<i>Corynorhinus townsendii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Likely to occur on-site to forage but no roosting/nursery habitat is present.	—	—	—	—

Table 2.3-10. Permanent Impacts to Sensitive Wildlife Species Present On- or Off-Site or with Moderate to High Potential to Occur

Species Scientific Name	Regulatory Status: Federal; State; MSCP; County Group	Basis for Impact Evaluation	Number/ Acre(s) Impacted	Percent Permanently Impacted On-Site	Number / Acre(s) Preserved	Percent Preserved On- Site
Spotted bat (<i>Euderma maculatum</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Likely to occur on-site to forage but no roosting/nursery habitat is present.	—	—	—	—
Western red bat (<i>Lasiurus blossevillii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Likely to occur on-site to forage but no roosting/nursery habitat is present.	—	—	—	—
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Incidental observation. Impact based on 1,660 acres of suitable habitat.	620 acres	37	1,015 acres	61
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	USFWS: None CDFW: CSC MSCP: Not Covered County: Group 2	Based on moderate potential to occur. Impact based on 1,656 acres of suitable habitat.	633 acres	38	1,000 acres	60
Mountain lion (<i>Puma concolor</i>)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Incidental observation of tracks. No suitable denning locations would be impacted, and movement routes and corridors would be preserved.	—	—	—	—

Federal Designations:

BCC U.S. Fish and Wildlife Service (USFWS) Bird of Conservation Concern
FE Federally Listed as Endangered
FT Federally Listed as Threatened

State Designations:

CSC California Special Concern Species
P California Department of Fish and Wildlife (CDFW) Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
WL Watch List

Multiple Species Conservation Program (MSCP) Designations:

Covered Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)
Not Covered Not Listed as Covered Species in Appendix B of Implementing Agreement between CDFW, USFWS, and County of San Diego (March 1998)

County Designations:

Group 1: High level of sensitivity, either because listed as threatened or endangered or because species has very specific natural history requirements that must be met
Group 2: Species is becoming less common, but is not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

Table 2.3-11. Impacts to Sensitive Vegetation Communities within City of Chula Vista Jurisdiction

Vegetation Community	Tier	Permanent Impacts (acres)	Location of Impact	Mitigation Ratio Assuming Inside Preserve	Mitigation Required (acres)
Coastal Sage Scrub	II	0.06	Outside Preserve	1:1	0.06
Disturbed Coastal Sage Scrub	II	0.07	Outside Preserve	1:1	0.07
Nonnative Grassland	III	1.38	Outside Preserve	0.5:1	0.69

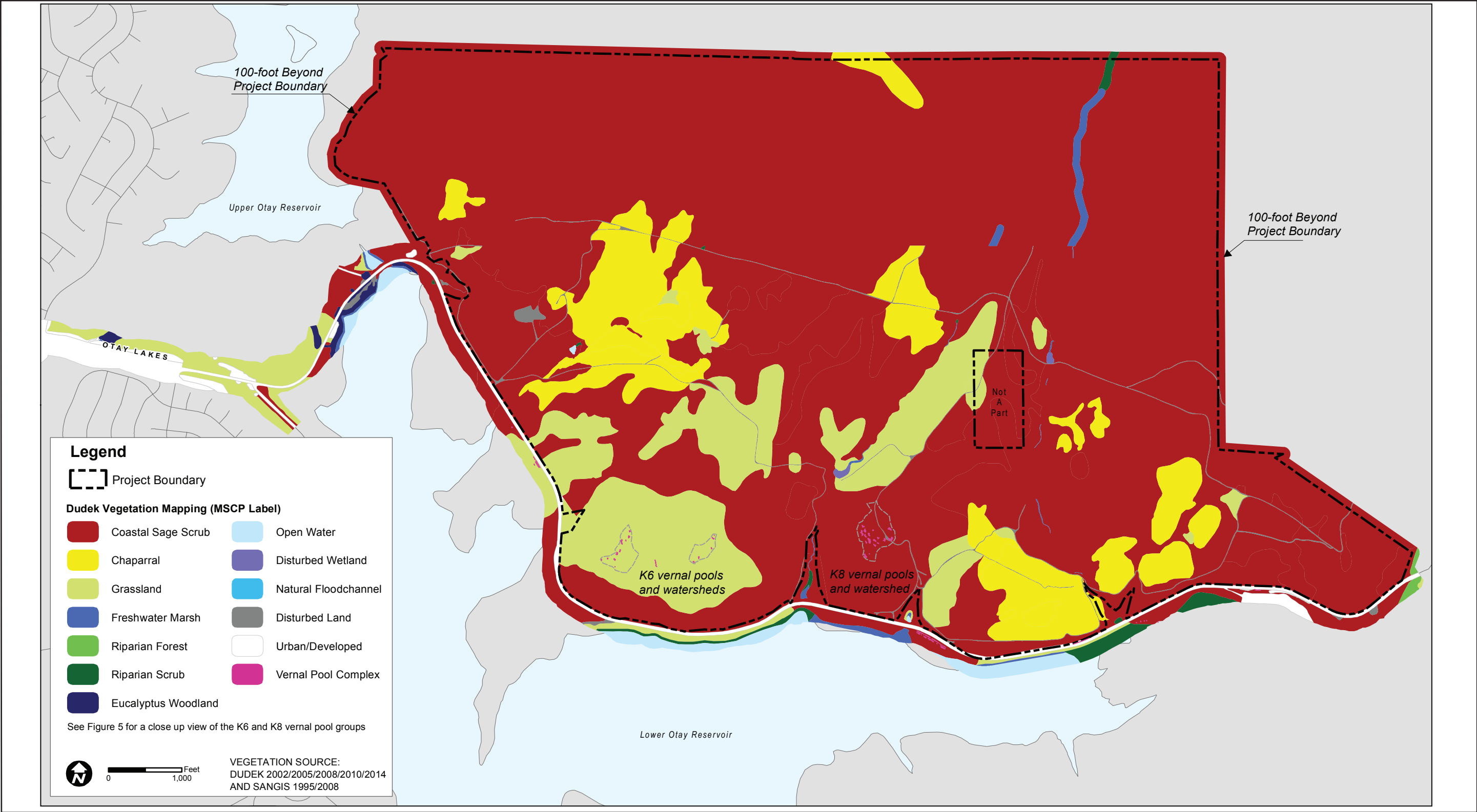
Note: Tiers and mitigation ratios are in accordance with the Chula Vista MSCP Subarea Plan's HLIT Upland Habitat Mitigation Ratios. No mitigation is required for Tier IV habitat types (i.e., non-sensitive vegetation communities and land covers including ornamental or developed land). It is assumed that mitigation will be located inside the Preserve. Mitigation outside of the Preserve (i.e., Chula Vista MSCP Subarea Plan or Planning Area boundary) will require increased mitigation.

Table 2.3-12. Existing Conditions for Potential Mitigation Pools

Vernal Pool Number	Size of Basin (Square Feet)	Size of Basin (Acres)	Inundation	Cysts	Shrimp	Vernal Pool Plants
A1	443.531300	0.0102	—	—	—	x
A2	230.750000	0.0053	—	—	—	—
A3	675.343800	0.0155	—	—	—	—
A4	997.875000	0.0229	x	—	—	x
A5	49.812500	0.0011	x	—	—	—
VP1	1693.625000	0.0389	x	—	x	x
VP10	408.968800	0.0094	x	x	—	—
VP11	1220.875000	0.0280	x	x	x	x
VP13	322.437500	0.0074	x	x	—	—
VP14	658.593800	0.0151	x	x	x	x
VP15	533.093800	0.0122	x	—	—	x
VP16	627.187500	0.0144	x	—	—	x
VP2	711.000000	0.0163	x	—	x	x
VP4	224.156300	0.0051	x	—	—	x
VP5	530.937500	0.0122	x	—	x	x
VP6	806.906300	0.0185	x	—	—	x
VP7	647.250000	0.0149	x	x	x	x
VP8	1671.406000	0.0384	x	x	—	x

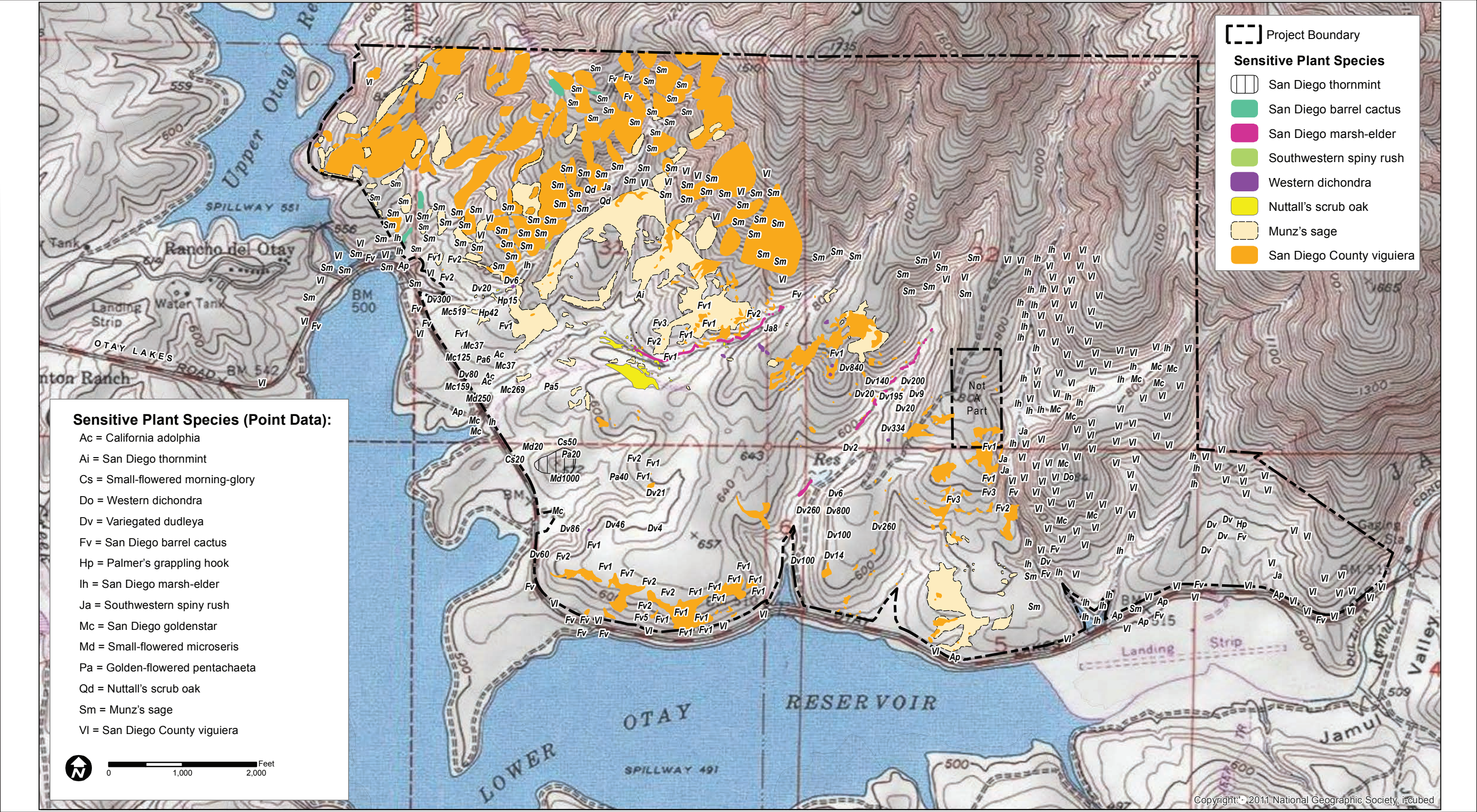
Note: The pools highlighted above (Vernal Pools 1, 2, 5, 7, 10, 11, 13, and 14) are occupied by fairy shrimp and would likely not be available for enhancement mitigation. Pools not highlighted in yellow do not contain fairy shrimp and would be able to be enhanced by conducting weed removal, introducing vernal pool plant species, and potentially inoculating with other species, including fairy shrimp. A total of 0.14 acre of existing vernal pool is available for enhancement. A total of 0.14 acre is proposed to be enhancement/restoration in that the basin of existing pools would be enlarged, weeds removed, and pools inoculated as suitable. This leaves the requirement for a total of 0.108 acre of restoration of vernal pool habitat. There are potentially 18 basins that could be restored within the K8 mesa. If the average size of the new basins is 700 square feet, the total acreage of restored pools is potentially 0.289 acre, which is more than is required to satisfy the mitigation needs. Thus, the combined acreage for mitigation, including enhancement, enhancement/restoration (enlarging existing pools), and restoration for the impacts to the K6 pools and the Villages 2 and 3 is proposed to total 0.248 acre, which meets the requirement of a combined 2:1 and 5:1 mitigation ratio.

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**Figure 2.3-1
Vegetation Map**

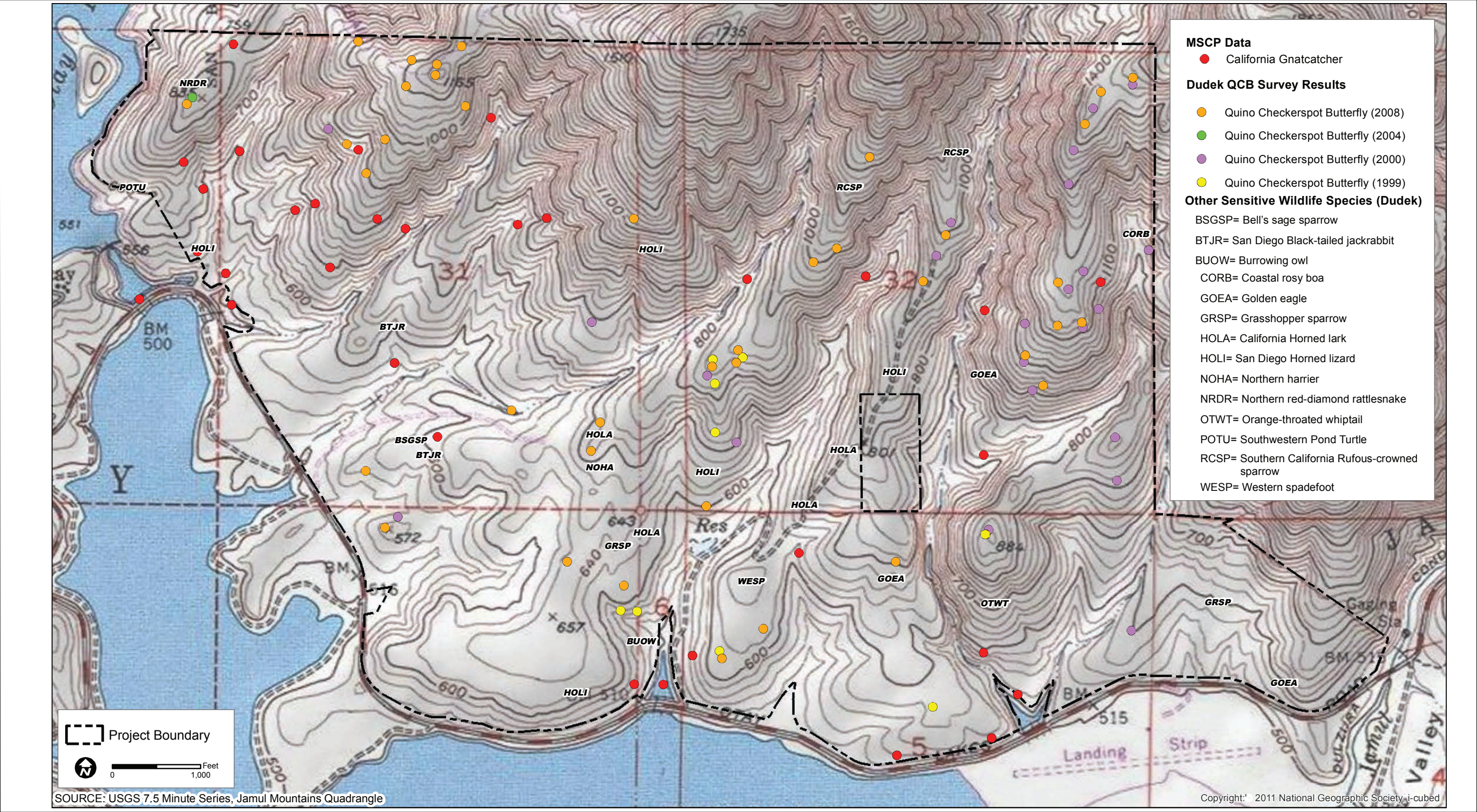
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Source: DUDEK, 2014

Figure 2.3-2
Sensitive Plant Species Map

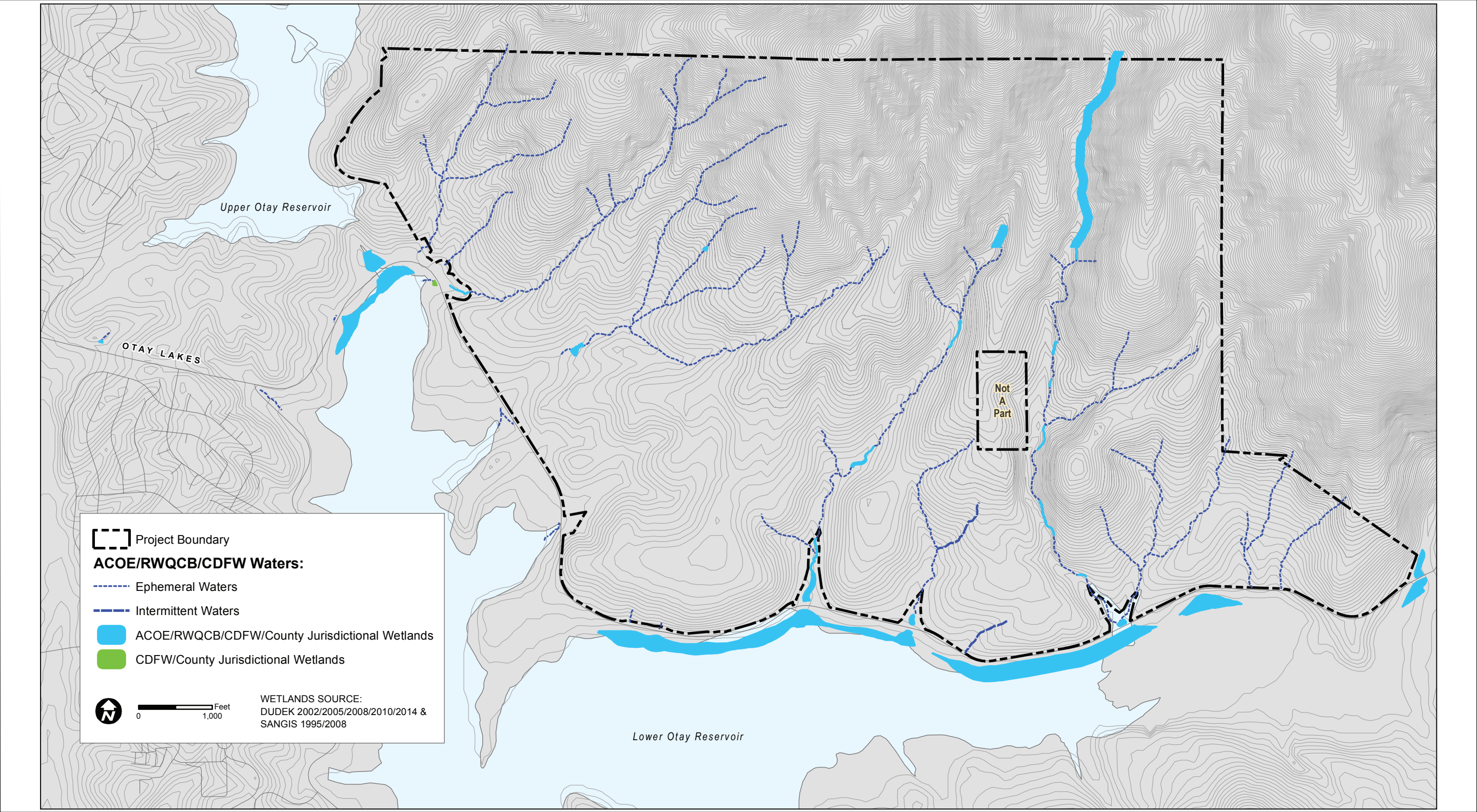
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Source: DUDEK, 2014

Figure 2.3-3
Sensitive Wildlife Species Map

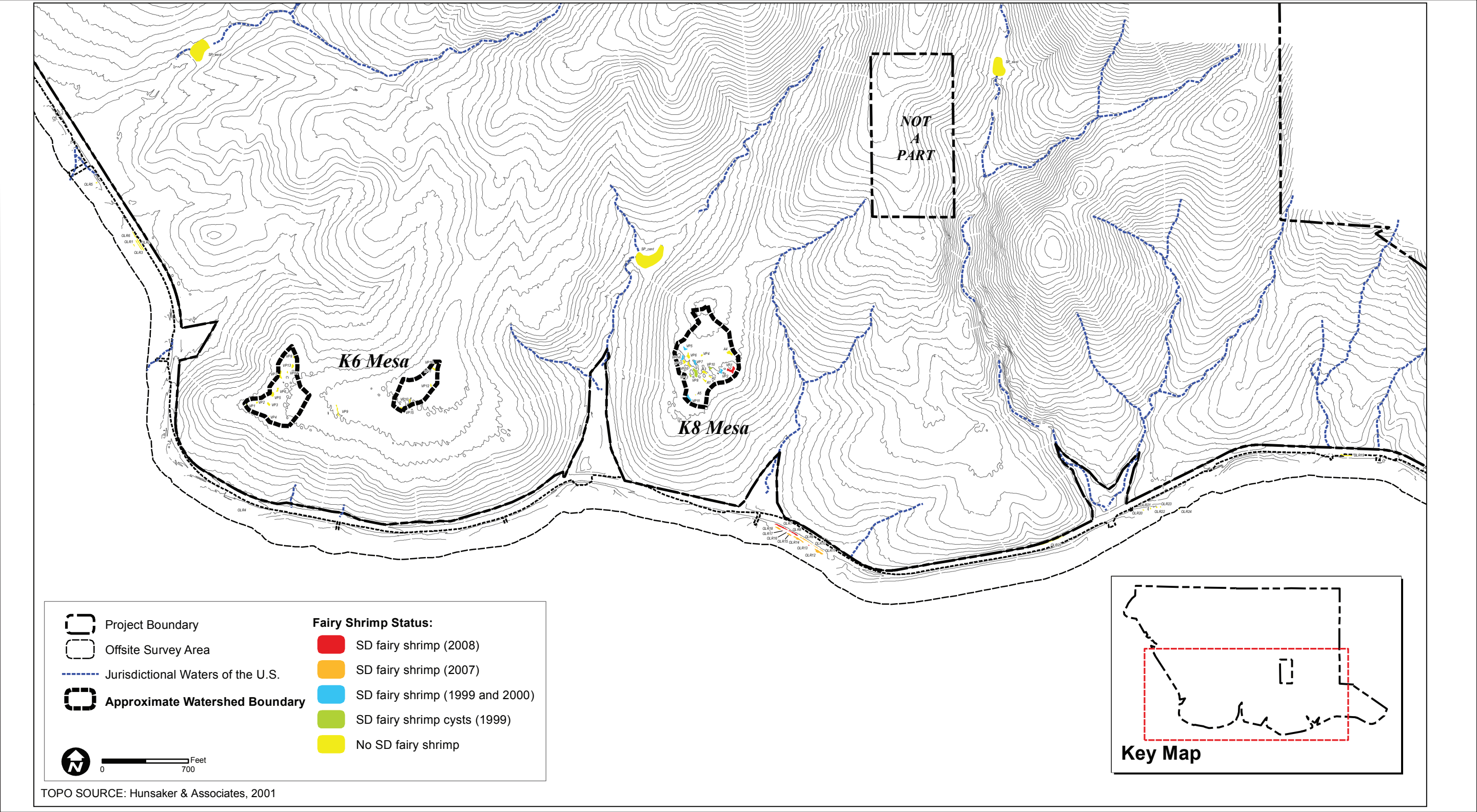
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Source: DUDEK, 2014

Figure 2.3-4
Jurisdictional Delineation Map

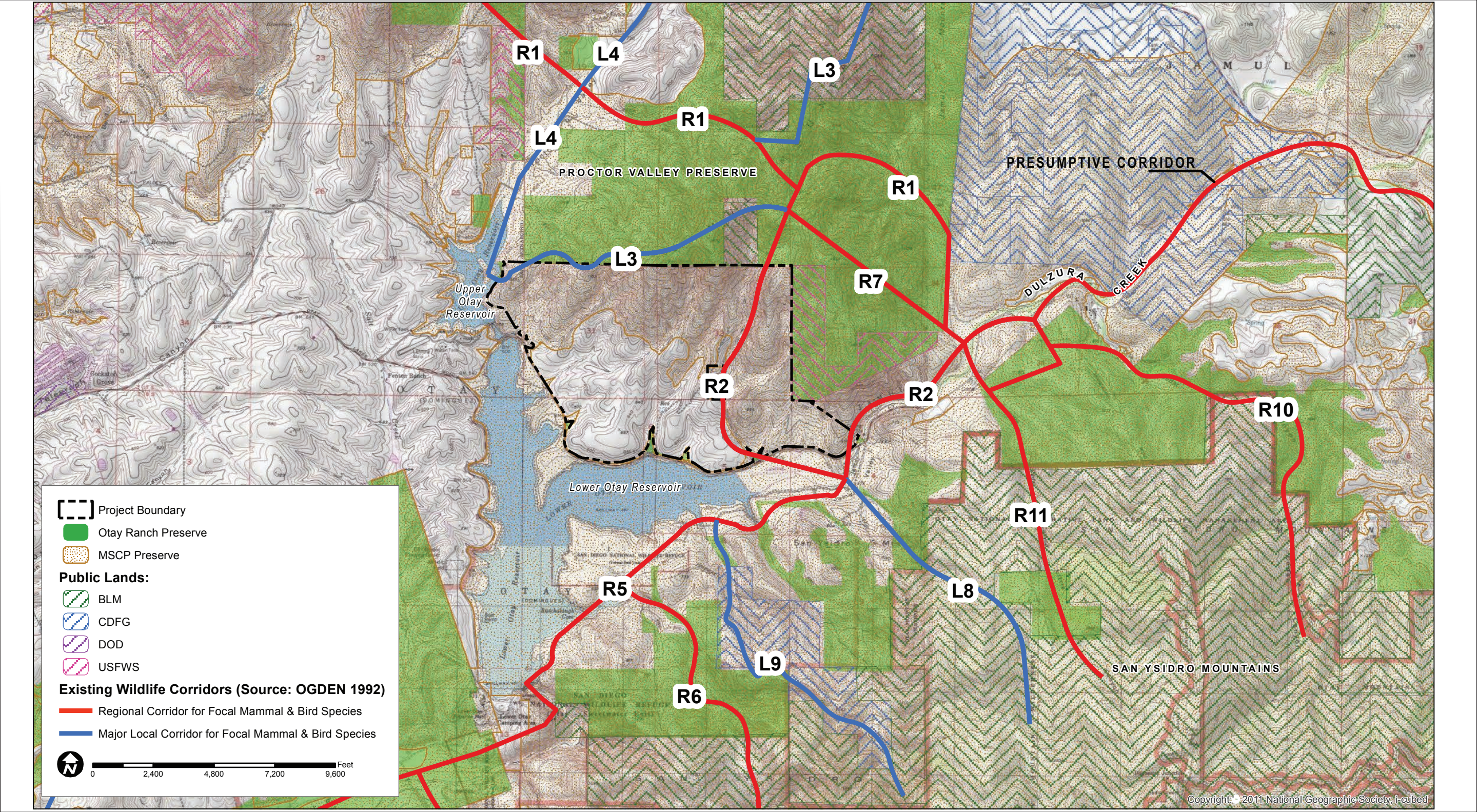
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Source: DUDEK, 2014

Figure 2.3-5
Seasonal Basins Map

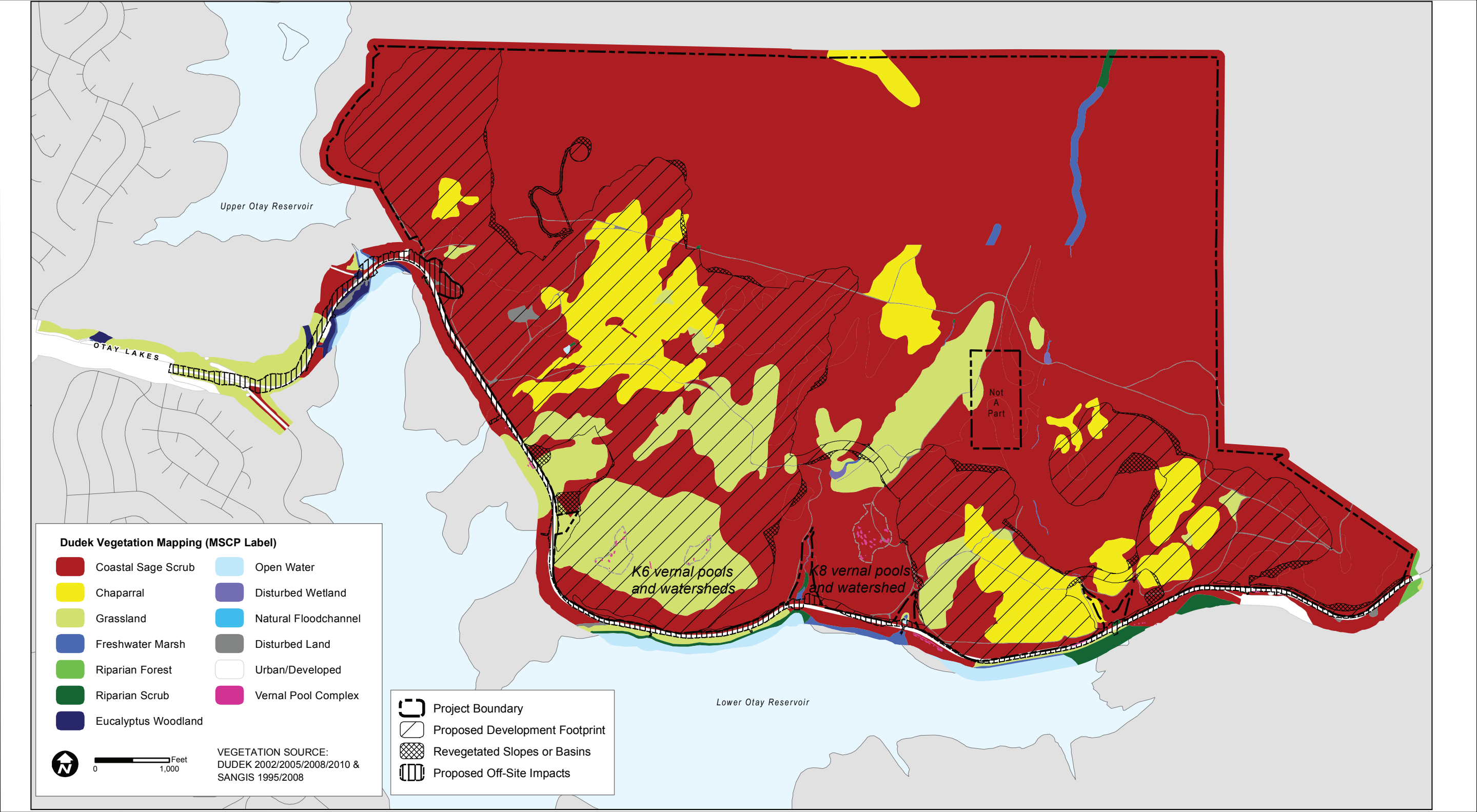
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Source: DUDEK, 2014

Figure 2.3-6
Existing Habitat Linkages/Movement Corridors

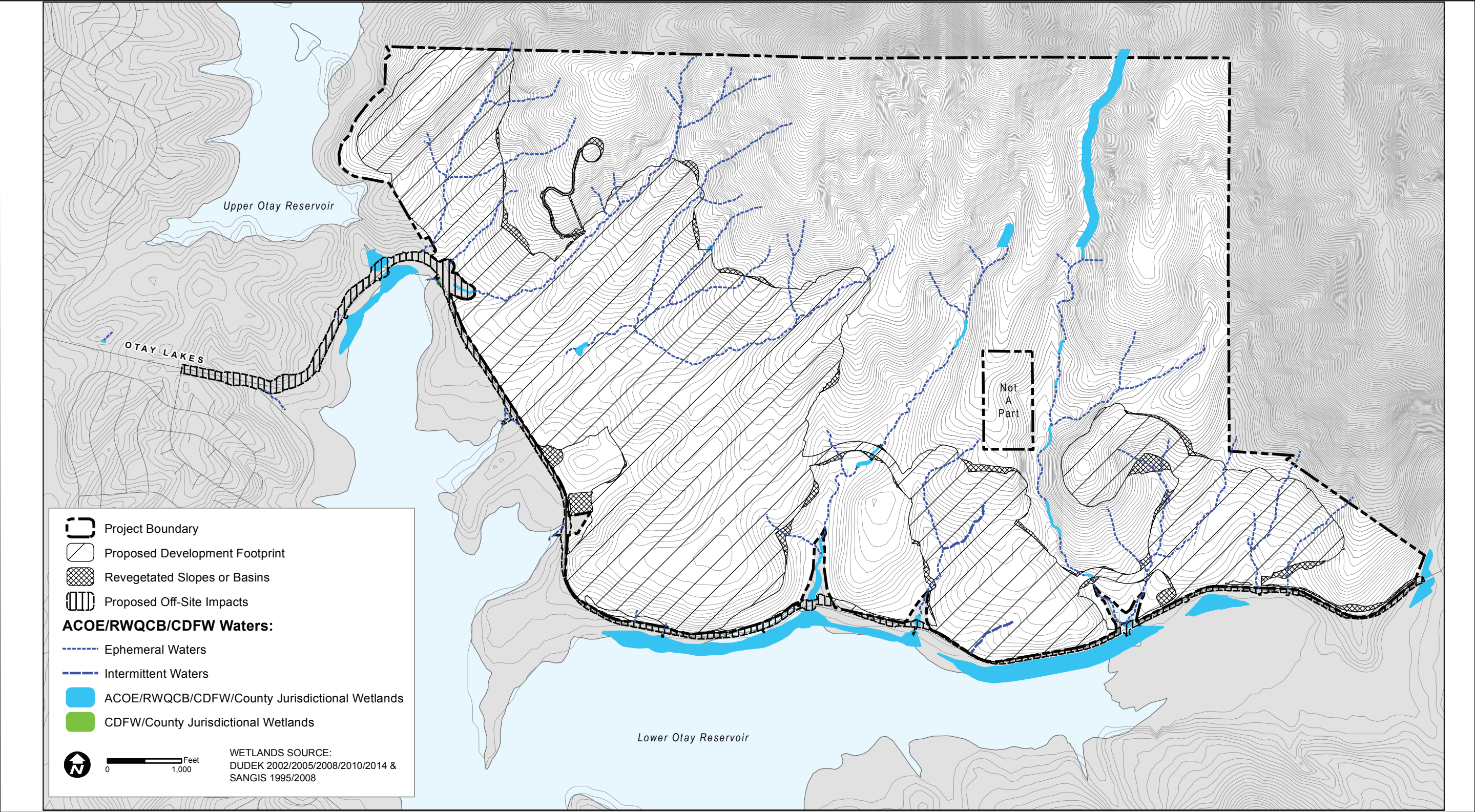
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Source: DUDEK, 2014

Figure 2.3-7
Vegetation Map with Proposed Development Footprint

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Source: DUDEK, 2014

Figure 2.3-8
Jurisdictional Delineation Map with Proposed Development Footprint

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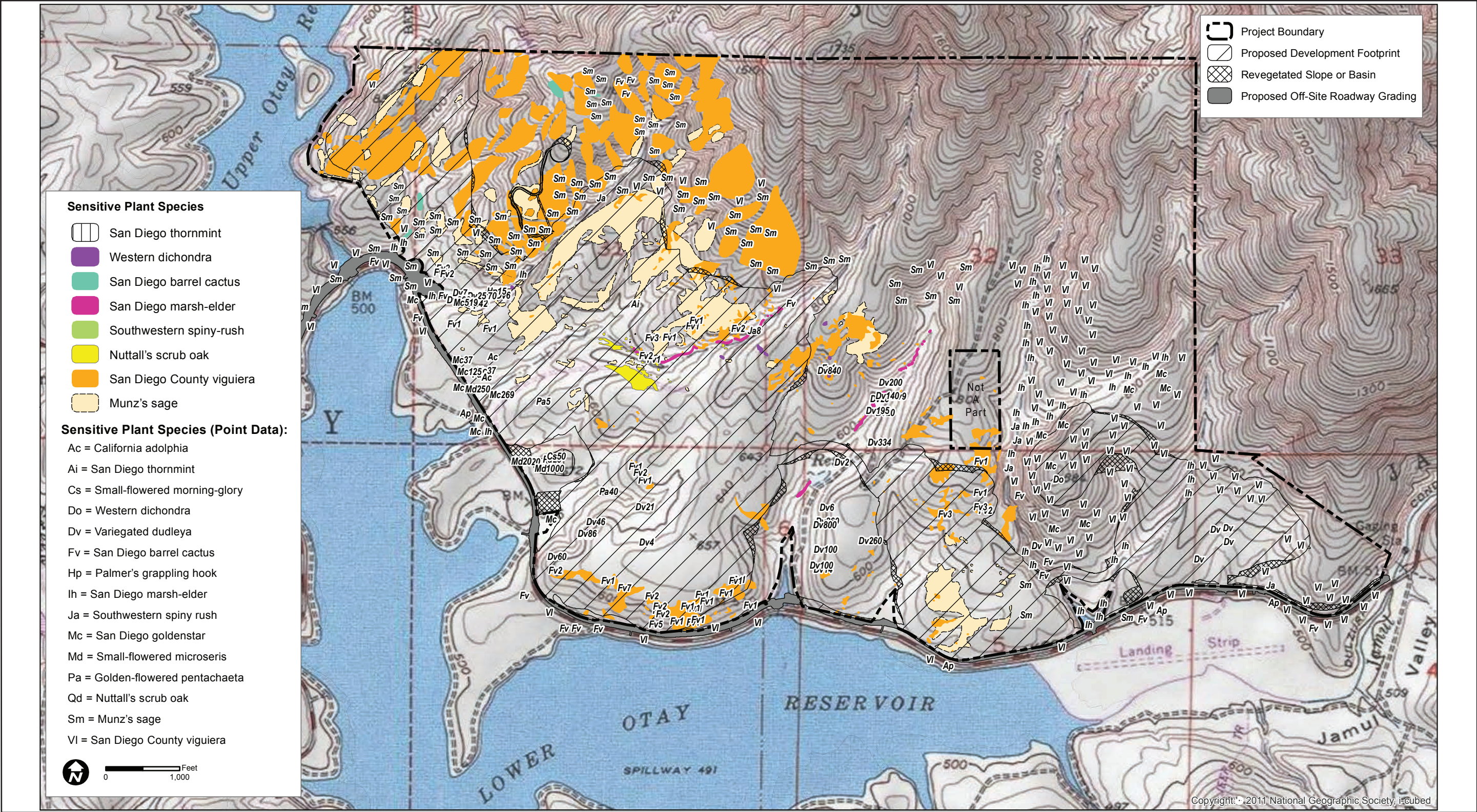
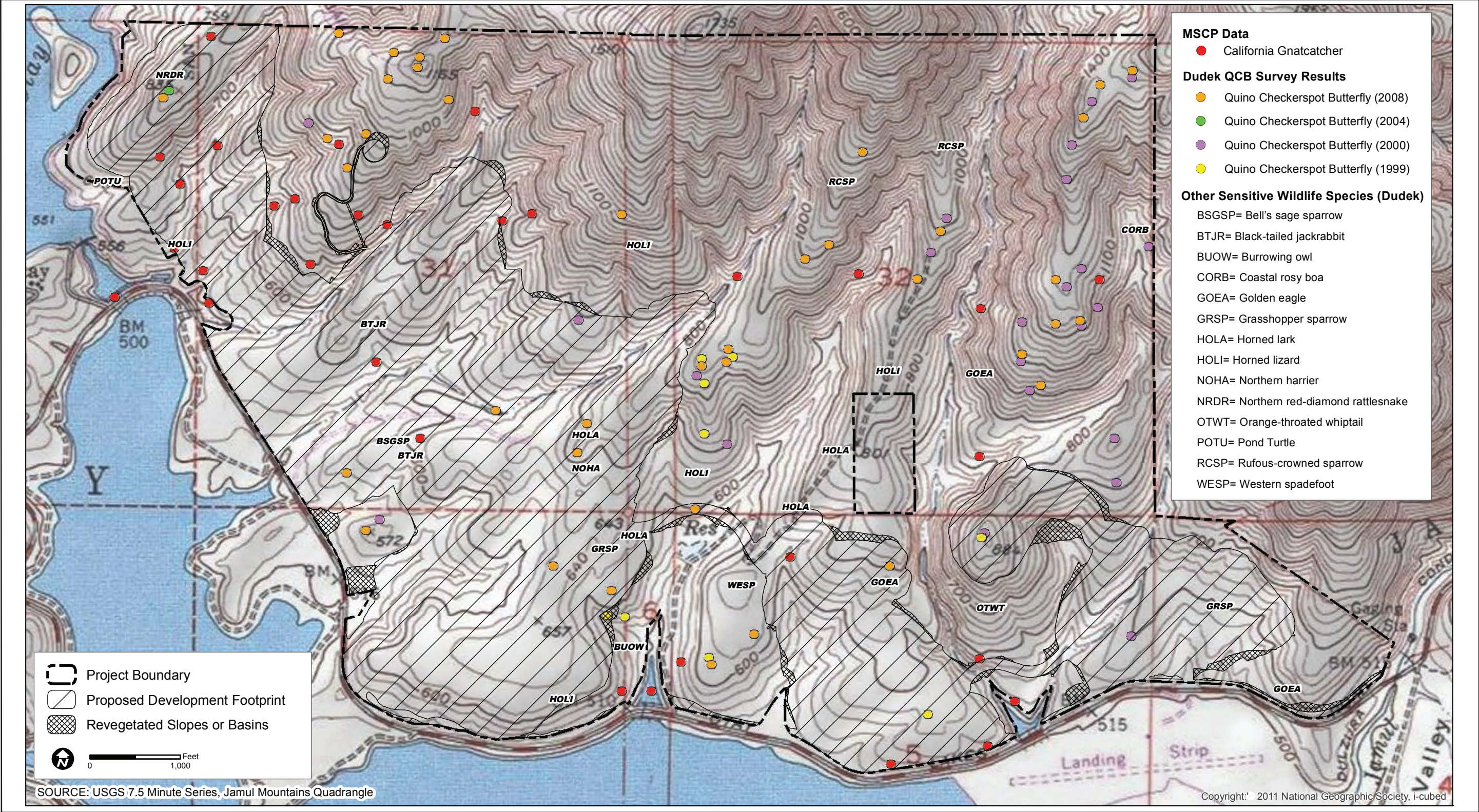


Figure 2.3-9
Sensitive Plant Species Map with Proposed Development Footprint

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Source: DUDEK, 2014

Figure 2.3-10
Sensitive Wildlife Species Map with Proposed Development Footprint

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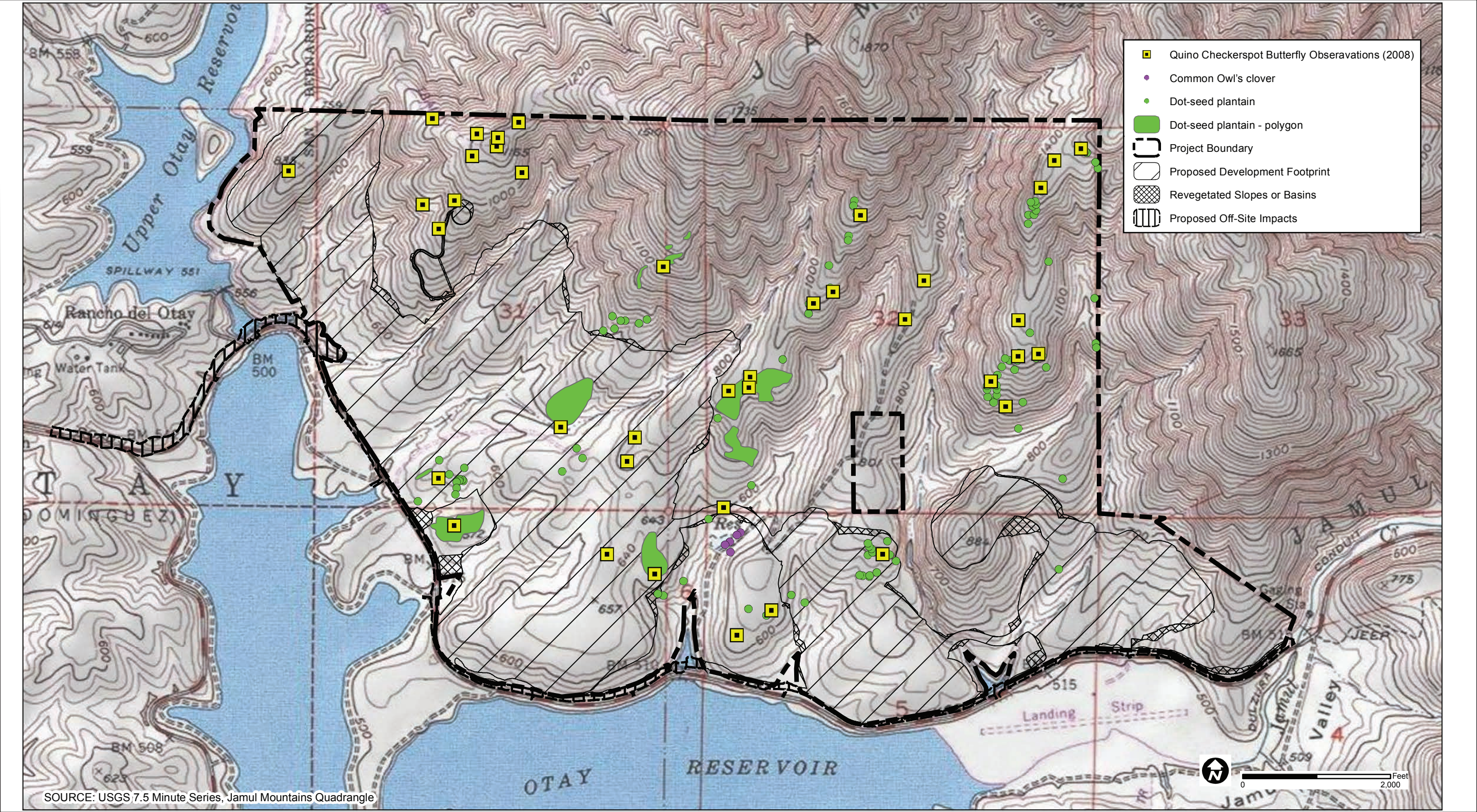


Figure 2.3-11
Quino Checkerspot Butterfly Observations and Host Plant Locations

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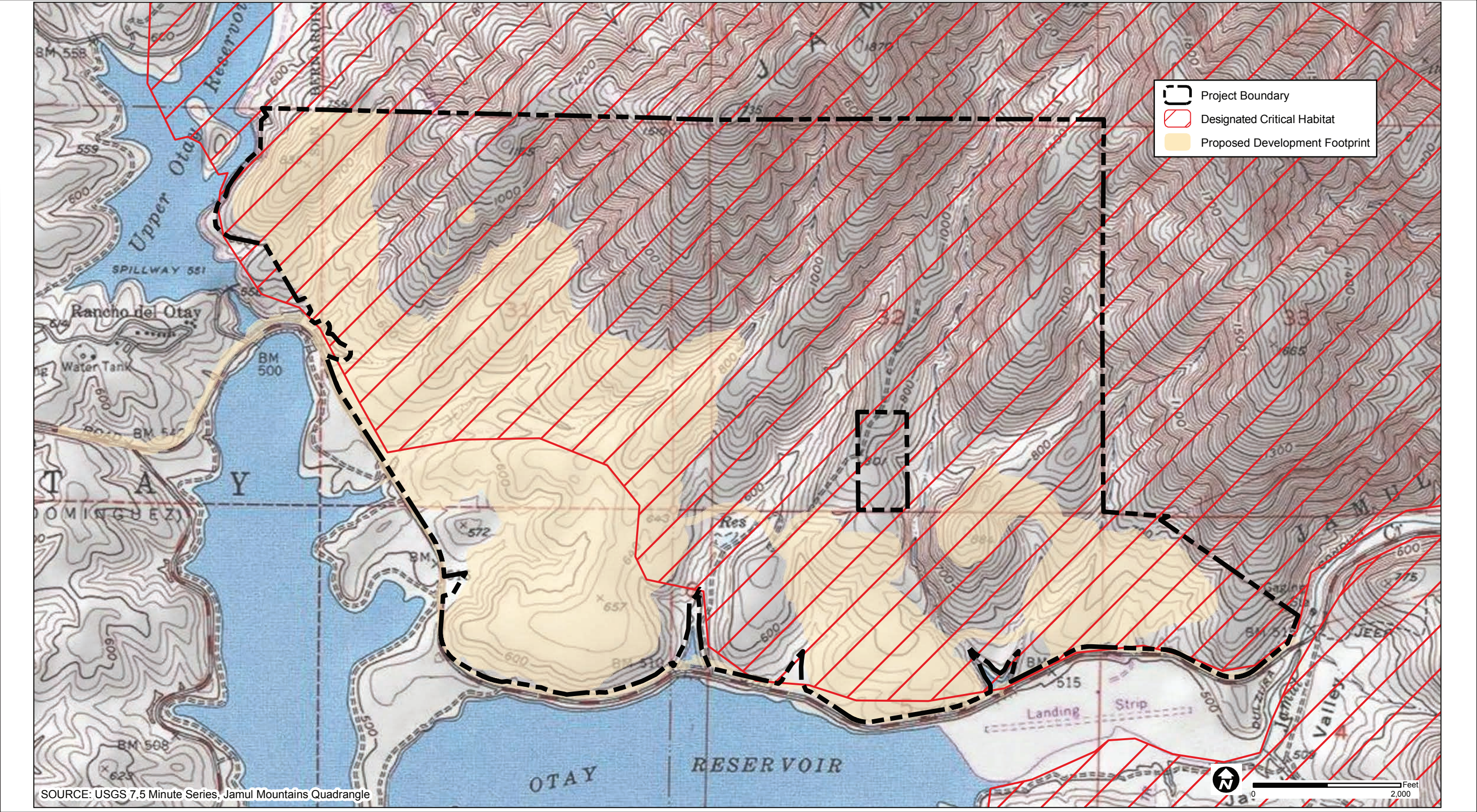
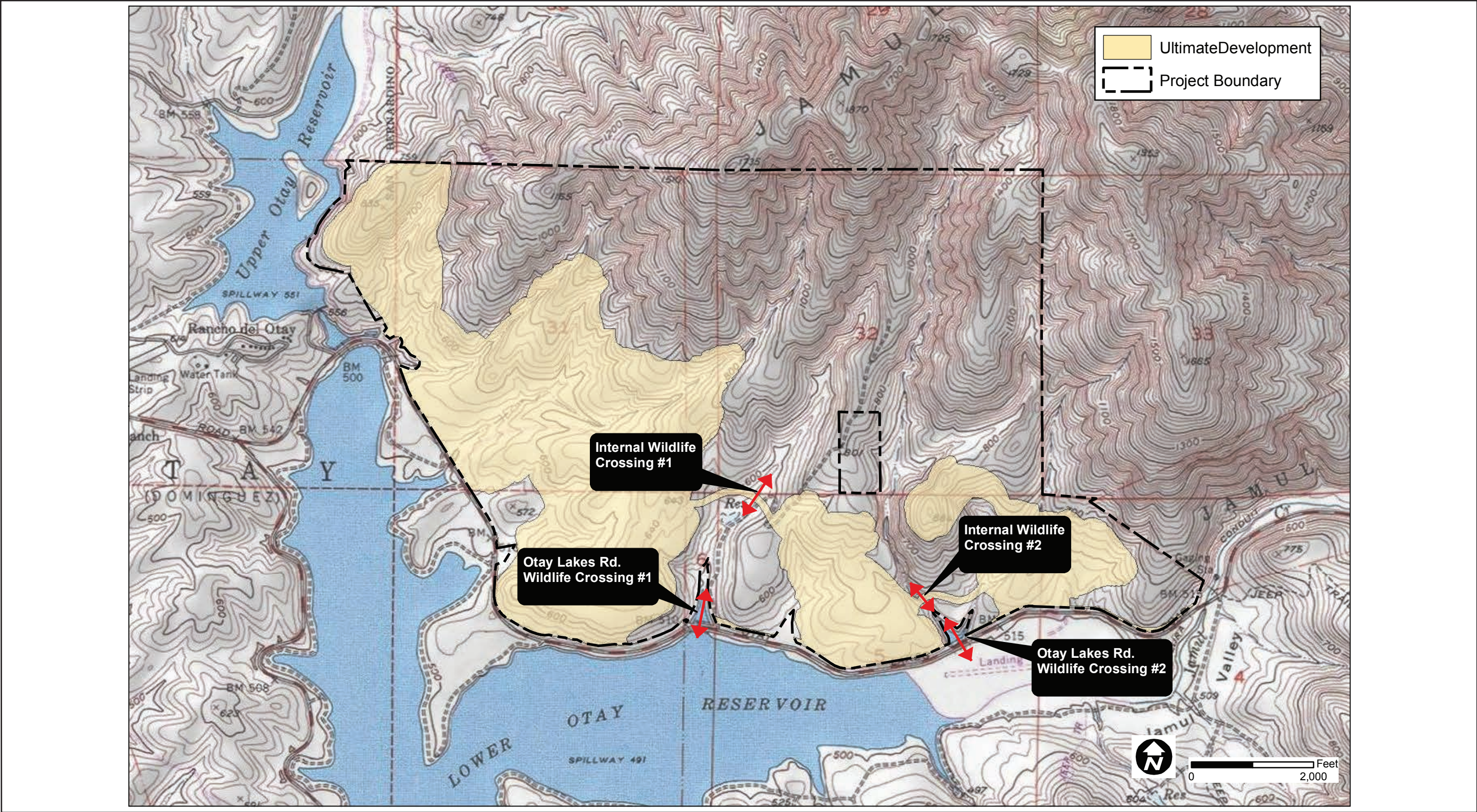


Figure 2.3-12
Quino Checkerspot Butterfly Designated Critical Habitat

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Source: DUDEK, 2014

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Source: DUDEK, 2014

Figure 2.3-14
Wildlife Crossing Locations

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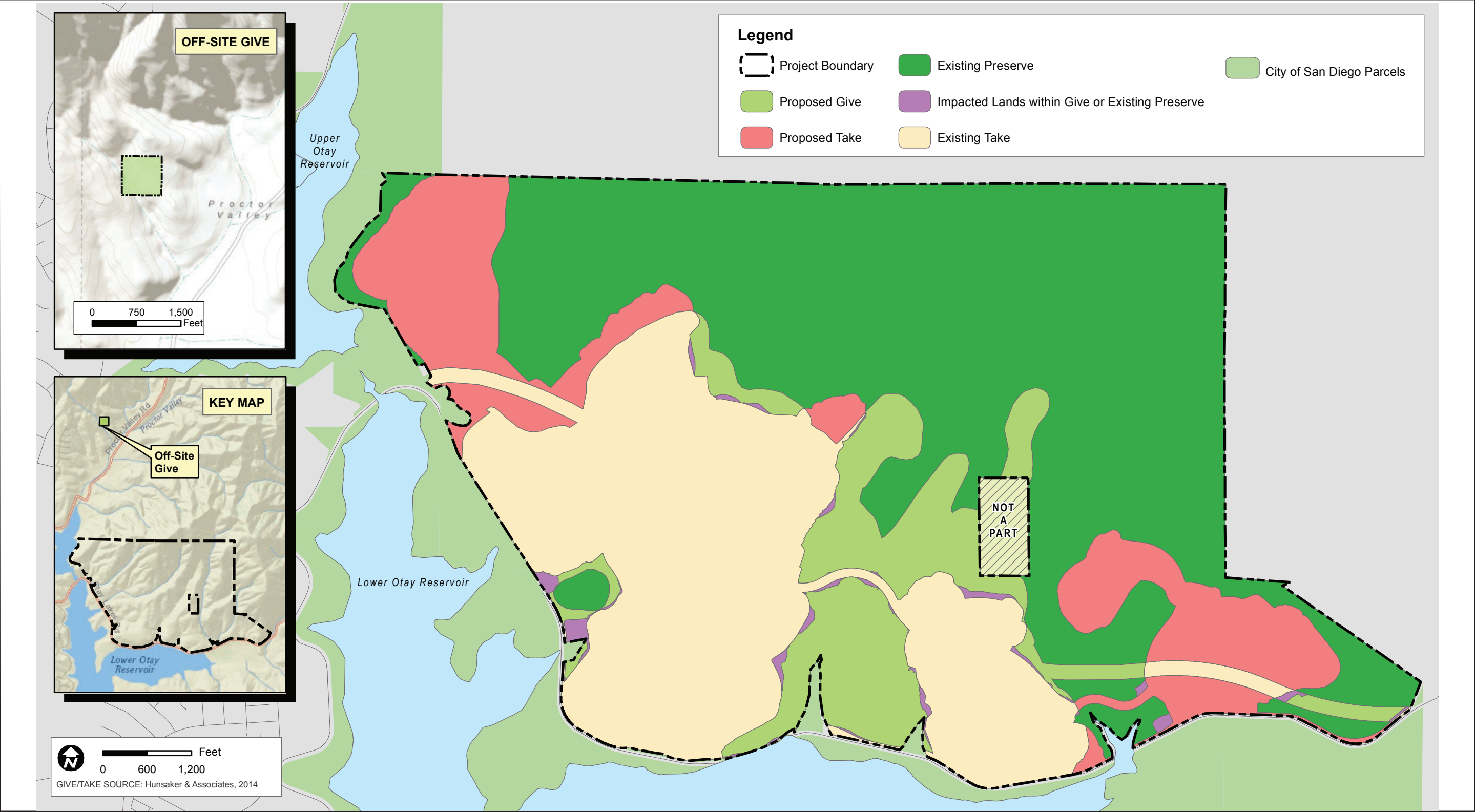
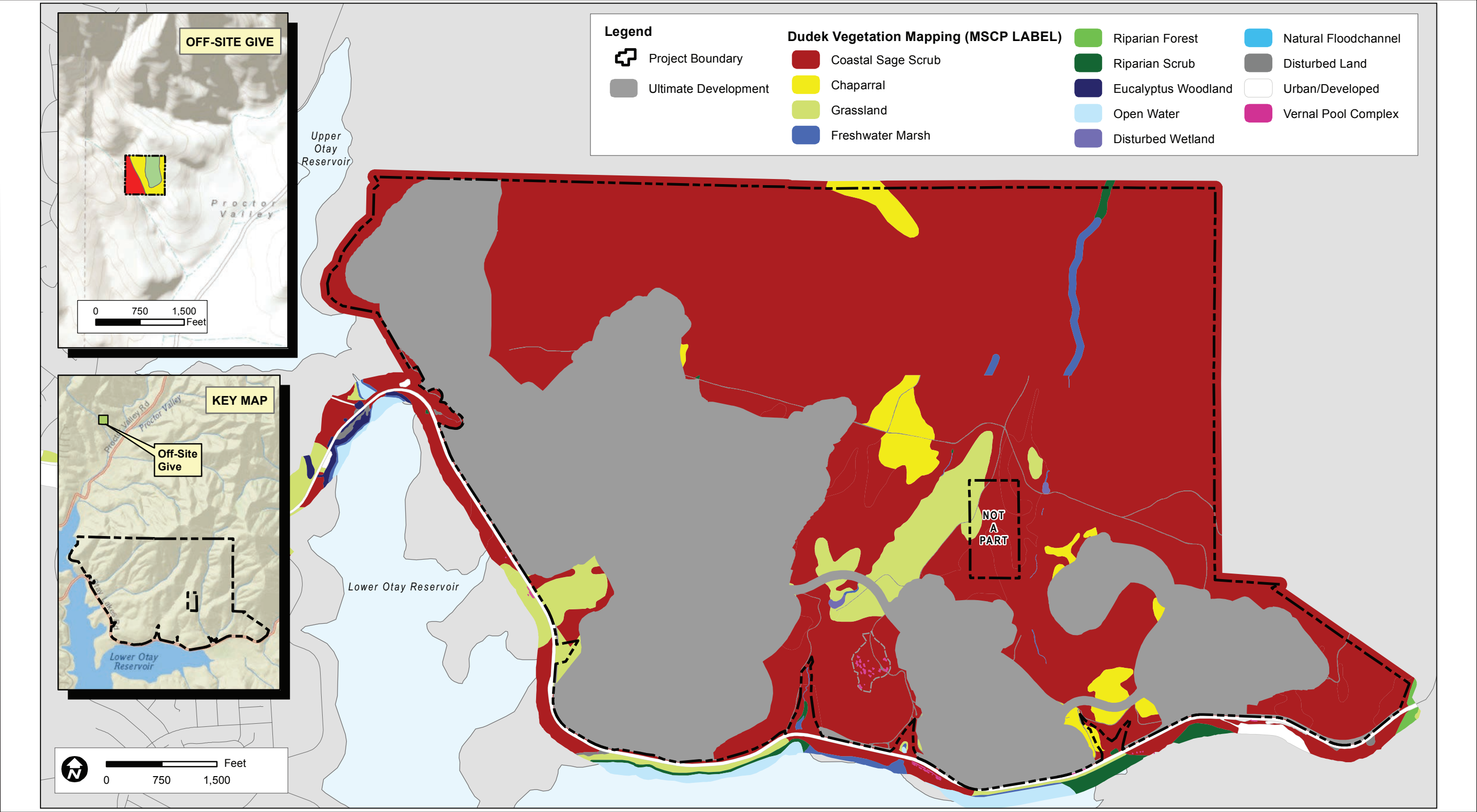


Figure 2.3-15
Proposed Boundary Adjustment Give/Take Areas

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Source: DUDEK, 2014

Figure 2.3-16
Ultimate Preserve Vegetation

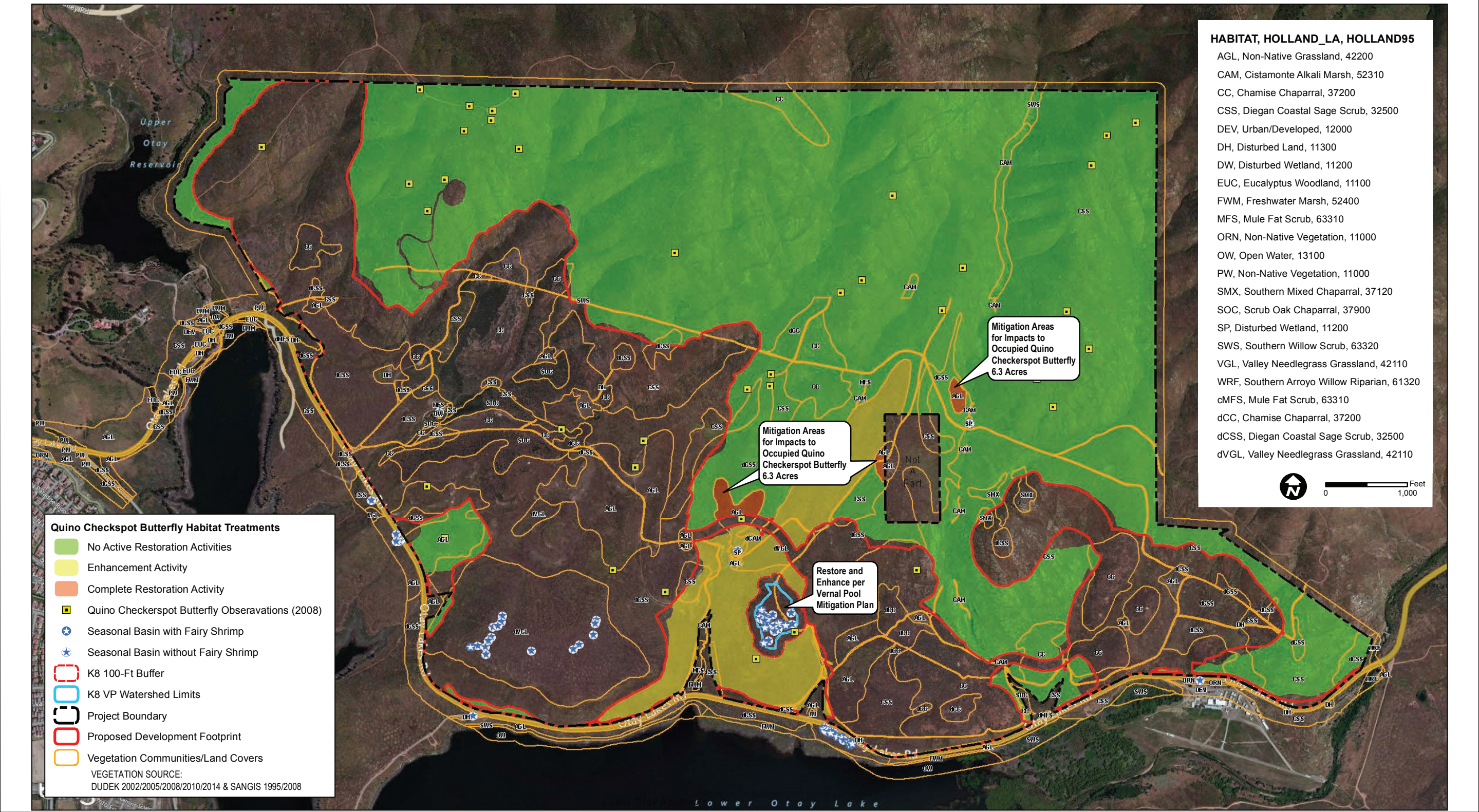
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Source: DUDEK, 2014

Figure 2.3-17
Location of Cumulative Projects

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Source: DUDEK, 2014

Figure 2.3-18
Proposed Habitat Treatment Areas for Quino Checkerspot Butterfly Mitigation

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2.4 Cultural Resources

The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to cultural resources for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR determined that implementation of the Otay SRP would result in the disturbance of significant prehistoric and historic resources, which was determined to be a significant, unavoidable impact on cultural resources. As a result, the Otay Ranch PEIR proposed mitigation measures to reduce the identified significant impacts. However, the Otay Ranch PEIR determined that, even with implementation of the mitigation measures, the impact to cultural resources would remain significant and unavoidable.

This section provides a Project-specific analysis of the potential impacts to cultural resources from implementation of the proposed Project. The potential cultural and historic resource impacts are evaluated in “*Otay Ranch Resort Village Archaeological/Historical Study County of San Diego USGS Jamul Mountains Quadrangle Approximately 1,870 Acres*” (Archaeological/Historical Study, August 2014), prepared by Brian F. Smith and Associates and provided in this EIR as **Appendix C-4**. The potential impacts of the proposed Project related to paleontological resources are evaluated in a letter report entitled Otay Ranch Resort Village Paleontological Resource and Monitoring Assessment (Paleontological Resources Letter Report, August 2014), prepared by Brian F. Smith and Associates, provided in this EIR as **Appendix C-5**.

2.4.1 Existing Conditions

Land use patterns in historic and recent periods have centered around agricultural activities, including cattle grazing and raising of cultigens (cultivated plants that do not have a wild or uncultivated counterpart), which have greatly affected the native vegetation communities that once existed in much of this area. Cattle grazing has not occurred on the Project site since 1999, and the Project site is currently undeveloped and unoccupied.

2.4.1.1 Cultural Setting

The following cultures have been identified in the general vicinity of the Project site: (1) the possible Paleo-Indian manifestation of the San Dieguito Complex, (2) the Archaic La Jolla Complex, and (3) the Late Prehistoric Kumeyaay culture. The area in the vicinity of the Project site has been historically used for ranching and farming. A detailed discussion of the cultural history for this project is provided in the Archaeological/Historical Study (Appendix C-4).

Prehistoric Cultural Sites

The survey of the Project site and records searches of previous investigations resulted in the identification of 79 prehistoric archaeological sites, two of which also have historic components, within the Project site. **Table 2.4-1** provides a listing of these prehistoric sites and a summary of artifacts recovered. The pattern of site distribution was directly associated with the natural and geologic setting. On the high elevations and steep slopes of the Project site, prehistoric activity focused on quarry sites and areas where high-quality metavolcanic rock was exposed. The high

elevations and steep slopes had the lowest frequency of prehistoric activity, which is likely due not only to the rugged terrain, but also to the presence of high-quality metavolcanic rock at lower elevations.

The highest frequency of prehistoric sites was noted in the north-central portion of the Project site, where the steep elevations gradually gave way to gentle slopes and where drainages cut deeply into the metavolcanic rock. These areas contained sites that were focused on lithic (stone) quarry, and food collecting and processing activities. In the southern portion of the Project site, where the landforms gradually leveled to terraces and rolling hills, prehistoric site frequency lessened slightly, and the pattern of prehistoric use changed from quarry activities to food resource collecting and processing.

The pattern of prehistoric sites within the Project site is directly dictated by the existing landforms and resource potential. Thus, although major prehistoric occupation sites are recorded elsewhere along the Otay River, the sites recorded within the Project site do not appear to include any major permanent or semi-permanent village occupations. Temporary camp sites are present within the Project site; however, very little evidence of hearths or burnt bone was collected from these cultural resources that would be indicative of more permanent sites. The prehistoric resources found within the Project site are represented by a scatter of lithic production waste that includes ground stone; precision, multi-use, core, and percussion tools; two instances of pottery; and one instance of a small amount of animal bone. These sites were likely the location of small resource procurement of animal or plant resources and quarried raw lithic material in the area.

Historic Cultural Sites

The survey of the Project site and review of previous investigations within the Project area resulted in the identification of five historic resources: three are historic sites only (SDI-11,390H; SDI-11,391H; and SDI-12,354H) and two have historic/prehistoric components (SDI-11,408/H and SDI-12,362/H). **Table 2.4-1** provides a listing of the historic sites identified on the Project site.

Site SDI-11,390H consists of the remains of a late 19th century homestead and associated historic artifacts, located near the center of the Project site. The historic site has been affected by subsequent use of the area for cattle ranching, grazing, and limited subsistence agriculture. Testing of the site demonstrated limited occupation beginning in the late 1880s. The site contains two foundations associated with one dwelling, one small enclosure, one linear rock alignment, and one refuse concentration. The structure appears to represent remains of the Thompson homestead. Evidence suggests that use of the site was very brief, given the small quantity of building materials and artifacts.

Site SDI-11,391H consists of the remains of an early 20th century homesite with associated historic artifacts. The historic site has been impacted by subsequent use of the area for cattle ranching, grazing, and limited subsistence agriculture. Testing of the site and archival information demonstrated limited occupation beginning in the early 20th century. The site contains one cistern, a possible foundation, and one sparse refuse deposit, which suggest that the

historic period activity at this site was primarily centered around some type of agricultural or livestock raising venture, with associated residential occupation.

Site SDI-12,354H consists of a historic stacked rock pile and pit just upstream and on the opposite side of a small knoll from a small reservoir. The entire surface of the site was inspected for evidence of prehistoric activity. No artifacts or features, other than the rock pile and pit, were observed. Both features were most likely constructed or created through the use of machinery, such as a backhoe. The mechanically excavated features may have been associated with the construction or maintenance of the small reservoir located directly southwest of the site.

Sites SDI-12,362/H and SDI-11,408/H were identified as having isolated bottles within an area of a large prehistoric lithic scatter. Neither bottle was relocated at either site during the current resurvey of the Project. Because the isolated bottles were not relocated, the historic elements of both SDI-12,362/H and SDI-11,408/H are considered to be not significant components of these sites.

Paleontological Resources

Geologically, the Project site is underlain by two major rock types: metavolcanic rocks of the Santiago Peak Volcanics in the northern and northeastern parts of the Project site, and sedimentary rocks of the Otay Formation in the southern and southwestern parts of the Project site. Minor exposures of upper Pleistocene (more than 10,000 years old) older alluvium and colluvium are present west of Otay Lakes Road but are not mapped within the Project site; unconsolidated Holocene (less than 10,000 years old) alluvial deposits are present in the floodplain areas of the Jamul Creek drainage, also outside of the Project site.

The Lower Cretaceous (approximately 128 to 118 million years old) Santiago Peak Volcanics consist of mildly metamorphosed volcanic and volcanoclastic rocks, but are predominantly andesite and dacite in composition. The metasedimentary parts of the Santiago Peak Volcanics, which are known to contain Jurassic fossils, are not present locally. The Jurassic metasediments are regarded as a separate formation.

The Otay Formation is divided into three informal members by paleontologists at the San Diego Natural History Museum: an upper sandstone/mudstone member, a middle gritstone member, and a basal angular-clast fanglomerate member. Numerous fossil localities have been discovered at other Otay Formation sites in the upper sandstone/mudstone member and the middle gritstone member, but have yet to be recorded from the basal fanglomerate member. A designation of “high paleontological resource sensitivity” has been assigned to the upper member of the Otay Formation, and a “moderate paleontological resource sensitivity” designation has been assigned to the middle and lower members of the Otay Formation.

Based on paleontological collections and records searches conducted by the Department of Paleontology at the San Diego Natural History Museum, there is only one previously recorded fossil locality within the Project site. However, many other fossil localities are present in the Otay Formation within a 1-mile radius to the west of the Project site. These localities have yielded important and diverse assemblages of terrestrial vertebrate fossils, including lizards,

snakes, tortoise, a variety of rodent-sized animals, rabbit, dog, fox, small browsing animals called oreodonts, and rhinoceros. The Otay Formation is now considered to be the richest source of late Oligocene (28 to 30 million years old) terrestrial vertebrates in California.

2.4.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines are based on the Guidelines for Determining Significance for Cultural Resources (2007) and the Guidelines for Determining Significance for Paleontological Resources (2009). A significant cultural or paleontological resource impact would occur if the Project would do the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. This shall include the destruction, disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner not consistent with the Secretary of Interior Standards.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological history or prehistory.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Propose activities directly or indirectly damaging to a unique paleontological resource or site. A significant impact to paleontological resources may occur as a result of the Project if Project-related grading or excavation would disturb the substratum or parent material below the major soil horizons in any paleontologically sensitive area of the County, as shown on the San Diego County Paleontological Resources Potential and Sensitivity Map

The following section outlines the methodologies employed in the technical studies and the guidelines used to determine the significant Project-related impacts to cultural resources. The analysis includes results of surveys conducted within the Project site and at off-site areas proposed for road and sewer line improvements. The archaeological program to evaluate the prehistoric cultural resources on the Project site included research and testing methodology conforming to County archaeological and historic resources guidelines (County of San Diego 2007a) and to the statutory requirements of CEQA and subsequent legislation.

Data for the Project site was obtained using both archival and field research methods. Archival research consisted of records searches of archaeological files at the South Coastal Information Center at San Diego State University to identify any previously recorded archaeological sites within the Project footprint and to determine the pattern of site types and the results of previous investigations in the vicinity. The field study consisted of an archaeological reconnaissance to determine the current status of recorded archaeological sites within the Project site and to search for any resources not previously studied.

All of the artifacts recovered from the Project site were identified and cataloged in keeping with accepted archaeological procedures. In addition, some artifacts were washed and further analyzed for identification. After cataloging, identification and analysis, the collections were packaged and marked for permanent curation. The collections, reports, field notes and photographs will be curated at the San Diego Archaeological Center, or other federally-approved facility.

The review of previous studies, as well as analysis of site components and artifacts, revealed no indication of Native American religious, ritual, or other special activities within the Project site. No part of the Project site is located on current Native American reservation land. However, it is likely that the Project site was part of the Traditional Use Area (TUA) of one or more of the local tribes. Field testing of most of the prehistoric sites was completed in 2002, prior to the County's requirement for Native American monitors. When additional fieldwork was conducted in 2008 for sites affected by Project redesign, Native American monitors provided by Red Tail Monitoring and Research, Inc. were present. A records search of the Sacred Lands Files of the Native American Heritage Commission was requested. The records search indicated "the presence of Native American cultural resources that may be impacted" by the Project site, although the locations of those resources could not be revealed. Requests for additional information regarding known cultural resources were mailed to the list of Native American representatives supplied by the Native American Heritage Commission. On August 8, 2007, the County coordinated a field trip to this site, along with the Otay Ranch Company representatives, as a part of the SB-18 tribal consultation process. The site visit included County representatives, Otay Ranch Company representatives, the cultural resources consultant Brian F. Smith and Native American representatives from Jamul, Santa Ysabel and San Luis Rey Tribes.

For further details on the methodology for analyzing impacts to cultural resources, refer to the Archaeological/Historical Study in this EIR (**Appendix C-4**).

The following references were used to identify paleontological resources on the Project site and surrounding vicinity: (1) Geologic maps of Tan (2002, Geologic map of the Jamul Mountains 7.5-foot quadrangle, San Diego County, California, a digital database, scale 1:24,000, published by the California Geological Survey); (2) Geologic maps of Todd (2004, Preliminary geologic map of the El Cajon 30- by 60-foot quadrangle, southern California, version 1.0: USGS Open-File Report 2004-1361: 1-30, 1 map sheet (scale 1:100,000); and (3) a paleontological collections and records search conducted by the Department of Paleontology at the San Diego Natural History Museum.

2.4.2.1 Historic Resources

Guideline for the Determination of Significance

A significant cultural resources impact would occur if the Project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. This shall include the destruction,

disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner not consistent with the Secretary of Interior Standards.

Rationale for Selection of Guideline

This guideline is from the County of San Diego Guidelines for Determining Significance for Cultural Resources (2007). Section 21083.2 of the CEQA Guidelines recommends evaluating historical resources to determine whether a proposed action would have a significant effect on unique historical resources.

Analysis

As noted above, three historic sites were identified on the Project site: SDI-11,390H; SDI-11,391H; and SDI-12,354H. No historic sites were identified in the off-site road or sewer line improvement areas.

The analysis of the cultural materials recovered from Site SDI-11,390H and related historic research revealed a historic occupation site with limited structural remains and a very minimal cultural deposit. The recovered artifacts suggest that the site was used during the late 1800s and early 1900s; however, the site lacks additional research potential. The work completed for this evaluation has exhausted the research potential of the site. Based on marginal information derived from the testing program, Site SDI-11,390H is not considered “historically significant” according to criteria listed in Section 15064.5 of the CEQA Guidelines.

The analysis of the cultural materials recovered from Site SDI-11,391H and related historic research revealed a historic occupation site with structural remains and a minimal cultural deposit. The pattern and redundancy of the recovered materials suggests a lack of additional information potential at the site. The archival information for the region south of the Project site indicates that there was settlement occurring by 1879. By 1903, a road and structure were present at the site. Based on the marginal information derived from the testing program, Site SDI-11,391H is not considered “historically significant” according to criteria listed in Section 15064.5 of the CEQA Guidelines.

The investigation of Site SDI-12,354H revealed no confirmed evidence of historic activity. No artifacts were observed, and neither the stacked rock pile nor the pit could be dated. The mechanically excavated features may have been associated with the construction or maintenance of the small reservoir located directly southwest of the site. Due to the lack of datable artifacts or elements associated with the rock pile and pit identified as SDI-12,354H, it is unlikely that additional information would result from subsequent investigations. Based on the information derived from the current investigation, the site is not considered “historically significant” according to criteria listed in Section 15064.5 of the CEQA Guidelines.

The cultural materials recovered from the three historical sites were not considered “historically significant” according to the criteria listed in Section 15064.5 of the CEQA Guidelines. In addition, none of the sites was listed on or eligible for the National Register of Historic Places, and none of the sites were listed on or eligible for the California Register of Historical Resources

or the Local Register of Historic Resources. As a result, these sites are not considered “historical resources” pursuant to Section 15064.5 of the CEQA Guidelines. Based on the above analysis, the proposed Project would not cause a substantial adverse change in the significance of a historical resource; therefore, impacts to historical resources from implementation of the proposed Project are considered *less than significant*.

2.4.2.2 Archaeological Resources

Guideline for the Determination of Significance

A significant cultural resources impact would occur if the Project would:

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological history or prehistory.

Rationale for Selection of Guideline

This guideline is derived from the County of San Diego Guidelines for Determining Significance for Cultural Resources (County of San Diego 2007). Section 15064.5 of the CEQA Guidelines recommends evaluating archaeological resources to determine whether a proposed action would have a significant effect on unique archaeological resources.

Analysis

As stated above, 79 prehistoric and historic archaeological sites were identified within the Project site, including 53 sites located within the proposed grading and brushing envelope and 26 sites located outside the construction zone and within designated open space. No archaeological sites were identified in the off-site road or sewer line improvement areas. Implementation of the proposed Project would result in potential direct and indirect impacts to most of the recorded prehistoric sites within the Project footprint, as discussed below.

Direct Impacts within the Proposed Grading and Brushing Envelope

Within the limits of the Project and road/sewer improvements, 79 cultural resources were identified; however, only 69 were tested according to the criteria in section 15064.5 of the CEQA Guidelines. The 10 sites that were not tested are assumed to be significant and would be preserved in designated natural open space areas. Detailed analyses for each of the sites are provided in the Archaeological/Historical Study, found in **Appendix C-4**. As summarized in **Table 2.4-1**, based on the information derived from testing, 60 of the 69 cultural resource sites tested are not considered significant. Because these sites were not considered significant, any impacts to these sites as a result of implementation of the proposed Project would not be considered significant; therefore, mitigation would not be required.

As summarized in **Table 2.4-1**, impacts to the following nine sites within the proposed grading and brushing envelope are considered significant and are described below: SDI-11,406; SDI-11,409; SDI-12,368; SDI-12,371; SDI-16,303; SDI-16,309; SDI-16,312; SDI-16,326; and SDI-16,332.

The analysis of the cultural materials recovered from Site SDI-11,406 revealed a moderate surface scatter and a relatively dense, although localized, cultural deposit of lithic artifacts. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional floral and/or faunal resource procurement and processing, as evidenced by a variety of precision tools. Based on the presence of a variety of tool types and a concentrated subsurface deposit that extends to 30 centimeters, Site SDI-11,406 exhibits significant cultural deposits and retains research potential, which would contribute to the understanding of prehistoric cultures in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-11,409 also revealed a moderate surface scatter and a cultural deposit. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional floral and/or faunal resource procurement and processing, as evidenced by the presence of a variety of precision tools. Based on the presence of a variety of tool types and a subsurface deposit that extends to 40 centimeters, Site SDI-11,409 exhibits significant cultural deposits and retains research potential, which would contribute to the understanding of prehistoric cultures in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-12,368 reveal a moderately dense surface scatter and two cultural deposits, one of which is relatively deep. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, as well as subsistence resource processing, as evidenced by the presence of the variety of precision tools recovered at the site. Based on a variety of tool types recovered and the depth of the deposit, Site SDI-12,368 exhibits significant cultural deposits and retains research potential. The surface scatter has been sampled, but the recovered collection is only a portion of the complete surface scatter. Testing also indicated that at least one of the two subsurface deposits contains a dense scatter of materials to a depth greater than most of the archaeological sites located on the Project site (50 centimeters). Based on the results of the testing program, Site SDI-12,368 would contribute to the understanding of prehistoric resource procurement and economy in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-12,371 reveal a moderately dense surface scatter and a localized cultural deposit with a depth of 30 centimeters. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, as well as resource processing, as evidenced by the presence of a variety of precision tools. Based on the variety of tool types recovered and the depth of the deposit, Site SDI-12,371 exhibits significant cultural deposits and retains research potential. Testing also indicated that the subsurface deposit at Site SDI-12,371 contains a significant amount of materials and exhibits with the potential to produce an assemblage that would contribute to the

understanding of prehistoric resource procurement and economy in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-16,303 reveal a moderately dense surface scatter and a localized, shallow cultural deposit. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional floral and/or faunal food procurement and processing, as evidenced by the presence of a variety of precision tools. Based on the variety of tool types recovered and the presence of culturally diagnostic artifacts, Site SDI-16,303 exhibits significant cultural deposits and retains research potential. Although the artifacts on the surface of the site, which represent a large percentage of the assemblage, have been collected, testing indicated that the localized subsurface deposits contain materials that would contribute to the understanding of prehistoric cultures in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-16,309 reveal a large, moderately dense surface scatter and a shallow cultural deposit. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional plant and/or animal resource processing, as evidenced by the presence of a variety of precision tools. Based on the variety and quantity of tool types recovered, Site SDI-16,309 exhibits significant cultural deposits and retains research potential. Both surface sampling and subsurface excavations indicate that the site contains materials that would contribute to the understanding of prehistoric resource procurement and economy in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-16,312 reveal a dense surface scatter and a shallow, but extensive, cultural deposit. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional floral and/or faunal food processing, as evidenced by the presence of a variety of precision tools. Based on the quantity of artifacts and the variety of tool types recovered, Site SDI-16,312 exhibits significant cultural deposits and retains research potential. All artifacts from the site were not collected but, rather, were sampled as part of the current investigation. The surface and subsurface contexts at Site SDI-16,312 contain materials that would contribute to the understanding of quarry and resource processing sites during the prehistoric occupation of the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-16,326 reveal a dense surface scatter and a deep cultural deposit. The recovered materials indicate that the site is a quarry and temporary camp where site activities were focused primarily on lithic procurement and manufacture, with plant and/or animal processing, as evidenced by the presence of a variety of precision tools. Based on the variety of tool types recovered, Site SDI-16,326 exhibits significant cultural deposits and retains research potential. Although all surface artifacts have been collected, the site retains a significant research potential represented by the depth (70 centimeters) of the subsurface deposit identified. The results of the investigation indicate that the subsurface deposits contain materials that would contribute to the understanding of prehistoric resource procurement and economy in the region. ***Impacts to this site would be considered significant.***

The analysis of the cultural materials recovered from Site SDI-16,332 reveals a moderately dense surface scatter and shallow cultural deposit. The recovered materials indicate that site activities were focused primarily on lithic procurement and manufacture, with additional plant and/or animal resource processing, as evidenced by the presence of animal bone and a variety of precision tools. Based on the variety of tool types recovered and the presence of animal bone, Site SDI-16,332 exhibits significant cultural deposits and retains research potential. Although most of the artifacts on the surface of the site, which represent a large percentage of the collection, have been collected, the recovery from the test unit indicates that the subsurface deposits contain materials that would contribute to the understanding of prehistoric resource procurement and economy in the region. ***Impacts to this site would be considered significant.***

Implementation of the proposed Project would result in direct impacts to the nine significant sites described above. Five of these sites are characterized by a quarry with a limited range of tools but a large representation of lithic production waste. The remaining four sites are minor prehistoric temporary camps or quarry areas, characterized by marginal deposits or features representing limited research potential. All of these sites contain subsurface deposits that represent significant research potential. Therefore, ***direct impacts to these nine sites are considered significant (Impact CR-1).***

Potential Indirect Impacts to Sites within the Designated Open Space Area

A total of 26 sites are outside of the proposed construction zone and would not be directly impacted by the development. Sixteen of these sites have been tested and determined to be of limited significance and would not be directly impacted according to the Project design. Ten of these sites represent resources that are assumed significant but were not tested because they lie outside of the development envelope and would be preserved in open space areas. A trail system is planned for the open space area that is intended to avoid the 10 significant sites. However, the 10 sites may be indirectly affected by increased visitation to open space areas due to the increased population of residents adjacent to the sites and a variety of activities in open space areas that may lead to encroachment into the archaeological sites, including maintenance procedures and unauthorized exploration of the open space. These ***indirect impacts to the 10 sites within open space areas are considered potentially significant (Impact CR-2).***

2.4.2.3 Disturbance to Human Remains

Guideline for the Determination of Significance

A significant impact to human remains would occur if the Project would:

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

Rationale for Selection of Guideline

This guideline is from the County of San Diego Guidelines for Determining Significance for Cultural Resources (County of San Diego 2007). This guideline is included because human remains must be treated with dignity and respect and CEQA requires consultation with the Most

Likely Descendant as identified by the Native American Heritage Commission (NAHC) for any project in which human remains have been identified.

Analysis

Sections 15064(d) and (e) of the CEQA Guidelines requires that if human remains are discovered on a project site that may be those of a Native American, no further excavation or disturbance shall occur and the County Coroner shall be notified to determine whether the remains are those of a Native American. If confirmed, the lead agency shall work with the Native American Heritage Commission to identify the person or persons most likely to be descended from the deceased Native American and the project applicant shall work with the descendent for treating or disposing of, with appropriate dignity, the human remains and any associated grave goods in accordance with the provisions of Public Resources Code Section 5097.98. No human bone material was identified during the testing program; however, the possibility exists that human remains could be buried on the Project site and be encountered during grading. Thus, implementation of the proposed Project could result in *potentially significant adverse impacts* related to disturbance of human remains (**Impact CR-3**).

2.4.2.4 Paleontological Resources

Guideline for the Determination of Significance

A significant impact to paleontological resources would occur if the Project would:

- Propose activities directly or indirectly damaging to a unique paleontological resource or site. A significant impact to paleontological resources may occur as a result of the Project if Project-related grading or excavation would disturb the substratum or parent material below the major soil horizons in any paleontologically sensitive area of the County, as shown on the San Diego County Paleontological Resources Potential and Sensitivity Map.

Rationale for Selection of Guideline

This guideline is from the County of San Diego Guidelines for Determining Significance (Paleontological Resources, 2009). It requires the evaluation of paleontological resources to determine whether a proposed action would have a significant effect on paleontological resources.

Analysis

The Project site is located within a “High” paleontological sensitive area of the County, as shown on the County Paleontological Resources Potential and Sensitivity map (County of San Diego 2009b). As described above, the upper sandstone/mudstone member of the Otay Formation is considered to have “high paleontological resource sensitivity” and the middle gritstone and lower fanglomerate members of the Otay Formation are considered to have “moderate paleontological resource sensitivity.” Both of these members occur within the Project site. In addition, as noted

above, there is one documented fossil locality within the Project site and numerous fossiliferous localities west of the Project site. Furthermore, the Otay Formation is considered the richest source of Late Oligocene terrestrial vertebrates in California. The Project proposes to excavate 16.2 million cubic yards of soil within the Otay Formation. This volume of excavation would exceed the County's threshold of 2,500 cubic yards in areas of high or moderate paleontological sensitivity and, therefore, implementation of the proposed Project could result in *potentially significant impacts* to these paleontological resources (**Impact CR-4**). According to the County Guidelines for Determining Significance for Paleontological Resources, monitoring of excavation activities during grading is required and unearthed fossil remains are to be salvaged, identified, and prepared for curation.

2.4.2.5 Resource Protection Ordinance Compliance

Section 86.605 of the County's Resource Protection Ordinance (RPO) contains a list of projects that are exempt from the RPO and includes an exemption for Otay Ranch as follows:

- (i) Any project located within the approximately 22,500 acre property known as "Otay Ranch", if determined to be consistent with a Comprehensive Resource Management and Protection Program which has been adopted by the Board of Supervisors for the "Otay Ranch."

The Otay Ranch Resort Village is included as a part of the Otay Ranch Resource Management Plan (RMP). The Otay Ranch RMP was created to provide a mechanism to manage a variety of resources within the context of a unified regional plan for Otay Ranch. The RMP includes three policies related to cultural resources. Each is identified below, and includes an analysis of how the proposed Project is consistent with the RMP requirements.

Policy 1.3B - In conjunction with the first SPA in the Proctor Valley Parcel, a complete cultural resource study to assess cultural resources on that ownership shall be required prior to the approval of any development application.

Analysis

The potential cultural and historic resource impacts are evaluated in the Archaeological/Historical Study provided in this EIR as **Appendix C-4**. The potential impacts of the proposed Project related to paleontological resources in the Paleontological Resources Letter Report provided in this EIR as **Appendix C-5**.

Policy 2.12 - Preserve significant cultural resources.

Analysis

The proposed project will accomplish the preservation of 10 significant sites, which will remain undisturbed in Open Space as part of the Otay Ranch RMP Preserve, while nine significant sites will be impacted by proposed grading. The preservation of 53 percent of the significant sites within the dedicated Preserve area will ensure that examples of these types of resources will remain as part of the archaeological resource base in the east Otay region. The nine significant

sites that will be impacted have been identified as significant due to their research potential. The data recovery mitigation program proposed as part of the development plan will receive a sufficient level of information from the group of sites in the development envelope to exhaust their research potential and contribute valuable information to the archaeological record.

The nine significant sites that will be impacted are primarily classified as lithic work stations or quarry sites that reflect the abundance of metavolcanic rock exposed at the higher elevations of Otay Ranch Village 13. This type of rock was targeted by prehistoric occupants as the preferred stone locally available for stone tool manufacture. In spite of the extensive quantity of flaked stone found on these sites that represents tool manufacture, very little evidence was found to indicate that these sites also served as habitation sites where prehistoric people lived and carried out all the tasks necessary to survive. In all likelihood, the major occupation site where Native Americans would have lived and accessed the quarries on Otay Ranch Village 13 is situated beneath the Lower Otay Reservoir, where the Otay River and Jamul Creek intersected. Therefore, while the loss of nine significant cultural resources represents a loss of 47 percent of the collection of significant sites, these sites are part of a very repetitive pattern of stone tool manufacture, which is a relatively small aspect of the material culture of these people. The loss of these sites will be adequately mitigated through the implementation of a data recovery program.

Policy 6.1 - Provide resource-related educational and interpretive programs to increase public sensitivity and awareness and appreciation of resources within the Preserve, consistent with the goal of the RMP.

Analysis

Standards for Policy 6.1 require that the Preserve Owner/Manager (POM) direct the construction of an interpretive center. For cultural resources within portions of the Project site dedicated to the Otay Ranch Preserve and administered by the POM, the RMP states that archaeological site preservation is the preferred mitigation measure for subsequent POM activities. Upon dedication of open space to the Preserve, it is the POM's responsibility to comply with this Policy.

2.4.3 Cumulative Impact Analysis

Cumulative impacts to cultural resources refer to the aggregate effect of land development or use associated with changes to the landscape since the historic settlement of the area began in the 1800s. Changes in land use over the past 150 years in the southwestern area of San Diego County have been driven by water and desirable land forms. Agriculture was focused first on the coastal plain and river valleys, and then gradually into the coastal mesas and foothills. In the area of Otay Ranch Village 13, the agri-business that flourished at Otay Ranch in the twentieth century greatly affected cultural resources through cultivation and grazing. Archaeological sites most affected by agricultural use are smaller, superficial sites that could be easily dispersed or plowed under by seasonal planting and harvesting.

Pressures from residential and commercial development followed the growth of the area, which generated the need for development primarily after 1960. With the sale of Otay Ranch from

United Enterprises, Inc. to the Baldwin Brothers, a large development company, in the early 1980s, the potential for substantial land use change was established. Development of Otay Ranch, Salt Creek Ranch, Eastlake, and Rancho San Miguel have changed hundreds of acres of farm and grazing land to housing tracts and commercial property. The cumulative impacts to cultural resources generated by this development are measurable because most development-related impacts have been evaluated as part of the CEQA review process. The assessment of cumulative impacts associated with the development of Otay Ranch Village 13 incorporated data from an area of three to four miles surrounding the project. Within that study area, 266 prehistoric sites have been recorded. These sites range from major habitation sites to sparse shell and artifact scatters. Research has concluded that 18 major development projects have contributed to the effect of residential, commercial, and infrastructure encroachment into the study area.

The cumulative impact analysis provided information that only 10.53 percent of cultural sites within the three-mile study radius around Otay Ranch Village 13 have been destroyed completely by development. The proposed development of Otay Ranch Village 13 will contribute to the cumulative impacts to cultural resources because cultural resources are characterized as non-renewable resources. Although cumulative impacts are unavoidable, these impacts can be mitigated through the implementation of a data recovery program.

2.4.3.1 Cumulative Prehistoric and Historic Cultural Impacts

The archival and field research conducted for preparation of the Cultural Resources Technical Report resulted in the identification of 79 cultural resource sites within the boundaries of the proposed Project, of which 53 sites would be directly impacted by the Project. In addition to the Project specific impacts, the effect of cumulative impacts to cultural resources in the area must also be assessed. The potential cumulative effect of proposed land development projects is the loss of cultural resources, which would collectively contribute to the loss of San Diego prehistory. However, Project-specific mitigation can be implemented to reduce the effect of development by ensuring the scientific recovery, study, and curation of important cultural resources.

Mitigation is recommended for nine of the directly impacted significant cultural resource sites. The Otay Ranch PEIR determined that implementation of the Otay SRP would result in a significant, unavoidable impact on cultural resources. Based on the cumulative Project-level and program-level potential for cultural resource impacts, the ***Project's contribution to cumulative impacts would be significant (Impact CR-5)***. Implementation of Project-level mitigation measures M-CR-1, M-CR-2 and M-CR-3 would reduce the Project's contribution to cumulative impacts.

The Management Plan for Otay Mesa Prehistoric Resources (Gallegos et al. 1998) was used as a guide for defining site types, the cultural resource study area, and for site comparisons to be employed for the cumulative impact analysis for the Project site. In addition, information obtained through the records obtained from the SCIC was also used for the cumulative impact assessment. The current status of archaeological sites outside of the Project boundaries was not

verified through visual inspection. Assumptions of site status were based on aerial maps showing developed lands and site record information.

A total of 365 prehistoric archaeological sites had been recorded in the Management Plan for Otay Mesa Prehistoric Resources as of 1998 (Gallegos et al. 1998). Habitation sites and temporary camps are interspersed throughout the study area and tend to be located near water sources and at the head of drainages. Metavolcanic quarries are located in the Jamul and San Ysidro Mountains, near outcrops of Santiago Peak Volcanic materials. A total of 17 projects have been identified within a one-mile radius of the proposed Project. A list of the projects in the vicinity of the proposed Project has been placed in **Table 2.4-2**. Most of these projects have centered on residential development; although other projects have included a transmission line, a commercial quarry, public service infrastructure that involve sewer and water lines, cell towers, and planning studies. Collectively, these projects reflect the eastward expansion of planned residential communities and the concomitant need for infrastructure improvements. In addition to modern development, much of the area has been previously disturbed by agriculture activities, including plowing, disking, and grazing.

There have been 44 prehistoric archaeological sites recorded within a one-mile radius of the Project site. Surface lithic scatters, temporary camps/artifact scatters, and habitations are the types of sites identified within or near the Project site. In addition, 79 prehistoric archaeological sites are located within the Resort Village property. Nine of these sites were tested and evaluated as significant and another 10 sites were assumed to be significant since they were not tested but instead are proposed to be placed into open-space easements. The sites within the Resort Village and those identified by Gallegos et al. (1998) represent habitation locales and temporary camps that are positioned on the uppermost drainage of the Otay River and close to the southwestern flank of the Jamul Mountains. Of the 14 habitation sites on Otay Mesa identified in Gallegos et al. (1998: vii, 73), only five (SDI-222, SDI-4281, SDI-8654, SDI-11,424, and SDI-10,198) are undeveloped and available for long-term preservation, as the remaining sites have been destroyed or their status is unknown. Plowing, erosion, roads, historic disturbances, and modern trash have impacted the habitation and temporary camp sites within the current Project area and those in a one-mile vicinity. Clearly, these previous impacts and the foreseeable direct impacts of the Resort Village Project will result in a cumulative impact to prehistoric resources given the continued loss of habitation sites and temporary camps in the Otay Mesa region. However, mitigation can be implemented to reduce the effect of the proposed development by ensuring the scientific recovery and study of the habitation sites (SDI-12,368 and SDI-16,326) and temporary camps (SDI-11,406, SDI-11,409, SDI-12,371, SDI-16,307, SDI-16,309, and SDI-16,332) to be directly impacted by the proposed Project. This will ensure that important information about prehistory is not lost.

The other 60 sites identified within the Resort Village Project can be characterized as “non-sites” and are not significant. Forty-eight of these “non-sites” are sparse lithic scatters and will be directly impacted by the proposed development, although 12 sparse lithic scatters will not be impacted. These marginal, non-significant sites are defined as “non-sites” (after Gallegos et al. 1998) since they lack a substantial subsurface deposit and surface artifact density ratios are less than three artifacts present in a 100 square meter area. On this basis, cumulative impacts to this

site type are not considered significant given that this site type lacks research potential or Native American concerns.

2.4.3.2 Cumulative Paleontological Resources Impacts

As described above, the upper sandstone/mudstone member of the Otay Formation is considered to have “high paleontological resource sensitivity” and the middle gritstone and lower fanglomerate members of the Otay Formation are considered to have “moderate paleontological resource sensitivity.” There is one documented fossil locality within the Project site and numerous fossiliferous localities west of the Project site. Development of other projects in the vicinity of the proposed Project could also result in adverse impacts to paleontological resources. Therefore, the *Project’s contribution to cumulative impacts to paleontological resources would be significant (Impact CR-6).*

2.4.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project’s effect on cultural resources:

<u>Impact Number</u>	<u>Description of Project’s Effect</u>	<u>Significance of Impact</u>
CR-1	Potential impacts to archaeological resources (nine prehistoric sites) within the proposed grading and brushing envelope	Potentially significant direct impact
CR-2	Potential indirect impacts to archaeological resources (10 prehistoric sites) within the designated open space area, including potential impacts associated with the future use of the Preserve for public hiking and riding trails	Potentially significant indirect impact
CR-3	Potential impacts to buried human remains	Potentially significant direct impact
CR-4	Potential impacts to paleontological resources within the upper sandstone/mudstone, middle gritstone, and lower fanglomerate members of the Otay Formation	Potentially significant direct impact
CR-5	Contribution to cumulative archaeological resources (prehistoric sites) impacts within the Project vicinity	Potentially significant cumulative impact
CR-6	Contribution to cumulative paleontological resources impacts within the Project vicinity	Potentially significant cumulative impact

2.4.5 Mitigation

The following mitigation measures are recommended to reduce the proposed Project's potentially significant direct, indirect and cumulative impacts on cultural and paleontological resources to a less-than-significant level.

2.4.5.1 Prehistoric Resources

Direct Impacts

M-CR-1 Prior to the issuance of grading permits, the Project applicant shall implement or cause the implementation of a data recovery program, as described below, for the following nine sites located within the proposed grading and brushing envelope:

SDI-11,406	SDI-11,409	SDI-12,368	SDI-12,371
SDI-16,303	SDI-16,309	SDI-16,312	SDI-16,326
SDI-16,332			

Data Recovery Program

The data recovery program is contingent upon extracting a sample that will exhaust the data potential of each site. The County has not adopted a policy that identifies the specific level of excavation required to achieve mitigation of impacts by data recovery. In most cases, the level of sampling is dictated by the information potential of the site. Data recovery is commonly discussed in terms of sampling percentages, referring to the percent of the area of the significant subsurface deposit to be excavated. The general approach for achieving the mitigation of impacts through data recovery would begin with an indexing of the site. The site index shall include a sufficient sample of the subsurface deposit, ranging from 2.5 to 4.0 percent of each deposit, to effectively stratify the deposits into areas of differing artifact content, densities, and activity areas. The small percentage value proposed for site indexing is reflective of the basic characterization of each of the significant sites as quarry locations with minimal evidence of occupation activities. The indexing process shall use a static grid to cover each site, with a sample unit placed in each grid cell. Using a grid will produce a very structured, nonrandom, and uniform index of the content of each cultural deposit. Within the portion(s) of each site that retains the greatest research potential, an additional 2 percent of that area shall be excavated. For most sites in the data recovery program, the area excavated shall be between 2.5 and 3 percent of the significant subsurface deposit (area of greater research potential). This volume of recovery would be sufficient to successfully pursue the research objectives of the research design and to provide other researchers with a large information resource. At the sites considered to retain the greatest research potential, a third level of stratified sampling may be implemented to focus block excavations on areas that demonstrate intense artifact recovery, features, or multi-cultural depositional patterns.

The excavation of the subsurface deposits shall be accomplished with standard 1-meter-square test units excavated by hand in 10-centimeter levels. All units shall be screened, mapped, measured, and photographed through standard stratigraphic control measures. A more detailed description of the field methods to be used is provided in Section 10.5 of the Archaeological/Historical Study provided in this EIR, **Appendix C-4**.

For the phases of work at each site, the first phase shall be the site indexing and the second phase shall be the focused investigation. A third phase, if warranted, would be extremely focused on high-potential elements of any significant site. Each phase has specific goals: the site index is a nonrandom representative sample of the entire site, while the second and third phases are focused, biased, and intuitive studies of the area within the deposit that has the greatest potential.

The grid for each site shall be determined by the number of sample units needed to accomplish the sample level of 2.5 percent. For most sites, the grid shall be set at 15-meter or 25-meter intervals. To calculate the grid size, the number of test units that represent the Phase 1 sample was divided into the calculated area of the deposit. The resulting quotient represents the area within each grid cell, and the square root of this value provides the dimension of the grid cell. For example, assuming a site contained 2,000 square meters of a cultural deposit, a 2.5 percent sample would be 50 square meters. The grid size would be determined by dividing the deposit size (2,000 square meters) by the number of units (50), which equals 40 square meters. The square root of 40 square meters is 6.3 meters; thus, the intersection of each grid line is spaced at 6.3 meters. Within each 6.3-meter by 6.3-meter grid cell, one test unit would be excavated to complete the site index.

For consistency, all of the sites shall be treated similarly, with an index phase followed by a focused, intuitive phase in the area of greatest importance. The phases of the sampling procedure to be used at the sites included in the data recovery program are as follows.

Data Recovery Program Phase 1

The first phase of excavation at any particular site shall typically involve a 2.5 percent sample used to index the site content and document intra-site variation. Test units shall be uniformly distributed within each site using a grid system. For most sites, the presence of multiple rock outcroppings would constitute voids in the sample grid. These areas would be deleted from the calculations of site deposits when the data recovery programs are initiated; however, the areas represented by the outcrops cannot be calculated at this time.

Data Recovery Program Phase 2

The second phase of excavation shall consist of a 2 to 4 percent sample of each site area identified as representing the greatest research potential. The stratification of the site following the Phase 1 work would typically identify an area of approximately 10 percent of the sample area identified as retaining additional research potential. For this sampling phase, the test units must not be

randomly placed but shall be intuitively located at the discretion of the archaeologist.

Data Recovery Program Phase 3

The last phase of excavation shall be conducted at any sites that are found to contain particularly important deposits worthy of extended excavation. The sample size of any such area is dependent on the nature of the deposit and research potential.

The procedures noted above shall be applied to each of the sites listed below in addition to any site-specific mitigation measures. The actual number of square meters to be excavated in any particular site would depend on the site size, importance, and research potential. The projected size of the sample for each of the sites listed below is a minimum of 2.5 percent, but the actual size of the sample needed to satisfy the data needs of the research objectives will ultimately be determined by the assessment of the recovery from the sample. The possibility exists that previously unidentified subsurface deposits would be identified during data recovery, increasing the research potential of a significant site. In this case, the sample size of the Phase 1 or Phase 2 excavation may be readjusted. If the recovery from any site is evaluated as redundant even before the minimum Phase 1 sample level of 2.5 percent is achieved, the consulting archaeologist shall request a variance from the County of San Diego to reduce the sample size to reflect the redundancy of the sample. This request would need to be supported by data and analysis from the excavations in progress at the site(s) in question. At each site, a backhoe may be employed following the completed sampling program to search for any anomalies within the site. Trenches would be used to expose portions of the sites; however, the number of trenches used in this type of investigation would be discussed and approved by the County before initiation.

Backhoe Trenching

All sites that are subject to data recovery and test unit excavations shall be subject to backhoe trenching following the test unit excavations to search for any unusual features or anomalies that would need to be examined further. The number and locations of the trenches to be excavated at each site shall be determined by the archaeologist on the basis of the size of the site and the recovery from the test units. If the trenches reveal the presence of deposits or features within a site that were not previously detected, then additional test units shall be excavated to expose the features and permit further investigation and recordation. For those four significant sites (SDI-12,368; SDI-16,312; SDI-16,326; and 16,332) that lie partially within the development envelope and partially within the Preserve (open space), the data recovery mitigation program would include portions of these sites within the development envelope as well as an area 10-feet-wide extending into the open space portion of the site. This extension of the data recovery program into the open space portions of the sites is intended to provide mitigation for indirect impacts in the buffer area of the open space that directly affects the development envelope.

Data Recovery Procedures

For all sites that are subject to data recovery, the program to carry out the necessary data recovery procedures, including the applicable field methodologies, laboratory analyses, and special studies for these sites, shall be provided as described below.

The data recovery program must be consistent with the policies and guidelines of the County and with the California Office of Historic Preservation (OHP) publication, Guidelines for Archaeological Research Design Preservation Planning Bulletin No.5 (1991).

Field Methods

The data recovery program shall focus on the excavation of test units measuring 1-meter-square to a minimum depth of 30 centimeters or until bedrock is encountered. If cultural materials are present beyond this depth, the excavation shall continue until one sterile level is exposed. The units shall be excavated in controlled, 10-centimeter levels. All removed soils shall be sifted through 1/8-inch mesh hardware cloth. All artifacts recovered during the screening process shall be properly labeled with provenience information in the field and subsequently subjected to standard laboratory procedures of washing (if appropriate) and cataloging. The excavation of the units shall be documented with field notes, illustrations, and photographs.

At the conclusion of the test unit excavations, backhoe trenches may be excavated to investigate the site(s) further and search for any unusual features or artifact concentrations. When a backhoe is used, the methodology to be followed is outlined below:

- All trenches must be excavated under the supervision of the Project archaeologist.
- All trenches must be mapped, measured, photographed, and sketched.
- Periodic screening of the excavated material from the trenches shall be conducted.
- Provenience data for all screened soil shall be recorded.

Based on data from the backhoe trenches, the data recovery program could be expanded to focus on features or unique deposits that differ from the materials already studied.

Any features discovered during the archaeological excavations shall be exposed through careful hand excavation. Additional test units may be needed to fully expose the features, which shall then be recorded by sketching and photography. Any datable materials found in association with discovered features shall be collected for radiocarbon dating. If obvious datable samples cannot be found at the sites in the data recovery program, then several bulk soil samples may be collected and processed in an attempt to date the deposits.

At each site, column samples shall be taken to permit microanalysis of midden contents. The columns shall measure 10 centimeters square and shall conform to the walls of selected completed test units to the bottom of the deposit. All of the soil from the column shall be collected and not screened in the field. The samples shall be returned to the laboratory for analysis. In addition, during hand excavation, special attention shall be given to the identification of lithic tools found in situ and their potential for residue analysis. When possible, such tools shall be bagged separately, thereby excluding them from the wet-screening process. A sample of the surrounding soil shall be collected to serve as a control sample, should the artifact be chosen for pollen, phytolith, or blood residue analyses.

Throughout the field operations, standard archaeological procedures shall be implemented. All test units and features shall be mapped using the established datums.

Laboratory Analysis

All of the materials recovered from the field excavations shall be subjected to standard laboratory analysis. Artifacts may be washed, if necessary, to permit proper identification. The artifacts shall be sorted and cataloged, including counts, materials, condition, weight, provenience, and unique artifact identification numbers.

The lithic artifacts recovered from the Project site shall be subjected to analysis, which shall include recordation of critical measurements and weight, and inspection for evidence of use/wear, retouch, patination, or stains. The recovered flakes (or a representative sample) shall be subject to an analysis of attributes such as size, condition, type, termination, and material. The attribute analysis shall include the flake collections recovered during the testing program.

Nonlithic materials, such as ecofacts (shell and bone), shall be subject to specialized analyses. The shell shall be cataloged by species and weight of recovery per level. The bone material shall be weighed and subsequently submitted for specialized faunal analysis. The laboratory analysis of the column samples may include flotation procedures to remove seeds and other microfaunal remains from the soil, followed by the screening of the remainder through a 1/16-inch mesh sieve, if the potential for nonlithic materials is noted in the deposit.

Other specialized studies that shall be conducted if the appropriate materials are encountered during the data recovery program include marine shell species identification, faunal analysis, otolith analysis (for seasonality), oxygen isotopic analysis (also for seasonality), radiocarbon dating, obsidian sourcing and hydration, and blood residue and phytolith studies. These specialized studies are briefly described below.

Shell Analysis

Analysis of any shell recovery would include the speciation of all shell fragments collected. The shell shall be recorded by weight and shall include a count of hinges to determine the minimum number of individuals represented by the recovery.

Faunal Analysis

Any bone material recovered during the data recovery program shall be analyzed by a faunal expert to identify species, types, age, and evidence of burning or butchering. The prehistoric bone recovery shall provide information concerning diet, activity areas within the sites, the habitats exploited, and methods of processing.

Radiocarbon Dating

This dating technique shall be attempted whenever possible. The investigations conducted thus far have not recovered any dateable material, although bulk soil dating was not attempted to determine if the deposits contained sufficient carbon for dating. The radiocarbon dating would be useful in conjunction with the stratigraphic recovery of cultural materials to establish the chronology of the sites. Therefore, the collection of samples for dating should be based on the presence of diagnostic artifacts, features, or geological strata delineations. In conjunction with the research topics, any possible opportunities to delineate parts of sites into Late Prehistoric and Archaic periods shall be advanced through the use of dating methods.

Blood Residue Studies

Organic residue on lithic artifacts may be useful in the determination of the species of animals represented by the residue. However, the use of blood residue studies is necessarily dependent upon the identification of such residues on artifacts. The detection of blood residue shall be made prior to any washing of artifacts so that the residue samples will not be lost.

Isotopic Profiles

The analysis of Oxygen-18 isotopic profiles from shells may be used to determine the season during which the shells were collected. This process measures the ratio of isotopes of oxygen, which is determined by water temperature. A minimum of five shells shall be used in this analysis, particularly if no other means of determining seasonality can be used. Use of this type of analysis is not likely due to the paucity of shell at the site.

Obsidian Hydration and Sourcing

Any recovered obsidian artifacts shall be submitted to a specialist to determine the source of the lithic material. The obsidian shall also be analyzed to produce hydration readings, which may then be used to provide relative dates for the use of the artifacts.

Monitoring

All brushing and grading activities within the Project site shall be monitored on a full-time basis by one or more archaeologists, as dictated by the size of the grading operation. All utility excavations, road grading, or brush removal must be coordinated with the archaeological monitor. Any known resources that are graded must be intensively monitored during grading to ensure that any important features, isolates, or deposits are either recorded and collected, or excavated. Should any resources be encountered during the monitoring of the brushing and grading that were not previously recorded, the action shall be temporarily halted or redirected to another area while the nature of the discovery is evaluated. Any resources that may be encountered shall require testing to determine their significance. If the testing demonstrates that a resource is significant, then a data recovery program shall be implemented consistent with these mitigation measures.

Cultural Material Curation

Cultural materials recovered from the Project site shall be permanently curated at a facility that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. No other collections from previous studies could be located at the time of this study. Should any additional collections be discovered from previous studies, these will be curated with the collections generated from the site evaluations.

Site-Specific Data Recovery Programs

As part of the data recovery program and other actions described above under mitigation measure M-CR-1, the Project applicant shall also cause a Data Recovery program to be implemented for each of the nine CEQA significant prehistoric sites that would be impacted by implementation of the proposed Project as described below.

- M-CR-1a** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,406, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 858-square-meter deposit. This represents a sample of 21 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 858 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1b** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,409, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 10,637-square-meter subsurface deposit. This represents a sample of 266 square meters for the Phase 1 index. The

proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 5 percent of the 10,637 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

- M-CR-1c** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,368, which shall focus on a uniform indexing of the focused subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 1,735-square-meter deposit. This represents a sample of 43 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-12,368 be subjected to data recovery. This will add five test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 1,735 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1d** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,371, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 781-square-meter deposit. This represents a sample of 20 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 781 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1e** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,303, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 67-square-meter deposit. This represents a sample of 2 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 67 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1f** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,309, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 5,496-square-meter deposit. This represents a sample of 137 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 5,496 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

- M-CR-1g** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,312, which shall focus on a uniform indexing of the subsurface deposit. Approximately 24 percent of this site will be impacted, including 1,618 square meters of the 4,967-square-meter deposit identified. This first level of index sampling shall consist of a 2.5 percent sample of the 1,618-square-meter deposit. This represents a sample of 41 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-16,312 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 1,618 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations, but it is estimated to be a sample of three additional test units.
- M-CR-1h** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,326, which shall focus on a uniform indexing of the subsurface deposit. The site contains three separate deposits, of which only the western deposit will be impacted. The western subsurface component encompasses an area of 860 square meters. This first level of index sampling shall consist of a 2.5 percent sample of the 860-square-meter deposit. This represents a sample of 22 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,326 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 860 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1i** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,332, which shall focus on a uniform indexing of the subsurface deposit. The total area of the subsurface deposits is approximately 1,731 square meters. The development will impact approximately one-third of SDI-16,332, including 924 square meters of the significant subsurface deposits. This first level of index sampling shall consist of a 2.5 percent sample of the 924-square-meter deposit. This represents a sample of 23 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,332 be subjected to data recovery. This will add seven test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 924 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1j** All cultural materials recovered from the Project, either during the mitigation program or during the past archaeological testing programs, shall be professionally prepared for permanent curation at a local facility meeting the

criteria for such curation centers as listed in 36CFR79. The cost to curate collections shall be the responsibility of the applicant. Copies of field notes, reports, maps and catalog data shall be included with the curated collection.

Indirect Impacts

M-CR-2a All sites, regardless of significance status, that are located outside of the development area shall be placed in open space easements. The sites may be included in general Project-wide open space preserves, in which case, site-specific easements would not be necessary. For sites that would be preserved within the development envelope, easements shall be dedicated for individual sites unless incorporated within larger biological or other open space designation. The open space designation shall include language that prohibits any type of surface modification to the sites or intrusions into the site by grading, trenching, or other development-related improvements. For any sites located within open space, a park area, or the Preserve, specific requirements for individual sites are necessary to ensure that the sites are not impacted by maintenance or landscaping. Open space areas shall be transferred to the County Department of Parks and Recreation (County Parks) and maintained as part of the Preserve. County Parks shall assume responsibility for the protection of the sites in the open space areas as part of the management of the Preserve. Aside from temporary fencing during grading and construction to ensure preservation during this period, no individual site preservation measures are deemed necessary during development activities. Subsequently, the long-term protection of the sites will be achieved through management of the Preserve by County Parks. During grading or brushing, the monitoring archaeologist shall determine the need for temporary fences and direct their installation to provide a physical barrier between the grading machinery and adjacent significant cultural resources that are designated for preservation or eventual data recovery. Once the open space areas are transferred to the Preserve, it will become the responsibility of the Preserve owner/manager to maintain the easements for the archaeological sites.

M-CR-2b Prior to any improvements to existing trails or development of new trails, improvement plans shall be reviewed by the Project archaeologist under the direction of the County to determine the potential for impacts to cultural resources, and the need for additional field research, testing, mitigation for potential impacts during construction and use, and monitoring of construction. The requirements of mitigation measure M-CR-1 for data recovery and analysis, including Native American monitoring, shall be applied during all subsequent surveys if new cultural resources are identified.

2.4.5.2 Human Remains

M-CR-3 In the event that human burials are encountered, standard procedures for such discoveries shall be implemented, including notification of the County Coroner's Office, the County, the Native American Heritage Commission, and local Native

American representatives. Fieldwork shall cease in the area of any such discovery. The Native American representative and the County shall be consulted to determine a preferred course of action, and the burial shall be treated according to the requirements of Public Resources Code §5097.98.

2.4.5.3 Paleontological Resources

M-CR-4 Paleontological monitoring shall be conducted during all mass grading and excavation activities in surface exposures of the Otay Formation to mitigate any adverse impacts (i.e., loss or destruction) to potential nonrenewable paleontological resources. A mitigation monitoring and reporting program consistent with County and CEQA guidelines and requirements shall be developed and implemented prior to any mass grading and/or excavation-related activities, including utility trenching, within the Otay Formation. The mitigation monitoring and reporting program shall be conducted in accordance with the following procedures:

- A. A Qualified Paleontologist or Paleontological Resources Monitor (under the supervision of the Qualified Paleontologist) shall be on-site during all excavation operations within geologic formations that may contain paleontological resources (i.e., the Otay Formation). The Qualified Project Paleontologist is a person with a Ph.D. or master's degree in paleontology or related field, and who has knowledge of San Diego County paleontology, and documented experience in professional paleontological procedures and techniques. A Paleontological Monitor is defined as an individual with at least 1 year of experience in field identification and collection of fossil materials. The Paleontological Monitor shall work under the direct supervision of the Qualified Paleontologist. The applicant shall authorize the Qualified Paleontologist and/or Paleontological Monitor to direct, divert, or halt any grading activity, and to perform all other acts required by the provisions listed below.
- B. The Qualified Paleontologist and/or Paleontological Monitor shall monitor all grading and excavation activities of undisturbed formations of sedimentary rock;
- C. If paleontological resources are unearthed, the Qualified Paleontologist or Paleontological Monitor shall do the following:
 1. Direct, divert, or halt any grading or excavation activity until such time that the sensitivity of the resource can be determined and the appropriate recovery implemented.
 2. Salvage unearthed fossil remains, including simple excavation of exposed specimens or, if necessary, plaster-jacketing of large and/or fragile specimens or more elaborate quarry excavations of richly fossiliferous deposits.

3. Record stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including a detailed description of all paleontological localities within the Project site, as well as the lithology of fossil-bearing strata within the measured stratigraphic section, if feasible, and photographic documentation of the geologic setting.
 4. Prepare collected fossil remains for curation to include cleaning the fossils by removing the enclosing rock material; stabilizing fragile specimens using glues and other hardeners, if necessary; and repairing broken specimens.
 5. Curate, catalog, and identify all fossil remains to the lowest taxon possible; inventory specimens; assign catalog numbers; and enter the appropriate specimen and locality data into a collection database.
 6. Transfer the cataloged fossil remains to an accredited institution (museum or university) in California that maintains paleontological collections for archival storage and/or display. The transfer shall include copies of relevant field notes, maps, stratigraphic sections, and photographs.
- D. The Qualified Paleontologist shall prepare a final Paleontological Resources Mitigation Report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils recovered, and the significance of the curated collection.
- E. Submit two hard copies of the final Paleontological Resources Mitigation Report to the Director of PDS for final approval of the mitigation, and submit an electronic copy of the report according to the County PDS Electronic Submittal Format Guidelines.

2.4.6 Conclusion

2.4.6.1 Historic Resources

Three historic sites were identified on the Project site. However, these sites are not considered historically significant. Therefore, implementation of the proposed Project ***would not result in significant impacts to historic resources***, and no mitigation is required.

2.4.6.2 Prehistoric Resources

A total of 79 prehistoric archaeological sites were identified within the Project site, including 53 sites located within the proposed grading and brushing envelope and 26 prehistoric sites located outside of the construction zone and within designated open space. Of the 53 sites located within the development area of the Project site, nine sites are considered significant and implementation of the proposed Project would result in significant direct impacts to those nine sites (**CR-1**). To address the direct impacts, this EIR has recommended adoption of mitigation measure **M-CR-1**, which would include a data recovery program. The data recovery program would exhaust the

research potential of the directly impacted prehistoric sites within the Project site and would reduce the potential impacts to these sites to a *less than significant level*.

Of the 26 prehistoric sites located within designated open space areas, implementation of the proposed Project would potentially result in significant indirect impacts to 10 of the 26 sites (**CR-2**). These potential indirect impacts would be mitigated to a less-than-significant level through implementation of the EIR's recommended mitigation measure **M-CR-2** requiring avoidance. Therefore, the potential indirect impacts to prehistoric cultural resources located in open space areas would be reduced to a *less than significant level*.

Although the Project-specific significant impacts to cultural resources would be mitigated to a less-than-significant level, the Project would still contribute to significant impacts identified in the Otay Ranch PEIR. However, the Project's cumulative impact to prehistoric resources would be *less than significant* based on the application of a data recovery program designed to exhaust any further research potential.

2.4.6.3 Human Remains

The proposed Project could result in potentially significant impacts to human remains (**CR-3**). County grading monitoring conditions require procedures to be followed, should human burials be encountered. Local Native American representatives are to be consulted for a recommendations as to their preferred course of action and the burial site, and remains would be treated according to Public Resources Code §5097.98. Compliance with these established County procedures (**M-CR-3**) would reduce the potentially significant impacts to human remains to a *less than significant level*.

2.4.6.4 Paleontological Resources

The proposed Project would result in potentially significant impacts to paleontological resources (**CR-4**). Mitigation measure **M-CR-4** for paleontological monitoring and salvage of fossils during all mass grading and excavation activities requires mitigation of any adverse impacts from loss or destruction of paleontological resources. Implementation of the EIR's recommended mitigation measure would reduce the potentially significant impact to paleontological resources to a *less than significant level*.

2.4.6.5 Cumulative Effects to Prehistoric and Historic Resources

The Project's cumulative impacts to cultural resources (**CR-5**) would be reduced to below a level of significance through mitigation measures M-CR-1 and M-CR-2 that include data recovery, the placement of significant sites within an open space easement, the curation of all artifacts obtained during the testing and data recovery programs, and recordation of all sites within the Project footprint. The proposed Project and those projects identified within the cumulative impact study area are mitigated through the placement of cultural resources within open space easements or by data recovery, curation, and/or reporting. Application of these mitigation measures would reduce the cumulative effect of the Project upon prehistoric and historic resources to a level of *less than significant*.

2.4.6.6 Cumulative Effects to Paleontological Resources

The general region surrounding the Project is considered to have moderate to high sensitivity for paleontological resources. The proposed Project will contribute to cumulative impacts to significant paleontological resources (**CR-6**). Application of mitigation measure **M-CR-4**, which requires monitoring and salvage of fossils, would reduce the cumulative effect of the Project upon paleontological resources to a level of *less than significant*.

Table 2.4-1
Summary of Investigations at the Otay Ranch Village 13 Sites

Site Designation	Report Section	Tested	Site Type	Significant	Potential Impacts	Cultures Represented	Surface Area (m ²)	Subsurface Area (m ²)	Max. Subsurface Depth (cm)	Total Artifacts Collected
SDI-I-222	6.1	Yes	LLP, poss R	LS/NRP	Yes	—	7,370	380	10	23
SDI-11,388	6.2	Yes	Q, TC	LS/NRP	No	—	62,281	2,898	20	838 (S)
SDI-11,389	6.3	Yes	LLP, poss R	LS/NRP	Yes	—	6,949	None	—	13
SDI-11,391A	6.4	Yes	LLP, poss R	LS/NRP	Yes (Partial)	—	138,218	2,254	10	In progress
SDI-11,391B	6.5	Yes	LLP, poss R	LS/NRP	Yes	—	39,849	5,603	20	184
SDI-11,391C	6.6	Yes	TC	LS/NRP	Yes	Late Prehistoric	200,262	1,894	20	629
SDI-11,404	6.7	Yes	LLP, poss R	LS/NRP	No	—	1,705	None	—	16
SDI-11,405	6.8	Yes	LLP, poss R	LS/NRP	Yes	—	2,537	336	10	90
SDI-11,406	6.9	Yes	Q, TC	Yes	Yes	Potentially Archaic	4,140	858	30	2,732
SDI-11,407	6.10	Yes	LLP, poss R	LS/NRP	Yes	—	44,535	387	40	148
SDI-11,408	6.11	Yes	Q, TC	LS/NRP	Yes	—	35,697	5,427	20	805
SDI-11,409	6.12	Yes	Q, TC	Yes	Yes	—	40,687	10,637	40	1,154 (S)
SDI-11,414	6.13	Yes	Q, TC	LS/NRP	No	—	55,219	19,760	20	1,507
SDI-12,336	6.14	Yes	LLP, poss R	LS/NRP	Yes	—	5,907	210	10	49
SDI-12,338	6.15	Yes	LLP	LS/NRP	Yes	—	764	None	—	3
SDI-12,339A	6.16	Yes	LLP, poss R	LS/NRP	No	—	7,710	None	—	26
SDI-12,339B	6.17	Yes	LLP, poss R	LS/NRP	No	—	7,821	None	—	115
SDI-12,340	6.18	Yes	LLP	LS/NRP	Yes	—	21,434	427	10	67
SDI-12,341	6.19	Yes	TC	LS/NRP	Yes (Partial)	—	227,493	1,179	10	690
SDI-12,342	6.20	Yes	LLP, poss R	LS/NRP	Yes (Partial)	—	1,408	140	10	37
SDI-12,343	6.21	Yes	LLP, TC	LS/NRP	Yes (Partial)	—	1,596	47	10	168 (S)
SDI-12,353	6.22	Yes	LLP, poss R	LS/NRP	Yes	—	879	None	—	13
SDI-12,355	6.23	Yes	LLP, poss R	LS/NRP	Yes (Partial)	—	4,174	125	10	45
SDI-12,356	6.24	Yes	LLP, poss R	LS/NRP	Yes	—	138	None	—	6
SDI-12,357	6.25	Yes	LLP, poss R	LS/NRP	Yes	—	986	None	—	10

Site Designation	Report Section	Tested	Site Type	Significant	Potential Impacts	Cultures Represented	Surface Area (m ²)	Subsurface Area (m ²)	Max. Subsurface Depth (cm)	Total Artifacts Collected
SDI-12,358	6.26	Yes	LLP, TC	LS/NRP	Yes	—	5,023	180	20	95
SDI-12,359	6.27	Yes	LLP, TC	LS/NRP	Yes	—	7,370	380	20	189
SDI-12,360	6.28	Yes	LLP, TC	LS/NRP	Yes	—	16,704	270	10	127
SDI-12,361	6.29	Yes	LLP, TC	LS/NRP	Yes	—	3,648	None	—	18
SDI-12,362	6.30	Yes	LLP	LS/NRP	Yes	—	25,110	None	—	11
SDI-12,363	6.31	Yes	LLP, TC	LS/NRP	Yes	—	5,477	350	30	228
SDI-12,364	6.32	Yes	LLP	LS/NRP	Yes	—	685	None	—	6
SDI-12,365	6.33	Yes	LLP, poss R	LS/NRP	Yes	—	1,084	None	—	4
SDI-12,366	6.34	Yes	LLP, poss R	LS/NRP	No	—	302	166	10	13
SDI-12,367	6.35	Yes	LLP, poss R	LS/NRP	Yes (Partial)	—	15,424	1,799	20	163 (S)
SDI-12,368	6.36	Yes	Q, TC	Yes	Yes (Partial)	—	23,792	1,735	50	1,034 (S)
SDI-12,369	6.37	Yes	LLP	LS/NRP	Yes	—	1,542	None	—	21
SDI-12,370	6.38	Yes	LLP	LS/NRP	Yes	—	2,635	None	—	8
SDI-12,371	6.39	Yes	Q, TC	Yes	Yes	—	4,253	781	30	413 (S)
SDI-12,372	6.40	Yes	LLP, poss R	LS/NRP	Yes	—	802	179	10	15
SDI-16,303 (T1)	6.41	Yes	Q, TC	Yes	Yes	Archaic	13,606	67	20	644
SDI-16,304 (T2)*	6.42	Yes	N/A	LS/NRP	Yes (Partial)	Archaic	5,600	34	10	50
SDI-16,305 (T3)	6.43	Yes	LLP, poss R	LS/NRP	Yes	—	13,495	105	10	40
SDI-16,306 (T4)	6.44	Yes	LLP, poss R	LS/NRP	Yes	—	1,031	None	—	11
SDI-16,307 (T5)*	6.45	Yes	LLP, poss R	LS/NRP	Yes (Partial)	N/A	4,800	61	30	113
SDI-16,308 (T6)*	6.46	No	N/A	Yes	No		4,800	N/A	N/A	N/A
SDI-16,309 (T7)	6.47	Yes	Q, TC	Yes	Yes	—	43,380	5,496	30 cm	4,146 (S)
SDI-16,310 (T8)	6.48	Yes	LLP	LS/NRP	Yes	—	1,252	None	—	11
SDI-16,311 (T9)*	6.49	Yes	N/A	LS/NRP	Yes	N/A	812	70	20	28
SDI-16,312 (T10)	6.50	Yes	Q, TC	Yes	Yes (Partial)	—	11,212	4,967	20	619 (S)
SDI-16,313 (T11)	6.51	Yes	LLP	LS/NRP	No	—	1,183	235	10 cm	40
SDI-16,314 (T12)*	6.52	No	N/A	Yes	No	N/A	665	N/A	N/A	N/A
SDI-16,315 (T13)*	6.53	No	N/A	Yes	No	N/A	8,744	N/A	N/A	N/A

Site Designation	Report Section	Tested	Site Type	Significant	Potential Impacts	Cultures Represented	Surface Area (m ²)	Subsurface Area (m ²)	Max. Subsurface Depth (cm)	Total Artifacts Collected
SDI-16,316 (T14)	6.54	Yes	LLP, poss R	LS/NRP	No	—	15,498	2,971	20 cm	263 (S)
SDI-16,317 (T15)*	6.55	No	N/A	Yes	No	N/A	5,358	N/A	N/A	N/A
SDI-16,318 (T16)*	6.56	No	N/A	Yes	No	N/A	1,450	N/A	N/A	N/A
SDI-16,319 (T17)	6.57	Yes	LLP	LS/NRP	No	Late Prehistoric	3,469	None	—	26
SDI-16,320 (T18)*	6.58	No	N/A	Yes	No	N/A	68	N/A	N/A	N/A
SDI-16,321 (T19)*	6.59	No	N/A	Yes	No	N/A	14,230	N/A	N/A	N/A
SDI-16,322 (T20)*	6.60	No	N/A	Yes	No	N/A	8,875	N/A	N/A	N/A
SDI-16,323 (T21)	6.61	Yes	LLP	LS/NRP	No	—	2,439	None	—	17
SDI-16,324 (T22)*	6.62	No	N/A	Yes	No	N/A	2,939	N/A	N/A	N/A
SDI-16,325 (T23)*	6.63	No	N/A	Yes	No	N/A	2,473	N/A	N/A	N/A
SDI-16,326 (T24)	6.64	Yes	Q, TC	Yes	Yes (Partial)	—	99,706	2,515	70	852
SDI-16,327 (T25)	6.65	Yes	LLP, poss R	LS/NRP	No	—	819	None	—	13
SDI-16,328 (T26)	6.66	Yes	LLP, R	LS/NRP	No	—	191	53	20	13
SDI-16,329 (T27)	6.67	Yes	LLP, poss R	LS/NRP	Yes (Partial)	—	365	25	10	60
SDI-16,330 (T28)	6.68	Yes	LLP, poss R	LS/NRP	Yes	—	278	78	20	130
SDI-16,331 (T29)	6.69	Yes	LLP	LS/NRP	Yes	—	3,049	None	—	30
SDI-16,332 (T30)	6.70	Yes	Q, TC	Yes	Yes (Partial)	—	14,943	1,731	20	398 (S)
SDI-16,333 (T31)	6.71	Yes	LLP, poss R	LS/NRP	Yes	—	7,260	104	20 cm	49
SDI-16,334 (T33)	6.72	Yes	LLP	LS/NRP	Yes	—	3,381	None	—	22
SDI-16,335 (T34)	6.73	Yes	LLP, poss R	LS/NRP	No	—	2,988	None	—	47
SDI-16,336 (W)	6.74	Yes	LLP	LS/NRP	Yes (Partial)	—	773	None	—	15
SDI-16,390 (T35)	6.75	Yes	TC	LS/NRP	Yes (Partial)	Late Prehistoric	7,724	338	10	55
SDI-16,391 (T36)	6.76	Yes	LLP, poss R	LS/NRP	Yes	—	5,845	None	—	72
SDI-11,390H	7.1	Yes	Homestead	LS/NRP	No	Historic	9,305	133	20	20 (S)
SDI-11,391H	7.2	Yes	Homestead	LS/NRP	No	Historic	3,117	489	10	45 (S)
SDI-12,354H	7.3	Yes	(Not relocated)	LS/NRP	No	—	—	—	—	—

Source: Cultural Resources Technical Report, Brian F. Smith and Associates, 2005

Key: LLP = Limited-use lithic production

Q = Quarry

R = Plant and/or animal resource processing

TC = Temporary campsite

(S) = Surface artifact scatter was sampled

* The following fields are not applicable (N/A) for those sites that will not be impacted and thus were not tested as part of the current investigation:

Site Type	Cultures Represented
Subsurface Area	Maximum Subsurface Depth
Total Artifacts	

Note: Surface Area is estimated for the sites that were not tested.

Table 2.4-2
Summary of Cumulative Projects for the Otay Ranch Village 13 Project

General Project Type	Description	Number of Projects	General Project Location	Estimated Acreage and/or Miles
Residential Development	Janal Ranch Survey; Archaeological Mitigation for Site SDI-7976 for III Woods Project; Otay Ranch Survey and Cultural Resource Evaluation; Otay Ranch EIR; Survey and Cultural Resource Evaluation for Off-Site Salt Creek Parcels; Otay Survey (May 1991); Eastlake III Testing; Janal/Fention Ranch Testing; Cultural Resources Evaluation at Otay Ranch Villages 3 and Portion of Village 4, Village 8 East, and Village 10	9	Section 25 (NW of project area); Unsectioned (west of Upper Otay Reservoir); Multiple (north, south, west, and east of project area); Unsectioned (Salt Creek); Section 30 (north of project area); Unsectioned (Upper Otay Reservoir); Sections 31 and 32; Sections 13, 17, 18, 19, 20, 22, 23, 24, 26, 27, 29, 30, 32, and 33	Approximately 25,066.9 acres
Energy	Southwest Powerlink Cultural Resource Management Plan	1	Linear (Sections 28,29, & 30)	3 miles
Industrial	Daley Rock Quarry Survey; Daley Rock Quarry EIR; Daley Rock Quarry Testing	3	Section 4, 34 (east of project area)	20 acres
Planning	Sweetwater Community Plan Update; Otay Lakes Fencing Biological and Cultural Resources Constraint Study	2	Multiple (northwest of project area); Multiple (south of project area)	8,000 acres; 3 miles
Public Infrastructure	Honey Springs Off-Site Water Line; Otay Water Treatment Plant Upgrade Survey; Cultural Resource Assessment AT & T Wireless	3	Otay Lakes Road; Unsectioned (around reservoirs); west of Lower Otay Reservoir	2 acres; 2 miles

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2.5 Geology and Soils

The following section provides a Project-level geologic analysis for the proposed Project and describes the existing geologic and soil conditions, evaluates the potential geologic and soils-related impacts that may result from Project implementation, and identifies feasible mitigation measures. The primary source of the information contained in this section is the Geotechnical Investigation, Otay Ranch Resort Village Area A Tentative Map, **Appendix C-6** to this EIR; Geotechnical Investigation, Otay Ranch Resort Village Area B Tentative Map, **Appendix C-7** to this EIR; and the Geotechnical Investigation, Otay Lakes Road Widening and Realignment, **Appendix C-8** to this EIR.

In 1993, the Otay Ranch PEIR was adopted and provided a program-level analysis of the existing conditions, potential impacts, and mitigation measures related to geology and soils for the entire Otay Ranch area, including the Project site. The Plan addressed by the Otay Ranch PEIR included a Town Center land use designation adjacent to Otay Lakes Road that envisioned locating a resort hotel overlooking Lower Otay Lake, but at a much lower elevation than the Resort site proposed by the current Project. The PEIR concluded that the potential geologic and soils-related impacts could be mitigated to below a level of significance with incorporation of site-specific mitigation measures into the design and construction of the Project.

2.5.1 Existing Conditions

2.5.1.1 *Geologic Setting*

Regionally, the Project site lies in the western region of the Peninsular Range Geomorphic Province, which extends approximately from the Imperial Valley to the Pacific Ocean and from the Transverse Ranges to the north and into Baja California to the south.. More specifically, the Project site lies within the transition area between the foothills of the Peninsular Range, the coastal plain of San Diego County, and northwestern Baja California. The stratigraphy of the coastal plain of San Diego County and northwestern Baja California consists of a thick sequence of relatively undisturbed Upper Cretaceous, Eocene, Oligocene, Miocene, Pliocene, and Pleistocene sedimentary rocks underlain by Peninsular Range batholith and pre-batholith rocks.

The Project site is on the Santa Ana structural block, which extends southeast from the central Transverse Ranges to beyond the United States/Mexico border region. The Santa Monica–Raymond fault forms the approximate northern boundary of the Santa Ana block. In southern California, the Newport–Inglewood–Rose Canyon and Whittier–Elsinore fault systems form the southwest and northeast boundaries of the Santa Ana block.

Bedrock units underlying the Project site include metavolcanic rock (formerly known as the Santiago Peak Volcanics) and fanglomerate deposits (mapped as a lower facies of the Otay Formation), while surficial units underlying the Project site include alluvial deposits, colluvium, topsoil, and undocumented artificial fill. The metavolcanic rocks underlying the Project site display a strong northwest-trending structural grain across the Project site. The main structural grain is cross-cut by northwest- and northeast-trending joint systems. The geologic structure of the fanglomerate deposits at the site is characterized by a gentle southwest dip. The contact

between the fanglomerate and underlying metavolcanic bedrock generally slopes down to the west and south.

Based on a review of published literature and geologic maps, the Project site is not located on any known active, potentially active, or inactive fault traces. In addition, the Project site lacks landslide features, and there is no evidence of previous landslides occurring on or adjacent to the Project site.

In June 2001, a field investigation was conducted and found surface water within one small, human-made reservoir within the southern-central portion of the Project site and within a drainage north of, and adjacent to, Otay Lakes Road in the southern-central portion of the Project site. Subsurface water was found only at the base of the canyon near Otay Lakes Road. No static groundwater table was encountered during exploratory excavations performed in 2008 and 2010 in connection with the Geocon geotechnical investigations; however, small diameter borings by Geocon in Otay Lakes Road encountered perched groundwater or seepage in areas near the drainages that pass beneath the road. The field investigation performed for the project site included geologic mapping and the excavation of 17 large-diameter borings, 48 excavator trenches, 71 trackhoe trenches, 22 air track borings, and 18 seismic refraction survey lines.

Due to the steep terrain and localized areas of large boulder outcrops in the northern and eastern portions of the property, the potential hazard for future rock fall is a consideration for development. The natural slopes were evaluated for their potential rock fall impact to proposed development by performing detailed field mapping of the rock slopes. The purpose of the mapping was to categorize the risk of rock fall by assigning a risk factor of low, medium, or high to the existing slopes. A low risk is defined as having no potential impact to proposed development and mitigation will not be required. A medium risk is defined as having some potential impact to proposed development and mitigation may be required. A high risk is an area that rock fall is eminent and significant mitigation will be required. The site has been classified as having both low and medium risk; however, no areas were observed that would be classified as having high risk.

A Rock Fall Hazard Map has been provided in **Figure 2.5-1**. The map indicates areas of development that encroach into the medium risk rock fall areas. The areas are located on the northwestern and eastern portions of the site. Mitigation measures will be required along portions of the edge of grading when cut slopes or daylight cuts encroach within the medium risk zone. Mitigation measures will not be required when fill slopes are constructed at the edge of grading that encroach into the medium risk zone as the fill slope provides a manufactured mitigation barrier to the adjacent development.

Both the surficial and global stability of the proposed slope configurations were evaluated based on the current geologic information. The portions of the site planned for development are generally underlain by Quaternary-age surficial soil, Tertiary-age Otay Formation and Fanglomerate Deposits, and Jurassic- to Cretaceous-age Metavolcanic Rock. The unit most likely to be subject to slope instability is the claystone portion of the Otay Formation, encountered at several locations throughout the site. The stability of graded slopes composed of Metavolcanic Rock is highly dependent on the degree of weathering and the geologic structure of the slope face. Slope stability analyses using the two-dimensional computer program *GeoStudio2007*

created by Geo-Slope International Ltd. are presented in **Appendices C-6** and **C-7**. The proposed slopes should be stable from shallow sloughing conditions provided the recommendations for grading and drainage are incorporated into the design and construction of the proposed slopes.

In general, permanent, graded fill slopes or cut slopes excavated within the sedimentary formational materials at the site with gradients of 2:1 (horizontal to vertical) or flatter would possess Factors of Safety of 1.5 or greater. However, stability fill construction may be required during grading operations if claystone beds are encountered on proposed cut slopes. The majority of rock cut slopes should be composed of *good quality* (Hoek and Bray 1981), moderately strong to very strong Metavolcanic Rock. Based on the results of slope stability analyses, slopes composed of moderately to slightly weathered rock should possess Factors of Safety of 1.5 or greater against large-scale, deep-seated slope failures at their present and proposed slope inclinations. Graded slopes in metavolcanic rock should possess Factors of Safety of 1.5 or greater at an inclination of 1.5:1 (horizontal to vertical) or flatter.

Kinematic analyses of the proposed 1.5:1 (horizontal to vertical) rock cut slopes were performed along a representative geologic cross-section using structural data obtained during field exploration, structural data presented by Neblett & Associates (2004), and structural orientations mapped by the California Geologic Survey (2002). The purpose of a kinematic analysis is to evaluate the critical discontinuities within a rock mass that may result in failures of the rock slope based on geologic structure and slope geometry. Rockpack III (2003) was used to create a stereonet of the dip vectors (dips and dip directions) of the discontinuities within the rock mass. Based on the results of the stereonet analysis, Markland's Tests for kinematically possible failures were performed on the data set. The resulting kinematic stereonet with the Markland's Test results are presented in **Appendices C-6** and **C-7**. An angle of internal friction of 20 degrees was used for the Markland's Tests based on parameters for gouge-filled shears (Afrouz 1992). The Markland's Test results indicate that localized minor hazards due to wedge and toppling failures may exist along portions of the proposed slopes where discontinuities intersect the slope face. The majority of cut slopes within moderately strong to very strong metavolcanic rock should not be subject to localized failures at the proposed slope inclinations. In areas where loose or potentially hazardous rock is encountered during grading, the loose material should be scaled off the slope face to mitigate the hazard.

Because of the potential presence of adverse geologic structures, the geologic structure of permanent cut slopes composed of Metavolcanic Rock should be analyzed in detail by an engineering geologist during the grading operations. Additional recommendations for slope stabilization may be necessary if adverse geologic structure is encountered. Grading of cut and fill slopes and intermediate terrace benching should be designed in accordance with the requirements of the local building codes or the 2013 CBC.

2.5.1.2 Regulatory Setting

Development of the proposed Project is subject to a number of regulatory requirements and industry standards related to potential geologic and soil hazards. These guidelines typically involve measures to evaluate risk and mitigate potential hazards through design and construction techniques. Specific guidelines encompassing geologic and soil criteria that may be applicable to

the design and construction of the proposed Project include the Chapter 5, Safety Element, of the County General Plan; the County Watershed Protection, Storm Water Management and Discharge Control Ordinance (Storm Water Ordinance, Nos. 9424 and 9426) and associated Storm Water Standards Manual; Title 8, Division 7 (Excavation and Grading), and Title 5, Division 1 (Amendments to the State Building Standards Code) of the San Diego County Code of Regulatory Ordinances; the International Conference of Building Officials (ICBO) Uniform Building Code (UBC) and related CBC standards; the Greenbook Committee of Standard Specifications for Public Works Projects, 2003 (Greenbook); and the National Pollutant Discharge Elimination System (NPDES) General Construction Activity and General Groundwater Extraction permits (NPDES Nos. CAS000002 and CAG919002, respectively). Summary descriptions of these guidelines are provided below.

County Standards

The San Diego County General Plan Safety Element identifies and evaluates geological and seismic hazards in San Diego County and provides policy direction that supports laws and regulations related to safety hazards as well as policies that support the guiding principles of the General Plan. Specifically, Guiding Principle 5 of the County General Plan provides direction for the Safety Element to ensure that development accounts for physical constraints and the natural hazards of the land. The following Goals and Policies of the Safety Element are relevant to the Project:

GOAL S-7

Reduced Seismic Hazards. Minimize personal injury and property damage resulting from seismic hazards.

Policies

S-7.1 Development Location. Locate development in areas where the risk to people or resources is minimized. In accordance with the California Department of Conservation Special Publication 42, require development be located a minimum of 50 feet from active or potentially active faults, unless an alternative setback distance is approved based on geologic analysis and feasible engineering design measures adequate to demonstrate that the fault rupture hazard would be avoided.

S-7.2 Engineering Measures to Reduce Risk. Require all development to include engineering measures to reduce risk in accordance with the California Building Code, Uniform Building Code, and other seismic and geologic hazard safety standards, including design and construction standards that regulate land use in areas known to have or potentially have significant seismic and/or other geologic hazards.

GOAL S-8

Reduced Landslide, Mudslide, and Rock Fall Hazards. Minimize personal injury and property damage caused by mudslides, landslides, or rock falls.

Policies

S-8.1 Landslide Risks. Direct development away from areas with high landslide, mudslide, or rock fall potential when engineering solutions have been determined by the County to be infeasible.

S-8.2 Risk of Slope Instability. Prohibit development from causing or contributing to slope instability.

Among other requirements, the County Storm Water Ordinance/Storm Water Standards Manual requires construction-related BMPs to address issues such as erosion and sedimentation. The County may (at its discretion) require the submittal and approval of a Storm Water Pollution Prevention Plan (SWPPP) to address construction-related storm water issues prior to site development. The submittal and approval of a SWPPP under County guidelines would be in addition to similar SWPPP requirements under NPDES guidelines, as described below.

The County Excavation and Grading requirements are implemented through issuance of grading permits, which apply to most projects involving more than 200 cubic yards (cy) of material movement (e.g., grading and excavation). Specific requirements for “Major Grading” include, among other criteria, use of qualified engineering and geotechnical consultants to design and implement grading plans, implementation of appropriate measures related to issues such as manufactured slope design and construction, and conformance with erosion and storm water control requirements.

County Building Code standards related to geotechnical concerns include applicable portions of the UBC, with specific County amendments. Implemented through issuance of building permits, CBC requirements related to geotechnical concerns address preparation of soils reports and implementation of structural loading and drainage criteria.

Uniform Building Code and Greenbook Standards

The UBC and Greenbook standards are produced through joint efforts by industry groups, such as ICBO and the American Public Works Association, to provide standard specifications for engineering and construction activities, including measures to address geologic and soil issues. Specifically, these measures encompass issues such as seismic parameters (e.g., classifying seismic zones and faults), engineered fill specifications (e.g., compaction and moisture content), expansive soil characteristics, and pavement design. The referenced guidelines, while not being formal requirements, are widely accepted by regulatory authorities and are routinely included in standards such as municipal grading codes. The UBC and Greenbook guidelines are regularly updated to reflect current industry standards and practices. The previously noted CBC guidelines are derived from the UBC and encompass criteria specific to California, including geologic and seismic characteristics.

2.5.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines are based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards approved by DPLU on July 30, 2007. A significant geology and soils impact would occur if the Project would do the following:

- Propose any building or structure to be used for human occupancy over or within 50 feet of the trace of an Alquist-Priolo fault or County Special Study Zone fault.
- Propose the following uses within an Alquist-Priolo Zone, which are prohibited by the County:
 - Uses containing structures with a capacity of 300 people or more. Any use having the capacity to serve, house, entertain, or otherwise accommodate 300 or more persons at any one time.
 - Uses with the potential to severely damage the environment or cause major loss of life. Any use having the potential to severely damage the environment or cause major loss of life if destroyed, such as dams, reservoirs, petroleum storage facilities, and electrical power plants powered by nuclear reactors.
 - Specific civic uses. Police and fire stations, schools, hospitals, rest homes, nursing homes, and emergency communication facilities.
- Be located within a County Near-Source Shaking Zone or within Seismic Zone 4 and the Project does not conform to the UBC.
- Has the potential to expose people or structures to substantial adverse effects because:
 - the Project site has potentially liquefiable soils; and
 - the potentially liquefiable soils are saturated or have the potential to become saturated; and
 - in-situ soil densities are not sufficiently high to preclude liquefaction.
- Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving landslides.
- Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, potentially resulting in an on- or off-site landslide.
- Be located directly below or on a known area subject to rock fall that could result in collapse of structures.
- Be located on expansive soil, as defined in **Table 18-1-B** of the UBC (1994), and does not conform with the UBC.

2.5.2.1 *Fault Rupture*

Guidelines for the Determination of Significance

A significant geology and soils impact would occur if the Project would do the following:

- Propose any building or structure to be used for human occupancy to be within 50 feet of the trace of an Alquist-Priolo fault or County Special Study Zone fault.
- Propose the following uses within an Alquist-Priolo Zone, which are prohibited by the County:
 - Uses containing structures with a capacity of 300 people or more. Any use having the capacity to serve, house, entertain, or otherwise accommodate 300 or more persons at any one time.
 - Uses with the potential to severely damage the environment or cause major loss of life. Any use having the potential to severely damage the environment or cause major loss of life if destroyed, such as dams, reservoirs, petroleum storage facilities, and electrical power plants powered by nuclear reactors.
 - Specific civic uses. Police and fire stations, schools, hospitals, rest homes, nursing homes, and emergency communication facilities.

Rationale for Selection of Guidelines

The significance thresholds for fault rupture are based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards (County of San Diego 2007d). The Guidelines require evaluation of the Project's proximity to an Alquist-Priolo fault and/or County Special Study Zone fault, and is included to avoid human-occupied structures from being unsafely located in the above or in the immediate vicinity of a known fault. The Guidelines are also used to evaluate risk to human life and the environment by specifically considering uses that facilitate congregation of large groups of people or facilities that provide a vital service to the community.

Analysis

No known earthquake faults are located on the Project site as depicted on the most recent Alquist-Priolo Earthquake Fault Zoning Map. The Project site also does not contain any County Special Study Zone faults. A review of published literature and site mapping analysis conducted for the Project site did not reveal any known, active, or inactive faults directly underlying, or in proximity to, the Project site. The Rose Canyon and Newport-Inglewood fault zones, each located approximately 14 miles away, are the closest known active faults to the Project site. The next-closest known faults are the Coronado Bank and Palos Verde Connected fault zones, located approximately 22 miles away. Consequently, while the potential for on-site ground rupture cannot be completely discounted, the probability for these types of effects is considered ***less than significant*** and no mitigation is required.

As described above, the Project site is not located within an Alquist-Priolo Zone. For this reason, implementation of the Project would not place prohibited structures or uses within an Alquist-Priolo Zone. *No significant impact* would result and no mitigation is required.

2.5.2.2 *Ground Shaking*

Guideline for the Determination of Significance

A significant geology and soils impact would occur if the Project would do the following:

- Be located within a County Near-Source Shaking Zone or within Seismic Zone 4 and the Project does not conform to the UBC.

Rationale for Selection of Guidelines

The significance threshold for seismic ground shaking is based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards (County of San Diego 2007d). This guideline is included to require evaluation of project safety and conformance with construction design standards in consideration of the strong seismic shaking that could occur throughout all areas of San Diego County.

Analysis

The Project site is not located within any areas identified as a County Near-Source Shaking Zone, which are predominately located along the Elsinore and San Jacinto fault zones in the eastern portions of the County, approximately 35 miles northeast of the Project site. The entire San Diego County geographic region, including the Project site, is within Seismic Zone 4 and is subject to ground shaking. A seismic evaluation of the Project site was conducted to assess the seismic hazard risks and to provide seismic design criteria, as required by Chapter 16 of the UBC (1997). This analysis produced peak ground acceleration and UBC seismic design coefficient values for the Project site. The seismic design coefficient values are presented in **Appendices C-6, C-7, and C-8**. Based on the information provided in these reports, the Project site is unlikely to be exposed to fault rupture. Construction in conformance to the UBC and compliance with any additional site-specific requirements described in the Project's Geotechnical Reports (**Appendices C-6, C-7, and C-8**), would result in *less than significant impacts* due to ground shaking.

2.5.2.3 *Liquefaction*

Guideline for the Determination of Significance

There would be a significant geology and soils impact if the Project would do following:

- Have the potential to expose people or structures to substantial adverse effects because:
 - the Project site has potentially liquefiable soils; and

- the potentially liquefiable soils are saturated or have the potential to become saturated; and
- in-situ soil densities are not sufficiently high to preclude liquefaction.

Rationale for Selection of Guidelines

The significance threshold for liquefaction is based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards (County of San Diego 2007d). This guideline addresses liquefaction hazards that may exist on a project site and the potential safety risks that could result if structures were located on liquefiable soils.

Analysis

Liquefaction hazards are commonly associated with uncompacted, saturated or nearly saturated, noncohesive, sandy and silty soils. Subsurface exploration and field mapping revealed that the soil and alluvium at the Project site are generally shallow, unsaturated, fine- to coarse-grained clayey sand and silty sand, with abundant gravels, cobbles, and boulders. Much of the surficial materials located on the Project site are cohesive due to clay content and are generally considered to have a very low potential for liquefaction due to the lack of near-surface permanent groundwater within 50 feet of the proposed grade and the dense nature of the compacted fill and formational materials.

Subsurface water, within alluvial materials, was found only at the base of the canyon near Otay Lakes Road and no static groundwater table was encountered during exploratory excavations. Thus, the groundwater table most likely exists at lower elevations in the main drainages adjacent to Lower Otay Lake. The elevation of the groundwater table in the lower drainages is most likely correlative to the water level in Lower Otay Lake during most of the year, and on-site soils are unlikely to become saturated.

Since the soil and alluvium will be removed and re-compacted as engineered fill within the proposed grading limits of the Project site, the potential for in-situ soil liquefaction within the proposed grading limits of the Project site is considered low. In addition, the Project site and vicinity are not within or adjacent to any County Liquefaction Hazard Zones (SanGIS 2006¹²). Therefore, impacts related to adverse effects due to liquefaction are considered *less than significant* and no mitigation is required.

2.5.2.4 Landslides

Guidelines for the Determination of Significance

A significant geology and soils impact would occur if the Project would do the following:

¹² See www.sangis.org, Interactive Mapping, Geologic Hazards.

- Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving landslides.
- Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, potentially resulting in an on- or off-site landslide.
- Be located directly below or on a known area subject to rock fall that could result in collapse of structures.

Rationale for Selection of Guidelines

The significance thresholds for landslides are based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards (County of San Diego 2007d). Guideline “a” evaluates the hazard to humans or structures based on the potential for landslides in the project area. Guideline “b” addresses the potential for development of the project to create a landslide hazard. Guideline “c” addresses the potential for adverse effects that may result if development is located below or on a known rock fall area.

Analysis

The Landslide Susceptibility map of the County General Plan Safety Element does not show the Project site to be within a “high” or “moderate” landslide susceptibility designation (County of San Diego 2011a). In addition, a review of published literature, site mapping, aerial photo analysis, and subsurface exploration revealed no evidence of previous landslides on or adjacent to the Project site. The lack of landslide features indicates that the Project site has been relatively stable in the recent geologic past, and has not been subject to earthquake-induced, large-scale landsliding. However, proposed grading could cause unstable slopes overlying the claystone units within the fanglomerate deposits, Otay Formation, and metavolcanic rocks. Therefore, while earthquake-induced large-scale landsliding is considered unlikely, the potential for landsliding due to unstable graded slopes, is considered a *potentially significant Project impact (Impact GE-1)*.

Surficial boulders and rocky outcrops exist on the peripheral natural slopes above proposed development at the Project site and pose a potential rock fall hazard. These areas identified as “Medium Rock Fall Hazard” are shown in **Figure 2.5-1**. Additionally, on-site metavolcanic rocks have the potential for local rock fall in cut slope or steep natural areas because they are foliated, jointed, and fractured. This is considered a *potentially significant Project impact (Impact GE-2)*.

2.5.2.5 Expansive Soils

Guidelines for the Determination of Significance

A significant geology and soils impact would occur if the Project would do the following:

- Be located on expansive soil, as defined in **Table 18-1-B** of the UBC (1994), and does not conform with the UBC.

Rationale for Selection of Guidelines

The significance threshold for expansive soil hazards is based on the County of San Diego Guidelines for Determining Significance, Geologic Hazards (County of San Diego 2007d). This guideline addresses conformance to the UBC's Expansive Soil Standards for construction on soils with high shrink/swell behavior, which are present throughout San Diego County.

Analysis

The geologic conditions present on the Project site have the potential for surficial instability due to expansive soils. The majority of the geologic units on the Project site likely possess a very low to medium expansion potential. However, some geologic units, including topsoil, colluvium, alluvium, and the claystone beds within the Otay Formation, fanglomerate deposits, and highly weathered metavolcanic rock may include highly expansive soils. Grading that may expose these expansive materials near the finish grade near building pads or public rights-of-way would be a potentially significant Project impact. However, the Project would conform to all UBC requirements to safely construct on expansive soils and would comply with the recommendations and requirements included in the Geotechnical Reports (**Appendices C-6, C-7, and C-8**). Recommendations to be followed include undercutting of lots, and street, curb and gutter, and sidewalk subgrade where highly expansive soil is exposed or located near grade. Therefore, with conformance with the UBC and requirements in the geotechnical reports, impacts from expansive soils are considered to be *less than significant*.

Proposed grading may expose claystone layers (considered highly expansive) within cut slopes which could cause unstable slopes. This issue is considered a slope stability issue and is addressed in Section 2.5.2.4.

2.5.3 Cumulative Impact Analysis

The geographic scope for cumulative impacts related to geology and soils includes the unincorporated portions of San Diego County and the City of Chula Vista bounded by I-805 to the west, Main Street to the south, Campo Road to the east, and SR-54 to the north. Past, present, and reasonably anticipated future projects identified for the region are discussed in Section 1.7 of this EIR. Many of the projects described in Section 1.7 have, or would, convert undeveloped land to urban uses, resulting in population increases. The FEIR for the County General Plan Update (County of San Diego 2011) determined that direct and cumulative impacts to geology and soils would be less than significant based on existing requirements to comply with all relevant federal, state, and local regulations and building standards, including the California Building Code and County-required geotechnical reconnaissance reports and investigations.

The previously adopted Otay Ranch PEIR provided a comprehensive assessment of the cumulative impacts related to geology and soils for the entire Otay Ranch area. This cumulative impacts analysis, found in Section 6 of the Otay Ranch PEIR, is incorporated by reference in this EIR. The Otay Ranch PEIR determined that a significant cumulative effect would result from an increase in population and property that would be exposed to the effects of seismic ground shaking from local active faults, such as the Rose Canyon and Coronado Bank faults. The PEIR

determined that construction in accordance with the UBC and site-specific geologic investigations to identify feasible mitigation measures would reduce the impact to a less than significant level.

The level of seismic activity within these areas and exposure of people or structures to risk of loss, injury, or death would be similar to that of the proposed Project. As cumulative projects are constructed, more people and structures will be exposed to seismic hazards due to earthquakes and other geotechnical constraints, such as expansive soils and landslides. All development within these areas will be required to be constructed to withstand probable seismic forces, including seismic-related fault rupture and ground shaking, ground failure/liquefaction, landslides, erosion, surficial instability, and expansive soils. Adherence to site-specific geotechnical recommendations, building codes, and applicable grading ordinances would reduce potential cumulative geotechnical impacts to a *less than significant level*.

In addition, as noted below, all Project-specific geotechnical impacts would be avoided or reduced below identified significance thresholds through conformance with the mitigation measures proposed in Section 2.5.5 and through conformance with geotechnical recommendations in **Appendices C-6, C-7, and C-8** and established regulatory requirements. As stated above, the previously certified PEIR determined that feasible mitigation measures would reduce cumulative geology and soils impacts *less than significant levels*.

In addition, issues such as seismic ground acceleration and liquefaction, and non-seismic expansive/reactive soils, drainage, and other conditions represent effects to the proposed development and are specific to on-site conditions. Accordingly, addressing these potential hazards for the proposed development involves using measures to conform with existing requirements, and/or site-specific design and construction efforts that have no relationship to, or impact on, off-site areas. Avoiding liquefaction impacts through excavation/replacement of susceptible surficial deposits would not affect similar deposits/hazards in off-site areas. Because of the site-specific nature of these potential hazards and the measures to address them, there is no connection to similar potential issues or cumulative effects to or from other properties. Therefore, cumulative impacts related to geology and soils are considered *less than significant*.

2.5.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project's effects related to geologic and soil hazards:

<u>Impact Number</u>	<u>Description of Project's Effect</u>	<u>Significance of Impact</u>
GE-1	Potential for unstable slopes.	Potentially significant direct impact.
GE-2	Potential for rock fall hazards on cut and natural slopes.	Potentially significant direct impact.

2.5.5 Mitigation

The following mitigation measures would be implemented in compliance with the Conclusions and Recommendations of the Project Geotechnical Reports (**Appendices C-6, C-7, and C-8**):

2.5.5.1 *Unstable Slopes*

- M-GE-1a** Otay Lakes Road, Widening & Realignment (**Appendix C-8**): Excavations of cut slopes shall be observed during grading by an engineering geologist to evaluate whether the soil and geologic conditions differ significantly from those expected. Cut slopes that expose shared claystone bedding may require slope stabilization consisting of stability fills.
- M-GE-1b** Area A and B, Tentative Map (**Appendices C-6 and C-7**): Because of the potential presence of adverse geologic structures, the geologic structure of permanent cut slopes composed of Otay Formation, Fanglomerate materials, or metavolcanic rock shall be analyzed in detail by an engineering geologist during grading operations. Grading of cut and fill slopes and intermediate terrace benching shall be designed in accordance with the requirements of the local building codes and the 2010 California Building Code (CBC). Additional recommendations for slope stabilization may be necessary if adverse geologic structure is encountered. Mitigation of unstable cut slopes can be achieved by the use of drained stability fills. In addition, cut slopes exposing cohesionless surficial deposits or rock slopes with unfavorable geologic structure may require stability fills. In general, the Typical Stability Fill Detail presented in Figure 10 (**Appendices C-6 and C-7**) should be used for design and construction of stability fills, where required. The backcut for stability fills should commence at least 10 feet from the top of the proposed finished-graded slope and should extend at least 3 feet into formational materials. For slopes that exceed 30 feet in height, the inclination of the backcut may be flattened as determined by the engineering geologist during grading operations.

2.5.5.2 *Rock Fall Hazards*

- M-GE-2a** Otay Lakes Road, Widening & Realignment (**Appendix C-8**): Mitigation measures will be required along the eastern portion of the roadway due to the steepness of the natural slopes and boulder outcrops above the proposed cut slope. The areas of proposed rock fall mitigation are shown on **Figures 2.5-2A and 2.5-2B**. The mitigation shall consist of the construction of a rock fall debris fence or other acceptable catchment device at the toe of the proposed cut slope. The hard rock slopes should be evaluated by an engineering geologist during site development and final locations of the debris fence or alternative method shall be provided at that time.

- M-GE-2b** Area A and Area B, Tentative Map (**Appendices C-6 and C-7**): Mitigation shall consist of the construction of rock fall debris fences or other acceptable catchment device at the toe of proposed slopes or at the edge of daylight cut or fill areas. The area of proposed rock fall mitigation for Area A is shown on **Figure 2.5-2A** and Area B on **Figure 2.5-2B**. Area A consists of the northernmost section of proposed residential development, east of Upper Otay Lake, and the northern section of Lower Otay Lake. Area B encompasses the easternmost section of proposed residential development and resort. The hard rock slopes shall be evaluated by an engineering geologist during site development and final locations of the debris fences or alternative method shall be provided at that time.
- M-GE-2c** Area A and Area B, Tentative Map (**Appendices C-6 and C-7**): Hard rock slopes shall be analyzed in detail by an engineering geologist during the grading operations. In areas where loose or potentially hazardous rock is encountered during grading, the loose material shall be scaled off the slope face to mitigate the hazard. If adverse geologic structures are encountered during grading, rock slope stabilization measures such as rock bolting, or rock fall protection systems may be necessary.
- M-GE-2d** When all measures to mitigate rock fall hazards have been provided, a professional opinion from an engineering geologist shall be provided that indicates that the potential risk for rock fall hazards to impact the proposed development would be less than significant with the mitigation measures that were implemented. It should also be stated that with mitigation measures incorporated, the proposed development is considered safe for human occupancy.

2.5.6 Conclusion

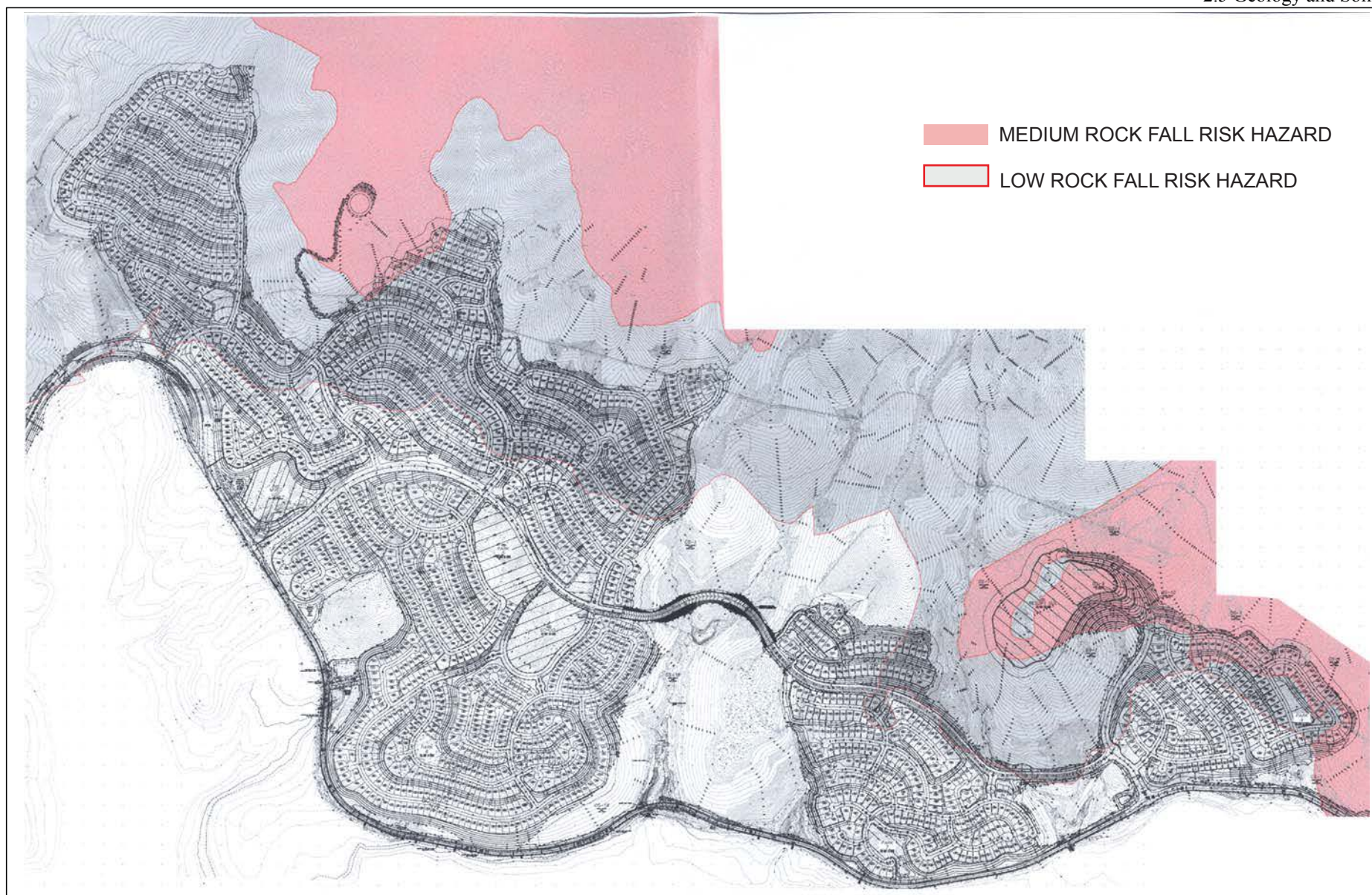
Potential geologic hazards related to fault rupture were found to be less than significant, as the Project would not place prohibited structures or uses within an Alquist-Priolo Zone or any other known fault. Potential ground shaking impacts and expansive soils impacts are considered less than significant because the Project would conform to the UBC and would also follow any additional site-specific requirements described in the Project's geotechnical reports. Potential geologic hazards due to liquefaction were found to be less than significant per the significance guidelines, as the soil and alluvium would be removed and re-compacted as engineered fill within the proposed grading limits and the Project site is not within or adjacent to any County Liquefaction Hazard Zones.

Implementation of Mitigation Measure **M-GE-1** would avoid potential impacts from slope instability (**GE-1**) and would reduce the impact related to unstable slopes to a *less than significant level*.

Implementation of Mitigation Measure **M-GE-2** would serve to provide protection from potential rock fall hazards on cut and natural slopes (**GE-2**) through placement of debris fences. Any boulders or loose rocks found during grading would be secured or removed. Providing protection from rock fall and securing and/or eliminating loose or unstable rocks or other

geologic material that could present a hazard if it were to come loose and fall would reduce the impact related to rock fall to a *less than significant level*.

The Project would conform to all recommendations and requirements included in the Geotechnical Reports (**Appendices C-6, C-7, and C-8**).



SOURCE: GEOCON Inc. 2011



Not to Scale

Figure 2.5-1
Rock Fall Hazard Map



SOURCE: GeoCon 2014

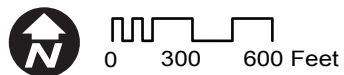


Figure 2.5-2A
Rock Fall Mitigation Map, Area A1

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Source: GeoCon 2014

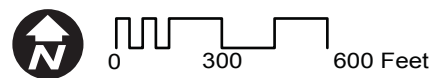


Figure 2.5-2B
Rock Fall Mitigation Map, Area B4

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2.6 Hazards and Hazardous Materials

This section provides a summary of potential impacts related to public safety risks/hazards associated with airport operations, emergency response plans, and vectors caused by implementation of the proposed Project. This section also analyzes the project's potential for on-site contamination, as well as the project's proximity to known hazards or potentially hazardous uses.

The airport hazards analysis presented in this section is based on the *California Airport Land Use Planning Handbook* (Handbook; Oct. 2011), published by the State of California's Department of Transportation, Division of Aeronautics (Caltrans), as well as a technical memorandum authored by Mead & Hunt regarding "Otay Ranch Resort Village: Safety Zone Boundaries for John Nichol's Field." The *Handbook* is available for public review and inspection at <http://www.dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanningHandbook.pdf>; and a copy of Mead & Hunt's technical memorandum is included as **Appendix C-20** to this EIR.

The analysis presented in this section is also based on the Otay Ranch Resort Village Phase I Environmental Site Assessment (Phase I) included as **Appendix C-9** to this EIR, and the Otay Ranch Resort Village Phase I Environmental Site Assessment West Residential Area Parcels A and B, included as **Appendix C-10** to this EIR. In addition, this section addresses the potential for wildfire impacts based on a Fire Protection Plan (FPP) prepared for the Project, which is included as **Appendix C-21**.

The Otay Ranch PEIR was adopted in 1993 and provided a program-level analysis of the existing conditions and potential impacts related to hazards, hazardous materials, and the risk associated with disturbance of any hazardous materials for the entire Otay Ranch area, which includes the Project site. The Otay Ranch PEIR identified significant impacts associated with hazards and hazardous materials. As a result, mitigation measures were adopted in the PEIR to reduce impacts to a less than significant level.

2.6.1 Existing Conditions

2.6.1.1 Topographical Characteristics

The topography is varied throughout the Project site. The regional topographic gradient trends to the south, toward Lower Otay Lake. Site elevation ranges from approximately 1,500 feet AMSL in the northern portion of the Project site to approximately 500 feet AMSL along the southern boundary. The Project site's surface drainage is to the south-southwest via five unnamed, seasonal drainages, which drain into Lower Otay Lake. Floodplain zoning for the Project site is in an area of minimal flooding. Information related to flood hazards is provided in Section 3.2, Hydrology and Water Quality.

2.6.1.2 *Geologic Setting*

The Project site is located in the Peninsular Ranges physiographic province of southern California. According to a geologic map of the area, the Project site is underlain by metavolcanic rocks and Tertiary sedimentary rocks. The metavolcanic rocks are Santiago Peak Volcanics, a somewhat metamorphosed sequence of the Upper Jurassic volcanic and volcanoclastic rocks, underlain by the Southern California Batholith, which is mostly Cretaceous in age. The Tertiary sedimentary rocks, which overlie the older Santiago Peak Volcanics, are classified as Otay Formation (Oligocene to Miocene) and consist of sandstone, siltstone, claystone, and conglomerate. No ultramafic or similar rocks are mapped in the Jamul Mountains quadrangle or in other nearby areas; the potential for the presence of naturally occurring asbestos (NOA), therefore, is very low.

2.6.1.3 *Soils Characteristics*

As described by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, there are at least six types of surface soils on the Project site. A brief description of these soils and their permeability classification are listed below.

Soil Type	Description	Permeability
Diablo-Olivenhain complex; 9 to 30% slopes (DoE)	Found on uplands and consists of deep clays derived from soft, calcareous sandstone and shale.	Slow
Friant rocky fine sandy loam; 9 to 30% slopes (FxE)	Found on mountainous uplands and consists of fine sandy loams that formed in material weathered from fine-grained metasedimentary rock.	Moderately rapid
Friant rocky fine sandy loam; 30 to 70% slopes (FxG)	Found on mountainous uplands and consists of fine sandy loams that formed in material weathered from fine-grained metasedimentary rock.	Moderately rapid
Olivenhain cobbly loam; 9 to 30% slopes (OhE)	Found on dissected marine terraces and consists of deep cobbly loams formed in old gravel and cobbly alluvium.	Moderate
San Miguel-Exchequer rock silt loams; 9 to 70% slopes (SnG)	Found in mountainous areas and consists of deep silt loams with a clay subsoil that are derived from metavolcanic rock.	Slow to moderate
Redding cobbly loam; 9 to 30% slopes (ReE)	Found on dissected terraces and consists of steep gravelly loams that formed in old mixed cobbly and gravelly alluvium.	Moderate

2.6.1.4 *Hydrogeologic Setting*

The Project site is in the Savage Hydrologic Subarea (HSA) of the Dulzura Hydrologic Area of the Otay Hydrologic Unit of the San Diego Hydrologic Basin (Basin Number 10.31). Beneficial uses of the groundwater within the Savage HSA include agricultural, municipal, and industrial uses. Depth to groundwater in this area is estimated to be approximately 300 feet or more below ground surface, based on the estimated depth of water in a well located on the Project site. Groundwater flow for the Project site is estimated to generally follow the topographic gradient, which is in the south-southwest direction.

2.6.1.5 *Historical Setting*

Previous Environmental Studies

The following two environmental site assessments were previously prepared for assessment areas that included portions of the Project site, as described below.

Phase I Environmental Site Assessment, Parcel 99, Otay Ranch, dated February 7, 2000, prepared by Snyder Consulting

The northern portion of Parcel 99 was previously assessed and included 340 acres covering the northwestern corner of the Project site. As part of the assessment, historical resources were evaluated, including a review of aerial photographs and an interview with a former Otay Ranch overseer. The aerial photography indicated that the assessed area had been undeveloped since prior to 1928 through the time of the assessment. The Otay Ranch overseer indicated that he grazed longhorn cattle on this portion of the property from 1989 through 1999 and was not aware of any insecticides or herbicides having been applied to the assessed area.

During the assessment, no chemicals, hazardous materials and waste, or underground or aboveground storage tanks were observed on the Project site. The Project site was undeveloped and unoccupied. No recognized environmental issues were identified during the site assessment, and additional assessment of the area was not recommended.

Phase I Environmental Site Assessment, Resort Site Open Space, dated May 29, 2003, prepared by P&D Environmental

The assessed area included 1,330 acres of the northern portion of the Project site. A review of historical resources indicated that grazing activity has not occurred on the Project site since 1999.

During the assessment, no chemicals, hazardous materials and waste, underground or aboveground storage tanks, wells, septic systems, pits, ponds, lagoons, or transformers were observed on the Project site. No recognized environmental issues were identified during the site assessment and additional assessment of the area was not recommended.

Historical Records

To determine past use of the Project site and to discover the occurrence of activities conducted on, or in the vicinity of, the Project site that may have adversely affected the site, a search of selected and readily available historical records was performed and interviews were conducted with people having knowledge of the Project site history. A detailed chronological review, based on the results of the historical records search, is provided as **Appendix C-4** to this EIR. A summary of the chronological review is provided below.

The western portion of the Project site was first settled in 1829 by the Estudillo family, and became part of Rancho Janal, a ranch used primarily for raising cattle for the hide trade. The

eastern portion was not originally part of the rancho. Sometime between 1872 and 1889, Frank Kimball acquired Rancho Janal. In 1889, Mr. Kimball sold the property to John D. Spreckels. During this time, historical records suggest that mining may have occurred on the property, but the type of mining was unspecified and no other information was found during the assessment to suggest that mining occurred on the property during any other time. The Mineral Resources Study provided as **Appendix C-15** to this EIR found no specific evidence that mining ever occurred on-site.

In the early 1900s, the property passed to the Babcock family, who used the property as a hunting lodge. During the 1920s, Rancho Janal ownership passed from Mr. Babcock to Rube Harrison, and then to Henry Fenton and his Western Salt Company. An aerial photograph from that time depicts the Project site as undeveloped land with one dirt track across the top of the Project site leading down to Proctor Valley, and other small dirt tracks leading into the Project site from Otay Lakes Road. Evidence of hazardous materials use on the Project site was not found.

In the 1930s, the Stephen Birch family began purchasing property in and around Ranchos Otay and Janal. The Birch family lived at Rancho del Otay and operated their ranch under the name Otay Agricultural Corporation, until renaming it United Enterprises. The Birch family ranch was used for growing lima beans, hay, and grain, and for cattle ranching. Based on previous Phase I interviews, it appears that the Birch family primarily used the land on the Project site for cattle ranching. The Birch family continued to own the Project site until the 1980s. Evidence of hazardous materials use on the Project site was not found. Aerial photographs reveal evidence of dry farming in the southwestern portion of the Project site between 1960 and 1963. It is possible, but not likely, that chlorinated pesticides were used on the Project site in conjunction with the dry farming.

In 1988, the Project site was acquired by Baldwin Vista Associates, L.P., a company owned by James and Alfred Baldwin. The Project site continued to be used for cattle grazing from 1989 to 1999, and was held by various Baldwin-controlled entities from 1997 until July 1999, when the Project site was transferred to Otay Project, L.P. The current owners of the Project site are Moller Otay Lakes Investment, LLC, and Lakeview 1 & 2, LLC. Evidence of hazardous materials use on the Project site was not found for 1988 to the present.

Historical Use of Adjoining Sites

Specific historical research was not conducted for the adjoining sites and surrounding area. However, in the process of researching historical data for the Project site, the following historical information was obtained regarding the adjoining sites. No issues of environmental concern associated with the past use of these adjacent sites were identified.

The sites adjoining the Project site to the north consist of undeveloped mountainous land. Research did not reveal any specific purpose or uses of these sites during the last 150 years.

The site adjoining the Project site to the northeast is undeveloped mountainous land. Dating back to approximately 1830, Rancho Jamul was adjacent to the southeast corner of the Project site.

The western portion of Rancho Jamul included mountainous lands and Jamul Creek, which are immediately adjacent to the Project site.

Otay Lakes Road currently forms the southern boundary of the Project site. Otay Lakes Road has been visible on aerial photographs and topographic maps since approximately 1928. Prior to that time, since the mid- to late 1800s, a road connecting San Diego with Jamul was located south of the Project site. Presumably, this road followed the same corridor as Otay Lakes Road.

Lower Otay Lake is located south of the Project site. Lower Otay Lake was formed in 1897 after construction of Lower Otay Dam by the Southern California Mountain Water Company, a company formed with the combined water interests of Elisha Babcock and John Spreckels. However, the dam was built without a spillway and, in January 1916, floods washed away Lower Otay Dam. Lower Otay Lake was restored after dam reconstruction was completed in 1918. At that time, the dam was renamed Savage Dam. Ownership of Lower Otay Lake was transferred to the City of San Diego sometime after 1918. Since the transfer, the City has continued to own and maintain Lower Otay Lake as a drinking water reservoir.

John Nichol's Field is also located south of Otay Lakes Road and north of the mouth of Jamul Creek. The airfield runway is located approximately 900 feet south of the easternmost portion of the Project site. No information was found indicating that aboveground or underground fuel storage tanks have ever been stored on the site.

Upper Otay Lake is located to the west of the Project site. Upper Otay Lake was formed in 1901, when Upper Otay Dam was built. Upper Otay Lake was originally built as an emergency reserve for Lower Otay Lake. However, beginning in 1959 and continuing through to the present, it has been used as a fish hatchery and recreational fishing area for Florida-Strain largemouth bass. The remainder of the adjacent area east of the Project site includes undeveloped mountainous land.

2.6.1.6 Site Reconnaissance

Coast 2 Coast conducted three site visits to the Project site. The purpose of the first visit, on April 11, 2005, was to determine if current usage or activities on the Project site have created, or have the potential to create, an environmental impairment to the Project site. The purpose of the second and third visits, on May 17, 2006, and September 11, 2009, was to obtain updates on the condition of the Project site. During site reconnaissance, Coast 2 Coast focused on viewing areas where activities likely to use and generate hazardous materials would typically occur.

Access to the Project site is restricted by locked gates; however, the U.S. Border Patrol accesses the property to conduct surveillance and gates are not always relocked. During all visits, the Project site was observed to be unoccupied and undeveloped. Tenants using or generating hazardous materials were not observed. There were no buildings observed on the Project site. The primary observable difference in the Project site over the course of the site visits was a decrease in the amount of vegetation observed on the Project site during the second visit, due to the contrast between the abnormally wet 2005 winter season and the drier 2006 and 2008/2009 winter seasons. The vegetation did not appear to be damaged or stressed in a manner that could be attributed to the presence of contamination.

Coast 2 Coast observed the Project site for the following improvements and features, and for evidence of the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products. Drains and sumps were not observed on the Project site. Strong, pungent, or noxious odors were not detected during the assessments. Easements for oil or gas pipelines were not found, and oil wells were not found within a 1-mile radius of the Project site. Transformers and other potential polychlorinated biphenyl (PCB)-containing equipment were not observed on the Project site. Evidence of stains or corrosion by hazardous substances was not observed. Significant soil or pavement staining was not observed on the Project site. Stored hazardous materials were not observed. Storm drains were not observed. Surface anomalies or depressions were not observed on the Project site. Five unnamed seasonal drainages were observed flowing north to south across the Project site; therefore, it appeared that surface drainage on the Project site flowed south-southwest. Two aboveground abandoned water storage tanks and a cattle feed structure that were observed in the 2005 and 2006 site visits had been removed prior to the 2009 site visit. Underground storage tanks were not observed. A water well observed in the southwestern portion of the Project site that was uncapped during the May 2006 site visit had been capped prior to the 2009 visit. Finally, no evidence of solid waste or hazardous waste disposal or illegal dumping was observed on the Project site in 2009, except for incidental illegal dumping of household trash and debris.

Due to the absence of any buildings on the site, there was no evidence of asbestos-containing materials or lead-based paint. Based on the 1990 California Department of Health Services California Statewide Radon Survey Screening Results for San Diego County, it is not anticipated that radon poses a significant environmental threat to the Project site.

In addition, as mentioned above, although farming was not observed on the Project site in any aerial photographs taken prior to 1953 or after 1963, a 1960 aerial photograph depicted dry farming in the southwestern portion of the Project site. Although intensive agriculture can lead to contamination, dry farming is conducted with minimal inputs to minimize expenses, so chemical pesticides would have been used in very small quantities if at all. Photos taken after 1960 do not show any evidence of farming but rather that the natural topography and vegetative cover remain undisturbed. Given the short duration and low intensity of agricultural use, the potential for hazardous contamination is not significant.

No issues of further environmental concern or “Recognized Environmental Conditions” were found during the assessment, and Coast 2 Coast determined that further environmental assessment of the property is not warranted at this time.

2.6.1.7 *Environmental Database Records Review*

Coast 2 Coast reviewed the results of a search of environmental database records, including federal and state American Society for Testing and Materials (ASTM) standard databases, conducted by Environmental Data Resources, Inc. (EDR). The first search was completed in May 2005 and a second search to update the data was completed in May 2006. A complete list of the databases reviewed is included in the Phase I, and copies of EDR’s reports are found in the **Appendix C-10**. The Project site, adjoining sites, and nearby sites were not found within the search radii for the databases reviewed.

EDR also researched additional databases, including federal and state supplemental ASTM standard databases and tribal records, to enhance and supplement the results from the standard environmental database sources. A complete list of databases reviewed is included in **Appendix C-10**. The Project site, adjoining sites, and nearby sites were not found within the search radii for the databases reviewed.

2.6.1.8 Fire Risks

Topography

Site topography is characterized by a broad mesa sloping to the south, broken by several steep canyons generally draining from north to south. Portions of the relatively flat mesa extend north into the Jamul Mountains, where the terrain is primarily characterized by steeper slopes. The site's average slope is approximately 44 percent. Slope is important relative to wildfire because steeper slopes typically facilitate more rapid fire spread. The steeper slopes are primarily within the areas designated as permanent open space preserve and would not be developed.

Vegetation

The Project site is currently vacant, with historic vegetation consisting of native coastal sage scrub and grassland habitats. Some riparian vegetation occurs in Project site drainages. More detailed information regarding the site's plant communities is provided in Section 2.3, Biological Resources. Coastal sage scrub and grassland habitats are highly flammable, while other vegetation, such as oak and sycamore riparian, is less flammable due to its higher moisture content, but will burn under certain conditions.

Climate

Throughout southern California, climate has a large influence on fire risk. The Project site climate is typical of a Mediterranean area, with warm, dry summers and wetter winters. Precipitation typically occurs between December and March. The prevailing wind is an on-shore flow with fall Santa Ana winds from the northeast that may gust to 50 mph or faster. Drying vegetation (fuel moisture of less than 5 percent for 1-hour fuels is possible) during the summer months becomes fuel available to advancing flames should an ignition occur. Extreme conditions, used in fire modeling for this site, include 92°F temperatures in summer and winds of up to 50 mph during the fall. Relative humidity of 12 percent or less is possible during fire season.

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable areas, and significant ignition sources. There have been numerous fires recorded by the California Department of Forestry and Fire Protection (Cal Fire) on its Fire and Resource Assessment Program (FRAP) database in the direct vicinity of the Project area, including five fires that have burned on the property. The most notable fire occurred on October 26, 2003, and burned nearly 40,000 acres in the Otay Mesa area, including the entire Project area. Much of the

property has burned four times over approximately 125 years, with fewer fire occurrences in the western portion.

Safety Element of the San Diego County General Plan

The Safety Element (County of San Diego 2011) identifies the following policies to reduce the risk from exposure to wildland fires:

Policies

S-3.1: Defensible Development. Require development to be located, designed, and constructed to provide adequate defensibility and minimize the risk of structural loss and life safety resulting from wildland fires.

S-3.2: Development in Hillsides and Canyons. Require development located near ridgelines, top of slopes, saddles, or other areas where the terrain or topography affect its susceptibility to wildfires to be located and designed to account for topography and reduce the increased risk from fires.

S-3.3: Minimize Flammable Vegetation. Site and design development to minimize the likelihood of a wildfire spreading to structures by minimizing pockets, peninsulas, or islands of flammable vegetation within a development.

S-3.4: Service Availability. Plan for development where fire and emergency services are available or planned.

S-3.6: Fire Protection Measures. Ensure that development located within fire threat areas implement measures that reduce the risk of structural and human loss due to wildfire.

S-4.1: Fuel Management Programs. Support programs consistent with State law that require fuel management/modification within established defensible space boundaries and when strategic fuel modification is necessary outside of defensible space, balance fuel management needs to protect structures with the preservation of native vegetation and sensitive habitats.

2.6.1.9 Aeronautical Uses

Description of John Nichol's Field

John Nichol's Field is a private- and restricted-use airfield situated near the southeastern edge of the San Diego metropolitan area at the end of the eastern arm of Lower Otay Lake. The airfield is located on a 24.1-acre site owned by the City of San Diego and leased to Tactical Air Operations, Inc. At present, the airfield operator's lease is scheduled to expire on September 30, 2015; although the lease contains an option allowing extension of the term until 2025 (provided certain conditions are met). The lease, which was executed in 2000 subsequent to the approval of the Otay SRP, provides that the site is be used solely and exclusively for conducting skydiving and ultralight aviation activities.

The airfield has been in use for more than 40 years and, consistent with the lease terms, presently serves as a base of operations for Skydive San Diego, a commercial skydiving/parachute training center. The airfield's other function is as a base for ultra-light/light sport aircraft activity. (Ultralights are very small, light-weight (less than 254 pounds empty weight), single-seat, recreational aircraft.) As a restricted-use facility, the airfield is generally closed to transient aircraft or aircraft not based there. Non-based aircraft must obtain prior permission to land.

All aircraft currently based at the airfield are associated with either skydiving or ultralight activity. Specifically, there are two Cessna Caravan jump planes (single-engine Blackhawk-conversion turboprops carrying up to 21 people each), three Twin Otter jump planes (twin-engine turboprops carrying up to 23 people each), and approximately 20 ultralight/light sport aircraft. There are no other aircraft based at the airfield.

Daily jump plane activity at the airfield varies significantly and is highly dependent upon the day of the week, the training mission being conducted, and the weather/wind. According to the airfield operator, on a busy day, there can be between 30 to 50 jump plane departures. Weekends and periods when Navy Seal training is being conducted constitute the busiest operational periods. Annual jump plane activity is estimated at 7,500 departures (15,000 total operations) by the airfield operator, which averages out to approximately 20 flights per day, with all operations flown by professional pilots.

The ultralight/light sport aircraft are usually operated in the vicinity of the airfield and typically only during low-wind conditions (i.e., mornings and late afternoons). Ultralight aircraft activity is estimated at approximately 3,000 annual departures (6,000 total operations) by the airfield operator.

The activity levels reported by the airfield operator are substantially higher than those witnessed by the EIR preparer. More specifically, several site visits were conducted by noise specialists and only two aircraft were observed at the airfield. During those site visits, a total of four flight operations were observed, with each one occurring on a separate day (AECOM 2012).¹³

The airfield has two runways, one paved and one unpaved, with both oriented roughly east/west. The paved primary runway (Runway 9-27) was unpaved until about 10 years ago. It now has approximately 1,800 feet of pavement, 50 feet wide, plus 200 feet of paved safety area on the east end and 600 feet of dirt overrun on the western end that are not considered part of the runway length. The secondary runway (Runway 5-23) is a 600-foot, dirt strip used occasionally by ultralights when the wind dictates. Neither runway is lighted; thus, all activity is during daylight hours only. There are no published instrument procedures serving the airfield.

All takeoffs and landings are made from the east to the west (i.e., on Runway 9-27) because the predominant winds (98% of the time) are from the west. Jump planes and ultralight/light sport aircraft taking off from Runway 9-27 turn to the left upon lift-off to climb-out over the eastern

¹³ As shown below in Section 2.6.2.3, operation counts are not utilized to determine consistency with the *Handbook's* safety criteria. Therefore, the numerical discrepancy between the operation counts provided by the airfield operator and the activity levels observed by AECOM does not affect the integrity of the analysis.

arm of Lower Otay Lake. The departing jump planes then make a 180-degree left turn to proceed back to the south of the airfield with a subsequent 180-degree left turn at altitude to release the jumpers. All jump runs are made from east to west with the jumpers targeting the drop zone located near the center of the airfield. When the jump planes have completed their run, they return to the airfield generally entering a standard left pattern for Runway 9-27 to the south of the airfield below 2,000 feet MSL, approximately 1,500 feet above the airfield 490-foot elevation.

Based on documentation maintained by the National Transportation Safety Board, accident reports for John Nichol's Field relate to incidents occurring on August 23, 1984 (on-airfield incident); August 6, 2012 (on-airfield incident); and, September 30, 2012 (off-airfield incident). The referenced reports are included as **Appendix C-22** to this EIR.

The Handbook: Its Purpose, Function, And Application Relative To John Nichol's Airfield

As explained further below, neither the State Aeronautics Act's airport land use compatibility planning provisions, nor the *Handbook* expressly apply to private use airports, such as John Nichol's Field. Indeed, the San Diego County Regional Airport Authority, acting in its capacity as the San Diego County Airport Land Use Commission (ALUC), has not adopted an Airport Land Use Commission Plan (ALUCP) for John Nichol's Field or any other private use airport in the County. (See San Diego County Regional Airport Authority, Land Use Compatibility, available at http://san.org/sdcraa/airport_initiatives/land_use/default.aspx [last visited Feb. 26, 2013].) Nonetheless, the County utilizes the *Handbook* in assessing land use compatibility in relation to private airports/airfields.

As background, the objectives of the State Aeronautics Act relative to airport land use compatibility planning are to: (1) provide for the orderly development of each public use airport and the area surrounding such airports, and (2) protect public health, safety and welfare by ensuring the orderly expansion of airports. (Pub. Util. Code, §21670, subd. (a).) Relatedly, the express purpose of the *Handbook* "is to provide guidance for conducting airport land use compatibility planning as required by" the State Aeronautics Act, and specifically sections 21674.5 and 21674.7. (*Handbook*, p. vii.)

In furtherance of these objectives, the State Aeronautics Act requires the creation of ALUCs on a county-by-county basis. The statutorily enumerated powers and duties of ALUCs are to: (1) assist local agencies in ensuring compatible land uses in the vicinity of airports; (2) coordinate planning at the state, regional, and local levels; (3) prepare and adopt ALUCPs; and, (4) review the plans, regulations, and other actions of local agencies subject to ALUCPs. (Pub. Util. Code, §21674.) ALUCs are authorized and directed to prepare ALUCPs that provide for the orderly growth of public use airports and the areas surrounding such airports. (Pub. Util. Code, §21675, subd. (a).) However, as mentioned above, because John Nichol's Field is not a public use airport, the cited provisions of the State Aeronautics Act are not applicable.

2.6.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines are based on the Guidelines for Determining Significance for Hazardous Materials approved by PDS on July 30, 2007. A significant hazards or hazardous materials impact would occur if the Project:

- Is a business, operation, or facility that proposes to handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the California Health and Safety Code (H&SC), generate hazardous waste regulated under Chapter 6.5 of the H&SC, and/or store hazardous substances in underground storage tanks regulated under Chapter 6.7 of the H&SC, and the Project will not be able to comply with applicable hazardous substance regulations.
- Is a business, operation, or facility that would handle regulated substances subject to California Accidental Release Prevention (CalARP) Risk Management Plan requirements that, in the event of a release, could adversely affect children's health due to the presence of a school or day care within one-quarter mile of the facility.
- Is located on or within one-quarter mile from a site identified in one of the regulatory databases compiled pursuant to Government Code Section 65962.5 or is otherwise known to have been the subject of a release of hazardous substances, and, as a result the Project, may result in a significant hazard to the public or the environment.
- Proposes structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burnsites) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 1,000 feet of a Formerly Used Defense Site (FUDS) and it has been determined that it is probable that munitions or other hazards are located on-site that could represent a significant hazard to the public or the environment.
- Could result in human or environmental exposure to soils or groundwater that exceed USEPA Region 9 Preliminary Remediation Goals (PRG), California Environmental Protection Agency (CalEPA) California Human Health Screening Levels (CHHSL), or Primary State or Federal Maximum Contaminant Levels (MCL) for applicable contaminants, and the exposure would represent a hazard to the public or the environment.
- Will involve the demolition of commercial, industrial, or residential structures that may contain asbestos, lead-based paints, and/or other hazardous materials and, as a result, the Project would represent a significant hazard to the public or the environment.
- Is located within 2 miles of a public or public use airport or within 1 mile of a private airport, and proposes residential densities inconsistent with the *California Airport Land*

Use Planning Handbook's Safety Compatibility Criteria Guidelines for Maximum Residential Density and, as a result, the Project may result in a significant airport hazard.

- Proposes one of the following unique institutions in a dam inundation zone as identified on the inundation map prepared by the dam owner: hospital, school, skilled nursing facility, retirement home, mental health care facility, care facility with patients that have disabilities, adult and childcare facility, jails/detention facility, stadium, arena, amphitheater, any other use that would involve concentrations of people that could be exposed to death in the event of a dam failure.
- Proposes a structure or tower 100 feet or greater in height on a peak or other location where no structures or towers of similar height already exist and, as a result, the Project could cause hazards to emergency response aircraft resulting in interference with the implementation of an emergency response.
- The Project cannot demonstrate compliance with all applicable fire codes.
- A comprehensive Fire Protection Plan has been accepted and the Project is inconsistent with its recommendations.
- The Project does not meet the emergency response objectives identified in the Safety Element of the County General Plan or offer feasible alternatives that achieve comparable emergency response objectives.
- The Project proposes a BMP for storm water management or construction of a wetland, pond, or other wet basin that could create sources of standing water for more than 72 hours, and, as a result, could substantially increase human exposure to vectors, such as mosquitoes, that are capable of transmitting significant public health diseases or creating nuisances.
- The Project proposes a use that involves the production, use, and/or storage of manure or proposes a composting operation or facility and, as a result, could substantially increase human exposure to vectors that are capable of transmitting significant public health diseases or creating nuisances.
- The Project would result in a substantial increase in the number of residents located within one-quarter mile of a significant off-site vector breeding source, including, but not limited to, standing water (e.g., agricultural ponds, reservoirs) and sources of manure generation or management activities (e.g., confined animal facilities, horse keeping operations, composting operations).

2.6.2.1 Hazardous Substances Handling

Guidelines for the Determination of Significance

A significant hazards or hazardous materials impact would occur due if the Project:

- Is a business, operation, or facility that proposes to handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the California Health and Safety Code

(H&SC), generate hazardous waste regulated under Chapter 6.5 of the H&SC, and/or store hazardous substances in underground storage tanks regulated under Chapter 6.7 of the H&SC, and the Project will not be able to comply with applicable hazardous substance regulations.

- Is a business, operation, or facility that would handle regulated substances subject to California Accidental Release Prevention (CalARP) Risk Management Plan requirements that, in the event of a release, could adversely affect children's health due to the presence of a school or day care within one-quarter mile of the facility.

Rationale for Selection of Guidelines

The significance guidelines for hazardous substances handling are from the County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination (County of San Diego, January 30, 2007), Guidelines 4.1a and 4.1b. Guideline 4.1a addresses projects that would handle hazardous substances as part of a business and is based on compliance with existing hazardous substance regulations; Guideline 4.1b addresses the potential for facilities that handle specified quantities of certain regulated substances to represent a significant hazard to children when located within one-quarter mile of a school or day care facility.

Analysis

The proposed Project does not propose any business, operation, or facility that would handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the H&SC or generate hazardous waste regulated under Chapter 6.5 of the H&SC. Should the proposed fire station require an underground fuel storage tank, it would be regulated under Chapter 6.7 of the H&SC; therefore, the Project would comply with applicable hazardous substance regulations. Any household hazardous materials that may result from residential development would be subject to federal, state, and local regulations. Thus, implementation of the proposed Project would not create a significant hazard to the public or the environment from on-site hazardous substance handling and impacts of the proposed Project are considered *less than significant*.

2.6.2.2 Projects with On-Site Contamination

Guidelines for the Determination of Significance

A significant hazards or hazardous materials impact would occur if the Project:

- Is located on or within one-quarter mile from a site identified in one of the regulatory databases compiled pursuant to Government Code Section 65962.5 or is otherwise known to have been the subject of a release of hazardous substances, and, as a result the Project, may result in a significant hazard to the public or the environment.
- Proposes structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burnsites) and, as a result, the Project would create a significant hazard to the public or the environment.

- Is proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 1,000 feet of a Formerly Used Defense Site (FUDS) and it has been determined that it is probable that munitions or other hazards are located on-site that could represent a significant hazard to the public or the environment.
- Could result in human or environmental exposure to soils or groundwater that exceed USEPA Region 9 Preliminary Remediation Goals (PRG), California Environmental Protection Agency (CalEPA) California Human Health Screening Levels (CHHSL), or Primary State or Federal Maximum Contaminant Levels (MCL) for applicable contaminants, and the exposure would represent a hazard to the public or the environment.
- Will involve the demolition of commercial, industrial, or residential structures that may contain asbestos, lead-based paints, and/or other hazardous materials and, as a result, the Project would represent a significant hazard to the public or the environment.

Rationale for Selection of Guidelines

The significance guidelines for projects with on-site contamination are from the County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination (County of San Diego, January 30, 2007), Guidelines 4.2a through 4.2f. Guideline 4.2a (first bullet) addresses the requirement that information about the location of hazardous materials release sites, included on the list prepared pursuant to Government Code section 65962.5, be disclosed in CEQA documents; Guideline 4.2b (second bullet) addresses the potential safety risks associated with occupied land uses being located near landfills; Guideline 4.2c (third bullet) addresses the potential risks from burnsites because certain locations in the County were historically used to burn trash and, as a result, these sites may be contaminated with heavy metals and/or other contaminants; Guideline 4.2d (fourth bullet) is included because the County is home to several FUDS properties that may present a hazard to the public or environment; Guideline 4.2e (fifth bullet) links the significance of site contamination to the PRGs and CHHSLs established by CalEPA and are tools for evaluating and cleaning up contaminated sites; and Guideline 4.2f (sixth bullet) addresses the potential release of hazardous substances that can occur during site construction and demolition if not properly handled and disposed.

Analysis

Known Hazardous Materials Sites

The Project site was historically used for dry farming and cattle ranching and no businesses have been conducted that involved the handling of hazardous substances in excess of the threshold quantities listed in the H&SC Chapter 6.95. As described in Section 2.6.1, a Phase I was prepared and an on-site investigation was conducted for evidence of hazardous materials and waste (Coast 2 Coast, September 11, 2009). Advanced database records searches also were

conducted and did not reveal any sources of hazardous materials. The environmental database records reviewed included those sites on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5. Implementation of the proposed Project would not cause a significant hazard to the public or the environment because it is not on the list of hazardous materials sites.

Furthermore, the proposed Project does not include structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burn sites); it is not proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash); it is not proposed on or within 1,000 feet of an FUDS. Therefore, none of the other impact criteria were triggered. Impacts related to those issues (first through fourth bullets) are considered *less than significant*.

Soils or Groundwater Contamination

As described earlier, no evidence of hazardous materials was found on-site during the site investigation or during the environmental database records searches. Historical aerial photographs depict dry farming on the southwestern portion of the Project site in an area where a future elementary school is planned as part of the Project. Although the historic dryland farming and potential historic pesticide use is not likely to have caused contamination, it represents a potential environmental concern in the area where the elementary school is planned due to the heightened sensitivity of children to the adverse effects of exposure to hazardous substances. To address this potentially significant impact, the existing regulations outlined in the California Education Code and the requirements of the California Department of Toxic Substances Control (DTSC) would be carried out by the Chula Vista school district prior to development of a school. DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been remediated to a level that protects the students and staff who would occupy the new school. All proposed school sites that receive state funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight. These requirements ensure that the site would be safe for school children prior to construction of a school. Because there is no evidence of historic pesticide use on this portion of the Project site, and because the existing regulatory structure (with DTSC oversight) ensures that the site would be safe for school children, this potential impact is considered *less than significant*.

2.6.2.3 Airport Hazards

Guidelines for the Determination of Significance

A significant airport hazards impact would occur if the Project:

- Is located within 2 miles of a public or public use airport or within 1 mile of a private airport, and proposes residential densities inconsistent with the *California Airport Land*

Use Planning Handbook's Safety Compatibility Criteria Guidelines for Maximum Residential Density and, as a result, the Project may result in a significant airport hazard.

Rationale for Selection of Guidelines

The significance guideline set forth above is from the County of San Diego Guidelines for Determining Significance – Airport Hazards (County of San Diego, July 30, 2007), Guideline 4.2.

As previously noted, the State Aeronautics Act and *Handbook* do not apply to private use airports. However, the County utilizes the *Handbook* as a benchmark for assessing a project's environmental significance, and the *Handbook* notes that, relative to private use airports, responsibility for airport land use compatibility planning falls to local governments. (*Handbook*, p. 3-28.) The *Handbook* states that local governments “should consider potential safety issues with regards to development near” private airports and “deliberate on, at a minimum, the safety guidance appropriate for the environment in which the airport is located (as outlined in Chapter 4 of this *Handbook*).” (*Ibid.*)

Accordingly, the analysis below uses the *Handbook's* guidance – and specifically the direction provided regarding the delineation of geometric safety zones and maximum residential density criteria – as a method to assess the environmental significance of the proposed Project relative to existing airfield hazards. The analysis below also considers whether the proposed Project is consistent with the *Handbook's* guidance regarding the minimum “open land” percentages within safety zones in which Project-related development would occur.

Analysis

To begin, due to the location of the Project site relative to the airfield (see **Figure 1.0-13**), the Project would only be affected by aircraft activity at the western end of the airfield's primary runway. Further, because operations at the airfield almost exclusively proceed in an east-to-west direction, only takeoffs/departures¹⁴ from the airfield's western end are of concern in conducting the compatibility analysis for the proposed Project. Moreover, once aircraft leave the ground during takeoff/departure, the executed flight pattern immediately takes aircraft away from the Project site. Aircraft taking off from Runway 9-27 turn slightly to the left upon lift-off to climb-out over the eastern arm of Lower Otay Lake. Finally, because of their very light weight and very slow flying speed, ultralights are highly unlikely to pose a significant threat to anyone on the ground; as such, the focus of the analysis is on jump plane activity.

With that context, Chapter 4 of the *Handbook* contains safety criteria to facilitate compatibility assessments of proposed residential densities with proximate aeronautical uses. These criteria apply to six safety compatibility zones identified in the *Handbook* that, in most respects, reflect the different phases of aircraft operations associated with departures and arrivals:

¹⁴ Because arrivals/landings occur at the airfield's eastern end, such operations do not present a compatibility concern relative to the Project site.

Zone 1:	Runway protection zone and object free area.
Zone 2:	Inner approach/departure zone.
Zone 3:	Inner turning zone.
Zone 4:	Outer approach/departure zone.
Zone 5:	Sideline zone.
Zone 6:	Traffic pattern zone.

To assess the compatibility of the proposed Project’s residential densities with those permitted by the *Handbook*, the geometric parameters of these six zones were delineated around John Nichol’s Field in accordance with the *Handbook*’s guidance on safety zone configuration. (*Handbook*, pp. 3-15 to 3-25; see also **Appendix C-21**.) A graphical depiction of the zone configuration for John Nichol’s Field is provided in **Figure 2.6-1**.

Utilizing the airfield’s zone configuration to identify the relevant areas of interest for purposes of airport hazards, **Table 2.6-1** compares the residential densities contemplated by the proposed Project with those allowed by the *Handbook* on a zone-by-zone basis. **Table 2.6-1** utilizes the *Handbook*’s clustering guidance due to the adjacency of the Project site to publicly-owned and preserved offsite land, which results in a clustering effect whereby substantial areas of “open land” are available to accommodate aircraft in distress. The application of clustering densities in this case is consistent with the *Handbook*, which describes clustering as the situation where “most of the buildings and other facilities are ... concentrated in one portion of the site, leaving other areas as open space because of terrain, environmental, or other considerations.” (*Handbook*, p. 4-27.)

As illustrated in **Table 2.6-1**, the proposed Project’s densities, when properly viewed in combination with offsite land areas, are consistent with the densities permitted by the *Handbook* for clustered residential land uses. The *Handbook* recognizes that clustering, as opposed to the spreading of development, can be utilized to provide aircraft in distress with substantial “open land” upon which to execute an emergency landing. (*Handbook*, pp. 4-27 to 4-28, and 4-33.) As illustrated in **Figure 2.6-1**, the residential development contemplated by the proposed Project essentially is clustered, for purposes of the *Handbook*, because the project site is adjacent to publicly-owned land dedicated to habitat preservation and conservation, thereby resulting in a clustered effect. Specific to Safety Zone 4, for example, **Figure 2.6-1** shows that proposed development is concentrated in the northern portion of the zone dimensions, leaving the southern portion of Zone 4 – where most of the flight tracks are located – completely undeveloped.

In addition to recommending the maximum residential densities presented in **Table 2.6-1**, the *Handbook* also sets forth guidance for minimum “open land” requirements within the safety zones. As characterized by the *Handbook*, “open land” should be “long, level, and free of obstacles” that potentially could send an aircraft in distress out of control. (*Handbook*, p. 4-31.) As a “general guideline, open land sites should be at least 300 feet long by 75 feet wide (about 0.5 acre or the size of a football field).” (*Ibid.*) Roads, parking lots, and recreational areas all can be utilized as “open land” areas. (*Ibid.*)

Figure 2.6-2 illustrates the areas within Zones 2, 3, and 4 that qualify as “open land” – capable of accommodating emergency landings – for purposes of the *Handbook*. **Table 2.6-2** below

quantifies the areas of qualifying “open land,” as defined for purposes of the *Handbook*, for each safety zone within which the proposed Project contemplates development (zones 2, 3, and 4), and assesses whether the percentage of qualifying “open land” within each zone is consistent with the *Handbook*’s recommendations for the minimum amount of “open land” within each zone. Both **Figure 2.6-2** and **Table 2.6-2** were informed by Project-related vegetation surveys, which studied whether the offsite land owned by the City of San Diego’s Water Department, located south of the Project site, is conducive to emergency landings and does not contain any obstructions to emergency landings, such as large trees.¹⁵

As shown in **Figure 2.6-2** and **Table 2.6-2** below, sufficient quantities of “open land,” including designated preserve lands in the City of San Diego’s *MSCP Subarea Plan*, are located in the safety zones at the airfield’s western end in which the proposed Project contemplates development. Relatedly, the Project site – in its existing condition – does not satisfy the *Handbook*’s criteria for “open land” due to topographical attributes. As such, build out of the Project site would not eliminate qualifying, existing “open land” that could be utilized by aircraft in distress. Rather, as illustrated in **Figure 2.6-1**, Otay Lakes Road – a component of the proposed Project – is sufficiently sized (i.e., 34-foot paved width, and a 60-foot right-of-way) to create an “open land” area that is capable of accommodating an emergency landing and is suitably located at the Project site’s perimeter.

Also of note, the clustering concept has been utilized by the San Diego County ALUC in all of its adopted ALUCPs. For example, in Policy AGU.2.4(c) of the *Agua Caliente Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), the San Diego County ALUC provided for the following residential development criteria:

In Safety Zones 3 and 4, new residential development at a density greater than 8.0 dwelling units per acre is incompatible. A density of 4.0 dwelling units per acre or less is compatible. In the range of more than 4.0 but less than 8.0 dwelling units per acre, new development is conditioned upon the building sites being clustered in a manner that maximizes the open land on which an aircraft could execute an emergency landing.

Further, the San Diego County ALUC mandates clustering for project sites equaling or exceeding 10.0 acres.¹⁶ While not dispositive for purposes of this assessment, the proposed Project is consistent with the residential densities permitted by the San Diego County ALUC.

¹⁵ In October 2013, a Dudek biologist undertook a site visit in order to assess whether the existing vegetation communities qualify as “open land” pursuant to the *Handbook*’s criteria. Based on the biologist’s survey efforts, the adjacent property located within the *MSCP Subarea Plan* contains a variety of vegetation communities, including coastal sage scrub, southern willow scrub, tamarisk scrub, freshwater marsh, herbaceous wetland, and disturbed habitat. The qualifying “open land” identified in **Figure 2.6-2** *excludes* areas identified during the biologist’s survey as being occupied by impediments to managing an aircraft distress, including trees of sizable height or circumference; uneven, sloped topography; open water; and, the creek area and its bed.

¹⁶ See also the San Diego County ALUC’s *Borrego Valley Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy BOR.2.4; *Brown Field Municipal Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Fallbrook Community Airpark Land Use Compatibility*

In light of the above, the proposed Project is consistent with the *Handbook's* residential density and “open land” criteria and, therefore, impacts related to airport hazards would be considered ***less than significant***. The conclusion that impacts related to airport hazards would not be significant is consistent with the substantial amount of “open land” within the airfield’s vicinity that is available to accommodate aircraft in distress; the typical departure route utilized by aircraft operating at the airfield, which turns away from the Project site; and, the type of operations conducted at the airfield, which either consist of aircraft operated by professional pilots for skydiving purposes or ultralight aircraft that are highly unlikely to pose a significant threat to on the ground conditions.

2.6.2.4 Emergency Response Plans

Guidelines for the Determination of Significance

A significant impact to emergency response plans would occur if the Project:

- Proposes one of the following unique institutions in a dam inundation zone as identified on the inundation map prepared by the dam owner: hospital, school, skilled nursing facility, retirement home, mental health care facility, care facility with patients that have disabilities, adult and childcare facility, jails/detention facility, stadium, arena, amphitheater, any other use that would involve concentrations of people that could be exposed to death in the event of a dam failure.
- Proposes a structure or tower 100 feet or greater in height on a peak or other location where no structures or towers of similar height already exist and, as a result, the Project could cause hazards to emergency response aircraft resulting in interference with the implementation of an emergency response.

Rationale for Selection of Guidelines

The significance guidelines for emergency response plans are from the County of San Diego Guidelines for Determining Significance – Emergency Response Plans (County of San Diego, July 30, 2007), Guidelines “a” and “b.” Guideline “a” (first bullet) is used to evaluate proposed projects for the types of uses that could adversely affect the implementation of a dam evacuation plan; Guideline “b” (second bullet) was developed based on guidance from the County Sheriff’s

Plan (adopted Dec. 2006; amended Dec. 2011), Policy FA.2.4; *Gillespie Field Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Jacumba Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy JAC.2.4; *McClellan-Palomar Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Montgomery Field Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Oceanside Municipal Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Ocotillo Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy OCO.2.4; *Ramona Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended June 2008 and Dec. 2011), Policy RMO.2.4. These ALUCPs hereby are incorporated by reference pursuant to CEQA Guidelines section 15150, and available for public review and inspection at the following website: http://san.org/sdcraa/airport_initiatives/land_use/adopted_docs.aspx (last visited Feb. 26, 2013).

Aerial Support Detail (ASTREA) for evaluation of the placement of large towers in locations that could impact efficient low flight patterns during emergency air response.

Analysis

The Project site is not designated as a dam inundation zone and no structure or tower 100 feet or greater in height is proposed by the Project. Therefore, the proposed Project would have ***no impact*** on emergency response plans.

2.6.2.5 Exposure to Wildland Fires

Guidelines for the Determination of Significance

A significant impact from exposure to wildland fires would occur due to the following:

- A comprehensive Fire Protection Plan has been accepted and the Project is inconsistent with its recommendations.
- The Project cannot demonstrate compliance with all applicable fire codes.
- The Project does not meet the emergency response objectives identified in the Safety Element of the County General Plan or offer feasible alternatives that achieve comparable emergency response objectives.

Rationale for Selection of Guidelines

The significance guidelines for exposure to wildland fires are from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Wildland Fire and Fire Protection (County of San Diego, August 31, 2010), Guidelines 1 through 3, for projects located within a wildland/urban interface (WUI). Guideline 1 (first bullet) is based on compliance with all applicable fire codes and the requirement that all discretionary projects are required to prepare an FPP and ensure that impacts resulting from wildland fire hazards have been adequately mitigated; Guideline 2 (second bullet) applies to all projects that are required to model fire behavior in mature vegetation on and near the site as part of its FPP based on site topography, fuel loads, atmospheric conditions, and fire intensity; and Guideline 3 (third bullet) is based on the need to have adequate fire services available and to provide a Project Facility Availability Form (DPLU Form #399F) that is completed and signed by the fire protection service provider prior to formally submitting the application to the County.

Analysis

Preparation of a Fire Protection Plan

The potential for wildland fire hazards in and around the Project site is high because planned open spaces and off-site areas are sparsely covered with chaparral and other vegetation, which, when coupled with the seasonal hot and dry conditions in the area, have the potential to create fuel for wildland fires. In addition, a substantial portion of the Project site would be preserved as

open space/Preserve. Thus, wildlands would be adjacent to urbanized or residential areas. However, the proposed Project includes an **FPP Appendix C-21**, as required by Chapter 47 of the County Consolidated Fire Code.

The FPP includes a fire risk assessment that is based on field data collection and fire behavior modeling to document the type and intensity of fire that would be expected on the Project site given characteristic site features such as topography, vegetation, and weather. Fire behavior modeling uses site-specific information to create modeled representations of how wildfire would move through available fuels on a given site and to objectively predict flame lengths and intensities. **Figure 2.6-3 and 2.6-4** shows the results of a Geographic Information System (GIS)-based fire-behavior software application that graphically portrays the fire behavior during summer and fall fires under existing site conditions and following application of fire management strategies identified in the FPP that would be implemented as Project mitigation measures.

A worst-case summer fire would result in a fire spreading at a rate of up to 1.1 mph with flame lengths of 21 feet. During a typical fall fire with gusty Santa Ana winds and low fuel moisture, fire is expected to be moderately fast, moving at up to 2.3 mph with highest flame length values reaching approximately 31 feet. Spotting is projected to occur up to nearly 1 mile during a summer fire and nearly 2.5 miles during a fall fire.

During a typical fall fire with gusty Santa Ana winds and low fuel moisture, fire is expected to be moderately fast, moving at up to 1.1 mph, with longest flame length values reaching approximately 18 feet. To replicate a catastrophic wildfire scenario, 50 mph winds were introduced for the fall/winter model scenario. The resulting extreme weather flame lengths are projected to be 46 feet. Based on this result, 100-foot vegetation management zones for the Project perimeter and planting restrictions are established for the entire project site.

These modeling results were used to support analysis and calculation of the size and composition of recommended vegetation management zones, in which flammable vegetation, continuous fuel beds, and ornamental shrubbery would be removed, reducing the intensity of approaching fire and helping to reduce the likelihood of a structural fire spreading into naturally vegetated areas.

Modeling of post-treatment conditions shown in **Figures 2.6-3 and 2.6-4** are based on a custom fuel model that was used to represent the anticipated irrigated landscape condition present in the Project's fuel modification areas and to mimic the irrigated, exotic landscape commonly found in the wildland/urban interface in southern California. For the Project, two variations of fuel bed depth values were used in modeling the fuel modification areas. Depth values were based on recommended fuel modification area requirements (4-inch height for Zone A, 6-inch height for Zone B) based on the proposed hydroseed mix to be used in revegetating manufactured slopes. The proposed hydroseed mix for the Project would consist primarily of grass species, with lesser quantities of native shrubs commonly associated with coastal sage scrub habitat types, resulting in a lower fuel landscape.

As illustrated for the Post Treatment Site Conditions in **Figures 2.6-3 and 2.6-4**, the 46-foot flame lengths predicted during pre-treatment modeling of extreme weather scenarios are significantly reduced to less than 10 feet at the outer edges of the fuel modification areas, and to

less than 5 feet by the time the inner portions of the fuel modification areas are reached. Similar reductions are observed during less extreme summer weather conditions.

The benefit provided by fuel modification zones is a reduction in the fire intensity and radiant and convective heat to which a structure would otherwise be exposed. This significant reduction in fire intensity does not mitigate the effect of flying embers, which may travel one mile or more during wind-driven fires. Most recently adopted building and fire codes were specifically enacted to reduce the potential for flame and ember penetration, which are leading causes for structural losses during wildfires.

Given the characteristics of climate, vegetation, location, topography, and fire history, the Project site is considered vulnerable to wildfire starting in, burning onto, or spotting onto the site. This is especially the case due to the large amount of naturally vegetated open space that would be preserved adjacent to the site. Under worst-case fall weather conditions, there would be the potential for fire to move rapidly through the Project site's native fuel types. The most common type of fire anticipated in the vicinity of the Project area would be a wind-driven brush fire from the north-northeast during the fall, with flame lengths reaching nearly 50 feet. The rate of spread would be rapid due to volatile fuels, wind, and low fuel moisture. A typical cause may be related to roadways (tossed cigarette, vehicle accidents, or vehicle fire), or agricultural tractor work, welding, open burning, arson, or fireworks discharged in the area.

Compliance with Applicable Fire Codes

As described in Section 4.4 of the FPP, the Project would be constructed in compliance with the 2014 County Consolidated Fire Code and 2013 County Building Code, Part 2.5 – 2013 California Residential Code, , and Part 9 – 2013 California Fire Code for new development in the wildland-urban interface (WUI). This would include ignition resistant construction for all structures, including exterior walls of non-combustible (stucco, masonry, or approved cement fiber board) or ignition resistant material from surface of the ground to the underside of the roof system. Eaves, soffits, vents, roofs, and window frames would be constructed utilizing similar fire resistant construction techniques and materials and designed to avoid any gaps that would allow intrusion by flames or embers. All exterior glazing in windows and doors are to be tempered glass or glass block and have a 20-minute fire rating. Similar standards would apply to doors, decks, and storage sheds. Lots on the perimeter of the Project site would require 6-foot-high walls constructed with solid masonry or other solid non-combustible materials; and no wood fences are permitted within 5 feet of structures on any lots. Spark arrestors are required on all chimneys, vents on heating appliances, outdoor fireplaces, and permanent barbecues and grills.

Fire protection systems under the applicable fire and building codes include vegetation management and fire suppression infrastructure. These standards address County Fire Code standards for water supply, including fire hydrant spacing, residential waterline distribution system capable of providing fire flows of at least 2,500 gallons per minute. All structures will have internal fire sprinklers, though exceptions can be granted by the fire district for sheds under 200 square feet. In addition, all systems other than single-family detached dwelling units will be remotely monitored by an approved 24/7 alarm company.

Additional site and structural design standards for the Resort complex and commercial buildings are intended to facilitate fire equipment access without obstructions, which would include two fire access/evacuation routes, two points of fire truck access to applicable structures, approved fire truck turnarounds, and enclosed, fire-rated stairways to all floors for firefighter access. Specific infrastructure requirements for the Resort include fire hydrant spacing, fire extinguishers, fire-extinguishing systems in restaurants, manual fire alarms and supervised smoke detection, and an emergency announcement system.

Fire Department Response Capabilities

As described in Section 3.6.1 of this EIR, the County's 5-minute travel time standard for Otay Ranch is applied to the Project's proposed land uses. The FPP concludes that, without additional fire facilities, the San Diego Rural Fire Protection District (RFPD) could not meet the County's standard travel time because the nearest RFPD facility is located approximately 14 minutes from the Project site at 14024 Peaceful Valley Ranch Road.

The Fire Protection Plan proposes that the Project site be served on an interim basis by a temporary, on-site RFPD fire station to be located within the Project's Western development area at either the Multiple Use area or another flat suitable site such as the P-1 park site. This temporary fire station will be established prior to the issuance of the first building permit. **Figure 2.6-5A** shows the temporary RFPD locations and a 5-minute travel time threshold.

Prior to the issuance of the first building permit in the Eastern development area, a permanent, on-site RFPD fire station would be constructed and be operational on the Project's Public Safety Site. The Public Safety Site reserved within the Project would provide adequate space for a station sufficient to serve the Project site within the General Plan Safety Element travel time threshold of five minutes. **Figure 2.6-5B** shows the Public Safety Site and a 5-minute travel threshold. RFPD's facility requirements for the fire station would include housing for four on-duty firefighters and reserve personnel, office space, training room and meeting rooms, and adequate space for any necessary equipment.

Community Protection and Evacuation Plan

As stated in the FPP, the Project applicant is required to have a qualified fire specialist prepare a Community Protection and Evacuation Plan (CPEP) for the Project in accordance with the requirements of the Fire Authority Having Jurisdiction (FAHJ) and approved by the FAHJ and San Diego County Fire Marshal prior to occupancy of any dwelling units in the first phase of Project development. The CPEP uses existing information from the County Office of Emergency Services (OES) that directs CPEP preparers through the various required components, as described on the OES website (OES 2010). Appropriate fire authorities and law enforcement personnel would participate in the preparation of the CPEP. The CPEP would provide site-specific procedures for various emergency situations, including wildfire, and would be made available to Otay Ranch residents and resort and commercial tenants. The CPEP should be reviewed by residents at least annually through organized meetings and educational outreach by the HOA, Community Services District (CSD), or other means.

Among the important concepts that would need to be included in the CPEP are hazard identification, description of the area's environment, mitigation strategies, law enforcement, fire agencies and contact information, homeowner education materials, preparedness checklist, route planning, and Project-specific procedures for early relocation and last resort site sheltering.

Otay Ranch residents and occupants of commercial and resort facilities would also need to be provided on-going education regarding wildfire, the CPEP, and the FPP's requirements. This educational information would support the Otay Ranch fire safety. Informational handouts, a community website page, mailers, fire safe council participation, inspections, seasonal reminders, and resort check-in handouts are methods that may be used to disseminate wildfire and relocation awareness information. The resort facility would need to include information for visitors at check-in and also exit instructions, typically located on the back of hotel room doors. All such informational and educational materials would be reviewed by the FAHJ to ensure consistency with relevant policies and procedures.

The potential for wildland fire hazards in and around the Project site is high because planned open spaces and off-site areas are sparsely covered with chaparral and other vegetation, which, when coupled with the seasonal hot and dry conditions in the area, have the potential to create fuel for wildland fires. As stated above, the Project would be constructed in compliance with all applicable fire codes, the applicant has caused an FPP to be prepared and compliance with the FPP would be assured during building permit review by the FAHJ and San Diego County Fire Authority, and an on-site temporary and permanent fire station would ensure compliance with emergency travel time requirement. As a result, the Project would have **a less than significant impact** due to wildfires.

2.6.2.6 Exposure to Vectors

Guidelines for the Determination of Significance

A significant impact from exposure to vectors would occur if the Project:

- Proposes a BMP for storm water management or construction of a wetland, pond, or other wet basin that could create sources of standing water for more than 72 hours, and, as a result, could substantially increase human exposure to vectors, such as mosquitoes, that are capable of transmitting significant public health diseases or creating nuisances.
- Proposes a use that involves the production, use, and/or storage of manure or proposes a composting operation or facility and, as a result, could substantially increase human exposure to vectors that are capable of transmitting significant public health diseases or creating nuisances.
- Would result in a substantial increase in the number of residents located within one-quarter mile of a significant off-site vector breeding source, including, but not limited to, standing water (e.g., agricultural ponds, reservoirs) and sources of manure generation or management activities (e.g., confined animal facilities, horse keeping operations, composting operations).

Rationale for Selection of Guidelines

The significance guidelines for exposure to vectors are from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Vectors (County of San Diego, January 15, 2009), Guidelines 4.1 through 4.3. Guideline 4.1 (first bullet) is included to recognize that sources of standing water, particularly where the water would be standing for more than 72 hours, provides excellent habitat for mosquito breeding; Guideline 4.2 (second bullet) is included because areas of concentrated manure and composting operations and facilities typically require careful management to minimize vector production; and Guideline 4.3 (third bullet) addresses the potential for a project to result in a substantial increase in the number of residents located near an existing off-site vector breeding source.

Analysis

Exposure to Vectors from Storm Water Management Basins

As described in Section 3.2, Hydrology and Water Quality, the Project proposes 15 water quality basins in the form of bioretention basins and roadside bioretention swales designed to provide treatment of the 85th percentile (0.65 inch) of rainfall runoff at the Project site prior to discharge to Lower Otay Lake. To address this requirement, the water quality basins would be located adjacent to Otay Lakes Road, upstream of culverts designed to drain the developed areas of the Project site. The basins would contain diversion weirs designed to detain the runoff water for between 24 and 48 hours in the lower chamber of the water quality basin, allowing sediments and pollutants to settle and filter through the heavy vegetation. Runoff in excess of the 85th percentile runoff (deemed to be clean water) would overtop the diversion weir and drain to Lower Otay Lake through the proposed storm drain culverts. More detailed information on the basins is provided in Section 3.2.

Maintenance of the water quality basins would be the responsibility of the property owner until such time as the assessment district/mechanism takes over the responsibility of the water quality basins and the County assumes maintenance responsibility of the bioretention swales within the public right of way. Periodic inspections would be performed following each significant storm (defined as 24-hour rainfall events in excess of 1 inch). The inspections would include checks for structural integrity of the basins and their outlet devices. The inspector would identify any repairs and maintenance activities deemed necessary, including the removal of trash, debris, and sediment from the upper chamber of the basin area. All riser orifices and weir box overflows would be unclogged during the periodic and post-rainfall inspections. Sediment would be removed to maintain the designed volume of storage in the basin. A registered civil engineer would also conduct semi-annual inspections of each water quality basin to provide a thorough inspection of the basin area, and to identify any required repairs or corrective maintenance activity needed to maintain the hydraulic performance of the basins. Semi-annual maintenance activities would include removal of the heavy vegetation that would inevitably grow in the basin. Roughly one-half of the vegetation would be removed from the basin at each annual maintenance session, including all woody or aquatic vegetation and other obstructions to flow.

Although inspection and maintenance of the basins would maintain their structural and storm water storage and discharge design standards, the potential would exist for the basins to increase human exposure to health vectors such as mosquitoes. This exposure to vectors would be a ***potentially significant impact*** (**Impact HZ-1**).

Exposure to Vectors from On-Site Manure or Composting Operations

The Project proposes residential, resort, school, parks, and open space land uses, and would not include any facilities involving the production, use, and/or storage of manure or a composting operation. Therefore, there would be ***no impact*** from exposure to vectors from manure or compost operations.

Exposure of Residents to Off-Site Vector Sources

Currently, the Project site is undeveloped and unoccupied and does not support any significant vectors, such as mosquitoes, rats, or flies. No properties within one-quarter mile of the Project contain agricultural ponds, confined animal facilities, or other vector-breeding sources. In addition, the proposed Project does not propose any activities, such as equestrian facilities, that would support vectors or facilitate an increase of vectors in the Project site. However, most of the Project residences would be located within one-quarter mile of the Upper or Lower Otay Lakes. The Lakes are owned and managed by the City of San Diego Public Utilities Department and regular changes in water elevations, presence of fish and birds as predators, wind waves, and fishing boat turbulence avoid conditions for creation of stagnant pools of water that would be mosquito breeding sources, which require a week of standing water conditions to complete the mosquito larvae breeding cycle. The County Department of Environmental Health identifies typical conditions of standing water necessary for mosquito breeding, and streams, lakes, and reservoirs are not included as typical sources. In addition, the significance guideline for exposure to vectors requires that water features proposed by the Project be evaluated. Therefore, the potential for exposure to vectors from Otay Lakes would not be a significant impact resulting from the proposed Project. Because implementation of the proposed Project would not cause an increase in residents exposed to vector-breeding sources, impacts related to vector exposure are considered ***less than significant***.

2.6.3 Cumulative Impact Analysis

The geographic scope for cumulative impacts related to hazards and hazardous materials includes the unincorporated portions of San Diego County and the City of Chula Vista bounded by I-805 to the west, Main Street to the south, Campo Road to the east, and SR-54 to the north.

The Otay Ranch PEIR cumulative impact analysis of hazards identified only impacts associated with the future use, transport, and storage of hazardous materials and determined that compliance with applicable laws and regulations would avoid a significant impact. ***No cumulative impacts*** associated with airport operations, emergency response plans, exposure to wildland fires, or exposure to vectors were addressed in the PEIR.

At a Project level, potential impacts related to hazards and hazardous materials are addressed and mitigated on a site-specific basis. The potential for significant cumulative impacts related to hazards and hazardous materials would be based on whether implementation of the proposed Project would contribute to local or regional impacts from hazards and hazardous materials. The analysis in this chapter determined that the Project's impact associated with handling of hazardous materials, on-site contamination, airfield operations, emergency response plans, and exposure to wildland fires would be either *less than significant or no impact*. Human exposure to vectors would be potentially significant and mitigation measure M-HZ-1 is identified to mitigate potential Project impacts.

To address the potential risk for hazards related to wildland fires, the proposed Project includes an FPP, as discussed above in Section 2.6.2.5. The FPP identifies measures to be implemented to reduce wildfire impacts, and procedures to be followed to educate and prepare residents and occupants of actions to be taken in the event of a potentially dangerous wildfire condition. However, in viewing the potential regional impact from wildland fires, the County General Plan Update EIR determined that the General Plan Update would contribute to a cumulatively considerable impact from wildland fires. Implementation of the FPP and mandatory Project compliance with applicable existing fire codes would reduce the potential for the Project to be impacted by wildland fires to below a level of significance. Further, the Project will only generate demand for a portion of the typical number of calls for service from a fire station. As such, the anticipated fire station will have capacity to respond to calls for service from other areas around the project site. The reduction in residential units in Village 15 will further reduce demand for fire protection services from the planned fire station. Thus, the proposed Project would *not result in a cumulatively significant impact* related to the risk of wildland fires.

Proposed water quality basins may cause an increased human exposure to vectors such as mosquitoes and mitigation measure M-HZ-1 has been identified to reduce the Project's impact to less than significant. In addition, as stated in Section 2.6.2.6 of the EIR, the only potential off-site source of vectors within one-quarter mile of the Project are the Otay Lakes, which were determined to not be a source of stagnant pools of water that would breed mosquitoes. Therefore, the proposed Project would *not contribute to a cumulatively considerable impact* associated with vectors.

2.6.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project's effects related to hazards and hazardous materials:

<u>Impact Number</u>	<u>Description of Project's Effect</u>	<u>Significance of Impact</u>
HZ-1	Proposed storm water retention basins may cause an increased human exposure to health vectors such as mosquitoes.	Potentially significant cumulative impact.

2.6.5 Mitigation

The following mitigation measures are recommended to reduce the potentially significant Project impacts to a less than significant level:

- M-HZ-1a** Project grading and improvements plans shall be reviewed by the Director of Public Works to determine that water quality basins are designed to drain within 72 hours and include a mechanism to open a flap gate or similar manual device if the drain time becomes too long. Manual drainage shall be conducted if water is held beyond 72 hours. Routine and semi-annual inspections shall include modification of orifice drain holes, if needed, to provide for optimum performance and suitable drain time.
- M-HZ-1b** The Director of Public Works shall determine the design of the water quality basins include rip-rap fields at inlet scour-protection points to be self-draining concurrent with the processing of grading and improvement plans.
- M-HZ-1c** Routine and semi-annual water quality basin inspections to the satisfaction of the Director of Public Works shall include removal of accumulated trash and debris that may capture and hold rainwater or runoff, or that accumulates around the outlet riser pipe or discharge orifice; repair of erosion or low-lying areas where ponding of water develops; identification and elimination of possible vector harborage or burrowing rodent activity; inspection for sufficient vegetation coverage for basin side slopes and floor; reduction of vegetation height to minimize insect harborage, with the height of ground cover grasses reduced to a maximum height of 6 inches; investigation and elimination or minimization of upstream dry season flow sources if dry season flows are persistent and lead to constant ponding; and notification of San Diego County Vector Control if sources are from off-site properties.

2.6.6 Conclusion

2.6.6.1 Hazardous Substances Handling

The proposed Project does not propose any business, operation, or facility that would handle hazardous substances or generate household hazardous waste in excess of the threshold quantities of the H&SC. Should the proposed fire station require an underground fuel storage tank, it would be regulated under the H&SC. Thus, implementation of the proposed Project would not create a significant hazard to the public or the environment from on-site hazardous substance handling and impacts of the proposed Project are considered *less than significant*.

2.6.6.2 Projects with On-Site Contamination

A Phase I was prepared and database records searches were conducted, which did not reveal any sources of hazardous materials. Implementation of the proposed Project would not cause a significant hazard to the public or the environment because it is not on the list of hazardous

materials sites. With regard to the site where the elementary school is planned due, existing regulations in the California Education Code and the requirements of the California DTSC would be carried out by the Chula Vista school district prior to development of a school. Thus, the potential impact from existing on-site contamination is considered *less than significant*.

2.6.6.3 Airport Hazards

The proposed Project's residential densities, in combination with offsite "open land" areas, are consistent with the maximum residential densities allowed by the *Handbook* for clustered development designs. Therefore, the proposed Project's impacts to airport hazards impacts would *not be significant*.

2.6.6.4 Emergency Response Plans

The Project site is not designated as a dam inundation zone and no structure or tower 100 feet or greater in height is proposed by the Project. Therefore, the proposed Project would have *no impact* on emergency response plans.

2.6.6.5 Exposure to Wildland Fires

In accordance with the FPP for the Project, a temporary, on-site RFPD fire station to be located within the Project's Western development area on an interim basis prior to first certificate of occupancy. Prior to the issuance of the first building permit in the Central or Eastern development areas, a permanent on-site RFPD fire station would be constructed and be operational on the Project's Public Safety Site. Therefore, the proposed Project would have *a less than significant impact* due to wildfires.

2.6.6.6 Exposure to Vectors

Proposed storm water retention basins may cause an increased human exposure to health vectors such as mosquitoes (**HZ-1**). To address this potential impact, mitigation measure M-HZ-1a through 1c would require design, inspection, and maintenance of the water quality basins to minimize the potential for the basins to become a source of health vectors. Therefore, the proposed Project *would not result in any significant impacts* related to exposure to vectors.

Table 2.6-1
Assessment of the Proposed Project's Consistency with the
Densities Permitted by the *Handbook*

Safety Zone	Number of Proposed Residential Units	Acreage within Zone^a	Average Density	<i>Handbook</i> Clustered Permitted Density^b	Consistent?
Zone 1 ^c	0	N/A	0	0	N/A
Zone 2	7	54.0	0.13 unit/ 1 acre	1 unit/ 1–5 acres	Yes
Zone 3	10	36.1	0.28 unit/ 1 acre	1 unit/ 1–5 acres	Yes
Zone 4	41	28.8	1.42 units/ 1 acre	3–5 units/ 1 acre	Yes
Zone 5 ^c	0	N/A	0	1 unit/ 1–2 acres	N/A
Zone 6 ^c	N/A	N/A	N/A	No Restrictions	N/A

Table Notes:

^a The “Acreage within Zone” quantities include off-site land that is located south of the Project site and within the safety zones, and that is part of the City of San Diego’s *Multiple Species Conservation Program (MSCP) Subarea Plan* (March 1997), which is available for public review and inspection at <http://www.sandiego.gov/planning/programs/mscp/docsmaps/index.shtml> (last visited May 23, 2013). The subject off-site land located south of Otay Lakes Road is owned by the City of San Diego’s Water Department and is referred to in the MSCP Subarea Plan as the Otay Lakes component of the “Cornerstone Lands.” According to the City’s MSCP Subarea Plan, this off-site land will be protected as habitat lands and an open space corridor through conservation easements (City of San Diego MSCP Subarea Plan [March 1997], pp. 28 and 29, 35.)

^b The “*Handbook* Clustered Permitted Density” quantities are based on Table 4F: Safety Compatibility Summary in the *Handbook*, specifically Sample Policy 2: Clustering (p. 4-33).

^c Zones 1 and 5 are described as “N/A” because the Project does not contemplate development within any of these safety zones. Zone 6 is also described as “N/A” as there are no restrictions on density pursuant to the *Handbook*.

Table 2.6-2
Assessment of the Proposed Project's Consistency
with the *Handbook's* Guidelines for Extent of "Open Land"

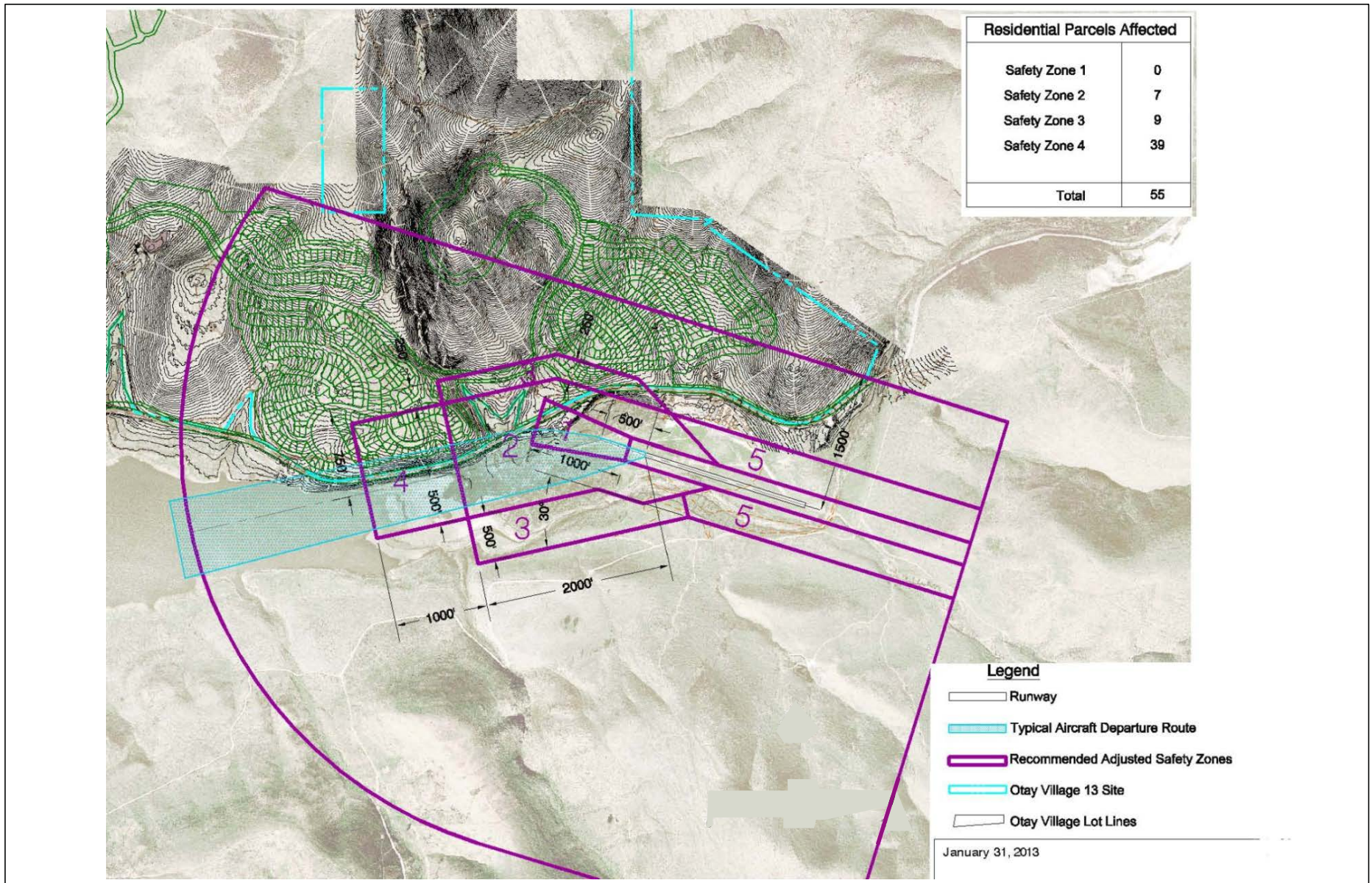
Safety Zone	Acreage within Zone^a	Acres of "Open Land"	Percent of Zone as "Open Land"	<i>Handbook</i> Required Minimum Percentage^b	Consistent?
Zone 1 ^c	N/A	N/A	N/A	N/A	N/A
Zone 2	54.0	20.58	38.1%	25% - 30%	Yes
Zone 3	36.1	15.33	42.4%	15% - 20%	Yes
Zone 4	28.8	6.48	22.4%	15% - 20%	Yes
Zone 5 ^c	N/A	N/A	N/A	25% - 30%	N/A
Zone 6 ^c	N/A	N/A	N/A	10%	N/A

Table Notes:

^a The "Acreage within Zone" quantities include off-site land that is located south of the Project site and within the safety zones, and that is part of the City of San Diego's *Multiple Species Conservation Program (MSCP) Subarea Plan* (March 1997), which is available for public review and inspection at <http://www.sandiego.gov/planning/programs/mscp/docsmaps/index.shtml> (last visited May 23, 2013). The subject off-site land located south of Otay Lakes Road is owned by the City of San Diego's Water Department and is referred to in the MSCP Subarea Plan as the Otay Lakes component of the "Cornerstone Lands." According to the City's MSCP Subarea Plan, this off-site land will be protected as habitat lands and an open space corridor through conservation easements (City of San Diego, MSCP Subarea Plan [March 1997], pp. 28 and 29, 35.)

^b The "*Handbook* Required Minimum Percentage" quantities are based on *Handbook's* suggested "Guidelines for Extent of Open Land Near Airports" (pp. 4-31 and 4-32).

^c Zones 1 and 5 are described as "N/A" because the Project does not contemplated development within any of these safety zones. Zone 6 is also described as "N/A" as there are no restrictions on density pursuant to the *Handbook*.

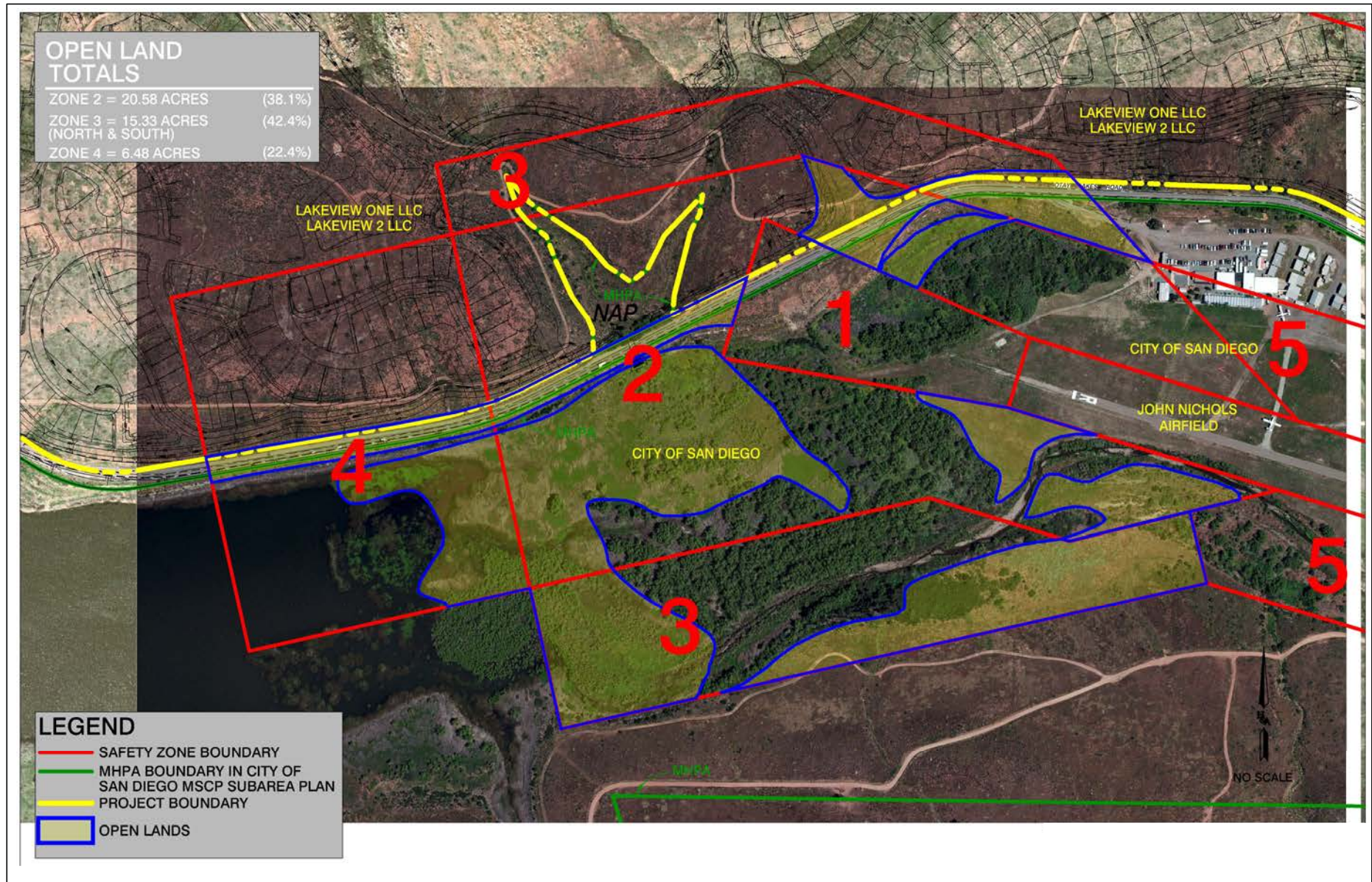


SOURCE: DUDEK



No Scale

Figure 2.6-1
Modified Runway Safety Compatibility Zones



SOURCE: DUDEK

Figure 2.6-2
Open Space Within Safety Compatibility Zones



No Scale

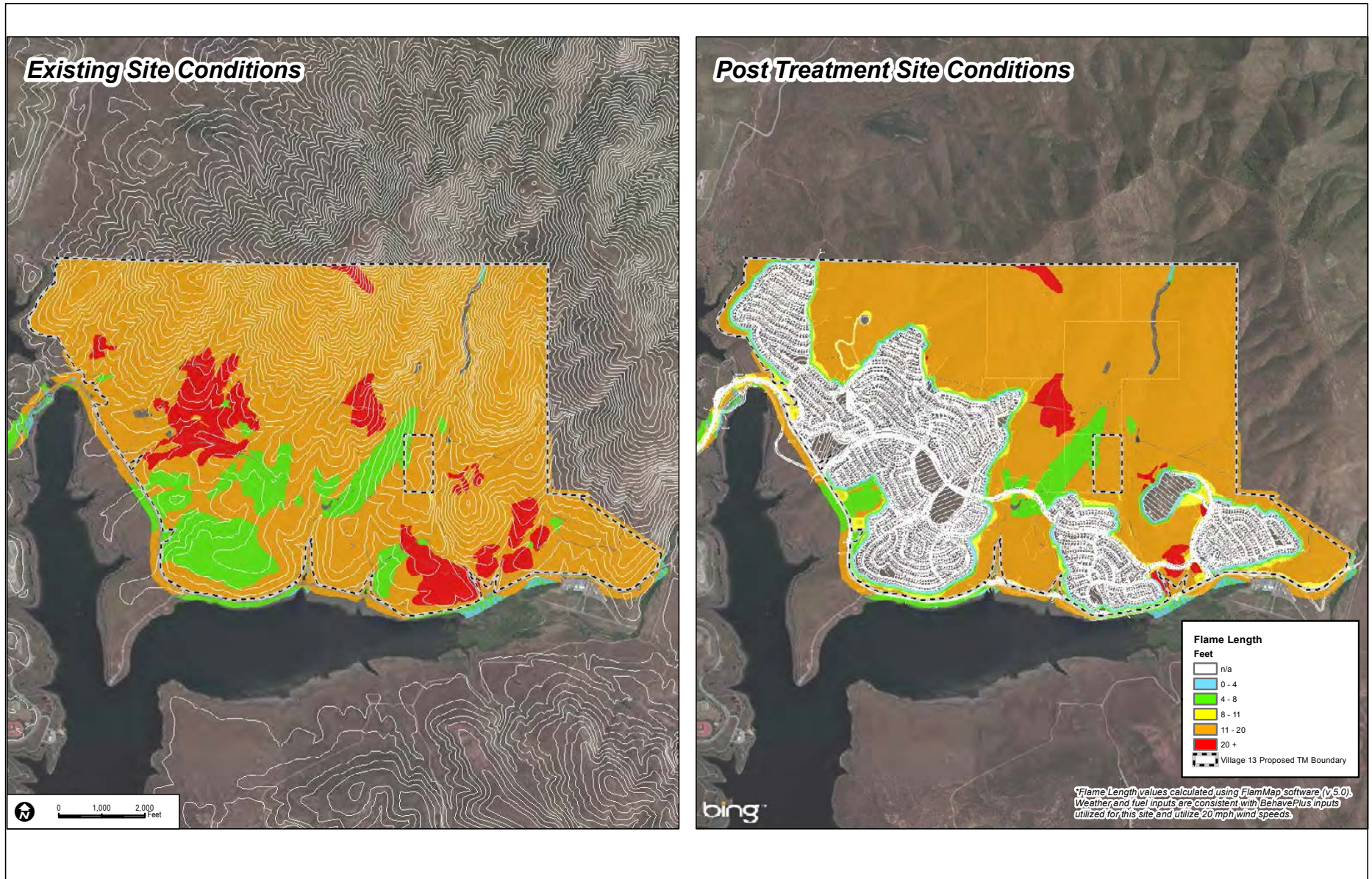
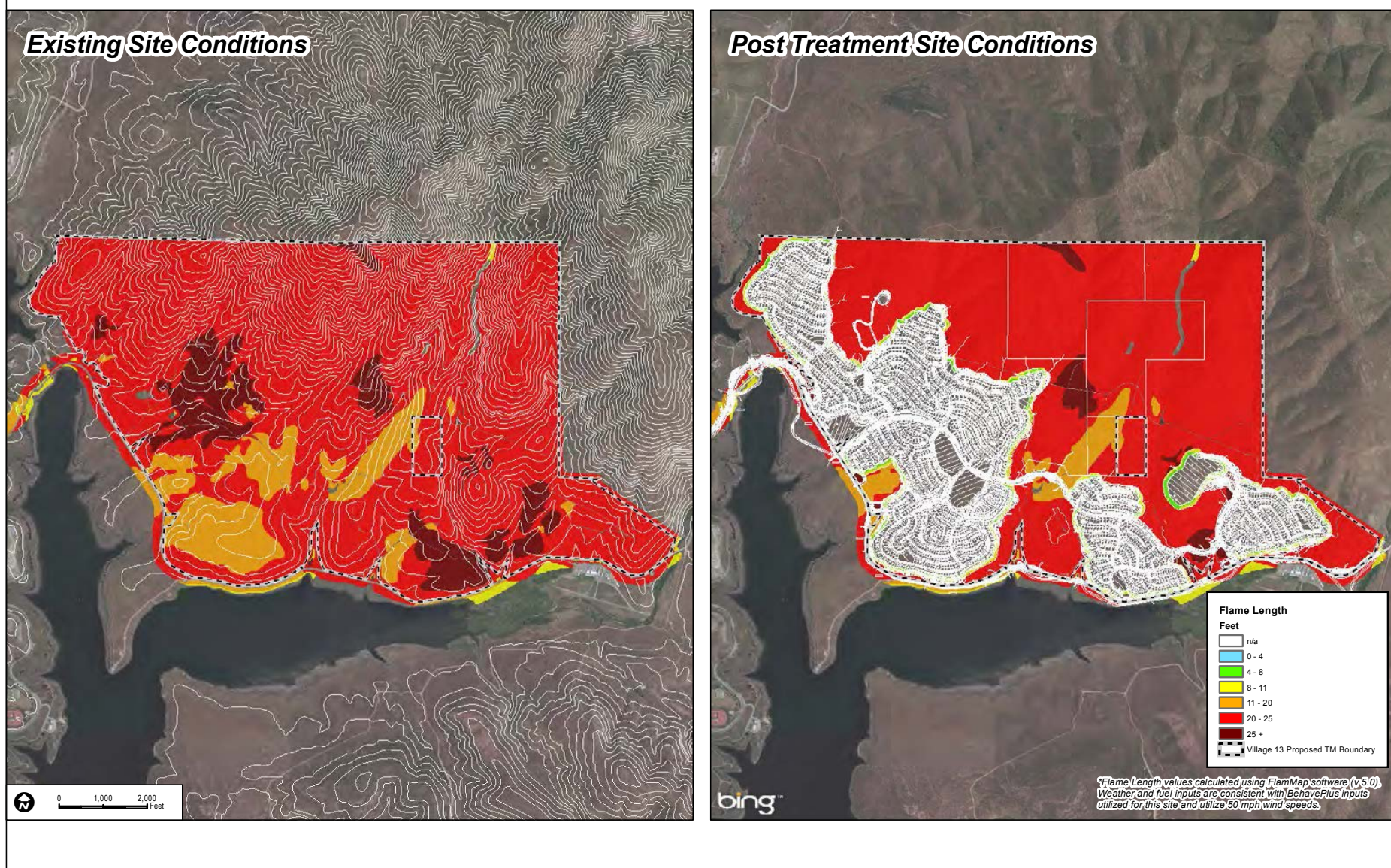


Figure 2.6-3
Fire Behavior - Summer Fire



SOURCE: DUDEK 2014

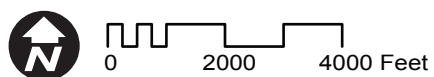
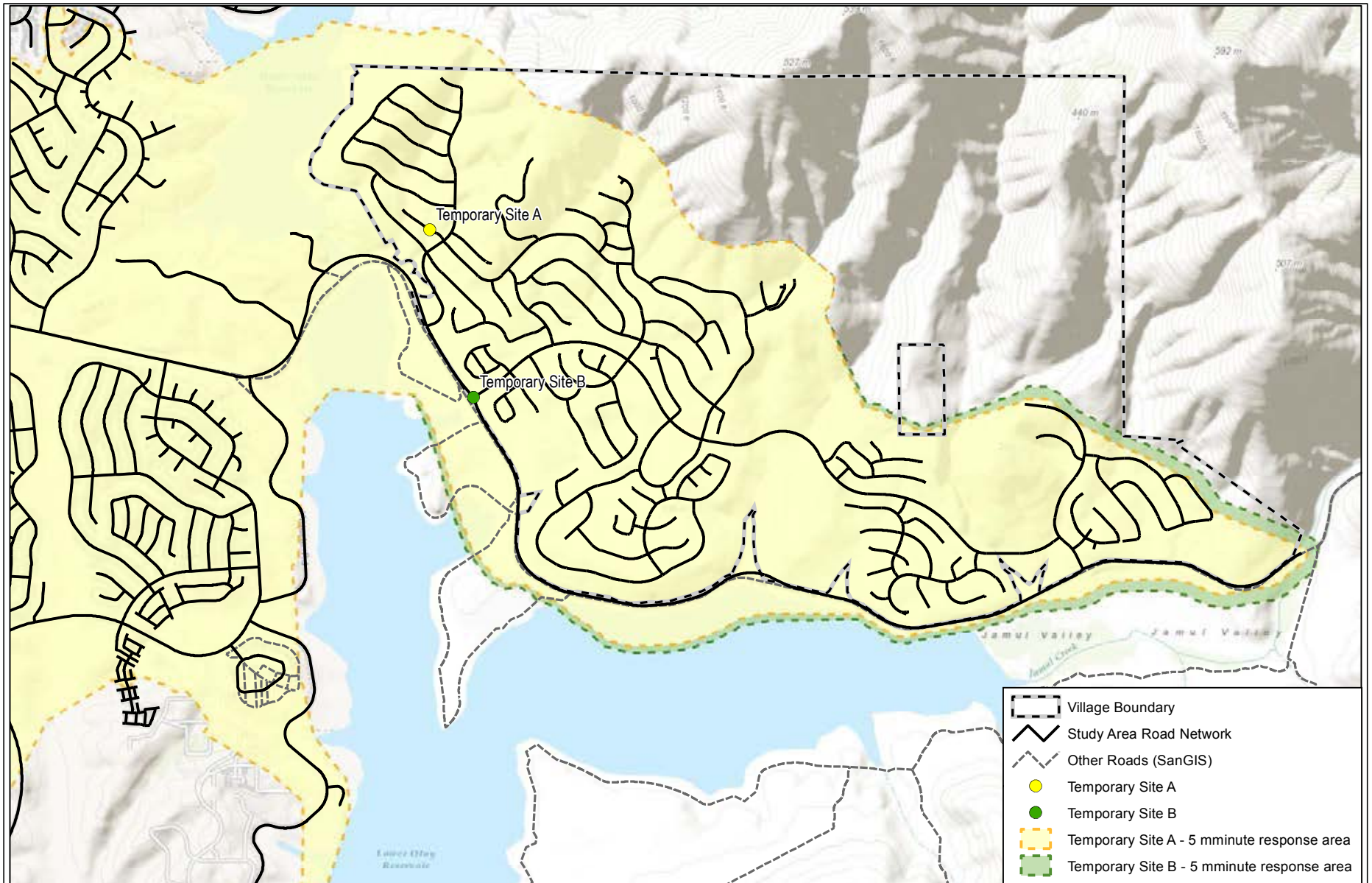


Figure 2.6-4
Fire Behavior - Fall Fire



SOURCE: DUDEK 2014

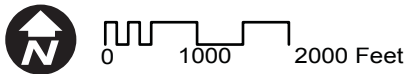
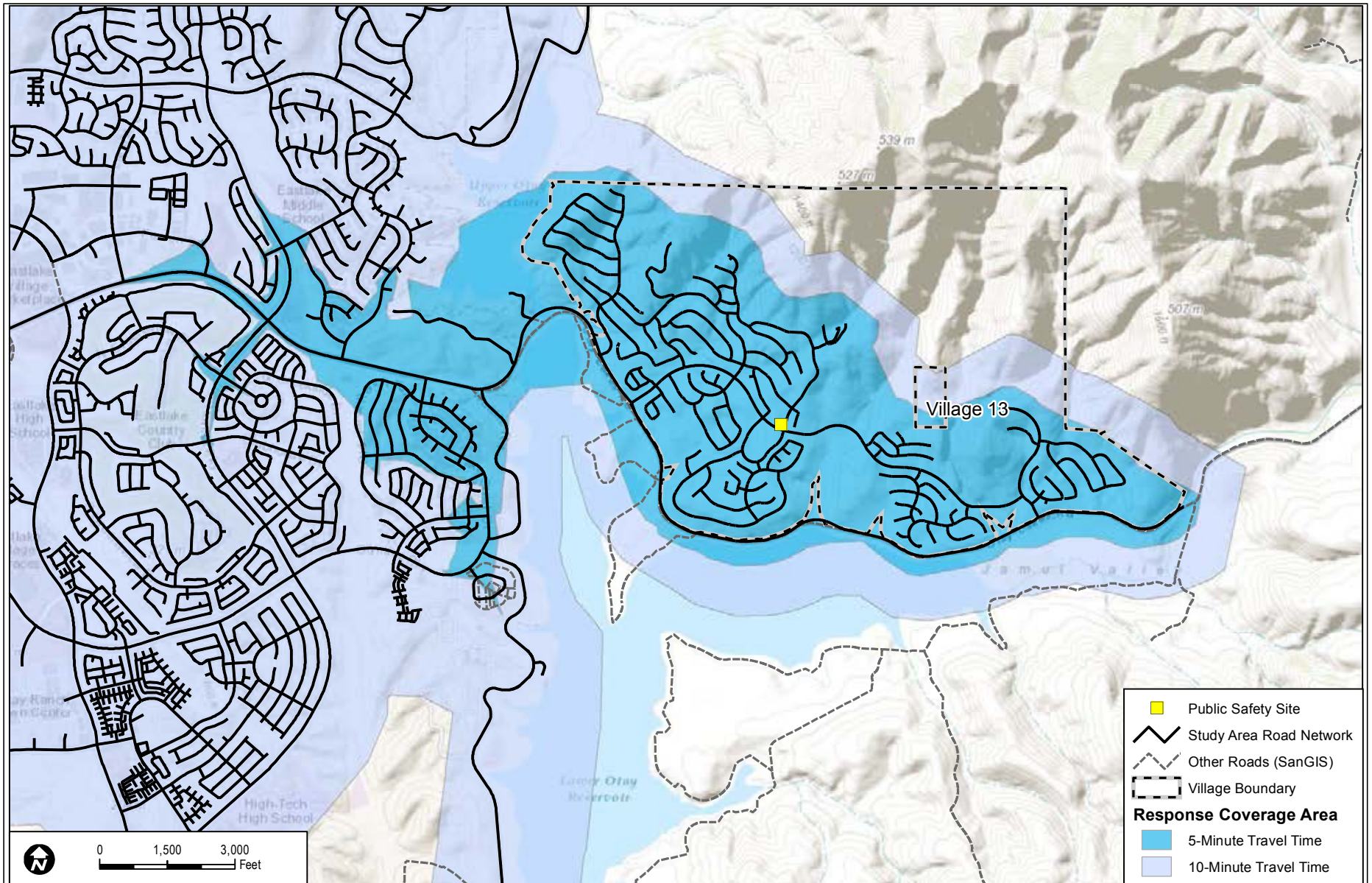


Figure 2.6-5A
Fire Department Response Analysis



SOURCE: DUDEK 2014



Figure 2.6-5B
Fire Department Response Analysis

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2.7 Noise

This section summarizes the potential noise impacts resulting from implementation of the proposed Project. The noise analysis of the proposed Project includes a description of existing conditions, an evaluation of potential noise impacts associated with Project construction and operations, identification of feasible mitigation measures, and discussion of the potential noise-related cumulative impacts of the proposed Project. The noise measurement terms used in this section are decibel (dB), which represents the loudness of a noise; A-weighted decibel (dBA), a noise measurement that approximates the range of human hearing; L_{eq} , the average noise level over a measured period of time, typically a 1-hour or 24-hour measurement; and the Community Noise Equivalent Level (CNEL), which assigns a 5-dB “penalty” to noise measurements taken between 7:00 p.m. and 10:00 p.m.

The analysis presented in this section is based on the Otay Ranch Resort Village Noise Impact Report (Noise Study) (AECOM 2015), provided as **Appendix C-11** to this EIR.

In 1993, the Otay Ranch PEIR, was certified and provided a program-level analysis of the existing conditions and potential impacts related to noise for the entire Otay Ranch area, including the Project site. The PEIR concluded that implementation of the Otay Ranch Project would result in significant noise impacts associated with the exposure of noise-sensitive receptors to noise levels in excess of the 60 dBA CNEL standard¹⁷, and indirect roadway and construction noise impacts on least Bell’s vireo habitat in other portions of the Otay Ranch community (not the proposed Project site). The Otay Ranch PEIR is incorporated into this EIR by reference and is available for public inspection and review at the County of San Diego, PDS, 5510 Overland Avenue, San Diego, California.

The noise analysis in this 2015 EIR is different from the 1993 PEIR, as it specifically considers the proposed Project site. This noise section references and uses information provided in the PEIR; however, the analysis and conclusions are based specifically on the proposed Project’s impacts and consistency with existing plans and policies. Potential noise impacts to noise sensitive birds and habitat are discussed under Section 2.3 Biological Resources, which identified no least Bell’s vireo habitat within the proposed Project site. Short-term indirect impacts to noise sensitive species, particularly nesting bird species, include potential construction noise impacts, particularly at the edge of proposed development adjacent to natural habitat areas. To mitigate those impacts and avoid indirect noise impacts to sensitive wildlife species, MM BIO-15 imposes the following requirements on the Project applicant:

- No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for coastal California gnatcatcher (February 15 to August 15, annually). If construction occurs during the breeding season, a nesting survey for California gnatcatcher shall be conducted prior to the onset of construction and

¹⁷ The County of San Diego typically describes community noise levels in terms of CNEL. CNEL is the average A-weighted sound level during a 24-hour day. It is obtained after adding 5 dB to sound levels in the evening hours (7:00 p.m. to 10:00 p.m.) and adding 10 dB to the sound levels at night (10:00 p.m. to 7:00 a.m.). The 5-dB and 10-dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours.

construction may occur if active nests can be avoided and provided an adequate buffer or noise levels are documented to be below 60 dBA Leq at the nest site.

- When clearing, grading, or grubbing activities occur during the breeding season for raptors (January 15 to July 31, annually), nesting bird surveys shall be conducted by a qualified biologist for the San Diego County Department of Planning and Development Services to identify active nest locations. Construction activities shall be restricted or modified such that noise levels related to those activities are below 60 dBA Leq, or other Wildlife Agency approved restrictions, in the vicinity of any active nest sites.
- Uses in or adjacent to the preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise-reduction measures or be curtailed during the breeding season of sensitive bird species.

2.7.1 Existing Conditions

2.7.1.1 Existing Land Uses and Noise

Otay Lakes Road forms the southern boundary of the Project site and provides the primary ingress and egress to the Project site. A private restricted-use airfield, the John Nichols Field Airfield, is located at the southeastern end of the Project site across from Otay Lakes Road. The proposed Project is not immediately adjacent to any existing developed property.

The primary existing noise source on the project site and within the project vicinity is vehicle traffic on Otay Lakes Road. Existing average daily traffic (ADT) volumes on Otay Lakes Road in the vicinity of the proposed project are approximately 2,927 with a roadway level of service (LOS) B (e.g., free flow for traffic) (Chen Ryan 2015). The secondary existing noise source at the project site and vicinity is aircraft high altitude flyovers from commercial, private, and military aircraft, and low altitude flyovers from daytime only skydiving jump plane takeoffs from the adjacent west end of the airfield runway, over Otay Lakes Road and the adjacent project site boundary. Annual jump plane activity is estimated at 7,500 departures, which varies daily (up to 30 -50 jump plane departures on a busy day) depending upon weather/wind, and scheduled commercial and Navy skydiving jumps being conducted (Mead & Hunt 2013).

Ambient noise measurements, primarily for vehicle traffic noise on Otay Lakes Road, were conducted at the Project site and in the developed community west of the Project site in the City of Chula Vista to determine existing noise conditions. Refer to the Noise Study, **Appendix C-11** for the equipment used and equipment specifications. Noise measurements were taken at seven locations as shown in **Figure 2.7-1** and **Figure 2.7-2**. Locations 1, 2, 3, and 7 are located in the developed community west of the Project site, along Otay Lakes Road, Clubhouse Drive, and Greensview Drive, to measure conditions in the immediate Project vicinity. Locations 4, 5, and 6 are located on Otay Lakes Road adjacent to the Project site to measure existing on-site conditions. The ambient noise level ranges are based on L₉₀ measurements for each location. L₉₀ measurements represent the noise level value that is exceeded at least 90 percent of the time during the course of measurement. A summary of the noise measurements taken at the seven

locations is provided in **Table 2.7-1**. As shown in **Table 2.7-1**, on-site background noise levels were measured between 35 dBA L_{90} and 43 dBA L_{90} , with higher background noise levels nearest Otay Lakes Road at the eastern end of the Project site, which is likely due to the influence of John Nichols Field. Off-site background noise levels in the Project vicinity were measured between 44 dBA L_{90} and 57 dBA L_{90} , with background noise levels of 50 dBA L_{90} or greater near Otay Lakes Road.

Noise measurements, primarily from jump plane takeoffs and flyovers, were also conducted at the project site boundary, nearest the west end of the John Nichols Airfield runway along Otay Lakes Road. During a one-hour measurement, the noise levels of two jump takeoffs and their low altitude flyovers and landings were recorded. A summary of the measurement is presented in **Table 2.7-2**. As shown in **Table 2.7-2**, jump plane flyovers from runway takeoffs (lasting approximately 20 seconds each) recorded maximum noise levels of 86 and 96 dBA L_{max} , for several seconds when the planes were approximately 100 feet overhead at the property line adjacent to Otay Lakes Road. However, the measurements also included passing traffic on Otay Lakes Road. With no vehicle or aircraft activity, ambient noise levels were observed as low as 32 dBA L_{min} . The one-hour average noise level at this location for this period was approximately 63 dBA L_{eq} .

2.7.1.2 Regulatory Setting

California Code of Regulations

Title 24 of the California Code of Regulations requires that residential structures, except detached single-family dwellings, be designed to prevent the intrusion of exterior noise so that the interior CNEL with windows closed, attributable to exterior sources, shall not exceed 45 dBA in any habitable room.

San Diego County General Plan

The following Goal and Policies of the County General Plan Noise Element is relevant to the Project:

GOAL N-2

Protection of Noise Sensitive Uses. A noise environment that minimizes exposure of noise sensitive land uses to excessive, unsafe, or otherwise disruptive noise levels.

Policies

N-2.1 Development Impacts to Noise Sensitive Land Uses. Require an acoustical study to identify inappropriate noise level where development may directly result in any existing or future noise sensitive land uses being subject to noise levels equal to or greater than 60 dBA CNEL and require mitigation for sensitive uses in compliance with the noise standards listed in Table N-2.

N-2.2 Balconies and Patios. Assure that in developments where the exterior noise level on patios or balconies for multi-family residences or mixed-use developments exceed 65 dBA CNEL, a solid noise barrier is incorporated into the building design of the balconies and patios while still maintaining the openness of the patio or balcony.

For all projects except single-family detached dwellings, exterior noise is defined as “noise measured at all exterior areas that are provided for group or private usable open space purposes.” For single-family projects, exterior noise is defined as “noise measured at an outdoor living area that adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:

- Net lot area up to 4,000 square feet: 400 square feet
- Net lot area 4,000 square feet to 10 acres: 10 percent of net lot area
- Net lot area more than 10 acres: 1 acre

County of San Diego Noise Ordinance

The County Noise Ordinance, Section 36.404, sets limits on the noise levels generated from one property to another, such as from mechanical equipment. Section 36.410 of the Noise Ordinance also regulates noise generated by construction activities.

Section 36.404. Sound Level Limits

Unless a variance has been applied for by an applicant and granted by the County, it is unlawful for a person to cause or allow noise generated on a particular property to exceed the 1-hour average sound level set forth in Section 36.404 and shown herein as **Table 2.7-3**. The noise level limits vary with the zoning of the properties concerned. The proposed Project site is currently zoned Specific Plan (S88) and Open Space (S80). Adjacent properties are zoned S80, Agriculture (A72), and Limited Control (S87).

Section 36.408. Hours of Operation of Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

- (a) Between 7 p.m. and 7 a.m.
- (b) On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410.

Section 36.409. Sound Level Limitations on Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level

of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Section 36.410. Sound Level Limitations on Impulsive Noise

In addition to the general limitations on sound levels in section 36.404 and the limitations on construction equipment in section 36.409, the following additional sound level limitations shall apply:

- (a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410A, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410A are as described in the County Zoning Ordinance.

City of Chula Vista General Plan

The Environmental Element of the City's General Plan contains applicable noise/land use compatibility guidelines, which are shown in **Table 2.7-4**. Policies from the City's General Plan relevant to this noise analysis include:

- EE 21.1 Apply the exterior land use-noise compatibility guidelines (contained in **Table 2.7-4**) to new development where applicable and in light of project-specific considerations.
- EE 21.3 Promote the use of available technologies in building construction to improve noise attenuation capacities.
- EE 22.5 Where necessary, require appropriate mitigation measures in order to attenuate existing and projected traffic noise levels in accordance with applicable standards, including the exterior land use-noise compatibility guidelines (contained in **Table 2.7-4**).

According to **Table 2.7-4**, all land uses are considered incompatible with noise levels in excess of 75 dBA CNEL. Offices, businesses, churches, athletic fields, and community parks are considered incompatible in excess of 70 dBA CNEL. Residences, schools, neighborhood parks, and libraries, are considered incompatible in excess of 65 dBA CNEL (City 2005).

City of Chula Vista Noise Ordinance

Chapter 19.68 of the City's Zoning Code, the Noise Control Ordinance, requires that "no person shall operate or cause to be operated, any source of sound ... or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the

noise level to exceed ... the applicable limits given in Table III.” Construction noise and the noise from motor vehicles operating on public ROW are exempt from these standards. **Table 2.7-5** includes the applicable portion of Table III of the noise ordinance. The ordinance states that if the measured ambient level exceeds that permissible as shown in **Table 2.7-5**, the allowed noise exposure shall be the ambient noise level, measured from the noise source.

Section 17.24.0040B of the City’s Municipal Code restricts the hours of construction activity, as follows: “The use of any tools, power machinery or equipment or the conduct of construction and building work in residential zones so as to cause noises disturbing to the comfort and repose of any person residing or working in the vicinity, between the hours of 10:00 p.m. and 7:00 a.m., Monday through Friday, and between the hours of 10:00 p.m. and 8:00 a.m., Saturday and Sunday, except when the same is necessary for emergency repairs required for the health and safety of any member of the community.” Any construction activities that occur within the City would need to occur during these times.

2.7.2 Analysis of Project Effects and Determination as to Significance

2.7.2.1 Noise Sensitive Land Uses Affected by Airborne Noise

Noise generated as a result of the proposed Project would affect noise sensitive land uses located both within the County of San Diego and the City of Chula Vista. Accordingly, in assessing Project impacts, the analysis applies the significance criteria specific to each respective jurisdiction. That is, for impacts within the County, the County criteria are applied, and for impacts within the City, the City’s criteria are applied. The relevant criteria for each jurisdiction are presented below.

County Guidelines for the Determination of Significance

The following significance guidelines are based on the Guidelines for Determining Significance and Report and Content Requirements for Noise approved by DPLU on January 27, 2009. A significant noise impact would occur if the Project:

- Results in the exposure of any on- or off-site, existing or reasonably foreseeable, future noise-sensitive land use to exterior or interior noise (including noise generated from the Project, together with noise from roads, railroads, airports, heliports, or all other noise sources) in excess of any of the following:
 - A. Exterior Locations:
 - i. 60 dB (CNEL); or
 - ii. An increase of 10 dB (CNEL) over pre-existing noise.

In the case of single-family residential detached noise sensitive land use (NSLU), exterior noise shall be measured at an outdoor living area that adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:

- 1) Net lot area up to 4,000 square feet: 400 square feet

- 2) Net lot area greater than 4,000 square feet and up to 10 acres: 10 percent of net lot area
- 3) Net lot area over 10 acres; 1 acre

For all other projects, exterior noise shall be measured at all exterior areas provided for group or private usable open space.

B. Interior Locations:

- i. 45 dB (CNEL) except for the following cases:
 - 1) Rooms that are usually occupied only a part of the day (schools, libraries, or similar facilities), the interior 1-hour average sound level due to noise outside should not exceed 50 decibels (A); and
 - 2) Corridors, hallways, stairwells, closets, bathrooms, or any room with a volume less than 880 cubic feet.
- Generates airborne noise (from all noise sources) that would exceed the following standards listed in the San Diego County Code of Regulatory Ordinances, Section 36.404, Sound Level Limits, at or beyond the property line:
 - 7 a.m. to 10 p.m. 50 dB
 - 10 p.m. to 7 a.m. 45 dB
- Generates an average sound level greater than 75 dB for an 8-hour period between 7 a.m. and 7 p.m., when measured at the property line of the property where the noise source is located or on any occupied property where the noise is being received.
- Produces an impulsive noise that exceeds the maximum sound level of 82 decibels measured at the property line of occupied property of a residential, village zoning, or civic use; or 85 decibels at occupied property of an agricultural, commercial, or industrial use. For a public road project, the maximum sound level is 85 decibels measured at the property line of occupied property of a residential, village zoning, or civic use; or 90 decibels at occupied property of an agricultural, commercial, or industrial use.
- Produces an impulsive noise that exceeds Caltrans recommended vibration thresholds of 0.2 peak particle velocity (PPV) (Caltrans 2002).

Rationale for Selection of Guideline

The establishment of exterior and interior sound level limits is in accordance with Policy N-2.1 of the Noise Element of the County General Plan.

City Guidelines for the Determination of Significance

The following significance criteria, adapted from Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a noise impact. Impacts to noise would be significant if the proposed project would:

- Result in the exposure of persons to or generation of noise levels in excess of standards established in the City of Chula Vista General Plan or noise ordinance, or applicable standards of other agencies:

According to the Environmental Element of City General Plan, as shown in **Table 2.7-4**, all land uses are considered incompatible with noise levels in excess of 75 dBA CNEL. Offices, businesses, churches, athletic fields, and community parks are considered incompatible in excess of 70 dBA CNEL. Residences, schools, neighborhood parks, and libraries, are considered incompatible in excess of 65 dBA CNEL (City 2005).

According to the City of Chula Vista Municipal Code, Chapter 19.68.010, Performance Standards and Noise Control, Exterior Noise Standards, as shown in Table 2.7-5, exterior noise levels are not to exceed the following limits at the property line:

Residential (except multiple dwelling)

- 7 a.m. to 10 p.m. 55 dB L_{eq}
- 10 p.m. to 7 a.m. 45 dB L_{eq}

Multiple Dwelling Residential

- 7 a.m. to 10 p.m. 60 dB L_{eq}
- 10 p.m. to 7 a.m. 50 dB L_{eq}

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial increase would be considered an increase of 10 dB (CNEL) over preexisting noise.

Rationale for Selection of Guideline

The establishment of exterior noise standards is in accordance with the City of Chula Vista Municipal Code, Chapter 19.68.010, Performance Standards and Noise Control, Exterior Noise Standards (City 2013).

Analysis

VEHICLE TRAFFIC NOISE

County of San Diego

Permanent increases in ambient noise levels are most often associated with noise from vehicular sources. Otay Lakes Road would be the primary source of on- and off-site traffic noise associated with Project operation. A secondary source of on-site traffic noise would be Strada Piazza, which functions as a collector road for access between residential areas and Otay Lakes Road and to the school site, parks, and the mixed-use center. According to the Project traffic study (Chen Ryan 2015), approximately 86 percent of Project traffic would travel on Otay Lakes Road west of the Project's west entrance and 14 percent would travel to the east toward Highway 94. Approximately 17 percent of Project traffic would use Wueste Road and 16 percent would use Hunte Parkway for travel between destinations to the west and south. Only 5 percent or less

would travel north from Otay Lakes Road. **Table 2.7-6** shows existing traffic volumes without and with the Project and the resulting change in dBA at locations where the increase from traffic noise would be 1.0 dBA or greater.

As shown in **Table 2.7-6**, the County segments that would have noise levels that noticeably increase would be Otay Lakes Road between Wueste Road and Driveway #2 (Strada Piazza) of 9 CNEL increase, and between Driveway #2 and #3 of 4 CNEL increase.

Currently, along Otay Lakes Road between Driveway #1 and Driveway #2, there are no noise-sensitive receptors. One NSLU is located between Lake Crest Drive and Wueste Road, north of Otay Lakes Road, approximately 870 feet from the centerline of Otay Lakes Road and approximately 90 feet above the existing roadway grade. Based on the noise levels presented in **Table 2.7-6**, existing plus project noise levels from Otay Lakes Road would attenuate to approximately 58 CNEL or less at this distance. Thus, the 9 dBA increase over existing noise levels would be **less than significant** as noise levels at this County receiver would be below the County's noise and land uses compatibility level of 60 CNEL.

Along Otay Lakes Road between Driveway #3 and SR-94, the only potentially noise-sensitive land uses along this location would be the Thousand Trail Recreational Vehicle (RV) Park approximately 130 feet south of Otay Lakes Road. Based on the 2011 General Plan Noise Element, noise levels below 70 CNEL are acceptable for active use parks and 65 CNEL is acceptable for passive parks. Based on the noise levels presented in **Table 2.7-6**, increases of approximately 3 CNEL would occur east of driveway #3, and noise levels at 100 feet from the center of the roadway would reach 62 CNEL. The nearest RV space used for camping is located 240 feet from the centerline of Otay Lakes Road and the swimming pool/playground area is approximately 130 feet from the centerline of Otay Lakes Road. At these distances, the noise levels presented in **Table 2.7-6** would be less than 65 CNEL. Therefore, land uses along Otay Lakes Road would be compatible with existing and future noise levels, and no direct noise impacts would occur along County roadways.

In addition, future 2030 PM peak-hour traffic volumes along the Project frontage of Otay Lakes Road would range from 950 trips east of Driveway #3 (Strada Ravenna) to 2,520 trips west of Driveway #1. The predicted 2030 peak-hour traffic volumes along on-site segments of Otay Lakes Road could expose sensitive receptors to noise levels in excess of applicable standards.

To evaluate the noise levels that sensitive receptors would be exposed to as a result of the proposed Project, the future exterior CNEL was calculated for proposed residential lot locations (i.e., receptors) within the Project boundaries at 5 feet above grade elevation and 15 feet back from the property line at the rear of the properties fronting Otay Lakes Road. All posted speed limits were assumed to be actual traffic speeds for purposes of noise modeling. The traffic mix used for Otay Lakes Road assumes a mix of 95 percent automobile, 2.6 percent medium trucks, and 2.4 percent heavy trucks. All receptors were modeled using a drop-off rate of 3 dBA per doubling of distance.

As shown in **Table 2.7-7** and **Figures 2.7-3, 2.7-4, and 2.7-5**, operation of the proposed Project could expose 20 residential receptor sites to exterior noise levels greater than 60 dBA CNEL that

would affect patios and other outdoor living areas and *a **potentially significant** noise impact would occur (Impact N-1)*. **Figures 2.7-3, 2.7-4, and 2.7-5** show potential locations of noise-impacted lots on the Project site and the height of noise barriers that would be required to reduce exterior noise levels at these locations to 60 dBA CNEL or less, and thereby reduce the impact to *less than significant*.

County of San Diego standards require an interior noise assessment for residential areas exposed to noise levels greater than 60 dBA CNEL. At receptor locations 2, 8, 10, 12, 17, 21, 28, 32, 37, 56, 57, 58, 60, 117, 124, 135, 138, 155, 159, and 162 exterior noise levels could exceed 60 dBA CNEL. Therefore, *interior noise impacts to residential lots at these locations are considered **potentially significant** (Impact N-1)*.

City of Chula Vista

As shown in **Table 2.7-6**, the City segments with a noticeable increase would be Otay Lakes Road between Hunte Parkway and Woods Drive of a 4 CNEL increase, Woods Drive and Lake Crest Drive of a 5 CNEL increase, and Lake Crest Drive and Wueste Road with an 8 CNEL increase. Direct impacts within Chula Vista would be limited to Otay Lakes Road between Hunte Parkway and Wueste Road, where noise levels would increase by 4 to 8 dBA over existing conditions.

Residential, institutional, and recreational NSLUs are located north and south of the Otay Lakes Road between Hunte Parkway and Wueste Road at least 100 feet from the centerline of Otay Lakes Road. In addition, these NSLUs are shielded from Otay Lakes Road by a 6-foot-high solid wall. This type of wall typically provides the minimum noise level reduction for breaking the line of sight, i.e., 5 dBA. Based on the noise levels presented in **Table 2.7-6**, unshielded noise levels would be as high as 68 CNEL at the rear yards of these residences; however, with the existing walls and topography, noise levels inside the rear yards would be at least 5 dBA below these reported levels. Thus, existing plus project noise levels at these NSLUs are anticipated to be 63 CNEL or less, and therefore, compatible with the City's 65 CNEL as acceptable for residential uses. Thus, the 4 to 8 CNEL increase over existing noise levels would be less than significant along these roadway segments. Therefore, the proposed project would result in a **less than significant** direct off-site impact due to project-related traffic noise.

AIRCRAFT NOISE

The centerline of the single runway at John Nichols Airfield is located approximately 850 feet south of the Project site across from Otay Lakes Road. The nearest proposed houses would be located approximately 1,025 feet north of the centerline of the main runway. No noise contours have been developed for this private, restricted-use (daytime commercial skydiving) airfield.

Two site visits have been conducted. On one day, minimal to no flight operations were observed, and on another day with maximum flight operations of 3 flights per hour were observed. During the noise monitoring specifically for vehicle traffic on Otay Lakes Road (**Table 2.7-1**), one small, single-engine propeller airplane landed during measurement 6 (see Figure 2.7-2)

generating a short-term noise level of 64 dBA (**Table 2.7-1**) for approximately 2 seconds as it passed overhead.

Noise measurements, primarily from jump plane takeoffs and flyovers, were also conducted at the project site boundary nearest the west end of the John Nichols Airfield runway along Otay Lakes Road. During a one-hour measurement, the noise levels of two jump takeoffs and their direct low altitude flyovers and landings were recorded. A summary of the measurement is presented in **Table 2.7-2**, which also shows the sound exposure levels (SEL) for the takeoff, flyover, and landing events.

As shown in **Table 2.7-2**, the direct jump plane flyovers from the two runway takeoffs (lasting approximately 20 seconds each) recorded maximum noise levels of 86 and 96 dBA L_{max} , respectively, for several seconds when the planes were approximately 100 feet directly overhead at the property line adjacent to Otay Lakes Road. However, the measurements also included passing traffic on Otay Lakes Road, typically 65 – 69 dBA L_{max} at this location, including passing emergency vehicles at 96 dBA L_{max} . With no vehicle or aircraft activity, ambient noise levels were observed as low as 32 dBA L_{min} . The one-hour average noise level at this location for this period was approximately 63 dBA L_{eq} .

The 2013 Mead & Hunt study stated that annual jump plane activity is estimated by the airfield operator at 7,500 departures (15,000 total operations). This average annual operation was used to calculate the CNEL due to jump plane activity. As shown in **Table 2.7-2**, the maximum noise level for a jump plane takeoff and flyover (not affected by emergency vehicle noise) is 86 dBA L_{max} and the maximum noise level for a jump plane landing is 70 dBA L_{max} . The measured SEL for a jump plane takeoff and flyover is 91 dBA and the measured SEL for a jump plane landing is 82 dBA. The noise levels for takeoffs, flyovers, and landings were calculated from the measured SELs using the following equation:

$$CNEL = SEL + 10 \cdot \log(N) - 49.4$$

Where, N is equal to the number of events during the daytime hours. As noted above, jump planes only operate during the daytime.

Using this equation, it was calculated that jump plane takeoffs and flyovers generate a CNEL of 54.8 dBA and landings generate a CNEL of 45.8 dBA. This results in a combined noise level of 55 dBA CNEL at the measurement location. As discussed in Section 2.7.1.1, the measurements were taken at the project site boundary nearest the west end of the airfield's Runway 27, in the overhead path of jump plane takeoffs from the runway over Otay Lakes Road.

Impacts from aircraft noise would be **less than significant** because no NSLUs would be exposed to noise levels greater than 60 dBA CNEL from maximum daily aircraft operations at John Nichols Airfield. Additionally, since the proposed Project would not feature land uses that involve the generation of aircraft noise, there would be *no significant impacts* associated with this activity.

AIRCRAFT NOISE PLUS TRAFFIC NOISE

The following assessment presents a combined assessment of traffic and aircraft noise. This assessment should be considered a worst case scenario, as the actual averaging periods of the two sources are not equal. While the CNEL is typically used to determine compatibility of land uses with vehicular traffic and aircraft noise, a traffic CNEL is calculated from a theoretical maximum traffic volume on a roadway and an aircraft CNEL is based on a theoretical average annual operations. However, for purposes of this noise assessment, the CNEL values used in the traffic and aircraft analyses are considered to be equivalent.

Figure 2.7-5 shows the proximity of the 60 dBA CNEL contour from vehicle traffic noise on Otay Lakes Road to potential locations of noise-impacted lots on the project site. As shown on **Figure 2.7-5**, the 60 dBA CNEL contour is adjacent to but does not cross over the residential lots along Otay Lakes Roads near the west end of the airfield runway; therefore, none of these residences have proposed noise barriers for traffic noise alone. As shown in **Appendix C-11**, Table 7 Traffic Noise Model Results identifies exterior noise levels at the NSLU located in the vicinity of the flight path adjacent to Otay Lakes Road (Receivers 45, 46, 47, 154, and 167) range from 53 to 58 dBA CNEL. With the addition of aircraft noise at these locations, combined noise levels would range from 57 to 60 dBA CNEL. Additionally, due to the relatively lower aircraft noise levels, aircraft noise would not affect the vehicle traffic contour lines shown in **Figure 2.7-5**. Thus, even considering the combination of aircraft and vehicle traffic, future noise levels would not exceed 60 dBA CNEL and no additional mitigation would be required. Therefore, aircraft operations at John Nichols Airfield would result in *less than significant* noise impacts.

2.7.2.2 Project-Generated Airborne Noise

Guidelines for the Determination of Significance

A significant noise impact would occur if the Project:

- Generates airborne noise (from all noise sources) that would exceed the following standards listed in the San Diego County Code of Regulatory Ordinances, Section 36.404, Sound Level Limits, at or beyond the property line:
 - 7 a.m. to 10 p.m. 50 dB
 - 10 p.m. to 7 a.m. 45 dB

Rationale for Selection of Guideline

The operational noise objective is based on the potential for noise generated by on-site uses from stationary sources to impact nearby NSLUs. These uses would include commercial and industrial uses, mechanical equipment used for heating and air conditioning, and activities such as large delivery trucks idling while unloading, and pump stations for wastewater conveyance.

Analysis

Potential NSLUs that may be affected by noise generated on-site during Project operation would include on-site residential, recreational, day care, and school land uses developed by the proposed Project, and surrounding residential land uses. The primary on-site noise source would be mechanical equipment used for heating and air conditioning. In addition, the commercial and resort land uses would generate noise from delivery activities. The following analysis is based on typical equipment installation practices and does not take into consideration voluntary measures that could be taken to achieve an increased level of noise abatement, such as locating all emergency generators within enclosures, behind barriers, or oriented within the site design to eliminate the line of sight between sensitive receptors and generators.

HVAC Equipment

HVAC equipment could be a primary noise source associated with commercial or public facility uses. HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from HVAC equipment vary substantially depending on unit efficiency, size, and location, but generally range from 45 to 70 dBA L_{eq} at a distance of 50 feet (U.S. Environmental Protection Agency [EPA] 1971). Accounting for typical attenuation rates of 6 dB per doubling of distance, noise levels attributed to unshielded HVAC mechanical systems could exceed the County noise limit stated above within 475 feet of the source. In addition, sources located within 800 feet of noise-sensitive land uses could exceed the County noise limit for nighttime stationary-source noise. As a result, noise from HVAC equipment under the proposed Project would be a ***potentially significant impact*** (**Impact N-2**).

Wastewater Pump Stations

Pump stations (i.e., lift stations) are associated with the wastewater collection and conveyance systems of residential developments, in which changes in elevation due to varied topography, require pumps at specific locations in the wastewater pipeline system to pump the wastewater up-grade under pressure. The Project proposes three on-site pump stations that would be required at the locations identified in Figure 1.0-6, as well as on **Figures 2.7-3, 2.7-4, and 2.7-5**.

The proposed pump stations would be constructed as both below- and above-grade facilities and each include three 30-horsepower (hp) pumps (**Figure 2.7-6**). The pumps would be submersible below-grade in a wet well, and operate as needed based on wastewater flow demands, typically during and after peak water use in the morning and evening, and to a lesser degree at night. Based on similar enclosed pump stations, the proposed pump station operation would generate 45 dBA at 15 feet from the access hatch of the pump station.

The County of San Diego noise ordinance sets an exterior hourly noise limit for land uses adjacent to residential properties of 50 dBA L_{eq} for daytime hours (7 a.m. to 10 p.m.) and 45 dBA L_{eq} during nighttime hours (10 p.m. to 7 a.m.). Therefore, the operational pump noise would not exceed the County noise level limits at surrounding residential property, if the pump station access door is located at least 15 feet from an adjacent residential property line. The

proposed pump stations, as shown on **Figures 1.0-6, 2.7-3, 2.7-4, and 2.7-5**, are located greater than 15 feet, from their nearest respective residential property line. Therefore, the operational noise levels of the pump stations would attenuate with these distances to below the most stringent County noise level limit of 45 dBA L_{eq} during nighttime hours at a residential property line. Therefore, *this impact is considered less than significant*.

Emergency Generators

Emergency gas-powered generators may be used during power outages as backup supply of necessary power requirements to vital systems within the proposed facilities constructed on the school, resort, public safety, and mixed-use land uses. Emergency generators are typically operated during loss of main electrical supply or preventive maintenance/testing. The operation of emergency generators with rated power outputs of 1,500 kilowatts (kW) can generate noise levels of approximately 95 dBA at 7 meters (23 feet) (Cummins Power Generation 2 009), which would attenuate to the County noise limits for stationary sources at approximately 3,500 feet (daytime) and 6,000 feet (nighttime).

Each of the three proposed pump stations associated with the wastewater collection and conveyance systems of the residential developments, would include an 80 kilowatt emergency back-up gas-powered generator, which, during a system power failure, would be activated and operational to provide temporary electrical power. In addition, these generators would be temporarily activated for regular maintenance and testing during the County's Noise Ordinance allowable hours during the daytime. The pump stations would be enclosed in the above-grade portion of the pump station. Operational noise level of the enclosed 80 kW generator is rated at 68 dBA at 23 feet. Therefore, the generator noise would attenuate to below the County nighttime limit of 45 dBA at approximately 400 feet from the pump station, assuming a drop-off rate of 6 dBA per doubling of distance. However, the proposed pump stations, as shown on **Figures 1.0-6, 2.7-3, 2.7-4, and 2.7-5**, are located less than 400 feet from their nearest respective residential property line. Therefore, the emergency generator associated with each pump stations could generate noise levels exceeding County standards. This impact would be *potentially significant (Impact N-2)*.

Emergency Facilities

The proposed land uses would also include emergency facilities such as fire stations that generate high noise levels from alarms and vehicle movements when station crews respond to emergency situations. The noise levels associated with the operation of emergency activities are exempt from the County Noise Ordinance and, thus, considered a *less-than-significant impact*.

Parking Lot Activities

Parking lots are expected to be included in the community commercial, school, and resort land uses. The details required to accurately predict noise emissions from car parking activities, location, size, and parking demand are not yet available. Therefore, the potential impact of noise generated by parking lot operations is evaluated in this analysis using a representative scenario.

Activities making up a single parking event included vehicle arrival, limited idling, occupants exiting the vehicle, door closures, conversations among passengers, occupants entering the vehicle, startup, and departure of the vehicle. A representative parking lot with 200 stalls and 400 parking events per hour would produce a noise level that exceeds the County standard for the daytime at distances up to 200 feet and exceeds the nighttime noise standard at distances up to 350 feet. Based on the Project land use plan it is likely that residential land uses would be within 350 feet of commercial areas. Therefore, the impact of noise generated from parking lot activities is considered a *potentially significant impact* (**Impact N-3**).

Loading Dock and Delivery Activity

Noise sources associated with loading dock and delivery activities can include trucks idling, on-site truck circulation, trailer-mounted refrigeration units, pallets dropping, and the operation of forklifts. Noise monitoring at loading docks previously undertaken by EDAW indicates that typical hourly average noise levels range from 55 to 60 dBA L_{eq} and from 80 to 84 dBA L_{max} at a distance of 50 feet (EDAW 2006). Based on these previously measured noise levels, the County's daytime stationary noise criterion would be exceeded approximately 300 feet from the acoustic center of the loading dock and the nighttime stationary noise criterion would be exceeded approximately 170 feet from the acoustic center of the loading dock.

Based on the land use plan of the Project and four alternatives, it is likely that residential land uses would be within 170 feet of commercial areas. Therefore, noise generated from loading dock and delivery activities is considered a *potentially significant impact* (**Impact N-3**).

Recreational and Educational Activities

Activities in the proposed parks, open spaces, and schools would also be sources of noise. The County Noise Ordinance considers noise from public or private schools exempt from the Code. Noise associated with outdoor recreation areas would generally take place during daylight hours and at distances at least 50 feet from on-site residences. In addition, any activities taking place within parks considered a nuisance would be illegal under the County Noise Ordinance and would be enforced by law enforcement officers. Thus, since noise would either be exempted from standards or controlled by law enforcement, no standard violation would be expected to occur from recreational and education activities. This impact is considered *less-than-significant*.

Other Stationary Noise Sources

No large stationary noise sources, such as a power plant or an industrial operation, are planned as part of the Project. However, at this stage of Project design and planning, information necessary for the assessment of noise impacts, such as equipment manufacturers and models or loading dock locations, is unavailable. Noise generated by on-site land use activities associated with the proposed Project could, therefore, result in a substantial permanent increase in ambient noise levels in the Project vicinity and exceed the sound level limits of Section 36.404 of the County Noise Ordinance. Therefore, noise generated on-site during operation of the proposed Project is considered a *potentially significant impact* (**Impact N-3**).

2.7.2.3 Construction Noise

Guidelines for the Determination of Significance

A significant construction noise impact would occur if the Project:

- Generates an average sound level greater than 75 dB for an 8-hour period between 7 a.m. and 7 p.m., when measured at the property line of the property where the noise source is located or on any occupied property where the noise is being received.

Rationale for Selection of Guideline

Construction causes the exposure of on- or off-site areas to noise associated with Project-related activities, including site grading, truck/construction movement, engine noise, rock excavation, and rock crushing. Noise from rock blasting associated with the Project is addressed below in Section 2.7.2.4.

Analysis

Construction of the proposed Project is anticipated to occur over a period of 10 years. It is anticipated that all development areas would involve phased grading, with adjacent roads and utilities constructed in each phase.

Noise impacts associated with construction activities are a function of (a) noise generated by the construction equipment, (b) the location and sensitivity of nearby land uses, and (c) the timing and duration of noise-generating activities. Noise levels within and adjacent to the sites on which Project construction occurs would increase.

Construction activities would be carried out in distinct phases, with each phase exhibiting unique noise characteristics based on the mix of construction equipment in use. The maximum noise level ranges for various pieces of construction equipment at a distance of 50 feet are shown in **Table 2.7-8**, which presents maximum values, not the average sound level generally used in this assessment. The average sound level at construction sites is typically less than the maximum noise level because the equipment operates in alternating cycles of full and low power. Also, the equipment rotates in various directions (i.e., noisiest side of the equipment to quieter sides of the equipment) and moves around the construction site, especially during clearing and grading activities. Thus, the average noise levels produced are less than the maximum level.

Grading

Grading activities generally require the largest, heaviest equipment, typically generating the greatest 1-hour average noise levels. The noise levels at construction sites typically range from 65 to 88 dB L_{eq} at 50 feet from the center of the activity. Construction noise in a well-defined area typically attenuates at approximately 6 dB per doubling of distance. It is anticipated that the development would involve phased grading on-site, which may overlap road grading activities associated with the off-site widening of Otay Lakes Road west of the Project site. The phased grading of the site would occur non-sequentially over the 11 year development period, to allow

the development to be adjusted to market changes, economic conditions, and regulatory constraints. **Figure 1.0-10** provides the footprints of proposed phases labeled as colors. Phased development is anticipated to occur from west to east across the project site (e.g., sequence of blue, green, gold, copper, and orange phases), potentially with overlapping grading phases and periods of no grading activities.

Rock Drilling, Blasting, and Crushing

Due to the Project site's underlying geologic setting which includes much rock, site preparation would include some rock drilling for rock blasting, and subsequent on-site rock crushing for aggregate.

Drilling into the rock is necessary to create bore holes for the blasting materials. Rock drills generate airborne noise levels of approximately 80 to 98 dB at a distance of 50 feet. Drilling holes for a blasting event can last from several hours to several days depending upon the rock type, area of rock to be blasted, number of holes, the depth of the holes, and the effort required drilling through the rock. No more than one to two blasts would occur in any one area per day due to the time required to drill the holes as well as to insert and connect the blasting materials.

The exact extent and location of these activities on-site is unknown at this time. Thus, it has been assumed that rock drilling and blasting could potentially occur at any location on-site, as needed. Assuming drilling and blasting activities are conducted in proximity to residences, the loudest drill, operating worst-case (continuously for 8 hours for two blasts to be conducted), would potentially generate a maximum 8-hour average noise level of approximately 98 dB at 50 feet, which would attenuate with distance of approximately 800 feet or greater to below the County's noise ordinance criteria of 75 dBA averaged over an 8-hour period, depending upon the local site surface and whether any intervening topography or structures exist, and without noise mitigation.

The primary noise source of drill-blast operations is the drilling, not the blasting, due to the short duration of the subsurface-contained blast compared to the continuous hours of drilling activity exposed at the surface. When explosive charges detonate in rock, almost all of the available energy from the explosion is used in breaking and displacing the rock mass. However, some blast energy does escape into the atmosphere as a sequence of airborne sound waves (a phenomenon known as "air blast over-pressure"), which are very low frequency, below the human audible range. Very high blast over-pressure levels can rattle or sometimes break windows. However, air-blast over-pressure rarely reaches levels that could cause building damage with modern blasting practices. Exact blast charge weights and locations are not known at this time; thus, air blast pressures cannot be predicted at this time.

Residences in proximity to drill-blast areas could be subject to intermittent drilling and blasting activities over several months, depending upon the type and amount of rock encountered. After each blast, several days to a couple of weeks are required to remove blasted material before the next drilling and blasting sequence.

Crushing of the blasted rock may also occur on-site to transport and/or reuse the material for aggregate. A rock crusher generates higher noise levels than typical construction equipment as

noise is generated by the breaking of rocks as well as the diesel engine operating the crusher. Rock crushers are stationary with material stockpiles in proximity, and are therefore, located away from noise sensitive receptors. Rock crushing typically includes a dozer and a loader for loading the rock crusher. The combined noise level from all these pieces of equipment would be maximum of approximately 95 dBA L_{max} at 50 feet with an hourly average of approximately 92 dBA L_{eq} at 50 feet. Based on a conservative attenuation rate of 6 dBA per doubling of distance, noise levels from rock crushing activities would attenuate with distance to 75 dBA L_{eq} at approximately 350 feet, which would comply with the County's noise level limit for construction noise of 75 dBA averaged over an 8-hour period. However, if rock crushing occurs over longer periods, the County could impose stricter limits, such as 60 dBA CNEL, which would require a separation of approximately 2,000 feet between the rock crushing activities and the nearest property line. As no locations for rock crushing have been identified, mitigation measures have been included that would provide adequate setbacks to limit rock crushing noise levels at surrounding property lines and for on-site property lines if necessary to comply with County standards. Rock crushing operations would be established at appropriate locations on-site to minimize the line of sight to noise-sensitive receptors and, therefore, would reduce the impact of noise to sensitive receptors to the maximum extent practicable.

A rock crusher generates higher noise levels than typical construction equipment as noise is generated by the breaking of rocks as well as the diesel engine operating the crusher. However, because it does not move and the material stockpiles can be located in close proximity, the work area is easier to define for a rock crushing operation. Rock crushing would typically include the use of a dozer and a loader for loading the rock crusher. The combined noise level from all these pieces of equipment would be on the order of 92 dBA L_{eq} at 50 feet and 95 dBA L_{max} at 50 feet. No potential rock crushing locations have been identified as the location would typically be chosen based on distance to material and accessibility by haul trucks. Based on a conservative attenuation rate of 6 dBA per doubling of distance, noise levels from rock crushing activities would attenuate to 75 dBA L_{eq} at approximately 350 feet, which, at this distance would comply with the County's noise level limit for construction noise of 75 dBA averaged over an 8-hour period.

On-site Construction Noise Impacts

On-site noise-sensitive receptors would be residents of homes completed during earlier phases of construction and inhabited during times that later phases of Project construction are taking place. Based on the Project phasing plan, it has been assumed that future development construction sites would be as near as 50 feet from these occupied residences. At 50 feet, the hourly average construction noise levels, primarily due to site grading (not associated with rock drilling, blasting, or crushing), would be at or below 75 dBA L_{eq} at 50 feet from the activity, with maximum noise levels of 88 dBA L_{max} during peak construction activity. Such noise levels could create temporary annoyance; however, peak noise levels would occur only sporadically, since not all equipment would be operating at all times and most construction activity would actually take place at longer distances from the receivers. Therefore, since the average noise level at 50 feet would be at or below 75 dBA L_{eq} , and no construction work would be performed during hours prohibited by the County Noise Ordinance, this impact would be ***less than significant***.

For potential rock drilling/blasting activities on-site, the exact location and extent is unknown at this time; however, these activities could potentially occur at any location on-site where rock is encountered. Assuming drilling and blasting activities are conducted in proximity to residences, the loudest drill, operating worst-case (continuously for 8 hours for two blasts to be conducted), would potentially generate a maximum 8-hour average noise level of approximately 98 dBA L_{eq} at 50 feet, which would attenuate with distance of approximately 800 feet or greater to below the County's noise ordinance criteria of 75 dBA L_{eq} averaged over an 8-hour period, depending upon the local site surface and whether any intervening topography or structures exist, and without noise mitigation.

Crushing of the blasted rock for aggregate may also occur on-site. Rock crushers are stationary with material stockpiles in proximity, and are therefore, located away from noise sensitive receptors. Rock crushing would generate approximately 95 dBA L_{max} at 50 feet with an hourly average of approximately 92 dBA L_{eq} at 50 feet, which would attenuate with distance to 75 dBA L_{eq} at approximately 350 feet, which would comply with the County's noise level limit for construction noise of 75 dBA L_{eq} averaged over an 8-hour daytime period.

Therefore, since it is feasible that construction noise impacts from rock drilling, blasting, and crushing may occur, this impact is ***potentially significant (Impact N-4)*** and a noise analysis assessing the proposed blasting and materials handling associated with the proposed Project would be required prior to County approval of the Final Map, Grading or Improvement Plan, or prior to Site Plan approval of residential development that may be impacted by rock drilling, blasting, and crushing.

Potential impulsive noise impacts associated with rock drilling and crushing are also analyzed below in Section 2.7.2.4, Impulsive Noise.

Off-site Noise Impacts from On-Site Construction

The nearest existing residential property is located approximately 850 feet north of the nearest roadway construction point on Otay Lakes Road and approximately 70 feet above the roadway atop a hill. The nearest residence to the Project's on-site construction is approximately 1,700 feet northwest of the nearest point of the proposed development. At 850 feet, the 1-hour average noise level would be approximately 54 dBA L_{eq} , although short-term noise levels may reach as high as 64 dBA for short periods typically less than 1 minute when several pieces of equipment are in proximity and the engines are under full load. Thus, the proposed Project would not violate the County Noise Ordinance threshold of an average sound level greater than 75 dBA L_{eq} and the impact on off-site sensitive receptors would be ***less than significant***.

Off-site Sewer Line Construction Noise Impacts

The Project proposes an off-site sewer line to the Salt Creek Interceptor, located approximately 2 miles west of the Project site. Construction noise impacts from construction of this line would be within existing public roads (along Otay lakes Road, west of Wueste Road). Improvements to Otay Lakes Road west of the project site include grading; trenching for utilities such as sewer and water, and paving. Unlike construction associated with on-site development, roadway

construction would be linear along a roadway's alignment. Thus, roadway construction noise levels are typically 72 dBA L_{eq} or lower at 50 feet from the edge of roadway construction. During maximum effort with several pieces of equipment operating at the same time in proximity or during pavement removal, maximum noise levels of 76 dBA L_{max} may be experienced at local residences; however, these would last for less than a few seconds at any specific time. Noise levels on this order would not exceed the County's construction noise levels limits. No sensitive land uses are within 50 feet of the proposed sewer expansion line along Otay Lakes Road. Therefore, noise from off-site sewer line construction would be in compliance with Section 36.410 of the County Noise Ordinance and the construction noise impact would be *less than significant*.

Off-site Construction Traffic Noise Impacts

Project construction would also result in a short-term increase in traffic on the local area's roadway network, but this increase would not be sufficient to increase traffic noise levels a substantial amount. It is expected that up to 160 employee commute trips would occur during the periods of maximum construction activity. Construction-related traffic would be distributed over the roadway network identified in the Otay Ranch Resort Village Construction Related Traffic Analysis Memorandum, (Fehr and Peers 2011a). Typically, traffic volumes must double to create an increase in perceptible (3 dBA) traffic noise (Caltrans 2009). The addition of construction related trips to the roadway network would result in a maximum daily noise increase of 2 dBA CNEL and 2 dBA L_{eq} during the AM peak hour. Construction trips would not affect the PM peak hour (see construction traffic modeling results in **Appendix D** of the Noise Impact Report). Therefore, construction traffic would not result in a 3 dBA increase in the daily or peak hour traffic noise levels and the additional construction-related traffic would have a *less than significant temporary increase in overall traffic noise levels*.

2.7.2.4 Impulsive Noise

Guidelines for the Determination of Significance

A significant impulsive noise impact would occur if the Project:

- Produces an impulsive noise that exceeds the maximum sound level of 82 decibels measured at the property line of occupied property of a residential, village zoning, or civic use; or 85 decibels at occupied property of an agricultural, commercial, or industrial use. For a public road project, the maximum sound level is 85 decibels measured at the property line of occupied property of a residential, village zoning, or civic use; or 90 decibels at occupied property of an agricultural, commercial, or industrial use.

Rationale for Selection of Guideline

The impulsive noise sound level limit is in accordance with Section 36.410 of the County Noise Ordinance. The threshold of significance is based on exceeding the noise level limits at the property line of occupied property for 25 percent of the minutes during the measurement period. The minimum measurement period is 1 hour, and measurements are to be conducted every 1

minute from a fixed location on the occupied property. If the measurement exceeds the maximum sound level limit for any portion of each minute of the measurement period, it will be deemed that the maximum sound level was exceeded during that minute.

Analysis

Rock Drilling, Blasting, and Crushing

Impulsive noise sources associated with construction activities generated by Project implementation could include blasting to break up bedrock close to the surface on the Project site. Using explosives to break rock generates low frequency sound waves that can damage buildings. However, techniques have been developed that allow blasting to be conducted in relative proximity to buildings without causing damage (e.g. noise blankets, multi-charges, reduced blast force).

Due to the geologic character of the Project site, explosive blasting and on-site rock breaking and drilling is anticipated during site preparation activities. At the current stage of the Project design, a blasting study has not been completed and no specific blasting locations are available. When explosive charges detonate in rock, almost all of the available energy from the explosion is used in breaking and displacing the rock mass. However, some blast energy escapes into the atmosphere as a sequence of airborne sound waves, a phenomenon known as “air blast over-pressure.” These sound waves are very low frequency, below the audible range. Very high blast over-pressure levels can rattle or in some cases break windows. However, with modern blasting practices air-blast over-pressure rarely reaches levels that could cause building damage.

The nearest off-site residential receptor to the blasting activities, a single-family residence northwest of the Project site, is approximately 1,700 feet from the nearest potential blasting site. At this distance, it is unlikely that blasting noise or materials handling would generate substantial noise impacts. However, since no blasting and materials handling plans are available, no exact blast charge weights, locations, and air blast noise levels can be determined.

The sudden and intense airborne noise potential created by a blast would create local ground-borne vibrations. The character of the blast and ground vibrations would be dependent on such factors as soil and rock type, amount and type of explosive used, depth below surface, and meteorological conditions. Drilling and blasting consists of drilling a pattern of holes in the face of the rock; loading the holes with explosives; detonating the explosives; ventilating the blasting gasses; and mucking the blasted rock.

Drilling into the rock is necessary to create bore holes for the blasting materials. Rock drills generate airborne noise levels of approximately 80 to 98 dB at a distance of 50 feet. Drilling holes for a blasting event can last from several hours to several days depending upon the rock type, area of rock to be blasted, number of holes, the depth of the holes, and the effort required to drill through the rock. No more than one to two blasts would occur in any one area per day because of the time required to drill the holes as well as to insert and connect the blasting materials.

Potential blasting locations have not been identified at this time. Assuming drilling and blasting activities are conducted in proximity to residences, the loudest drill, operating continuously for 8 hours for two blasts to be conducted, would generate an 8-hour average noise level of approximately 98 dB at 50 feet and would attenuate to below the County Noise Ordinance criteria of 75 dBA averaged over an 8-hour period at approximately 800 feet or greater, depending upon the local site surface and whether any intervening topography or structures exist, and without noise mitigation, such as construction of noise barriers.

The primary noise source of drill-blast operations is the drilling and not the blasting due to the short duration of the blast compared to the longer drilling activity. Residences in proximity to drill-blast areas would be subject to intermittent drilling and blasting activities over several months. After each blast, several days to a couple of weeks are required to remove blasted material before the next drilling and blasting sequence.

As stated above, the Project would also include rock crushing. No potential rock crushing locations have been identified as the location would typically be chosen based on distance to material and accessibility of haul trucks. Based on a conservative attenuation rate of 6 dBA per doubling of distance, noise levels from rock crushing activities would attenuate to 75 dBA L_{eq} at approximately 350 feet, which would comply with the County's noise level limit for construction noise. However, if rock crushing occurs over longer periods than what is specified in the County's Guidelines for Significance regarding noise, or at the discretion of the County, the County could impose stricter limits, such as 60 dBA, which would require a separation of approximately 1,000 to 2,000 feet between the rock crushing activities and the nearest property line depending on the intervening terrain. This distance can be substantially reduced through the use of shielding. However, as no locations for rock crushing have been identified, mitigation measures have been included that would provide adequate setbacks to limit rock crushing noise levels at surrounding property lines and for on-site property lines if necessary to comply with County standards.

Therefore, since it is feasible that noise impacts from rock drilling, blasting, and crushing may occur, *this impact is **potentially significant (Impact N-5)*** and a noise analysis assessing the proposed blasting and materials handling associated with the proposed Project would be required prior to County approval of the Final Map or prior to Site Plan approval of residential development that may be impacted by rock drilling, blasting, and crushing.

2.7.2.5 Groundborne Noise and Vibration

Guidelines for the Determination of Significance

A significant vibration impact would occur if the Project:

- Produces an impulsive noise that exceeds Caltrans' recommended vibration thresholds of 0.2 peak particle velocity (PPV) (Caltrans 2002).

Rationale for Selection of Guideline

Caltrans vibration impact assessment methodology recommends the above threshold for prevention of human disturbance and structural damage from vibration sources.

Analysis

Construction Equipment and Blasting

Construction activities produce varying degrees of ground vibration, depending on the equipment and methods employed. While ground vibrations from typical construction activities very rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive land uses are near the construction site. The construction activities that typically generate the highest levels of groundborne noise and vibration are blasting and impact pile driving.

As discussed above, on-site construction equipment that would cause most of the noise and vibration impacts would be associated with site grading. According to the Federal Transit Administration (FTA), vibration levels associated with the use of bulldozers range from approximately 0.003 to 0.089 inches per second (in/sec) peak particle velocity (PPV) and 58 to 87 vibration decibels (VdB referenced to 1 microinch per second [μ in/sec] and based on the root mean square [RMS] velocity amplitude) at 25 feet (FTA 2006). Using FTA's recommended procedure for applying a propagation adjustment to these reference levels, vibration levels would exceed County-recommended thresholds (0.0040 PPV) within 200 feet of bulldozers and 180 feet of trucks. The nearest residence to these activities could be a minimum of 50 feet across an established roadway during an adjacent development phase. Therefore, vibration levels during Project construction could exceed the FTA-recommended standard of 0.0040 in/sec PPV.

When explosive charges detonate in rock, almost all of the available energy from the explosion is used in breaking and displacing the rock mass. However, a small portion of the energy is released in the form of vibration waves that radiate away from the charge location. The strength, or "amplitude," of the waves is reduced as the distance from the charge increases. The rate of amplitude decay depends on local geological conditions but can be estimated with a reasonable degree of consistency, which allows regulatory agencies to control blasting operations by means of relationships between distance and explosive quantity.

Due to the geologic character of the Project site, explosive blasting and/or onsite rock breaking is anticipated during site preparation activities for the proposed Project. Thus, significant vibrations or groundborne noise impacts may be associated with construction of the proposed Project. At the current stage of the Project design, a blasting study has not been completed and no specific blasting timelines, blast numbers, or locations are proposed or available.

The explosive charges used in mining and mass grading are typically wholly contained in the ground. The nearest residential receptor to the blasting activities, a single-family residence northwest of the Project site, is approximately 1,700 feet from the nearest potential blasting site. At this distance, it is unlikely that blasting vibration or materials handling would generate

substantial vibration impacts. However, as blasting plans and materials handling plans are not currently available, the amount of vibration cannot be predicted and the possibility that blasting would occur after Project homes have been occupied does exist.

Therefore, the potential exists for *potentially significant vibration impacts* to occur (**Impact N-6**) and a vibration analysis assessing the proposed blasting and materials handling associated with the proposed Project would be required prior to issuance of County grading permits for any phase of Project grading.

No operational components of the proposed Project include significant groundborne noise or vibration sources and no significant vibrations sources currently exist, or are planned, in the Project area. Thus, *no significant* groundborne noise or vibration impacts would occur with the operation of the proposed Project.

2.7.3 Cumulative Impact Analysis

Cumulative noise impacts would be those associated with Project traffic volumes; traffic volumes generated by other past, present, and reasonably foreseeable development projects; and/or a summary of development projections contained in an adopted planning document. According to the County Guidelines, a cumulatively considerable impact occurs when a project contributes a noise level increase of greater than 1 dBA CNEL to a cumulative impact. Similar to direct noise impacts, a cumulative noise impact occurs when the noise level exceeds the applicable standard or a substantial noise level increase over existing noise occurs. The project's contribution to the future noise level is determined by comparing the cumulative condition with project and without project conditions.

Project-generated traffic would contribute to cumulative increases in traffic noise levels. Noise level increases would be greatest nearest the Project site, which would have the greatest concentration of Project-related traffic. Traffic noise is primarily a function of volume, vehicle mix, speed, and proximity. For purposes of this evaluation, the vehicle mix, speed, and proximity are assumed to remain constant in the future as the existing condition. Thus, the primary factor affecting noise levels would be increased traffic volumes.

Similar to direct traffic noise impacts, a cumulative traffic noise impact occurs when the noise level would exceed the applicable standard and result in a substantial noise level increase. The Project's contribution to the future noise level is determined by comparing future noise conditions without and with the proposed Project.

According to the proposed Project's traffic study (Chen Ryan 2015), the cumulative traffic generation analysis in the Project vicinity is based on ADT volumes from SANDAG's Year 2030 Transportation Model, and the ADT volumes associated with the operation of the Jamul Casino and the construction of the La Media Bridge between southern Chula Vista and the Community of Otay Mesa.

Tables 2.7-9 and 2.7-10 present the ADT volumes for the existing, cumulative without project condition, and the cumulative with proposed project conditions for County and Chula Vista

roadways, respectively. Off-site traffic noise impacts have been evaluated based on the calculated change in noise levels due to the increase in traffic volumes. As shown in **Tables 2.7-9** and **2.7-10**, at most locations, the proposed Project would not significantly contribute to the cumulative noise level increase, i.e., the Project's contribution would not be more than 1 dBA. Exceptions to this occur at the following roadway segments:

Otay Lakes Road:

- Lane Avenue to Fenton Street (City);
- Fenton Street to Hunte Parkway (City);
- Hunte Parkway to Woods Drive (City);
- Woods Drive and Lake Crest Drive (City);
- Lake Crest Drive and Wueste Road (City);
- Wueste Road to SR-94 (County);

Olympic Parkway:

- East of Olympic Vista Road (City);

Potential impacts associated with NSLUs located along each of these segments are addressed below.

County of San Diego

One NSLU is located between Lake Crest Drive and Wueste Road; north of Otay Lakes Road, the NSLU is located approximately 870 feet north of the centerline of Otay Lakes Road and approximately 90 feet above the existing roadway grade. Based on the noise levels presented in **Table 2.7-9**, future noise levels from Otay Lakes Road would attenuate to approximately 55 dBA CNEL or less at this distance, assuming hard site conditions. Thus, the 6 dBA increase over existing noise levels would be **less than significant** as noise levels at this County receiver would be below the noise and land uses compatibility level.

There are no existing NSLUs between project Driveway #1 and Driveway #3; thus, no impact occurs along this portion of Otay Lakes Road. Along Otay Lakes Road between Driveway #3 and SR-94, increases of approximately 2 dBA would occur and noise levels at 100 feet from the center of the roadway would reach approximately 64 dBA CNEL. However, the only potentially noise-sensitive land uses along this location would be the Thousand Trail RV Park. Based on the noise levels presented in **Table 2.7-9**, traffic noise levels beyond 100 feet attenuate to less than 64 dBA CNEL and at 160 feet traffic noise levels would attenuate to less than 62 dBA CNEL. As previously identified, the nearest RV space used for camping is located 240 feet from the centerline of Otay Lakes Road and the swimming pool/playground area is approximately 130 feet from the centerline of Otay Lakes Road. At these distances, the noise levels reported in **Table 2.7-9**, would attenuate to less than 60 dBA CNEL and 63 dBA CNEL, respectively. Therefore, future noise levels along Otay Lakes Road would be compatible with existing and future uses within San Diego County and no cumulatively considerable noise impacts would

occur along County roadways. Therefore, cumulative noise impacts along Otay Lakes Road within the County would be **less than significant**.

City of Chula Vista

Traffic noise levels along several roadways within Chula Vista would similarly experience a potentially substantial increase in noise levels. Specifically, five segments of Otay Lakes Road, from Lane Avenue to Wueste Road, would experience increases of between 2 dBA and 6 dBA as a result of project traffic in the cumulative scenario. Additionally, Olympic Parkway, east of Olympic Vista Road would experience a 2 dBA increase.

The City considers 65 dBA CNEL to be acceptable for residential uses. The 2 dBA increase on Olympic Parkway east of Olympic Vista Road would result in a total noise level of 64 dBA CNEL. This falls below the City's threshold and would be considered **less than significant**.

Based on observations, the NSLUs along all the affected Chula Vista roadways are located at distances of 100 feet or greater and are all shielded from local roadways by solid masonry walls and solid combination barriers, such as masonry atop earthen berms and masonry with glass/acrylic glass. These wall/berm combinations would block the line of sight between the source and receiver and provide a minimum 5 dBA reduction in noise levels (FHWA 2011).

Based on the noise levels presented in **Table 2.7-10**, a 5 dBA reduction in these noise levels would result in noise levels ranging from 59 to 64 dBA CNEL and project-related traffic would add more than a 1 dBA CNEL increase to cumulative noise level increase. These noise levels would comply with the City of Chula Vista's 65 dBA CNEL noise compatibility guidelines at the affected NSLUs; therefore, cumulative noise impacts within the City of Chula Vista would be **less than significant**.

2.7.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the Project's noise analysis:

Impact Number	Description of Project's Effect	Significance of Impact
N-1	Traffic noise resulting in exposure of sensitive receptors within the Project site to exterior noise levels in excess of 60 dBA CNEL, and interior noise levels in excess of 45 dBA CNEL.	Potentially significant direct impact
N-2	Noise generated by on-site HVAC and emergency generators	Potentially significant direct impact
N-3	Noise generated by other on-site land use activities (e.g., other stationary sources) associated with the proposed Project could exceed the Sound Level Limits of Section 36.404 of the County Noise Ordinance.	Potentially significant direct impact

<u>Impact Number</u>	<u>Description of Project's Effect</u>	<u>Significance of Impact</u>
N-4	Noise generated by construction activities associated with the proposed Project, including rock crushing and drilling could exceed the construction hours of Section 36.408 and the construction Sound Level Limits of Section 36.409 of the County Noise Ordinance.	Potentially significant direct impact
N-5	Impulsive noise from explosives blasting or on-site rock-crushing and drilling activities resulting in exposure of a noise-sensitive land use to noise impacts in excess of County standards.	Potentially significant direct impact
N-6	Groundborne vibration on-site from construction equipment activities (site grading and truck transport), rock blasting, or rock-breaking activities could resulting in exposure of noise-sensitive land uses to significant vibrations or groundborne noise impacts in excess of the County guidelines.	Potentially significant direct impact

2.7.5 Mitigation

The following mitigation measures would be incorporated into implementation of the proposed Project to reduce noise impacts.

2.7.5.1 *Impacts Related to the Exposure of Noise-Sensitive Land Uses to Substantial Exterior/Interior Noise Levels*

To reduce excessive traffic noise levels, individual lots identified in **Table 2.7-7** are required to be designed using individual barriers located within each lot to shield a yard exterior area of sufficient size in the proper location. Quantifying the area per lot that would require protection shall occur as part of the Site Plan review for the individual lots identified in **Table 2.7-7**. These calculations and additional noise attenuation requirements are outlined in the measures below.

M-N-1a The Project proponent shall prepare a noise protection easement for those lots identified in **Table 2.7-7** of the Project EIR. The noise protection easement language shall contain a restriction stating that the structure and the outdoor activity area will be placed such that a noise barrier will complement the residence's architecture, reduce noise levels at outdoor activity areas to within acceptable standards, and will not incorporate a solid (opaque) wall in excess of 10 feet in height.

M-N-1b Concurrent with approval of the Final Map, the Project proponents shall dedicate to the County a noise protection easement on each of the lots identified in **Table 2.7-6** for the receptor locations shown in **Figures 2.7-3, 2.7-4, and 2.7-5** of the

Project EIR. These easements are for the protection of noise sensitive locations from excessive traffic noise. The noise protection easements shall be shown on the Final Map(s).

- M-N-1c** For any lot shown to be exposed to noise levels exceeding 60 dBA CNEL, the noise protection easement shall require that, prior to approval of the building permit or other development approval, an acoustical study be prepared based on proposed noise barrier placement and housing construction to demonstrate and ensure that interior noise levels are below 45 dBA CNEL.
- M-N-1d** The Project proponent shall construct a noise barrier at the top of slope and at the back of yards for any Noise Sensitive Land Use that would be exposed to a CNEL greater than 60 dBA, as shown in **Figures 2.7-3, 2.7-4, and 2.7-5** of the Project EIR. The barrier shall be at the height specified in **Table 2.7-7**. Barriers may be constructed of masonry, wood, and transparent materials, such as glass or Lucite. Earthen berms or a combination of berms and walls could also be used to provide noise attenuation.
- M-N-1e** Noise barriers, as described in M-N-1d, would not reduce noise levels to second-story elevations due to their lesser barrier heights relative to two-story structures. Where two-story homes are to be located where traffic noise levels would meet or exceed 60 dBA CNEL without abatement (see **Table 2.7-6** of the Project EIR), the noise protection easement required by mitigation measure M-N-1 shall specify that the applicant for a building permit or other development approval must have to demonstrate that interior noise levels due to exterior noise sources would not exceed 45 dBA CNEL prior to approval of the building permit or other development approval. In these cases, it is anticipated that the typical method of compliance would be to provide the homes with air conditioning or equivalent forced air circulation to allow occupancy with closed windows, which for most residential construction would provide sufficient exterior-to-interior noise reduction.

2.7.5.2 Project-Generated Airborne Noise (Stationary Activities)

- M-N-2** Prior to Site Plan approval of proposed land uses within the mixed-use, resort, public safety, or single family residential sites, the applicant or designee(s) shall prepare acoustical studies of proposed mechanical equipment, which shall identify all noise-generating equipment (including emergency generators and generators associated with the proposed sewer pump stations), predict property line noise levels from all identified equipment, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation) as necessary to comply with the County Noise Ordinance, Section 36.404.
- M-N-3:** Prior to the issuance of a building permit for commercial land uses containing loading docks, delivery areas, and parking lots, the applicant, or its designee, will prepare an acoustical study(s) of proposed commercial land use site plans, which

will identify all noise-generating areas and associated equipment, predict noise levels at property lines from all identified areas, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation, reduction of parking stalls), as necessary, to comply with the County Noise Ordinance Section 36.404.

2.7.5.3 Construction Noise

M-N-4 To reduce construction noise impacts associated with rock drilling and crushing noise generated by Project-related blasting activities, Project applicant(s) of all phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County.
 - Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.
 - A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.
- Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines.
- Blasting shall not be conducted within 1,000 feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level.
 - All rock drilling activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.
 - All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.

2.7.5.4 *Impulsive Noise*

M-N-5 To reduce impulse noise impacts associated with air blast over-pressure and rock drilling and crushing noise generated by Project-related grading activities, Project applicant(s) of all phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County.
 - Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.
 - A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.
- Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines.
- Blasting shall not be conducted within 1,000 feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level.
 - All rock drilling activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.
 - All rock crushing activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.

2.7.5.5 *Groundborne Vibration*

M-N-6 To reduce impacts associated with groundborne vibration generated by Project-related construction activities, the applicant(s) of all Project phases shall conform to the following requirements, which shall be prominently noted on grading plans:

- Heavy construction equipment shall not be operated within 200 feet of any residential structure.

- Rock blasting shall not be performed within 1,000 feet of a residential structure.
- A vibration analysis assessing the proposed blasting and materials handling associated with proposed project shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the plan.

2.7.6 Conclusion

2.7.6.1 Traffic Noise

Increased traffic volumes on on-site segments of Otay Lakes Road and interior Project roads would result in potentially significant direct and cumulative impacts associated with the exposure of on-site noise-sensitive land uses to exterior and interior noise levels in excess of applicable standards. However, the direct and cumulative impacts would be reduced to less-than-significant levels through implementation of mitigation measure M-N-1. Increased traffic volumes on off-site segments of Otay Lakes Road would result in **less-than-significant** impacts to ambient noise levels and no mitigation is required.

2.7.6.2 Aircraft Noise

During operation of the proposed Project, impacts associated with the exposure of Project-related noise-sensitive land uses to noise levels from aircraft operations at John Nichols Field would be less than significant and no mitigation is required. The proposed Project would not feature land uses that generate aircraft noise; **no impacts** associated with this issue would occur.

2.7.6.3 Stationary Activities

Operation of the proposed Project could result in potentially significant noise impacts associated with on-site mechanical equipment used in residential and commercial developments and delivery activities associated with the Project's commercial land uses. However, implementation of mitigation measures M-N-2 and M-N-3 would reduce potential impacts from mechanical equipment and delivery activities associated with the commercial and resort land uses to a **less than significant** level.

2.7.6.4 Construction Activities

During construction activities, implementation of the proposed Project would be required to comply with Section 36.408 and 36.409 of the County Noise Ordinance, which restricts exposure at the property lines of on-site or nearby sensitive receptors to an eight hour average sound level greater than 75 dBA L_{eq} between the hours of 7 a.m. and 7 p.m. Therefore, the impact of construction noise from normal grading and construction activities would be less than significant. Rock drilling, blasting, and crushing noise would be required to adhere to mitigation measure M-N-3, which requires setback distances from occupied property lines of 800 feet for rock drilling and 350 feet for rock crushing, and 1,000 feet from occupied structures for rock blasting to reduce these impacts to a less than significant level. Impulsive noise associated with

Project blasting, drilling, and crushing would be required to adhere to mitigation measure M-N-5, with the same setbacks as M-N-4, which would reduce the impacts from impulsive noise to a **less than significant** level.

2.7.6.5 *Groundborne Vibration*

During Project grading and blasting operations, potential impacts associated with the exposure of a noise-sensitive land use to groundborne vibration levels would be reduced to a level less than significant by mitigation measure M-N-5, which requires Project blasting operations to be planned, conducted, and monitored to reduce the impact of groundborne vibration on noise-sensitive land uses (rock blasting shall not be performed within 1,000 feet of a residential structure); and by mitigation measure M-N-6, which requires that heavy equipment not be operated within 200 feet of an inhabited residence.

Table 2.7-1
Noise Measurements – Vehicle Traffic

Site ID*	Location	Date Time	L _{eq} (dBA)	L _{max} (dBA)	L _{min} (dBA)	L ₉₀ (dBA)	Noise Sources
1	Northeast corner of Clubhouse Drive and Silverado Drive	12/05/06 10:51 p.m.	57	73	41	46	Traffic on Clubhouse Drive and Silverado Drive was the dominant noise source. Traffic within golf course parking lot was secondary source. Peak noise level was caused by a lawn mower on Clubhouse Drive.
2	Greensview Drive, east of 2300-A Greenbrier Drive	12/05/06 11:28 p.m.	53	65	40	44	Traffic on Greensview Drive was the dominant noise source. Peak noise level was caused by a heavy truck passing by on Greensview Drive.
3	Otay Lakes Road, between 2564 and 2556 Table Rock Avenue	12/05/06 12:08 p.m.	63	73	41	50	Traffic on Otay Lakes Road was the dominant noise source. Peak noise level was caused by a heavy truck passing by on Otay Lakes Road.
4	Okay Lakes Road, approximately 3,500 feet south from the northern end of Lower Otay Lake	12/05/06 2:04 p.m.	53	71	34	36	Traffic on Otay Lakes Road was the dominant noise source. Secondary sources included airplane passing overhead. Peak noise level was caused by a heavy truck passing on Otay Lakes Road.
5	Otay Lakes Road, approximately 2,500 feet south of site 4	12/05/06 2:30 p.m.	64	90	34	35	Traffic on Otay Lakes Road was the dominant noise source. Secondary sources included helicopter. Peak noise level was caused by a motorcycle passing on Otay Lakes Road.
6	Otay Lakes Road, situated 8,800 feet east of site 5	12/05/06 2:59 p.m.	60	76	37	43	Traffic on Otay Lakes Road was the dominant noise source. Secondary sources included airplane landing (64 dBA). Peak noise level was caused by a motorcycle passing on driveway to airfield.
7	Otay Lakes Road, approximately 1,020 feet west of Eastlake Parkway	12/05/06 2:40 p.m.	62	74	54	57	Traffic on Otay Lakes Road was the dominant noise source. Peak noise level was caused by a heavy truck passing on Otay Lakes Road.

* The Site ID corresponds to locations shown in Figures 2.7-1 and 2.7-2.
Source: EDAW 2006

Table 2.7-2
Noise Measurement Data – Aircraft Takeoffs and Landings

Time	dBA				Noise Sources
	L _{eq}	L _{max}	L _{min}	SEL	
3:10 p.m.	-	86	34	91	Jump plane takeoff & flyover
3:30 p.m.	-	96	49	101	Emergency vehicles, jump plane takeoff & flyover
3:45 p.m.	-	70	50	82	Jump plane landing
3:00 – 4:00 pm	63	96	30	-	Traffic on Otay Lakes Road was the dominant noise source. Peak noise level from takeoffs and heavy truck passing on Otay Lakes Road.

L_{eq} – Average noise level for the measurement period;

L_{max} – Maximum noise level for the measurement period;

L_{min} – Minimum noise level for the measurement period;

SEL – Sound Exposure Level

Source: AECOM 2013

Table 2.7-3
County of San Diego Noise Ordinance Sound Level Limits

Zone	Applicable Hours	Sound Level Limit dB L_{eq} (1 hour)
RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92, RV, and RU. Use Regulations with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
RRO, RC, RM, C30, S86, RV, RU and V5. Use Regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
S94, V4, and all other commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
V1, V2	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
V1	10 p.m. to 7 a.m.	55
V2	10 p.m. to 7 a.m.	50
V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
M50, M52, M54	Anytime	70
S82, M56, and M58	Anytime	75
S88 (see subsection (c) below)		

Source: County of San Diego Noise Ordinance, Section 36.404.

Notes:

- a) Except as provided in section 36.409 of this chapter, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the one-hour average sound level limits in Table 36.404, when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise
- (b) Where a noise study has been conducted and the noise mitigation measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those mitigation measures reduce potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.
- (c) S88 zones are Specific Planning Areas which allow for different uses. The sound level limits in Table 8 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 4, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.
- (d) If the measured ambient noise level exceeds the applicable limit in Table 36.404, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.
- (e) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.
- (f) Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line are subject to the noise level limits in this table, as measured at or beyond 6 feet from the boundary of the easement upon which the equipment is located.

Table 2.7-4: City of Chula Vista Exterior Land Use-Noise Compatibility Guidelines

Land Use	Annual CNEL in Decibels					
	50	55	60	65	70	75
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and Other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Offices and Professional						
Places of Worship (excluding outdoor use areas)						
Golf Courses						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

Source: City 2005.

Table 2.7-5: City of Chula Vista Exterior Noise Standards

Environmental Noise – L_{eq} in any hour¹		
Receiving Land Use Category	Noise Level (dBA)	
	10 p.m. to 7 a.m. (Weekdays) 10 p.m. to 8 a.m. (Weekends)	7 a.m. to 10 p.m. (Weekdays) 8 a.m. to 10 p.m. (Weekends)
All residential, except multiple dwelling	45	55
Multiple dwelling residential	50	60
Commercial	60	65

Source: City 2013

¹ Environmental noise is the L_{eq} in any hour. The limits also apply to a category of noise defined as nuisance noise, and the limits are not to be exceeded at any time.

Table 2.7-6
Traffic Volumes and Noise Levels – Existing and Existing Plus Project Conditions

Roadways	Segment	Existing Traffic Volumes (ADT)	Existing Traffic Noise Level at 100 feet (CNEL)	Existing + Project Traffic Volumes (ADT)	Existing + Project Traffic Noise Level at 100 feet (CNEL)	CNEL increase
Otay Lakes Rd (County)	Wueste Rd and Driveway #1	2,927	59	22,467	68	9
	Driveway #1 and Driveway #2	2,927	59	20,717	68	9
	Driveway #2 and Driveway #3	2,927	59	7,099	63	4
	Driveway #3 and SR-94	2,927	59	5,347	62	3
Proctor Valley Road	Lane Avenue and Hunte Parkway	14,155	65	15,033	66	1
Telegraph Canyon Road	I-805 SB Ramps and I-805 NB Ramps	55,247	71	56,125	71	0
	I-805 NB Ramps and Oleander Avenue	59,615	72	61,811	72	0
	Oleander Avenue and Medical Center Drive	55,776	71	57,972	72	1
	Medical Center Drive and Paseo Ladera	47,486	71	49,901	71	0
	Paseo Ladera and Paseo Ranchero/Heritage Road	44,404	70	47,039	71	1
	Paseo Ranchero/Heritage Road and La Media Road	35,495	69	38,569	70	1
Otay Lakes Road	East H Street and Telegraph Canyon Road/Otay Lakes Road	28,912	69	30,010	69	0
	La Media Road and Rutgers Avenue	42,142	70	46,973	71	1
	Rutgers Avenue and SR-125 SB Ramps	41,931	70	46,762	71	1
	SR-125 SB Ramps and SR-125 NB Ramps	46,406	71	51,676	71	0
	SR-125 NB Ramps and Eastlake Parkway	40,291	70	47,318	71	1
	Eastlake Parkway and Lane Avenue	26,054	68	33,959	69	1
	Lane Avenue and Fenton Street	18,832	67	27,615	68	1
	Fenton Street and Hunte Parkway	18,627	67	27,627	68	1
	Hunte Parkway and Woods Drive	9,672	64	23,282	68	4
	Woods Drive and Lake Crest Drive	7,546	63	22,256	68	5
	Lake Crest Drive and Wueste Road	2,654	58	18,464	66	8

Table 2.7-6
Traffic Volumes and Noise Levels – Existing and Existing Plus Project Conditions

Roadways	Segment	Existing Traffic Volumes (ADT)	Existing Traffic Noise Level at 100 feet (CNEL)	Existing + Project Traffic Volumes (ADT)	Existing + Project Traffic Noise Level at 100 feet (CNEL)	CNEL increase
Olympic Parkway	La Media Road and E Palomar Street	33,412	69	33,632	69	0
	E Palomar Street and SR-125 SB Ramps	35,139	69	35,798	69	0
	SR-125 SB Ramps and SR-125 NB Ramps	38,154	70	39,691	70	0
	SR-125 NB Ramps and Eastlake Parkway	43,506	70	46,800	71	1
	Eastlake Parkway and Hunte Parkway	16,289	66	21,339	67	1
	Hunte Parkway and Olympic Vista Road	9,936	64	13,449	65	1
	East of Olympic Vista Road	4,075	60	7,588	63	3
Lane Avenue	Proctor Valley Road and Otay Lakes Road	6,269	62	7,367	63	1
Hunte Parkway	Proctor Valley Road and Otay Lakes Road	10,897	64	14,410	66	2
	Otay Lakes Road and Clubhouse Road	8,154	63	11,009	64	1
	Clubhouse Road and Olympic Parkway	2,015	57	2,893	59	2
	Olympic Parkway and Eastlake Parkway	14,155	65	15,033	66	1

Bolded rows indicate a potential noise impact.

Source: Chen Ryan 2015

**Table 2.7-7
Traffic Noise Model Results**

Receptor ID¹	Lot #²	Peak Hour dBA L_{eq}	Exterior CNEL	Barrier Height (ft)	Mitigated CNEL
2	R-1B-1	62	63	4	58
8	R-1B-54	61	62	4	59
10	R-2A-46	62	63	4	59
12	R-2A-155	62	63	8	59
17	R-1D-84	60	61	2	60
21	R-1F-11	61	62	4	58
28	R-4A-3	60	61	6	57
32	R-4A-49	60	61	6	59
37	R-5A-75	60	61	2	59
56	R-2A-13	62	63	4	59
57	R-2A-9	66	67	6	60
58	R-2A-1	60	61	4	60
60	R-1A-69	64	65	6	54
117	R-1F-7	60	61	2	59
124	R-2A-162	60	61	2	60
135	R-1A-64	62	63	10	58
138	R-2A-5	62	63	6	57
155	R-4B-61	60	61	6	58
159	R-4A-56	60	61	2	60
162	R-4C-75	60	61	6	60

Note: Based on 24-hour traffic volume data for local roadway west of the Project site. CNEL values for roadway affected by the proposed Project are calculated to be 1 dBA higher than the predicted peak hour noise level.

¹ Receiver Identification Numbers may not be sequential

² Lot numbers were not assigned at the time of the modeling. Locations of receivers were placed within lot lines on the existing site plan in the TNM model. See Figures 2.7-3, 2.7-4, and 2.7-5 for receiver locations, Project lot numbers, and barrier locations.

Source: AECOM 2012

Table 2.7-8
Typical Noise Level Ranges at Domestic Housing Construction Sites

Construction Phase	Maximum Noise Level at 50 feet - dBA	
	Minimum Required Equipment On-Site	All Pertinent Equipment On-Site
Clearing	83	83
Excavation	75	88
Foundation/Conditioning	81	81
Paving	65	81
Finishing and Cleanup	72	87

Source: Bolt, Beranek and Newman, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," prepared for the U.S. Environmental Protection Agency, 1971.

Table 2.7-9
County Roadways – Existing, Cumulative, and Cumulative Plus Project Conditions

County Roadways	Segment	Existing		Cumulative		Change vs. Existing (CNEL)	Cumulative + Project		Change vs. Existing (CNEL)	Project Contribution (CNEL)
		Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)	Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)		Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)		
Otay Lakes Rd	Wueste Rd and Driveway #1	2,927	59	6,400	62	3	25,540	68	9	6
	Driveway #1 and Driveway #2	2,927	59	6,400	62	3	23,790	68	9	6
	Driveway #2 and Driveway #3	2,927	59	6,400	62	3	10,170	64	5	2
	Driveway #3 and SR-94	2,927	59	6,400	62	3	8,420	64	5	2

Note: **Bolded** numbers indicate a cumulative noise impact.

Source: Chen Ryan 2015

Table 2.7-10
Chula Vista Roadways– Existing, Cumulative, and Cumulative Plus Project Conditions

City Roadways	Segment	Existing		Cumulative		Change vs. Existing (CNEL)	Cumulative + Project		Change vs. Existing (CNEL)	Project Contribution (CNEL)
		Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)	Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)		Traffic Volumes(ADT)	Traffic Noise Level at 100 feet (CNEL)		
Proctor Valley Road	Lane Avenue and Hunte Parkway	14,155	65	30,200	69	3	31,080	69	4	0
Telegraph Canyon Road	I-805 SB Ramps and I-805 NB Ramps	55,247	71	58,700	72	0	59,580	72	0	0
	I-805 NB Ramps and Oleander Avenue	59,615	72	61,900	72	0	64,100	72	0	0
	Oleander Avenue and Medical Center Drive	55,776	71	58,500	72	0	60,700	72	0	0
	Medical Center Drive and Paseo Ladera	47,486	71	55,700	71	1	58,120	72	1	0
	Paseo Ladera and Paseo Ranchero/Heritage Road	44,404	70	56,200	71	1	58,830	72	1	0
	Paseo Ranchero/Heritage Road and La Media Road	35,495	69	49,700	71	2	52,770	71	2	0
Otay Lakes Road	East H Street and Telegraph Canyon Road/Otay Lakes Road	28,912	69	32,100	69	1	33,200	69	1	0
	La Media Road and Rutgers Avenue	42,142	70	43,200	70	0	48,030	71	1	0
	Rutgers Avenue and SR-125 SB Ramps	41,931	70	43,600	70	0	48,430	71	1	1
	SR-125 SB Ramps and SR-125 NB Ramps	46,406	71	47,700	71	0	52,970	71	1	1

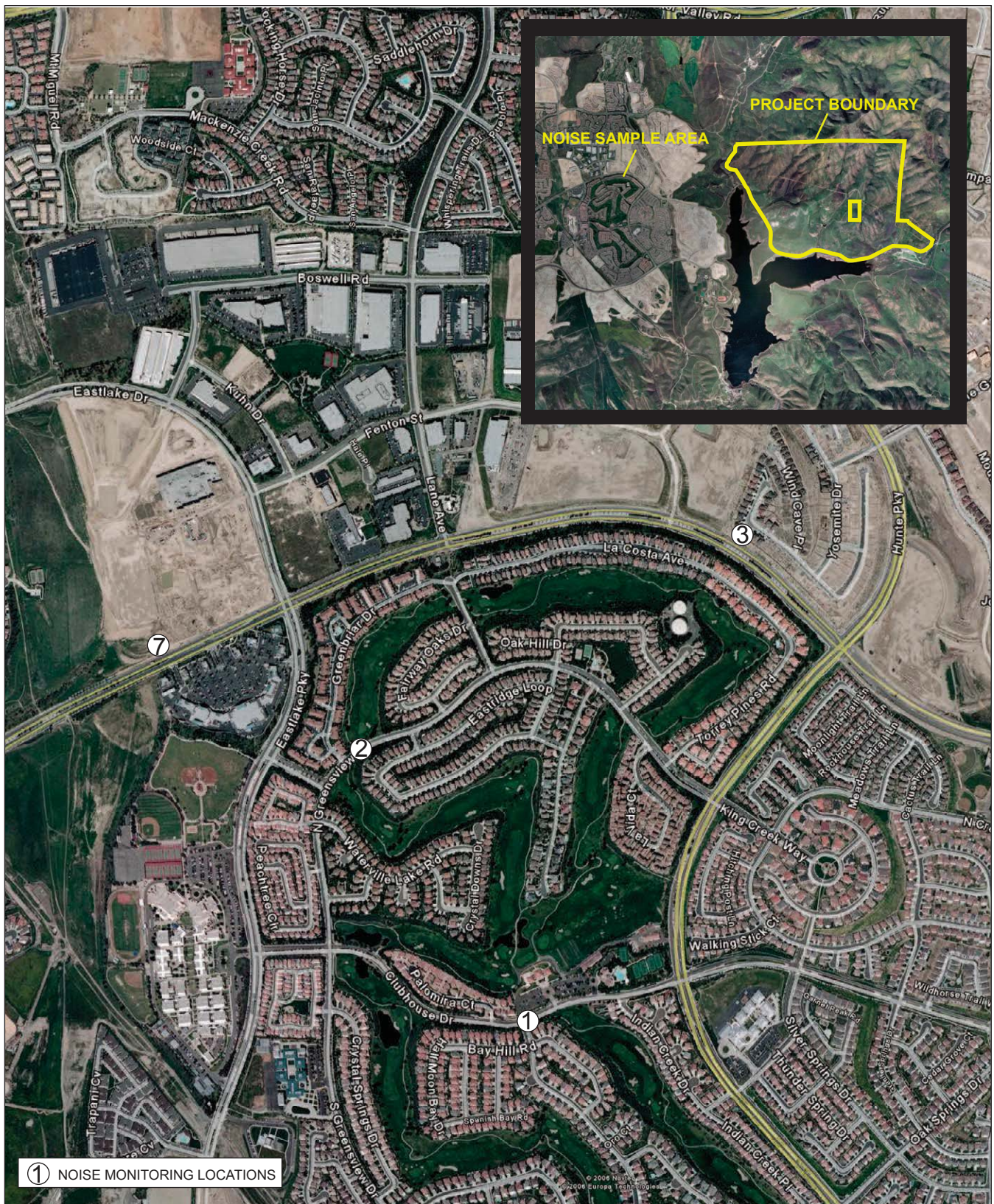
City Roadways	Segment	Existing		Cumulative		Change vs. Existing (CNEL)	Cumulative + Project		Change vs. Existing (CNEL)	Project Contribution (CNEL)
		Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)	Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)		Traffic Volumes(ADT)	Traffic Noise Level at 100 feet (CNEL)		
City Roadways	SR-125 NB Ramps and Eastlake Parkway	40,291	70	47,500	71	1	54,530	71	1	1
	Eastlake Parkway and Lane Avenue	26,054	68	28,500	69	0	36,400	70	1	1
	Lane Avenue and Fenton Street	18,832	67	20,800	67	0	29,580	69	2	2
	Fenton Street and Hunte Parkway	18,627	67	19,800	67	0	28,800	69	2	2
	Hunte Parkway and Woods Drive	9,672	64	14,300	66	2	27,910	68	5	3
	Woods Drive and Lake Crest Drive	7,546	63	16,700	66	4	31,410	69	6	3 *
	Lake Crest Drive and Wueste Road	2,654	58	5,350	61	3	21,160	67	9	6
Olympic Parkway	La Media Road and E Palomar Street	33,412	69	35,300	69	0	35,520	69	0	0
	E Palomar Street and SR-125 SB Ramps	35,139	69	54,000	71	2	54,660	71	2	0
	SR-125 SB Ramps and SR-125 NB Ramps	38,154	70	55,000	71	2	56,540	72	2	0
	SR-125 NB Ramps and Eastlake Parkway	43,506	70	57,000	72	1	60,290	72	1	0
	Eastlake Parkway and Hunte Parkway	16,289	66	33,000	69	3	38,050	70	4	1
	Hunte Parkway and Olympic Vista Road	9,936	64	16,100	66	2	19,610	67	3	1

City Roadways	Segment	Existing		Cumulative		Change vs. Existing (CNEL)	Cumulative + Project		Change vs. Existing (CNEL)	Project Contribution (CNEL)
		Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)	Traffic Volumes (ADT)	Traffic Noise Level at 100 feet (CNEL)		Traffic Volumes(ADT)	Traffic Noise Level at 100 feet (CNEL)		
	East of Olympic Vista Road	4,075	60	6,900	62	2	10,410	64	4	2
Lane Avenue	Proctor Valley Road and Otay Lakes Road	10,804	64	18,500	67	2	19,380	67	3	0 *
Hunte Parkway	Proctor Valley Road and Otay Lakes Road	6,269	62	12,700	65	3	13,800	65	3	0
	Otay Lakes Road and Clubhouse Drive	10,897	64	15,000	66	1	18,510	67	2	1
	Clubhouse Drive and Olympic Parkway	8,154	63	14,000	65	2	16,850	66	3	1
	Olympic Parkway and Eastlake Parkway	2,015	57	18,200	67	10	19,080	67	10	0

Note: **Bolded** numbers indicate a cumulative noise impact.

* Due to rounding the nearest whole number, Project Contribution (CNEL) value not the exact difference in Change vs Existing (CNEL) columns for Cumulative and Cumulative Plus Project. Values are modeled to one decimal place but rounded here to the nearest whole number for comparison against exceedance threshold which is a whole number.

Source: Chen Ryan 2015

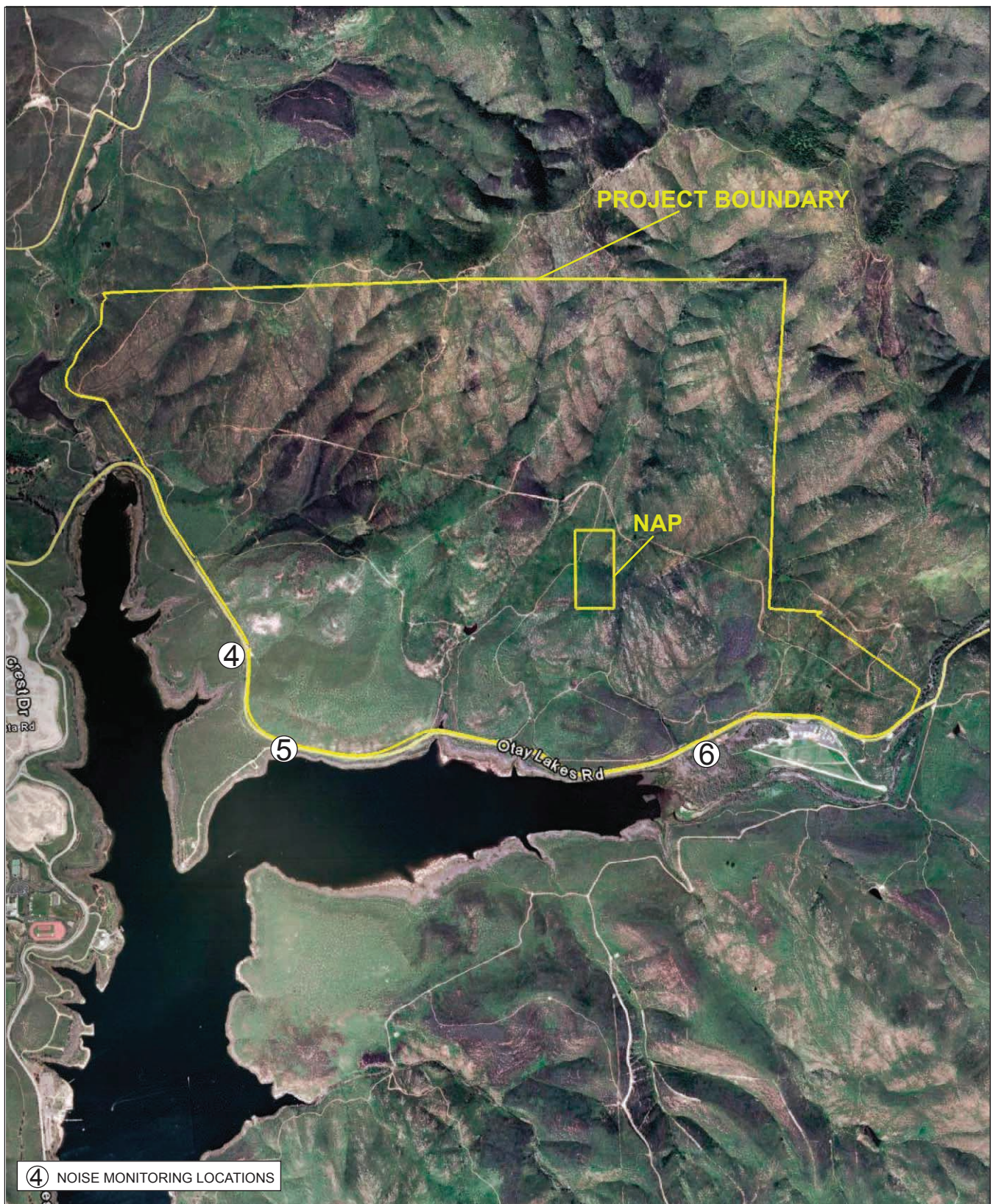


SOURCE: Google Earth 2006



No Scale

Figure 2.7-1
Noise Monitoring Locations
- City of Chula Vista



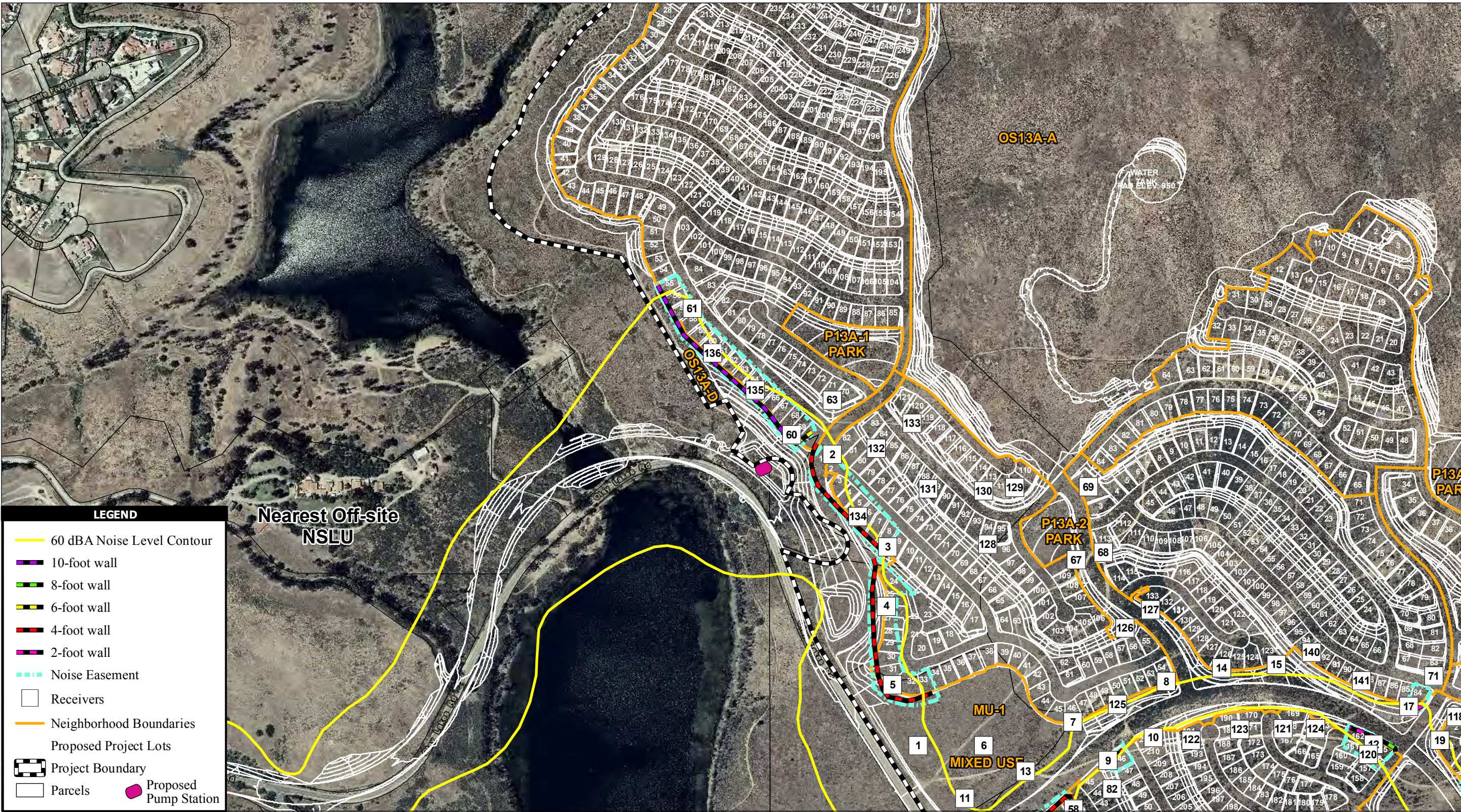
SOURCE: Google Earth 2006



No Scale

Figure 2.7-2
Noise Monitoring Locations
- Project Site

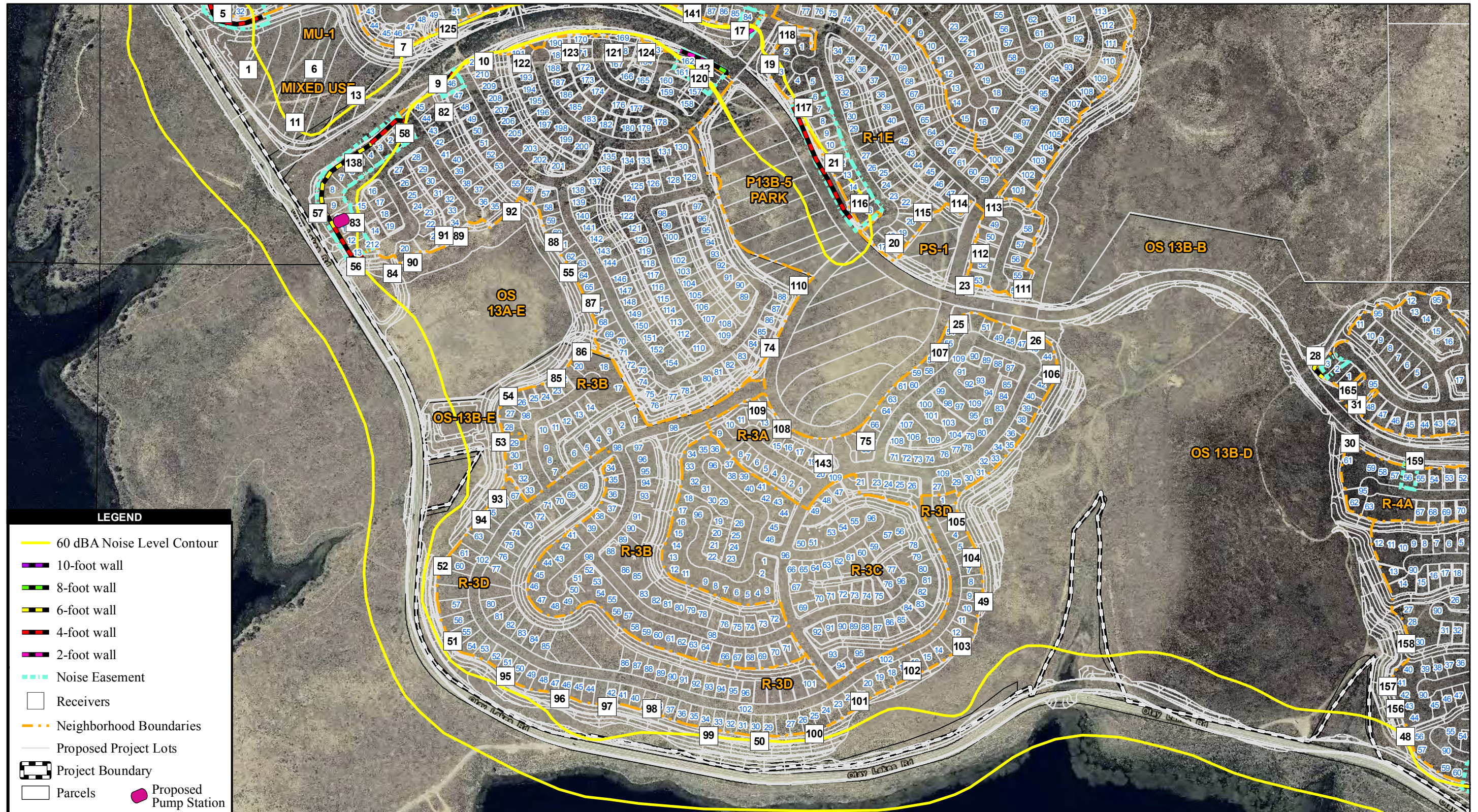
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Source: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors; SANDAG 2012; Otay Ranch 2014; AECOM 2014

Figure 2.7-3
Noise Model Receiver and Barrier Locations
Western Project Area

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Source: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors; SANDAG 2012; Otay Ranch 2014; AECOM 2014

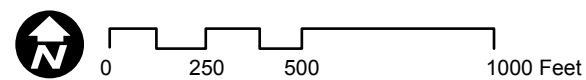
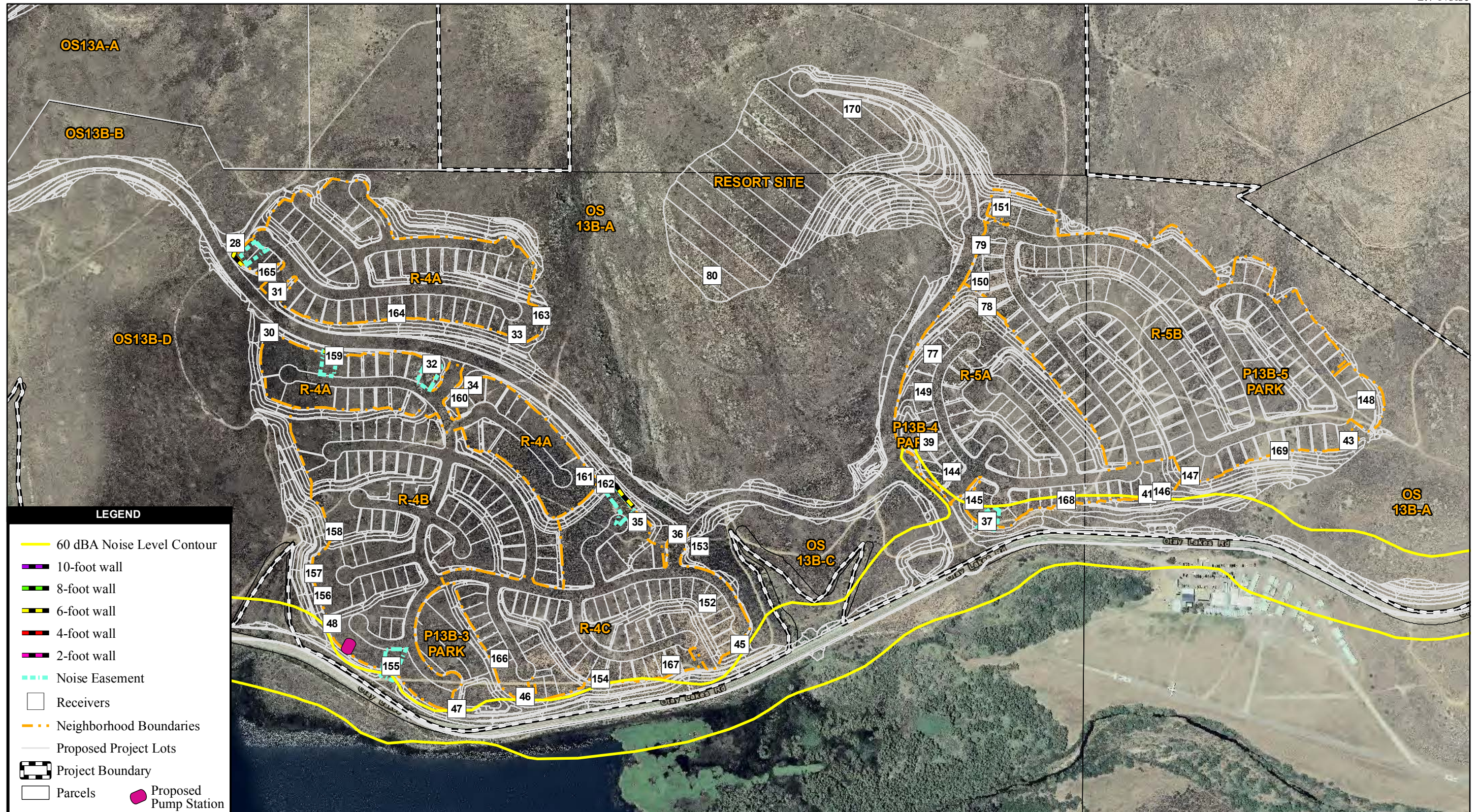


Figure 2.7-4
Noise Model Receiver and Barrier Locations
Central Project Area

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Source: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors; SANDAG 2012; Otay Ranch 2014; AECOM 2014

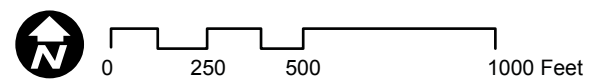
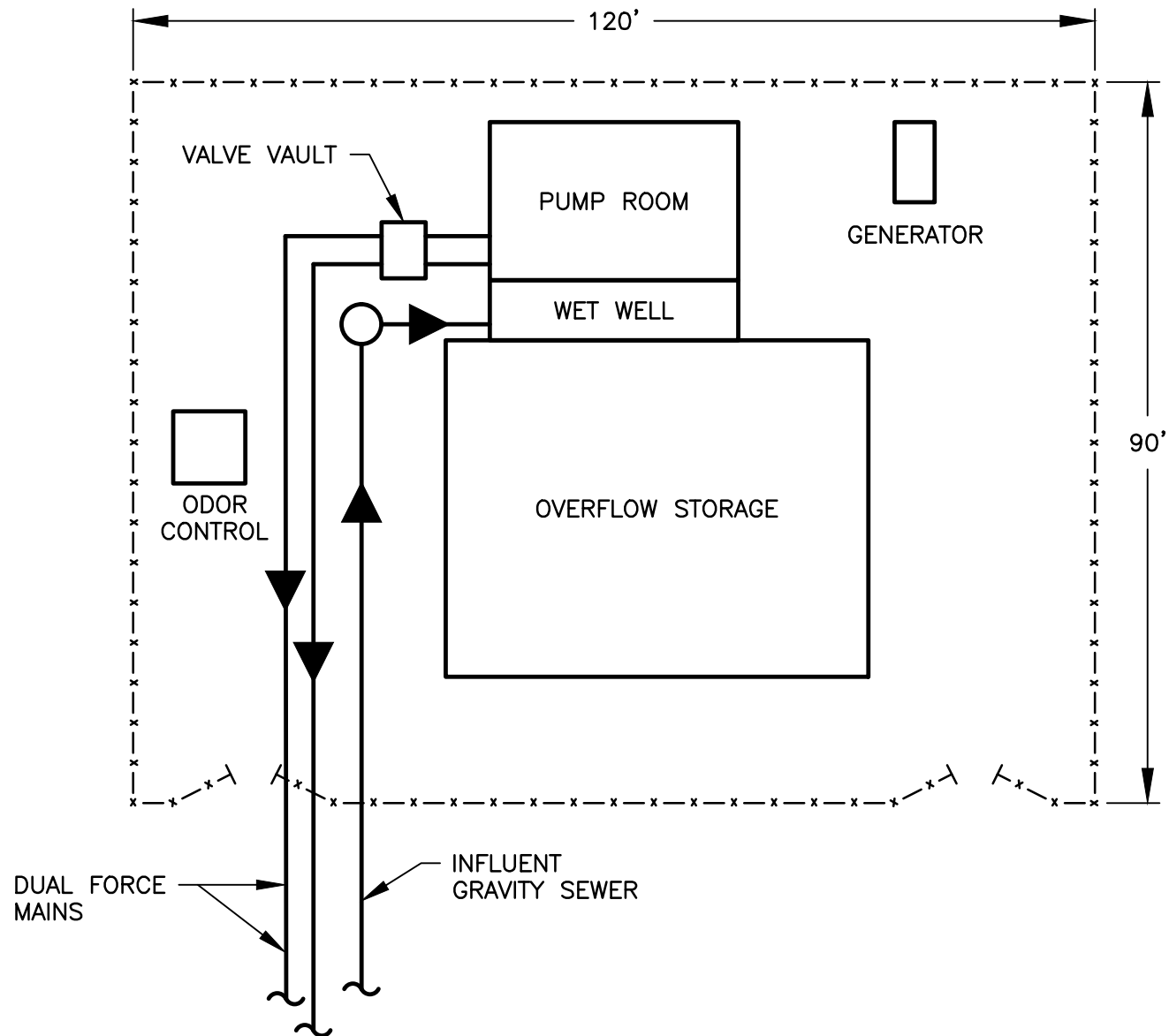


Figure 2.7-5
Noise Model Receiver and Barrier Locations
Eastern Project Area

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SOURCE:



Figure 2.7-6
Pump Station Site

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2.8 Solid Waste

2.8.1 Existing Conditions

2.8.1.1 *Existing Regulations and Programs*

Solid waste management has been recognized as an important regional issue in San Diego County. Prior to 1989, solid waste planning and management was the prime responsibility of individual jurisdictions. However, the California legislature changed this approach when its members enacted the Integrated Waste Management Act (IWMA) of 1989. The IWMA required jurisdictions to reduce their dependence on landfills for disposal of solid waste, and to ensure an effective and coordinated approach to safe management of all solid waste generated within the state. In October 1997, the County sold its active landfills and other solid waste collection assets to Republic Services, Inc. (Republic). Currently, solid waste generated by residents and businesses is disposed of locally at the landfill of the hauling contractor's choice. The following section discusses the seven active landfills, nine transfer stations, construction demolition and inert processing facilities, fifteen biomass processing facilities, and various recycling programs that currently serve the County's solid waste disposal service needs.

2.8.1.2 *Existing Solid Waste Disposal Facilities and Programs*

The Project site is currently vacant and, therefore, is not provided with solid waste disposal services. The current solid waste collection and disposal operator in both the Project-area portion of the County and within the City of Chula Vista is Republic, which also owns Otay Landfill located approximately 3 miles southwest of the Project site, and Sycamore Landfill located west of the City of Santee, approximately 17 miles northwest of the Project site. Pursuant to the City of Chula Vista's franchise agreement with Republic, both Otay and Sycamore Canyon are City-authorized landfills. The current operator of the Otay landfill is Otay Landfill, Inc. The remaining capacity in the landfill is approximately 24,514,904 cubic yards (CalRecycle 2012). The current permit (37-AA-0010) anticipates that Otay Landfill would be in operation until 2028 based on current waste generation rates. The Sycamore Landfill has a remaining capacity of approximately 42,246,551 cubic yards (CalRecycle 2011).

Landfills

Until 1997, the solid waste management system in San Diego County was serviced by eight landfill facilities. In March 1997, the San Marcos landfill facility was closed by court order. Currently, there are seven active landfills in the San Diego region that serve residents, businesses, and military operations. The landfills are Borrego, Miramar, Otay, Sycamore, Las Pulgas, and San Onofre. The current landfills for public use are either privately owned and operated, or are operated by the City of San Diego. The Sycamore, Otay, and Borrego landfills are owned and operated by Republic Services, and the Miramar Landfill is owned and operated by the City of San Diego on leased U.S. Department of the Navy land. Las Pulgas and San Onofre landfills are owned and operated by the U.S. Marine Corps (USMC). The USMC-operated landfills are not available for public disposal (CalRecycle 2014).

The total remaining capacity in all the existing landfills available for public disposal and located in the County or its cities is approximately 82,086,693 cubic yards or 59,798,903 tons. The nearest landfill to the proposed project, the Otay Landfill, has permitted capacity of 61,154,000 cubic yards, remaining capacity of approximately 24.5 million cubic yards as of March 2012, and is expected to be in operation until February 2028. Construction and demolition and inert processing (CDI), chip and grind, and composting operations are permitted at Otay Landfill. Diversion rates for CDI are estimated at 85%, and composting operations are achieving approximately a 95% diversion rate. Total permitted capacity at the Sycamore Landfill is approximately 71.2 million cubic yards and the landfill has a remaining capacity of 59%, or 42.2 million cubic yards and is expected to close in October 2031 (CalRecycle 2014).

At this time, there is one planned, permitted new landfill located within the County. The proposed Gregory Canyon Landfill is located adjacent to Route 76, about 3 miles east of I-15. If opened, this new landfill would have a capacity of approximately 30,000,000 tons (CalRecycle 2014). Another facility, in East Otay Mesa, is in process at the County; however, given the intensive duration of review to permit such facilities and the current status of that landfill, it was not assumed this facility will be operational for the proposed project.

Transfer Stations

Solid waste not dumped directly into a landfill is deposited temporarily in several privately operated transfer stations or rural bin sites located throughout the County. Nine transfer stations in the County assist with solid waste disposal services. The region's transfer stations and rural bin sites play a vital role in accommodating throughput to landfills, serving as collection and separation points of solid waste and recyclables. Transfer stations help reduce traffic congestion and provide the flexibility to haul waste to distant landfills or processing plants outside of the San Diego region. The network currently handles approximately 60 percent of the region's solid waste and services. The network has a permitted throughput of approximately 3 million tons per year, and currently uses about 2 million tons per year, or 67 percent of network capacity (CalRecycle 2014). The rural bin sites were closed as of May 1, 2009 by Republic since they were deemed not profitable. However, other haulers are available that can service the area (County of San Diego 2009d).

Construction Demolition and Inert Processing Facilities

Construction, Demolition, and Inert (CDI) debris waste not dumped directly in a landfill is deposited temporarily for processing at privately operated construction demolition processing facilities. Four CDI processing facilities in the County assist with solid waste diversion from the landfill. (CalRecycle 2014).

Organic Material Processing Facilities

Fifteen biomass processing facilities serve San Diego County that chip, grind, and compost organic materials. Approximately 508,000 tons of organic materials are processed for compost chips and mulch annually. An estimated 450 tons per day are prepared for transport to several biomass-powered electric-generating plants in Imperial and Riverside counties, which accrue about 117,000 tons per year. Two additional biomass plants are planned for the County of

San Diego: one in the City of Vista and the other in the Otay Mesa area. As of January 2009, one new composting facility had applied for operating permits, which would produce about 37,000 additional tons of compost annually (County of San Diego 2011b).

County Recycling Programs

In 1989, the IWMA required cities and counties to reduce their waste disposal levels by 25 percent by the year 1995 and by 50 percent by 2000. The Solid Waste Planning and Recycling Program implemented by the County Department of Public Works (DPW) serves residents and businesses in the unincorporated communities of San Diego County and works to achieve IWMA goals through continual improvement of waste diversion programs. Since 1991, the County has had a mandatory Recycling Ordinance (Ordinance 8866) for solid waste generators and waste haulers; in 2007, the County adopted a mandatory Construction and Demolition Ordinance (9840) for projects larger than 40,000 square feet (County of San Diego 2014). In 2005, the unincorporated San Diego County communities attained a 50 percent diversion rate.

The IWMA also requires the preparation of a County Integrated Waste Management Plan (IWMP). The County's IWMP, adopted on September 17, 1996, discusses the need for a reduction in solid waste and includes a Source Reduction and Recycling Element, Household Hazardous Waste Element, Non-Disposal Facility Element, Countywide Siting Element, and Countywide Summary Plan. Currently, the County implements extensive programs for source reduction, recycling, and best-use practices for a variety of materials. Current programs include support of rural recycling programs, curbside and drop-off recycling for motor oil and filters, and public/private partnerships for development of additional construction/demolition and organics processing capacities. Roughly 60 privately owned non-disposal facilities operate in the County, not including those within the City of San Diego. These include recycling and reuse companies, transfer stations, organic processors, and construction/demolition facilities. This network of non-disposal facilities is integral into the collection and processing of recyclable materials and help the County meet its diversion goals (CalRecycle 2014).

Non-Exclusive Solid Waste Management Agreement

The Non-Exclusive Solid Waste Management Agreement was created to allow the County to participate in the solid waste collection market to ensure orderly operation and to minimize the potential for adverse effects on the local environment. The agreement is based on the declaration of the California IWMA that it is in the interest of the public to require local agencies to make adequate provisions for solid waste handling. In addition, the County Board of Supervisors has determined that the agreement must be awarded to qualified companies for the collection and subsequent transfer, transportation, recycling, processing, and disposal of solid waste. The agreement allows the County to regulate waste collection in a market-driven process (County of San Diego 2011b).

2.8.2 Analysis of Project Effects and Determination of Significance

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs; or
- Not comply with federal, state, and local statutes and regulations relating to solid waste.

Rationale for Selection of Guideline

The significance thresholds are based on the guidelines for significance in CEQA Guidelines Appendix G for Utilities and Service Systems.

Analysis

As to the first guideline for significance, the proposed Project would result in disposal of solid wastes generated from residential, commercial, resort, public, and other allowed uses. As provided by the California Integrated Waste Management Board (CIWMB) (1999), potential generation rates of these uses would be as follows:

<u>Land Use</u>	<u>Tons Per Year</u>
Residential	0.46 per dwelling unit
Retail Trade – Restaurant	3.1 per employee
Retail Trade – Food Store	2.9 per employee
Retail Trade – General Merchandise	0.3 per employee
Finance, Insurance, Real Estate, Legal	0.3 per employee
Services – Hotels/Lodging	2.1 per employee
Services – Medical/Health	1.5 per employee
Services – Education	0.8 per employee

Based on the proposed development of 1,938 residences, the residential portion of the Project would generate approximately 891.5 tons per year or 2.44 tons per day. Sufficient employment data is not currently available to accurately estimate waste generation from future commercial and education uses; however, an estimate could be made based on 300 (per FIA – to be updated by DPFPG potentially) employees for the resort and varying numbers (per FIA – to be updated by DPFPG potentially) of employees for each of the other land uses, as shown below. Based on these estimated solid waste generation rates, the proposed Project would generate 1,686 tons per year, or 4.62 tons per day, as follows:

<u>Land Use</u>	<u>Tons Per Year</u>	<u>Rate</u>	<u>Total</u>
Residential	0.46 per du	1,938 du	891.5
Retail Trade – Restaurant	3.1 per employee	11 employees	34.1
Retail Trade – Food Store	2.9 per employee	28 employees	81.2
Retail Trade – General Merchandise	0.3 per employee	22 employees	6.6
Finance, Insurance, Real Estate, Legal	0.3 per employee	22 employees	6.6
Services – Hotels/Lodging	2.1 per employee	300 employees	630
Services – Medical/Health	1.5 per employee	0 employees	0
Services – Education	0.8 per employee	45 employees	36
Total Tons per Year			1,686
Total Tons per Day			4.62

du=dwelling unit

As stated above, the Otay Landfill has a total capacity of 61,154,000 cubic yards and remaining operating capacity of approximately 24.5 million cubic yards as of March 2012. Based on the current average Otay Landfill disposal rate of 5,004 tons per day and the maximum permitted disposal rate of 5,830 tons per day, the estimated disposal of approximately 4 tons per day from the proposed Project would not cause the landfill to exceed its permitted capacity or require construction of a new landfill. In addition, the single family residences will be provided educational information as part of the New Homebuyer Package to inform residents about recycling, composting, and other practices that effectively reduce the amount of solid waste going to landfills. Therefore, impacts related to this issue are considered *less than significant*.

For the second guideline for significance, numerous federal, state, and local programs and regulations exist to manage solid waste disposal requirements and operations. These include the IWMA, which both regulates the management of solid waste within the state and presents strategies to assist in the siting of solid waste disposal facilities, and the Non-Exclusive Solid Waste Management Agreement, which regulates waste collection as a market-driven business (CalRecycle 2010).

In addition, the County General Plan contains goals and policies within the Land Use Element to assist in the provision of adequate waste management facilities and recycling and resource recovery activities to accommodate planned growth in the unincorporated areas of the County. Goal LU-12 requires infrastructure and services that meet community needs and are provided concurrent with growth and development. Policy LU-12.1 supports this goal by requiring concurrency of infrastructure and services with development. Goal LU-16 promotes appropriately sited solid waste management facilities to reduce environmental impacts and potential land use incompatibilities. Policies LU-16.1, LU-16.2, and LU-16.3 support this goal by encouraging additional recycling facilities and minimizing environmental impacts associated with solid waste facilities (County of San Diego 2011a).

In the Conservation and Open Space Element, Goal COS-17 encourages sustainable solid waste management. Policies COS-17.1, COS-17.2, COS-17.3, COS-17.4, COS-17.6, COS-17.7, and COS-17.8 support this goal by requiring landfill waste management, composting, methane recapture, and recycling (County of San Diego 2011a).

The proposed Project would be required to comply with federal, state, and local statutes and regulations related to solid waste. In addition, General Plan Update goals and policies related to solid waste disposal would further ensure compliance with all applicable laws and regulations. Therefore, proposed Project impacts associated with solid waste regulation are considered *less than significant*.

2.8.3 Cumulative Impact Analysis

Cumulative impacts to landfill capacity were addressed on a County-wide basis in the County General Plan Update Final EIR (County of San Diego 2011b) and also on a more local perspective in the Chula Vista General Plan EIR (City of Chula Vista 2005a). The County cited the IWMP estimate that solid waste disposal would increase from 3.7 million tons in 2002 to 6.1 million tons in 2017 and that additional landfill capacity would be needed by 2016 or increased diversion technologies would need to be developed. The County cites the need to increase the waste recycling rate to 75 percent to avoid the need to construct additional landfills (County of San Diego 2011b).

The Chula Vista General Plan EIR estimated that buildout of the General Plan would increase solid waste generation from 496 tons per day in 2004 to 751 tons per day by year 2020, which is an increase of 255 tons per day. This increase included the solid waste generated by Otay Ranch Village 13 and by the Eastern Urban Center Sectional Planning Area (EUC SPA), which was estimated in its EIR to generate 22.805 tons per day of solid waste (City of Chula Vista 2009).

Since the adoption of the Chula Vista General Plan EIR, additional projects have been proposed and/or approved, which would increase the demand for solid waste disposal. These projects include the Otay Ranch Village 8 West SPA Plan (approved), the Otay Ranch Village 9 SPA Plan (approved), the Otay Ranch Village 2 Comprehensive SPA Plan Amendment (pending), and the Otay Ranch University Villages (Villages Three North and Portion of Village Four, Village Eight East, and Village Ten) SPA Plan (pending). These projects would result in a total of approximately 103 additional tons of solid waste per day within the vicinity of the Project site, which would likely be disposed of at the Otay and/or Sycamore landfills. In contrast, Village 15 is no longer expected to be developed, nor are portions of Planning Areas 16, 17, and 19.

From a localized perspective, (generally speaking, areas nearest to the Otay Landfill), the Otay Landfill currently operates at 826 tons per day less than its maximum permitted daily intake. However, available capacity beyond year 2028 (when the Otay Landfill is expected to cease operations) is uncertain unless more effective diversion technologies are developed to achieve a 50 percent increase in the current level of recycling (i.e. from current rate of 50% to 75% diversion rate). In July 2012, Assembly Bill 341 went into effect. This bill sets a goal of 75% of solid waste generated statewide to be source reduced, recycled, or composted by the year 2020. AB 341 also requires that “a business that generates more than four cubic yards of commercial solid waste per week or is a multifamily residential dwelling of five units or more shall arrange for recycling services, consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection handling, or recycling of solid waste, to the extent that these services are offered and reasonably available from a local service provider.”

Although the proposed Project's direct impact of approximately 4 tons per day would not be a significant Project impact, the regional need for increased landfill capacity would be a significant cumulative impact that may require construction of new landfills in the County. The proposed Project would be unable to avoid contributing to this ***significant cumulative solid waste disposal impact (Impact SW-1)***.

2.8.4 Significance of Impacts Prior to Mitigation

Implementation of the proposed Project is not anticipated to result in significant direct impacts related to solid waste disposal, as sufficient permitted landfill capacity exists to accommodate the Project's solid waste disposal needs. However, the cumulative impact to the need for increased regional landfill capacity would be significant.

2.8.5 Mitigation

No mitigation measures are proposed because implementation of the proposed Project would be served by a landfill with sufficient permitted capacity to accommodate the proposed Project's solid waste disposal needs, and one that complies with federal, state, and local statutes and regulations relating to solid waste. From a regional standpoint, no known mitigation measures would be able to avoid significant cumulative impacts related to the projected future solid waste disposal needs of the San Diego County region.

2.8.6 Conclusion

Implementation of the proposed Project is not anticipated to result in significant direct impacts related to solid waste disposal. However, the cumulative impact for increased regional landfill capacity would be significant. No known Project-level mitigation measures are available to avoid this significant cumulative impact. Therefore, the ***cumulative impact remains significant and unavoidable***.

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2.9 Transportation and Traffic

This section presents a summary of the potential transportation-related impacts of the proposed Project. It is based on the Traffic Impact Study (TIS), Otay Ranch Resort Village Project (Village 13), prepared by Chen Ryan (March 2015), included as **Appendix C-12** to this EIR.

By way of background, the Otay Ranch SRP PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to transportation and traffic for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR identified significant cumulative impacts relative to short-term and long-term traffic operations. As a result, mitigation measures were adopted in the PEIR requiring that projects in the region construct appropriate improvements and contribute their proportionate share toward construction of regional facilities. The Otay Ranch PEIR is incorporated into this EIR by reference and is available for public inspection and review at the County of San Diego, PDS, 5510 Overland Ave., San Diego, California.

2.9.1 Analysis Methodology

The traffic impact analysis presented in this section was conducted by Chen Ryan Associates, Inc. in accordance with County and Chula Vista traffic impact guidelines; the enhanced California Environmental Quality Act (CEQA) project review process, and the SANTEC/ITE Guidelines for Traffic Impact Studies in San Diego.

2.9.1.1 Scenarios Analyzed

Based on direction provided by the County, the following six scenarios were analyzed as part of the traffic impact analysis:

1. Existing Conditions – used to establish the existing baseline of traffic operations within the Project study area.
2. Existing Plus Project (Phase I) Conditions – represents existing traffic conditions (volumes and roadway network) with the addition of traffic from Phase I of the proposed Project.
3. Existing Plus Project (Buildout) Conditions – represents existing traffic conditions (volumes and roadway network) with the addition of traffic from buildout of the proposed Project.
4. Cumulative Year (2025) Plus Project Traffic Conditions - represents cumulative traffic conditions, including existing baseline traffic, traffic from anticipated land development projects, and traffic from buildout of the proposed project.
5. Year 2030 Base Conditions – represents projected long-range (2030) without Project cumulative baseline traffic conditions against which traffic generated by the proposed Project can be compared.
6. Year 2030 Base Plus Project (Buildout) Conditions – represents 2030 baseline traffic conditions with the addition of traffic generated by buildout of the proposed Project.

Because the proposed Project would add 50 or more peak-hour trips to multiple intersections and roadway segments located within the jurisdiction of Chula Vista, and 25 or more peak-hour trips to facilities within the County's jurisdiction, each of the six scenarios addressed as part of this analysis considers the potential impacts to roadways located in both the County and Chula Vista. (See Section 2.9.1.8, Analysis Study Area, for further explanation regarding the scope of the traffic impact analysis study area.)

2.9.1.2 Level of Service Definition

Traffic-related impacts are assessed relative to the concept of level of service (LOS), which is a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passenger's perception of operations. LOS, which is measured on a scale of A to F, generally describes the operational conditions in terms of speed, travel time, freedom to maneuver, comfort, convenience, and safety. **Table 2.9-1** describes traffic flow quality for LOS A through LOS F. LOS calculation worksheets for all scenarios analyzed are provided in **Appendix C-12**.

2.9.1.3 Intersection Analysis Methodology

The following methodologies were used to perform peak-hour intersection capacity analysis for signalized and unsignalized intersections within the Project study area.

Signalized Intersection Analysis

The signalized intersection analysis used in this study is based on the operational analysis methodology outlined in the Highway Capacity Manual 2000 Transportation Research Board Special Report 209, Chapter 16 (referred to herein as HCM 2000 or HCM). The HCM 2000 methodology defines intersection LOS as a function of intersection control delay in terms of seconds per vehicle (sec/veh).

The HCM 2000 methodology sets 1,900 passenger cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections, and is based on the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g., through and right-turn movements sharing the same lane). The LOS criteria used for this technique are described in **Table 2.9-2**. The computerized analysis of intersection operations was performed using the Traffix 8.0 R1 traffic analysis software.

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way- and all-way-stop controlled intersections, were analyzed using the methodology set forth in the HCM 2000, Chapter 17. The LOS for a two-way-stop controlled (TWSC) intersection is determined by the computed or measured control

delay and is defined for each minor movement. **Table 2.9-3** summarizes the LOS criteria for unsignalized intersections.

Both the County and Chula Vista consider LOS D during the AM and PM peak hours to be the minimum standard for intersection LOS.

2.9.1.4 Arterial Roadway Segment Analysis Methodology

The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast ADT volumes. **Tables 2.9-4 and 2.9-5** present the roadway segment capacity and LOS standards used to analyze roadway segments within the County and Chula Vista, respectively. These standards generally are used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and LOS of a roadway segment is influenced heavily by the ability of the arterial intersections to accommodate peak-hour volumes.

The County General Plan Mobility Element and the Chula Vista General Plan Circulation Element establish the acceptable conditions for roadway segments. In the County, Mobility Element Policy M-2.1 establishes LOS D as acceptable; LOS C is considered acceptable for Circulation Element roadway segments within Chula Vista. Per the Otay Ranch General Development Plan, LOS D is permitted on the roadways to be constructed within Otay Ranch

2.9.1.5 Freeway and State Highway Analysis Methodology

Freeway LOS and performance were assessed based on procedures in the SANTEC/ITE Guidelines for Traffic Impact Study (TIS) in the San Diego Region (March 2000) and are derived from the HCM 2000. The procedure for calculating freeway LOS involves estimating a peak-hour volume-to-capacity (v/c) ratio. Peak-hour volumes are estimated based on application of the design hour (K), directional (D), and truck (T) factors relative to ADT volumes. The resulting v/c is then compared to acceptable ranges of v/c values corresponding to the various LOS for each facility classification, as shown in **Table 2.9-6**. The corresponding LOS represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

LOS D or better is used in this study as the threshold for acceptable freeway operations based on the Caltrans and SANDAG Regional Growth Management Strategy (RGMS) requirements (SANDAG 2010). For the purposes of this study, all of the traffic adjustment factors used in the analysis of existing and future conditions were obtained from Caltrans.

2.9.1.6 Two-Lane State Highway (SR-94) Analysis Methodology

The two-lane state highway SR-94, portions of which are signalized, was analyzed using both County and Caltrans methodologies. SR-94 is located within the geographic boundaries of the County; however, the highway is a state-owned facility subject to operational control by Caltrans.

County of San Diego

The County methodology is based on analysis of ADT segment operations. **Table 2.9-7** illustrates the County's two-lane state highway ADT thresholds for LOS E and LOS F when signalized intersection spacing is longer than 1 mile. For facilities where signalized intersection spacing is less than 1 mile, the LOS is determined based on the LOS of the intersections along the subject highway.

Caltrans

The Caltrans methodology for LOS analysis of two-lane state highways is based on peak-hour travel speed, as shown on **Table 2.9-8**. Since SR-94 is a state-owned facility subject to operational control by Caltrans, significant impacts were assessed using the Caltrans methodology.

2.9.1.7 Ramp Intersection Capacity Analysis Methodology

Consistent with Caltrans requirements, all signalized intersections at freeway ramps were analyzed using Intersecting Lane Volume (ILV) procedures as described in the Caltrans Highway Design Manual (HDM). The ILV analysis is used as a supplemental analysis to the HCM 2000 intersection analysis methodology, which is based on an assessment of each intersection as an isolated unit, without consideration of effects from adjacent intersections. Based on the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002), Intersection Lane Volume (ILV) is not a Measure of Effectiveness or a significant impact criteria, therefore, the ILV analysis included in this report is for informational purposes only. **Table 2.9-9** provides values of ILV per hour associated with various traffic-flow descriptions.

2.9.1.8 Ramp Metering Analysis Methodology

Ramp metering analysis was conducted based upon the *SANTEC/ITE Guidelines for Traffic Impact Studies* in the San Diego region to calculate delays and queues at the study area freeway on-ramps. Within the project study area, the I-805 northbound on-ramp at Telegraph Canyon Road is the only ramp with an activated ramp meter. Based upon data provided by Caltrans District 11, the I-805 northbound on-ramp at Telegraph Canyon Road meter is activated only between 5:30 AM and 9:30 AM. Thus, ramp metering analysis was conducted only during the AM peak hour under the various study scenarios.

2.9.1.9 Analysis Study Area

The SANDAG Series 11 Transportation Model was used to perform a Select Zone Analysis to identify the number of Project-related peak-hour trips that would be distributed across the transportation network. Consistent with jurisdictional requirements, all intersections and roadways where the proposed Project would add 50 or more peak-hour trips in either direction to the existing traffic were included in the study area for analysis. In addition, consistent with County requirements, the study area also included intersections and roadways in the County where the proposed Project would add 25 peak-hour trips.

Based on the above criteria, the study area for the traffic impact analysis was determined. The study area intersections, arterial roadway segments, and freeway and state highway facilities are listed below. The study area scope is depicted on **Figure 2.9-1**, Project Study Area.

Study Intersections

Based on the applicable criteria, the following 44 intersections, including eight (8) located within the County, three (3) in the City of San Diego, and thirty-three (33) within the City of Chula Vista (City), were analyzed in this study:

1. East H Street / Otay Lakes Road (City of CV)
2. Proctor Valley Road / Hunte Parkway (City of CV)
3. Telegraph Canyon Road / I-805 SB Ramps (City of CV)
4. Telegraph Canyon Road / I-805 NB Ramps (City of CV)
5. Telegraph Canyon Road / Oleander Avenue (City of CV)
6. Telegraph Canyon Road / Paseo Del Rey (City of CV)
7. Telegraph Canyon Road / Medical Center Drive (City of CV)
8. Telegraph Canyon Road / Paseo Ladera (City of CV)
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road (City of CV)
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road (City of CV)
11. Otay Lakes Road / Rutgers Avenue (City of CV)
12. Otay Lakes Road / SR-125 SB Ramps (City of CV)
13. Otay Lakes Road / SR-125 NB Ramps (City of CV)
14. Otay Lakes Road / Eastlake Parkway (City of CV)
15. Otay Lakes Road / Lane Avenue (City of CV)
16. Otay Lakes Road / Fenton Street (City of CV)
17. Otay Lakes Road / Hunte Parkway (City of CV)
18. Otay Lakes Road / Woods Drive (City of CV)
19. Otay Lakes Road / Lake Crest Drive (City of CV)
20. Otay Lakes Road / Wueste Drive (City of CV)
21. Otay Lakes Road / SR-94 (County)
22. Olympic Parkway / East Palomar Street (City of CV)
23. Olympic Parkway / SR-125 SB Ramps (City of CV)
24. Olympic Parkway / SR-125 NB Ramps (City of CV)
25. Olympic Parkway / Eastlake Parkway (City of CV)
26. Olympic Parkway / Hunte Parkway (City of CV)
27. Olympic Parkway / Olympic Vista Road (City of CV)
28. Olympic Parkway / Wueste Drive (City of CV)
29. Lake Crest Drive / Wueste Drive (City of CV)
30. Main Street / SR-125 SB Ramps* (City of CV)
31. Main Street / SR-125 NB Ramps* (City of CV)
32. Main Street / Eastlake Parkway* (City of CV)
33. Otay Valley Road / SR-125 SB Ramps* (City of CV)
34. Otay Valley Road / SR-125 NB Ramps* (City of CV)
35. Otay Mesa Road / La Media Road (City of SD)
36. Otay Mesa Road / SR-125 SB Ramps (City of SD)

37. Otay Mesa Road / SR-125 NB Ramps (City of SD)
38. Otay Mesa Road / Ellis Road* (County)
39. SR-94 / Proctor Valley Road/Jefferson Road (County)
40. SR-94 / Maxfield Road (County)
41. SR-94 / Melody Road (County)
42. Project Driveway #1 @ Otay Lakes Road (County)*
43. Project Driveway #2 @ Otay Lakes Road (County)*
44. Project Driveway #3 @ Otay Lakes Road (County)*

Nine (9) of the above study area intersections, those denoted with an asterisk (*), currently are not constructed. However, these intersections are included in the respective County Mobility Element and the City Circulation Element and, therefore, are included in the 2025 and 2030 scenarios, as applicable.

Arterial Roadway Segments

Based on the applicable criteria, the following arterial roadway segments are included within the Project traffic study area:

1. Proctor Valley Road, between Lane Avenue and Hunte Parkway (City of CV)
2. Telegraph Canyon Road, between I-805 and La Media Road (City of CV)
3. Otay Lakes Road, between East H Street and Wueste Road (City of CV)
4. Olympic Parkway, between La Media Road and Wueste Road (City of CV)
5. Lane Avenue, between Proctor Valley Road and Otay Lakes Road (City of CV)
6. Hunte Parkway, between Proctor Valley Road and Eastlake Parkway (City of CV)
7. Otay Lakes Road, between Wueste Road and SR-94 (County)

Freeway and State Highway Facilities

Based on the applicable criteria, the following freeway and state highway facilities are included within the Project traffic study area:

1. I-805, between Bonita Road and Main Street
2. SR-125, between SR-54 and SR-905

Two-Lane Highway Segments

Based on the applicable criteria, the following two-lane highway segment is included within the Project traffic study area:

1. SR-94, between Lyons Valley Road and Otay Truck Trail (south of Otay Lakes Road)

2.9.1.10 Project Trip Generation

At buildout, the proposed Project will consist of 1,881 single-family dwelling units, 57 multi-family dwelling units, 28.6 acres of park facilities, a 2.1-acre public safety facility, a 10-acre

elementary school site, up to 40,000 square feet of commercial uses, and a 200-room resort. The Project will be developed in two phases. Phase I will consist of an initial 925 single-family dwelling units in the western development area. The second phase of the Project will include buildout of the proposed land uses to full development. Site access is proposed via three driveways, each accessing Otay Lakes Road. The two driveways to the west will be constructed to serve Phase I access requirements.

Trip generation rates for the proposed Project were developed using SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region. **Table 2.9-10** depicts the daily and AM and PM peak-hour trip generation totals for each of the Project's traffic-generating components. Separate trip-generation totals are provided for Phase I and Project Buildout.

As shown in the table, the proposed Project at buildout would generate 27,191 daily trips, including 2,154 AM peak-hour trips (821 inbound/1,332 outbound) and 2,650 PM peak-hour trips (1,691 inbound/959 outbound). Under the Phase I scenario, the Project would generate 9,250 daily trips, including 740 AM peak-hour trips (222 inbound/518 outbound) and 925 PM peak-hour trips (647 inbound/278 outbound).

In light of the type of land uses that would be developed as part of the proposed Project, not all trips would leave the Project site. For example, a portion of the shopping trips would be satisfied by the commercial uses located within the proposed Project site, as would a certain percentage of school and recreational trips. Therefore, Project trips were disaggregated into those trips that would remain within the Project site (i.e., internally captured trips) and those that would leave the Project site (i.e., external trips). The estimates for internal versus external trip generation percentages were developed based on the likely origins/destinations for each land use type. These estimates were then cross-checked with the Project trip generation as estimated by the SANDAG Series 11 Year 2030 Transportation Model. Only external trips were distributed and assigned to the study area roadways.

Table 2.9-11 illustrates the proportion of internal and external Project trips. As shown, of the 27,191 total ADT to be generated by the Project, 5,275 of those trips (or approximately 19.4 percent) are expected to remain internal to the Project site, and 21,916 ADT are expected to be external trips, with 1,663 AM peak-hour trips (575 inbound/1,088 outbound) and 2,134 PM peak-hour trips (1,402 inbound/732 outbound).

2.9.1.11 Project Trip Distribution

The distribution of the external Project trips on the study area roadways was determined based on a computer-generated "Select Zone" analysis using the SANDAG Series 11 Year 2030 Transportation Model. Three different trip distributions were developed in conjunction with the anticipated roadway network under the various analysis scenarios and timeframes, as follows:

- Existing
- Cumulative (Year 2025)
- Year 2030

Figures 2.9-2, 2.9-3, and 2.9-4 illustrate the respective external Project trip distribution patterns, shown as a percentage of total external Project trips, associated with the various network scenarios and timeframes listed above.

Note that manual adjustments were made to project trip distribution patterns to reflect land use changes in Otay Ranch Planning Area 17 (Traffic Analysis Zone (TAZ) 4135) along Otay Lakes Road, east of the project site and west of SR-94. The model forecast (SANDAG Series 11 Southbay2, dated 1/14/2014) assumed the buildout of Otay Ranch Planning Area 17 in Traffic Analysis Zone 4135, which is expected to generate approximately 6,227 daily trips. However, with the adoption of the County of San Diego General Plan Update, the Planning Area 17 land uses have been redesignated as 296 Single Family Residential, with the remainder of the planning area designated as Open Space. As a result, approximately 1,000 project daily trips (1% of the project trips) were going to/coming from TAZ 4135. Manual adjustments were made by redistributing these 1,000 ADT to the adjacent roadway network. Of the 1,000 ADT, 80% were assumed to travel west to Chula Vista and the remaining 20% were assumed to travel east onto SR-94.

2.9.1.12 Project Trip Assignment

Based on the Project trip distribution percentages, the external daily and AM/PM peak-hour Project trips were assigned to the various roadway networks. The following four separate trip assignments were developed:

- Phase I land uses on the existing network
- Buildout land uses on the existing network
- Buildout land uses on the Year 2025 network
- Buildout land uses on the Year 2030 network

Figures 2.9-5 and 2.9-6 (Existing Plus Project - Phase I), **2.9-7 and 2.9-8** (Existing Plus Project - Buildout), **2.9-9 and 2.9-10** (Cumulative Year 2025 Plus Project Build), and **2.9-11 and 2.9-12** (Year 2030 Plus Project Buildout) illustrate the assignment of Project trips to the respective roadway networks and study area intersections.

2.9.2 Existing Conditions

This section describes the study area intersections, arterial roadway segments, and freeway/state highway segments, as well as existing peak-hour intersection traffic volumes, and daily roadway and freeway traffic volumes. LOS analysis results for all study area facilities under existing conditions are presented.

2.9.2.1 Study Area Roadways Description

Study Area Intersections

As noted above, the study area includes 44 intersections, including eight (8) located within the County, three (3) in the City of San Diego, and thirty-three (33) within the City of Chula Vista.

See Section 2.9.1.8, Analysis Study Area. **Figure 2.9-13** illustrates the study area intersection lane geometrics under existing conditions.

The following is a description of the study area's north/south and east/west arterial roadway segments located within Chula Vista and County that form the study area intersections.

Study Area Arterial Roadway Segments

North/South Roadway Facilities

City of Chula Vista

Otay Lakes Road– The north/south portion of Otay Lakes Road runs from Bonita Road to Telegraph Canyon Road where it becomes La Media Road. Otay Lakes Road is a four-lane roadway with a raised median between East H Street and Telegraph Canyon Road. A section of this segment is being constructed to 6-lanes. This roadway is currently classified as a six-lane Prime Arterial in Chula Vista General Plan Circulation Element.

Lane Avenue – Lane Avenue is currently a four-lane roadway between Proctor Valley Road and Otay Lakes Road. It is classified as a four-lane Collector in the City General Plan Circulation Element.

Hunte Parkway – Hunte Parkway is currently a four-lane roadway with a raised median between Proctor Valley Road and Olympic Parkway. It is a six-lane roadway with a raised median between Olympic Parkway and its current southern terminus. Hunte Parkway is classified in the Chula Vista General Plan Circulation Element as a four-lane Major Street between Proctor Valley Road and Olympic Parkway, and a six-lane Prime Arterial south of Olympic Parkway.

County of San Diego

Jefferson Road – Jefferson Road is a two-lane roadway between Lyons Valley Road and SR-94 in the County of San Diego. It is classified as a two-lane Light Collector with Raised Median (2.2A) in the County General Plan Update Circulation Element.

Proctor Valley Road – Proctor Valley Road is a two-lane roadway and runs from I-805 in Chula Vista to SR-94 in the community of Jamul in the County of San Diego to the east. Within the County of San Diego, Proctor Valley Road is classified as a two-lane Light Collector (2.2E) in the County General Plan Update Circulation Element. A portion of Proctor Valley Road between SR-94 and Chula Vista is unpaved.

East/West Roadway Facilities

City of Chula Vista

Proctor Valley Road – Proctor Valley Road is a six-lane roadway with a raised median in Chula Vista. It is classified as a six-lane Prime Arterial between SR-125 and Hunte Parkway, and a

four-lane Major Road between Hunte Parkway and the City's eastern border with the County of San Diego. A portion of Proctor Valley Road is currently an unpaved road in the County.

Telegraph Canyon Road – Telegraph Canyon Road is a seven-lane roadway between I-805 and Oleander Avenue, and a six-lane roadway with a raised median between Oleander Avenue and Otay Lakes Road. It is currently classified in the Chula Vista General Plan Circulation Element as a seven-lane Expressway between I-805 and Oleander Avenue, and a six-lane Prime Arterial between Oleander Avenue and Otay Lakes Road.

Otay Lakes Road – Otay Lakes Road is a six-lane roadway with a raised median between Telegraph Canyon Road and the eastern boundary of Chula Vista, just east of Wueste Road. It is currently classified as a six-lane Prime Arterial, with the exception of the segment between I-805 and Eastlake Parkway, which is classified as a seven-lane Expressway.

Olympic Parkway – Olympic Parkway, between La Media Road and Hunte Parkway is a six-lane roadway with a raised median with the exception of the segment between the SR-125 NB Ramp and Eastlake Parkway, which is an eight-lane roadway with a raised median. Between Hunte Parkway and Wueste Drive, Olympic Parkway narrows to a four-lane roadway with a raised median. Olympic Parkway is classified as a six-lane Prime Arterial between I-805 and the SR-125, an eight-lane Expressway between SR-125 and Eastlake Parkway, a six-lane Prime Arterial between Eastlake Parkway and Hunte Parkway, and a four-lane Major Street between Hunte Parkway and Wueste Road.

County of San Diego

Maxfield Road – Maxfield Road is a two-lane roadway in the community of Jamul. It is classified as a Local Public Road in the County General Plan Mobility Element.

Melody Road – Melody Road is a two-lane roadway in the community of Jamul. It is classified as a two-lane Light Collector (2.2E) in the County General Plan Mobility Element.

Honey Springs Road – Honey Springs Road is a two-lane roadway. It is classified as a two-lane Light Collector (2.2E) in the County General Plan Mobility Element.

Otay Lakes Road – Otay Lakes Road is a two-lane roadway within the County of San Diego. It is classified as a four-lane Major Road with Intermittent Turn Lane (4.1B) between the County/City boundary and the second Project driveway. However, the Project proposes to reclassify this segment from a 4.1B to a 4.2A Boulevard with Raised Median. With the proposed reclassifications, Otay Lakes Road, between Wueste Road & Project Driveway #2 is projected to operate at LOS D or better under the Future Year 2030 Plus Project (Buildout) conditions. Therefore, this facility is being analyzed as a 4.2A this point forward. Otay Lakes Road, east of the second Project driveway is a 2-lane Community Collector with Improvement Options (2.1D) in the County General Plan Mobility Element.

Figure 2.9-14 illustrates the existing roadway geometrics for roadway facilities within the Project study area.

Study Area Freeway and State Highways

The following three Caltrans freeway and state highway facilities traverse the Project study area:

I-805 – I-805 ranges from 8-lanes to 10-lanes between Home Avenue and SR-905 within the study area. Construction of two new High Occupancy Vehicle (HOV) lanes on I-805, between Home Avenue and East Palomar Street has been recently completed.

SR-125 – SR-125 is a 4-lane state highway between East H Street and SR-905. It will operate as a toll road through the Year 2035. However, SANDAG has recently purchased this facility and could potentially convert this facility to a freeway sooner than the Year 2035.

SR-94 – Within the Project study area, SR-94 is a two-lane State Highway between Lyons Valley Road and the community of Tecate. No improvements are planned by Caltrans to the portions of SR-94 located within the study area.

2.9.2.2 Existing Roadway Volumes

Figure 2.9-15 illustrates the existing AM/PM peak-hour traffic volumes for the study area intersections. **Figure 2.9-16** illustrates the ADT volumes for the study area roadway and freeway segments. The roadway segment and study area intersection counts were conducted in April 2014, and are provided in **Appendix C-12**. Freeway segment counts were obtained from Caltrans.

2.9.2.3 Existing LOS Analysis

LOS analyses under existing conditions were conducted using the methodologies described above in Section 2.9.1, Analysis Methodology. Intersection, arterial roadway segment, freeway/state highway segment, and freeway ramp intersection LOS results each are addressed below.

Intersection Analysis

Table 2.9-12 illustrates the intersection LOS and average vehicle delay results for the study area intersections under existing conditions. LOS calculation worksheets for existing conditions are provided in the TIS (located in **Appendix C-12** to this EIR). As shown in the table, all of the study area intersections currently are operating at acceptable LOS D or better.

Arterial Roadway Segment Analysis

Table 2.9-13 illustrates the LOS analysis results for the study area roadway segments located within the City of Chula Vista under existing conditions. As shown in the table, Telegraph Canyon Rd, between Oleander Ave and Medical Center Drive is currently operating at an unacceptable LOS D under existing conditions.

Table 2.9-14 displays the LOS analysis results for the study area roadway segments located within the County under existing conditions. As shown in the table, all study roadways in the County currently are operating at acceptable LOS A or B. (Note that the analysis of Honey Springs Road, Melody Road, Maxfield Road, Jefferson Road, and Proctor Valley Road is not included in the Year 2025 and Year 2030 analysis scenarios, as the proposed Project would not contribute 25 peak-hour trips to these facilities. In addition, based on SANDAG traffic forecasts, these facilities are not anticipated to operate at unacceptable LOS in the future Year 2030.)

Freeway/State Highway Segment Analysis

Table 2.9-15 illustrates LOS analysis results for I-805 and SR-125 under existing conditions. As shown in the table, all study area I-805 freeway segments currently operate at acceptable LOS D or better under existing conditions. ADT data on SR-125 was not available; SR-125 is a privately operated toll road and ADT information is not made available to the public. However, based upon visual observations, all segments along SR-125 currently are operating at acceptable levels with free flow conditions.

Two-Lane Highway Segment Analysis

Tables 2.9-16 and 2.9-17 illustrate the LOS results for SR-94 under existing conditions. The analysis was performed using both County and Caltrans methodologies. The HCM analysis worksheets are included in **Appendix C-12**.

As shown on **Table 2.9-16**, SR-94 from Lyons Valley Road to south of Otay Lakes Road currently is operating at acceptable LOS C or better based on the County LOS criteria. Similarly, as shown on **Table 2.9-17**, SR-94 from Melody Road to south of Otay Lakes Road currently is operating at acceptable LOS C based on the Caltrans/HCM methodology. (Note that as a two-lane state highway SR-94, north of Melody Road, was not analyzed using the Caltrans/HCM methodology as the proposed project would not add 50 or more peak hour trips in either direction of SR-94 per SANTEC/ITE Guidelines.)

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at Otay Lakes Road and Olympic Parkway were analyzed under existing conditions using the ILV procedures. The ILV analysis results are illustrated in **Table 2.9-18A** and analysis worksheets are provided in **Appendix C-12**. As shown in **Table 2.9-18A**, both I-805 ramp intersections along Telegraph Canyon Road currently operate “At Capacity” and/or “Under Capacity,” with the exception of the I-805 northbound ramp/Telegraph Canyon Road intersection, which currently operates at “Over Capacity” during the AM peak hour. All of the existing SR-125 ramp intersections along Otay Lakes Road and Olympic Parkway currently operate at “Under Capacity.”

Ramp Metering Capacity Analysis

Table 2.9-18B displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under existing conditions. The ramp currently has three lanes, including one High Occupancy Vehicle (HOV) lane. Based upon field observations, approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

As shown on **Table 2.9-18B**, the AM peak hour demand at the ramp is greater than the ramp's capacity, resulting in traffic queues of 800 feet per lane. The ramp's storage length is approximately 650 feet per lane. Thus, under existing conditions, the vehicle demand during the morning peak hour exceeds the available storage length, resulting in queuing along Telegraph Canyon Road. However, the delay is an estimated 1.8-minutes (less than 15 minutes), which is considered acceptable per the SANTEC/ITE Guidelines.

2.9.3 Analysis of Project Effects and Determination as to Significance

This section presents an analysis of the potential impacts of the proposed Project. The applicable guidelines for the determination of significance are provided, followed by analysis of potential impacts under four scenarios: Existing Plus Project Phase I, Existing Plus Project Buildout, Cumulative Year (2025), and 2030 Plus Project Buildout. The section concludes with analysis of the proposed Project's site access and on-site circulation plans.

Under Appendix G of the CEQA Guidelines, a project may have a potentially significant impact relative to transportation/traffic if it would do the following:

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

As to guidelines "a" and "b," specific thresholds relative to the performance of the circulation system, including traffic loads, street capacity, and congestion management agency standards are

set forth below along with corresponding analyses. As to guideline “c,” the proposed Project would not result in a change in air traffic patterns and, therefore, no further analysis is required in this regard. As to guideline “d,” the proposed Project’s impacts relative to transportation design features are addressed below in Section 2.9.3.6, Site Access and On-Site Circulation. As to guideline “e,” potential impacts relative to emergency access are addressed in Section 3.6 of this EIR, Public Services. As to guideline “f,” the proposed Project’s consistency with alternative transportation programs is addressed below in Section 2.9.3.7, Alternative Transportation Programs. Although no longer specifically required by CEQA Guidelines Appendix G, the proposed Project’s impacts relative to parking capacity are addressed below in Section 2.9.3.8, Parking Capacity.

2.9.3.1 Guidelines for the Determination of Significance

This section outlines the thresholds used to determine the significant Project-related impacts to intersections and roadway segments within the jurisdictions of the County and Chula Vista, as applicable, and for freeway/state highway facilities located within the jurisdiction of Caltrans. Application of the specific threshold is based on the jurisdictional location of the subject roadway facility. The thresholds are based on the County of San Diego Guidelines For Determining Significance, Transportation and Traffic (February 15, 2010), the Chula Vista General Plan Circulation Element and discussions with Chula Vista staff. A significant traffic-related impact will occur if the proposed Project exceeds these thresholds.

County Thresholds

Intersections

The significance criteria differ depending on whether the intersection is signalized or unsignalized.

Signalized Intersections

Traffic volume increases that result in the following will be considered to have a significant traffic volume or LOS traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion at a signalized intersection currently operating at LOS E or LOS F as specified in **Table 2.9-19**, or will cause a signalized intersection to operate at LOS E or LOS F.

Unsignalized Intersections

Traffic volume increases that result in one or more of the following criteria will be considered to have a significant traffic volume or LOS traffic impact on an unsignalized intersection:

- The additional or redistributed ADT generated by the proposed Project will add 20 or more peak-hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D (see **Table 2.9-19**); or
- The additional or redistributed ADT generated by the proposed Project will add 20 or more peak-hour trips to a critical movement of an unsignalized intersection currently operating at LOS E (see **Table 2.9-19**); or
- The additional or redistributed ADT generated by the proposed Project will add five or more peak-hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F (see **Table 2.9-19**); or
- The additional or redistributed ADT generated by the proposed Project will add five or more peak-hour trips to a critical movement of an unsignalized intersection currently operating at LOS F (see **Table 2.9-19**); or
- Based on an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance, or other factors, it is found that a project's generation rate, while less than those specified above, would significantly impact the operations of the intersection.

Arterial Roadway Segments

Traffic volume increases that result in one or more of the following criteria will be considered to have a significant traffic volume or LOS traffic impact on a road segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a Circulation Element roadway or state highway currently operating at LOS E or LOS F as specified in **Table 2.9-20**, or will cause a Circulation Element roadway or state highway to operate at LOS E or LOS F as a result of the proposed Project; or
- The additional or redistributed ADT generated by the proposed Project will cause a residential street to exceed its design capacity.

Two-Lane Highways

The significance criteria applicable to two-lane highways differ depending on whether the signalized intersection spacing on the segment is greater than or less than 1 mile.

Signalized Intersection Spacing More Than 1 Mile

Traffic volume increases that result in the following criteria will be considered to have a significant traffic volume or LOS traffic impact on a two-lane highway facility with signalized intersection spacing more than 1 mile:

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F as specified in **Table 2.9-21**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed Project.

Signalized Intersection Spacing Less Than 1 Mile

Traffic volume increases that result in the following criteria will be considered to have a significant traffic volume or LOS traffic impact on a two-lane highway facility with signalized intersection spacing less than 1 mile:

- The additional or redistributed ADT generated by the proposed Project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F as specified in **Table 2.9-22**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed Project.

Chula Vista Thresholds

Chula Vista defines traffic impacts as either “project-specific impacts” or “cumulative impacts.” Project-specific impacts are those impacts for which the addition of project trips results in an identifiable degradation in LOS on roadway segments or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those impacts in which the project trips contribute to a poor LOS at a nominal level.

The following outlines the City criteria for determining whether a long-term project, such as the proposed Project that will not reach full buildout for 5 or more years, results in project-specific or cumulative impacts on intersections or roadway segments.

Intersections

Project-specific impacts would occur at intersections if both of the following conditions were found:

- The intersection is projected to operate at LOS E or LOS F; and
- The Project trips comprise 5 percent or more of entering volume.

The impact would be considered cumulative if the intersection is projected to operate at LOS E or F and none of the other criteria are triggered.

Roadway Segments

Project-specific impacts would occur to roadway segments if all of the following conditions were found:

- The roadway is projected to operate at LOS D, E, or F;
- The Project trips comprise 5 percent or more of total segment volume; and
- The Project adds more than 800 ADT to the roadway segment.

The impact would be considered cumulative if the segment is projected to operate at LOS D, E, or F, and none of the other criteria are triggered. However, based on the City's thresholds, in cases where roadway segments are projected to operate at LOS D or E under long-term conditions, but all intersections along this segment are projected to operate at LOS D or better, the roadway segment impact would *not* be considered significant since intersection analysis is more indicative of actual roadway system operations than segment analysis. Notwithstanding, if a roadway segment is projected to operate at LOS F under long-term conditions, the project impact would be significant regardless of intersection LOS.

Caltrans Thresholds

Impacts to Caltrans freeway/state highway facilities were assessed based on the threshold in the SANTEC/ITE Guidelines for Traffic Impact Study in the San Diego Region, as illustrated in **Table 2.9-23**. As shown, the Project would result in a significant freeway impact if the Project LOS is E or F, the v/c increases by more than 0.01, and travel speeds decrease by more than 1 mph. With respect to ramp metering, also as shown on Table 2.9-23, a significant impact would result if the Project increases delay by two minutes or more at those ramp meters with delays above 15 minutes without the Project.

2.9.3.2 Analysis – Existing Plus Project (Phase I)

This section presents an analysis of Project-related impacts under the scenario in which Phase I Project traffic volumes are added to existing traffic volumes on the existing roadway network. Intersection and roadway geometrics under this scenario are assumed to be identical to existing conditions, with the addition of one of the two Project driveways, as follows:

- Project Driveway #2 at Otay Lakes Road – roundabout.

Analysis of the Existing Plus Project (Phase I) scenario was conducted using the methodologies previously described in Section 2.9.1, Analysis Methodology. Intersection, roadway segment, and freeway/state highway LOS results are discussed below. Peak-hour traffic volumes at the study area intersections under Existing Plus Project (Phase I) conditions are presented in **Figure 2.9-17**, while average daily traffic volumes on the study area roadway segments under this scenario are illustrated in **Figure 2.9-18**.

Intersections

Table 2.9-24 illustrates the intersection LOS and average vehicle delay results under Existing Plus Project (Phase I) conditions. LOS calculation worksheets for this scenario are provided in **Appendix C-12**.

As shown in **Table 2.9-24**, under this scenario, all of the study area intersections would continue to operate at acceptable LOS D or better conditions during both the AM and PM peak hours. Thus, based on the applicable criteria, the addition of Project (Phase I) trips would not result in significant impact at any of the study area intersections.

Arterial Roadway Segments

Tables 2.9-25 and 2.9-26 illustrate the LOS analysis results for the study area roadway segments under Existing Plus Project conditions in the City and County, respectively.

As shown in **Tables 2.9-25 and 2.9-26**, the following five roadway segments, with three each located within the City of Chula Vista and two in the County, would operate at unacceptable LOS E, under Existing Plus Project (Phase I) conditions. However, as explained below, because additional criteria are applicable in assessing significant impacts, the proposed Project would not result in any significant impacts.

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City of CV) – Proposed Phase I project trips would comprise 1.6% (less than 5%) of the total segment volume, and would add 925 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS B during the peak hours, thus the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS E, City of CV) – Proposed Phase I project trips would comprise 70.6% (more than 5%) of the total segment volume, and would also add 6,383 ADT (more than 800 ADT) to this roadway segment. However, the intersections of Otay Lakes Road / Lake Crest Drive and Otay Lakes Road / Wueste Road are projected to operate at acceptable LOS C or better, thus the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed Phase I project trips would comprise 73.8% (more than 5%) of the total segment volume, and would also add 8,230 ADT (more than 800 ADT) to this roadway segment. Even though, the intersections of Otay Lakes Road / Wueste Road are projected to operate at acceptable LOS C or better, since the project cause this roadway segment to operate at an unacceptable LOS F, the project would have a significant impact to this roadway segment.
- Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant impact to this roadway segment.
- Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, the project would have a significant impact to this roadway segment.

Based upon the significant impact criteria described in Section 2.8, the addition of trips generated by Phase I development of the project, would cause ***significant direct impacts*** at the following three roadway segments:

- *Otay Lakes Road between Wueste Road and the City of Chula Vista/County boundary (Impact TR-1);*
- *Otay Lakes Road between City of Chula Vista/County Boundary and Project Driveway #1 (Impact TR-2); and*
- *Otay Lakes Road between Project Driveway #1 and Driveway #2 (Impact TR-3).*

Freeways/State Highways

Table 2.9-27 illustrates the resulting LOS for I-805 under Existing Plus Project (Phase I) conditions. As shown, all study area I-805 and SR-125 freeway segments would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase I) conditions. As such, the addition of trips generated by *Phase I of the proposed Project would not cause a significant impact* to study area freeway/state highway segments.

Two-Lane Highways (SR-94)

Tables 2.9-28 and 2.9-29 illustrate LOS analysis results for SR-94 under Existing Plus Project (Buildout) conditions. The analysis was performed using both the County and Caltrans methodologies. The HCM analysis worksheets are included in **Appendix C-12**.

As shown in **Table 2.9-28**, SR-94 from Lyons Valley Road to south of Otay Lakes Road would operate under acceptable LOS D or better conditions based on the County criteria. Therefore, the addition of vehicle trips generated by full development of the proposed Project would not cause a significant impact to SR-94 based on the County criteria.

With respect to the Caltrans methodology, as shown in **Table 2.9-29**, SR-94 from Melody Road to south of Otay Lakes Road would operate under acceptable LOS C based on this methodology. Therefore, the addition of trips generated by full development of the *proposed Project would not cause any significant traffic impacts* to SR-94 using the Caltrans analysis methodology.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at Otay Lakes Road and Olympic Parkway were analyzed under Existing Plus Project (Phase I) conditions using the ILV procedures. The results of the analysis are illustrated in **Table 2.9-30A** and the analysis worksheets are provided in **Appendix C-12**.

As shown in the table, both I-805 ramp intersections at Telegraph Canyon Road would continue to operate “At Capacity” and/or “Under Capacity,” with the exception of the I-805 Northbound Ramps/Telegraph Canyon Road intersection, which would operate “Over Capacity” during the AM peak hour. All of the SR-125 ramp intersections along both Otay Lakes Road and Olympic Parkway would operate “At Capacity” and/or “Under Capacity” during both the AM and PM peak hours under the Existing Plus Project (Phase I) conditions. As noted above, the ILV

analysis is provided for information purposes only and is not intended to be used as a means to assess Project impacts.

Ramp Metering Analysis

Table 2.9-30B displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Existing plus Project (Phase I) conditions. Similar to existing conditions, and based upon field observations, it is assumed that approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

As shown on **Table 2.9-30B**, the AM peak hour demand at the ramp would be greater than the capacity provided by the ramp meter under this scenario. However, based upon SANTEC/ITE Guidelines, the projected delay of 3.2 minutes (less than 15 minutes) would be acceptable. Therefore, the proposed project would not result in significant impacts at this on-ramp.

2.9.3.3 Analysis – Existing Plus Project Buildout

This section presents an analysis of Project-related impacts under the scenario in which full buildout Project traffic volumes are added to existing traffic volumes on the existing roadway network. Intersection and roadway geometrics under this scenario are assumed to be identical to existing conditions, with the addition of the three Project driveways, as follows:

- Project Driveway #1 at Otay Lakes Road – signalized T-intersection (see **Appendix C-12**, Section 5.1, Traffic Signal Warrant);
- Project Driveway #2 at Otay Lakes Road – roundabout; and
- Project Driveway #3 at Otay Lakes Road – roundabout.

Mitigation Measures Carried forward from Phase 1

The following improvements (project feature and mitigation measures) would be implemented under Existing Plus Project (Phase I) scenario, and therefore are included as part of the Existing Plus Project (Buildout) roadway network:

- Widening of Otay Lakes Road, between the City of Chula Vista/County boundary and Project Driveway #1 (County) from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification); and
- Widening of Otay Lakes Road, between Project Driveway #1 and Driveway #2 (County) from 2 lanes to the proposed 4-lane Boulevard with Raised Median (County's 4.2A Public Road Classification).

Analysis of the Existing Plus Project (Buildout) scenario was conducted using the methodologies previously described in Section 2.9.1, Analysis Methodology. Intersection, roadway segment, and freeway/state highway LOS results are discussed below. Peak-hour traffic volumes at the study area intersections under Existing Plus Project conditions are presented in **Figure 2.9-19**,

while average daily traffic volumes on the study area roadway segments under this scenario are illustrated in **Figure 2.9-20**.

Intersections

Table 2.9-31 illustrates the intersection LOS and average vehicle delay results under Existing Plus Project (Buildout) conditions. LOS calculation worksheets for this scenario are provided in **Appendix C-12**.

As shown in **Table 2.9-31**, under this scenario, all of the study area intersections would continue to operate at acceptable LOS D or better conditions during both the AM and PM peak hours, with the exception of the unsignalized Otay Lakes Road/Wueste Road intersection, which is located within the City of Chula Vista limits. With the addition of Project traffic, this intersection (#20) would operate at unacceptable LOS E during the PM peak hour. Because the buildout Project traffic would comprise more than 5 percent of the total entering volumes, based on the applicable significance criteria, the addition of trips generated by Project buildout would cause a **significant direct impact** at this intersection (**Impact TR-4**).

Arterial Roadway Segments

Tables 2.9-32 and 2.9-33 illustrate the LOS analysis results for the study area roadway segments under Existing Plus Project conditions in the City of Chula Vista and County, respectively.

As shown in **Tables 2.9-32 and 2.9-33**, the following six roadway segments, with four each located within the City of Chula Vista and two in the County, would operate at unacceptable LOS D (only in Chula Vista), E, or F under Existing Plus Project (Buildout) conditions. However, as explained below, because additional criteria are applicable in assessing significant impacts, the proposed Project would result in significant impacts on three of the six roadway segments.

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City) – Proposed buildout project trips would comprise 3.8% (less than 5%) of the total segment volume, and would add 2,196 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at an acceptable LOS B during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between East H St and Telegraph Canyon Rd/Otay Lakes Rd (LOS D, City) – Proposed buildout project trips would comprise 3.7% (less than 5%) of the total segment volume, and would add 1,098 ADT (more than 800 ADT). However, the intersections of East H Street / Otay Lakes Road and Telegraph Canyon Road / Otay Lakes Road/La Media Road are projected to operate at an acceptable LOS D during the peak hours. Thus, the project would not have a significant impact to this roadway segment.
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City) – Proposed buildout project trips would comprise 10.2% (more than 5%) of the total

segment volume, and would also add 5,270 ADT (more than 800 ADT) to this roadway segment. However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at an acceptable LOS C during the peak hours. Thus, the project would not have a significant impact to this roadway segment.

- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 86.0% (more than 5%) of the total segment volume, and would also add 16,310 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour, thus the project would have a significant impact to this roadway segment.

Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed project trips would comprise 87.0% (more than 5%) of the total segment volume, and would also add 19,540 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour, thus the project would have a significant impact to this roadway segment. Based on the City's significance criteria, the addition of trips generated by full Project buildout would cause *significant direct impacts* at the following two roadway segments:

- *Otay Lakes Road between Lake Crest Drive and Wueste Road (Impact TR-5); and*
- *Otay Lakes Road between Wueste Road and City of Chula Vista/County boundary (Impact TR-6).*

Freeways/State Highways

Table 2.9-34 illustrates the resulting LOS for I-805 and SR-125 under Existing Plus Project (Buildout) conditions. As shown, all study area I-805 and SR-125 freeway segments would continue to operate at acceptable LOS D or better under Existing Plus Project Buildout conditions. As such, the addition of trips generated by full development of the proposed Project would not cause a significant impact to study area freeway/state highway segments.

Two-Lane Highways (SR-94)

Tables 2.9-35 and 2.9-36 illustrate LOS analysis results for SR-94 under Existing Plus Project (Buildout) conditions. The tables illustrate the analysis performed using the County and Caltrans methodologies, respectively. The HCM analysis worksheets are included in **Appendix C-12**.

As shown in **Table 2.9-35**, SR-94 from Lyons Valley Road to south of Otay Lakes Road would operate under acceptable LOS D or better conditions based on the County criteria. Therefore, the addition of vehicle trips generated by full development of the *proposed Project would not cause a significant impact* to SR-94 based on the County criteria.

With respect to the Caltrans methodology, as shown in **Table 2.9-36**, SR-94 from Melody Road to south of Otay Lakes Road would operate under acceptable LOS C based on this methodology. Therefore, the addition of trips generated by full development of the *proposed Project would not cause any significant traffic impacts* to SR-94 using the Caltrans analysis methodology.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at Otay Lakes Road and Olympic Parkway were analyzed under Existing Plus Project (Buildout) conditions using the ILV procedures. The results of the analysis are illustrated in **Table 2.9-37A** and the analysis worksheets are provided in **Appendix C-12**.

As shown in the table, both I-805 ramp intersections at Telegraph Canyon Road would continue to operate “At Capacity” and/or “Under Capacity,” with the exception of the I-805 Northbound Ramps/Telegraph Canyon Road intersection, which would operate “Over Capacity” during the AM peak hour. All of the SR-125 ramp intersections along both Otay Lakes Road and Olympic Parkway would operate “At Capacity” and/or “Under Capacity” during both the AM and PM peak hours under the Existing Plus Project (Buildout) conditions. As noted above, the ILV analysis is provided for information purposes only and is not intended to be used as a means to assess Project impacts.

Ramp Metering Analysis

Table 2.9-37B displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Existing plus Project (Buildout) conditions. Similar to existing conditions, and based upon field observations, it is assumed that approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

As shown on **Table 2.9-37B**, the AM peak hour demand at the ramp would be greater than the capacity provided by the ramp meter under this scenario. However, based upon SANTEC/ITE Guidelines, the projected delay of 4.6 minutes (less than 15 minutes) would be acceptable. Therefore, the proposed project would not result in significant impacts at this on-ramp.

2.9.3.4 Analysis - Cumulative Year (2025)

This section presents an analysis of Cumulative Year (2025) traffic conditions, which includes cumulative land development projects anticipated to generate additional traffic within the study area. Potential traffic impacts to the existing transportation network due to the addition of cumulative projects and proposed project traffic were assessed.

SANDAG’s Series 11 Year 2025 Transportation Model was utilized to forecast cumulative (Year 2025) traffic volumes. The most recent model approved by the City of Chula Vista (developed for the Otay Ranch Village Two Comprehensive SPA Amendment project) was utilized as a starting point to ensure the accuracy of the modeling assumptions within the City’s jurisdiction.

Outside of Chula Vista, SANDAG Year 2025 land use assumptions were examined and updated to ensure that anticipated land development projects identified by both the County and City of San Diego in the vicinity of the proposed project were accurately reflected in the model. Field review was conducted by Chen Ryan staff to verify that cumulative projects fully occupied and operational as of May 2014 are not included as a part of the cumulative (year 2025) model, as their traffic would already be included in the Existing Conditions.

Table 2.9-38 lists the approved and pending project list in East Otay Mesa by the Year 2025, which was incorporated in the SANDAG transportation model.

The Cumulative (Year 2025) roadway network was assumed to be identical to the existing plus project (buildout) network with the following exceptions:

- Completion of Heritage Road, between Olympic Parkway and Main Street including the signalization of the intersection of Heritage Road / Main Street (City of CV). Heritage Road is identified as a Mitigation Measure for multiple projects within the City of Chula Vista, including the Village Two Comprehensive SPA Amendment and the University Villages Project (identified as MM TCA-4 in the University Villages FEIR, SCH # 2013071077). It is also a Chula Vista Transportation Development Impact Fee (TDIF) facility (SMT 364 – Facility #57), and identified as a Six-Lane Prime Arterial in the Chula Vista General Plan Circulation Plan – East;
- Widening of Otay Lakes Road, between H Street and Telegraph Canyon Road from a 4-lane Major Road to a 6-lane Prime Arterial (City of CV), consistent with the classification identified in the City’s currently adopted General Plan Circulation Element. This improvement project (STM355 – Otay Lakes Road Widening) is included in the Chula Vista adopted FY 2012-13 through FY 2016-17 Capital Improvement Program (CIP) and will be funded by Transportation Development Impact Fees; and
- Signalization of the County intersection of SR-94/Melody Road due to the completion of the Jamul Casino project (Final Tribal Environmental Evaluation – Jamul Indian Village Gaming Development Project / Jamul Indian Village Resolution No. 2013-03) (County).

The Cumulative Year (2025) intersection and roadway geometrics are illustrated in **Figures 2.9-21 and 2.9-22**, respectively. **Figures 2.9-23 and 2.9-24** show the peak-hour intersection and average daily roadway volumes for the study area intersections and roadway segments, respectively, under Cumulative Year (2025) conditions. Traffic volumes for the Cumulative Year (2025) scenario were developed using the SANDAG Series 11 Year 2025 Transportation Model.

Analysis of the Cumulative Year (2025) condition is presented below. Intersection, arterial roadway segment, and freeway/state highway LOS were assessed using the methodologies described in Section 2.9.1, Analysis Methodology.

Intersections

Table 2.9-39 illustrates intersection LOS and average vehicle delay results for the study area intersections under both the Cumulative Year (2025) without and with Project conditions. As

show in **Table 2.9-39**, all of the study area intersections would operate at acceptable LOS D or better under the Cumulative Year (2025) with Project conditions with the exception of the following two intersections:

- Otay Lakes Road / Wueste Road (City) - This intersection (#20) would operate at unacceptable LOS F during both the AM and PM peak hours with the addition of the project traffic. Based on the applicable significance criteria, the addition of ***Project trips would cause a significant direct impact*** to the Otay Lakes Road/Wueste Road intersection because the Project traffic would comprise more than 5 percent of the total entering volumes (**Impact TR-7**).
- Otay Lakes Road / SR-94 (County) - This intersection (#21) would operate at unacceptable LOS E and F during the AM and PM peak hours, respectively. Based on the applicable significance criteria, the additional traffic generated by the cumulative projects and the buildout of the ***Project would cause a significant cumulative impact*** to the Otay Lakes Road / SR-94 intersection (**Impact TR-8**).

Arterial Roadway Segments

Tables 2.9-40 and 2.9-41 illustrate the LOS analysis results for the study area roadway segments under without and with Project Cumulative Year (2025) conditions for the City of Chula Vista and County roadways, respectively. As shown in the tables, the following eleven roadway segments, nine located within the City and two located within the County, would operate at unacceptable LOS D (only in Chula Vista), E, or F under Cumulative Year (2025) conditions. However, as explained below, because additional criteria are applicable in assessing significant impacts, the proposed ***Project would result in significant impacts*** on four of the eleven roadway segments.

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E, City) – Proposed buildout project trips would comprise 3.6% (less than 5%) of the total segment volume, and would add 2,200 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS D or better during the peak hours. Thus, ***the project would not have a significant impact*** to this roadway segment.
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E, City) – Proposed buildout project trips would comprise 4.2% (less than 5%) of the total segment volume, and would add 2,420 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Medical Center Drive and Telegraph Canyon Road / Paseo Ladera are projected to operate at acceptable LOS D or better during the peak hours. Thus, ***the project would not have a significant impact*** to this roadway segment.
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E, City) – Proposed buildout project trips would comprise 4.5% (less than 5%) of the total segment volume, and would add 2,630 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ladera and Telegraph Canyon Road / Paseo Ranchero/Heritage Road are projected to operate at acceptable LOS D during the

peak hours. Thus, *the project would not have a significant impact* to this roadway segment.

- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Road (LOS D, City) – Proposed buildout project trips would comprise 5.5% (more than 5%) of the total segment volume, and would add 3,070 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ranchero/Heritage Road and Telegraph Canyon Road / La Media Road are projected to operate at acceptable LOS D during the peak hours. Thus, *the project would not have a significant impact* to this roadway segment.
- Otay Lakes Rd, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D, City) – Proposed buildout project trips would comprise 9.9% (more than 5%) of the total segment volume, and would add 5,270 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, *the project would not have a significant impact* to this roadway segment.
- Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 74.7% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT). Additionally, the intersection Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours. Thus, **the project would have a significant impact** to this roadway segment.
- Otay Lakes Rd, between Wueste Road and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed buildout project trips would comprise 76.5% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT). Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours. Thus, **the project would have a significant impact** to this roadway segment.
- Olympic Parkway, between East Palomar Street and SR-125 SB Ramps (LOS D, City) – Proposed buildout project trips would comprise 1.2% (less than 5%) of the total segment volume, and would add 660 ADT (less than 800 ADT). However, the intersections of Olympic Parkway / East Palomar Street and Olympic Parkway / SR-125 SB Ramps are projected to operate at acceptable LOS C or better during the peak hours. Thus, *the project would not have a significant impact* to this roadway segment.
- Olympic Parkway, between SR-125 SB Ramps and SR-125 NB Ramps (LOS E, City) – Proposed buildout project trips would comprise 2.7% (less than 5%) of the total segment volume, and would add 1,540 ADT (more than 800 ADT). However, the intersections of Olympic Parkway / SR-125 SB Ramps and Olympic Parkway / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, *the project would not have a significant impact* to this roadway segment.
- Otay Lakes Rd, between City of Chula Vista/County boundary and Project Driveway #1 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, *the project would have a significant cumulative impact* to this roadway segment.

- Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment. Thus, the *project would have a significant cumulative impact* to this roadway segment.

Based on the application of the City’s significance criteria, the addition of *Project trips would cause significant impacts* at the following three roadway segments as identified:

- *Otay Lakes Road between Lake Crest Drive and Wueste Road (Impact TR-9, Direct);*
- *Otay Lakes Road between Wueste Road and City of Chula Vista/County boundary (Impact TR-10, Direct);*
- *Otay Lakes Road between City of Chula Vista/County boundary and Project Driveway #1 (Impact TR-11, Cumulative); and*
- *Otay Lakes Road between Project Driveway #1 and Driveway #2 (Impact TR-12, Cumulative).*

Freeway/State Highways

Table 2.9-42 illustrates the resulting LOS for I-805 and SR-125 under Cumulative Year (2025) with Project conditions. As shown, all segments along I-805 and SR-125 would continue to operate at acceptable LOS D or better under this scenario, with the exception of I-805 between East H St and Telegraph Canyon Rd, which would operate at unacceptable LOS E. However, based on the applicable significance criteria, the addition of *Project traffic would not cause a significant traffic impact* to this freeway segment because the increase in v/c ratio is estimated to be less than 0.01.

Two-Lane Highways (SR-94)

The signalization of the SR-94/Melody Road intersection would result in intersection spacing of less than 1 mile at the following three SR-94 segments and, therefore, requires that the three segments be analyzed using the Two-Lane Highways with Signalized Intersection Spacing *Under One Mile* methodology, with the LOS to be determined by the intersection operations along the highway at these locations:

- SR-94 between Lyons Valley Road and Jefferson Road;
- SR-94 between Jefferson Road and Maxfield Road; and
- SR-94 between Maxfield Road and Melody Road.

As shown in **Table 2.9-39**, all of the intersections along the above three segments (Intersections #39, #40, and #41) are projected to operate at acceptable LOS D or better under with Project conditions. Thus, SR-94 between Lyons Valley Road and Melody Road (the three segments identified above) would operate at acceptable LOS under Cumulative Year (2025) with Project conditions.

The signalized intersection spacing for the remaining segments of SR-94 within the study area, those between Melody Road and Otay Lakes Road and south of Otay Lakes Road, is more than 1 mile; thus, these segments were analyzed using the Two-Lane Highways with Signalized Intersection Spacing *Over One Mile* methodology as presented below.

Tables 2.9-43 and 2.9-44 illustrate the LOS analysis results for these segments of SR-94 under Cumulative Year (2025) without and with Project conditions; this analysis was performed using both the County and Caltrans methodologies as the two respective tables illustrate.

As shown in **Table 2.9-43**, based on the County LOS criteria, the segment of SR-94 south of Otay Lakes Road would operate at unacceptable LOS E under Cumulative Year (2025) with Project conditions. Because the Project would add 370 ADT (more than the 325 County threshold), the additional Project trips would cause a significant cumulative traffic impact at this location under the County criteria. However, this segment of SR-94 also was analyzed using the Caltrans methodology; under this method, the peak-hour travel speeds were calculated at an acceptable LOS D (see **Table 2.9-44**). Because peak-hour operations typically are considered by traffic engineers to be the most accurate indicator of roadway operating conditions, combined with the fact that SR-94, as a state route, is a Caltrans facility, the analysis concluded, based on the Caltrans methodology that the Project would not result in a significant impact at the subject SR-94 segment.

As shown in **Table 2.9-44**, SR-94 from Melody Road to south of Otay Lakes Road would operate at acceptable LOS D based on the Caltrans/HCM methodology and, therefore, the addition of *Project trips would not cause any significant traffic impacts* to SR-94 utilizing this methodology.

Ramp Intersection Capacity Analysis

The signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at Otay Lakes Road and Olympic Parkway also were analyzed under Cumulative Year (2025) conditions using the ILV procedures. ILV analysis results are set forth in **Table 2.9-45A**.

As shown in the table, both I-805 ramp intersections would continue to operate “At Capacity” and/or “Under Capacity,” with the exception of the I-805 Northbound Ramps/Telegraph Canyon Road intersection, which would operate at “Over Capacity” during the AM peak hour. All of the SR-125 ramp intersections would operate “At Capacity” and/or “Under Capacity” during both the AM and PM peak hours under Cumulative Year (2025) conditions. As noted above, the ILV analysis is provided for information purposes only and is not intended to be used as a means to assess Project impacts.

Ramp Metering Analysis

Table 2.9-45B displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Cumulative (Year 2025) conditions. Similar to existing conditions, and based upon field observations, it is assumed that approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

As shown on **Table 2.9-45B**, the AM peak hour demand at the ramp would be greater than the capacity provided by the ramp meter under this scenario. However, based upon SANTEC/ITE Guidelines, the projected delay of 4.2 minutes (less than 15 minutes) would be acceptable. Therefore, the proposed project would not result in significant impacts at this on-ramp.

2.9.3.5 Analysis – 2030 Plus Project Buildout

This section presents an analysis of Year 2030 traffic conditions both with and without the proposed Project at buildout. The scenarios analyzed in this section are as follows:

- Year 2030 Base Conditions
- Year 2030 Base Plus Project (Buildout) Conditions

With respect to the roadway network and land use assumptions used to conduct the analysis, representatives of the County, City, Caltrans, and the Project applicant determined that three network and land use combinations would be modeled preliminarily, with the worst case scenario (i.e., greatest intensity of development) selected for the analysis. Based on the model output comparisons, it was determined that the Year 2030 analysis would be based on the County General Plan Update (Referral Map) and the City's current adopted General Plan, with the addition of the latest land use assumptions for the City's University Villages project. The University Villages project would be located in the undeveloped southeast portion of Chula Vista, and includes significant increases in land use density and intensity, as compared to the City's current adopted General Plan.

Additionally, SANDAG's year 2030 forecast model assumed the buildout of Planning Area 17, which is expected to generate approximately 6,227 daily trips. However, with the adoption of the County of San Diego General Plan Update, the Planning Area 17 land uses have been designated as 296 Single Family Residential units, with the remainder of the planning area designated as Open Space. Based on SANDAG's *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002), it is estimated that the 296 Single Family Residential units would generate 2,960 daily trips. Thus, Planning Area 17 would generate fewer trips than those assumed in the 2030 forecast model. Therefore 3,267 daily trips were reduced from the applicable traffic analysis zone, as well as from the surrounding roadway network, to reflect the adopted Planning Area 17 land uses.

The roadway network used for the analysis is based on buildout of the City General Plan Circulation Element and the County General Plan Mobility Element, which include the following improvements:

- Construction of Main Street, between Heritage Road and Eastlake Parkway - this segment of Main Street is included within the City's TDIF program and the first phase of the construction is included in the City's CIP Program for 2013-2016 (STM357 - #60A & #60B);
- Construction of Otay Valley Road, between Main Street and Eastlake Parkway – Otay Valley Road from Main Street to SR-125 western right-of-way (ROW), and Otay Valley

Road from SR-125 eastern ROW to Eastlake Parkway is assumed to be constructed by the University Villages Project for access and frontage (University Villages FEIR, 5.3-105 & 5.3-116, SCH # 2013071077); and

- Construction of two new interchanges along SR-125 at Main Street and Otay Valley Road – the SR-125/Main Street interchange (overpass and ramps) is included as part of the City of Chula Vista’s TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #67). The SR-125/Otay Valley Road interchange (overpass and ramps) is included as part of the City of Chula Vista’s TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #68).
- Widening of Otay Lakes Road, between Lake Crest Drive and Wueste Road to a 6-lane Prime Arterial – this segment of Otay Lakes Road is included in the City’s Circulation Element as a 6-lane Prime Arterial, and is included in the City’s TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #28B).
- Widening of Otay Lakes Road, between Wueste Road and the City of Chula Vista/County boundary to a 6-lane Prime Arterial – this segment of Otay Lakes Road is included in the City’s Circulation Element as a 6-lane Prime Arterial. Based on information provided by the City of Chula Vista, it is anticipated that this segment of Otay Lakes Road would be included in the City’s TDIF program by December of 2015.
- Construction of Main Street, from Heritage Road to Eastlake Parkway - this segment of Main Street is included within the City’s TDIF program and the first phase of construction is included in the City’s CIP Program for 2013-2016 (STM357 #60A & #60B);
- Construction of Otay Valley Road, from Main Street to Eastlake Parkway– Otay Valley Road from Main Street to SR-125 western right-of-way (ROW), and Otay Valley Road from SR-125 eastern ROW to Eastlake Parkway would be constructed by the University Villages Project for access and frontage (University Villages FEIR, 5.3-105 & 5.3-116, SCH # 2013071077); and
- Construction of two new interchanges along SR-125 at Main Street and Otay Valley Road– the SR-125/Main Street interchange (overpass and ramps) is included as part of the City of Chula Vista’s TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #67). The SR-125/Otay Valley Road interchange (overpass and ramps) is included as part of the City of Chula Vista’s TDIF program and was approved by the City Council on November 18, 2014 (STM-359 Facility #68).

These improvements would be funded by the County’s Transportation Impact Fee (TIF) program and the City’s Transportation Development Impact Fees (TDIF), which require that new developments fund their fair share of the construction of planned transportation facilities affected by the proposed development. (See County Code, Section 77.201; City Municipal Code, Chapter 3.54.). It should be noted that the project is proposing to reclassify Otay Lakes Road, between the City/County boundary and the planned Project Driveway #2 from 4.1B (classified in the currently adopted General Plan as a Major Road with Raised Median) to 4.2A (Boulevard with Raised Median). As a result, Otay Lakes Road, between Wueste Road and Project Driveway #2,

was analyzed based upon the proposed classifications (4.2A) instead of the currently adopted General Plan classification (4.1B).

Year 2030 intersection geometrics were developed by expanding the existing geometrics to match the planned roadway cross-sections. **Figures 2.9-25 and 2.9-26** illustrate the anticipated intersection and roadway geometrics for the study area under Year 2030 conditions. **Figures 2.9-27 and 2.9-28** illustrate the projected peak-hour intersection volumes and average daily roadway volumes for this scenario.

Analysis of Year 2030 Base conditions and Year 2030 Base Plus Project (Buildout) conditions is presented below. Intersection, arterial roadway segment, and freeway/state highway LOS were assessed using the methodologies described in Section 2.9.1, Analysis Methodology. Peak-hour traffic volumes at the study area intersections under the Project scenario are illustrated in **Figure 2.9-29**, while average daily traffic volumes on the study area roadway segments under this scenario are illustrated in **Figure 2.9-30**.

Intersections

Year 2030 Base Traffic Conditions

Table 2.9-46 illustrates intersection LOS and average vehicle delay results for the study area intersections under Year 2030 Base conditions. As shown in **Table 2.9-46**, all of the study area intersections would operate at acceptable LOS D or better under Year 2030 Base conditions.

Year 2030 Base Plus Project (Buildout) Conditions

Table 2.9-47 illustrates intersection LOS and average vehicle delay results under Year 2030 Base Plus Project (Buildout) conditions. As shown in **Table 2.9-47**, all of the study area intersections would continue to operate at acceptable LOS D or better during both the AM and PM peak hours.

Arterial Roadway Segments

Year 2030 Base Traffic Conditions

Table 2.9-48 illustrates the LOS analysis results for study area roadway segments within the City under Year 2030 Base conditions. As shown in the table, the following six segments would operate at unacceptable LOS D or E under Year 2030 Base conditions:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E);
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E);
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Ranchero/Heritage Rd (LOS E);
- Telegraph Canyon Rd, between Paseo Ranchero/Heritage Rd and La Media Rd (LOS D);
- Otay Lakes Road, between SR-125 NB Ramps and SR-125 SB Ramps (LOS D); and
- Olympic Pkwy, between SR-125 NB Ramps and East Lake Pkwy (LOS D).

Table 2.9-49 illustrates the LOS analysis results for study area roadway segments within the County under Year 2030 Base conditions. As shown in the table, all roadway segments within the County (i.e., the segment of Otay Lakes Road) would operate at acceptable LOS C or better under Year 2030 Base conditions.

Year 2030 Base Plus Project (Buildout) Conditions

Tables 2.9-50 and 2.9-51 illustrate the LOS analysis results for the study area roadway segments under Year 2030 Base Plus Project (Buildout) conditions in the City and County, respectively. As shown, the following nine roadway segments, each located within the City, would operate at unacceptable LOS D, or E under Year 2030 Base Plus Project (Buildout) conditions. However, as explained below, because additional criteria are applicable in assessing significant impacts, the proposed ***Project trips would not result in a significant impact*** at any of the nine segments:

- Telegraph Canyon Rd, between Oleander Ave and Medical Center Dr (LOS E) – Proposed buildout project trips would comprise 3.7% (less than 5%) of the total segment volume, and would add 2,200 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Oleander Avenue and Telegraph Canyon Road / Medical Center Drive are projected to operate at acceptable LOS D or better during the peak hours; thus, the ***project would not have a significant impact*** to this roadway segment.
- Telegraph Canyon Rd, between Medical Center Dr and Paseo Ladera (LOS E) – Proposed buildout project trips would comprise 4.1% (less than 5%) of the total segment volume, and would add 2,420 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Medical Center Drive and Telegraph Canyon Road / Paseo Ladera are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Telegraph Canyon Rd, between Paseo Ladera and Paseo Rancho/Heritage Rd (LOS E) – Proposed buildout project trips would comprise 4.4% (less than 5%) of the total segment volume, and would add 2,630 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Ladera and Telegraph Canyon Road / Paseo Rancho/Heritage Road are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Telegraph Canyon Rd, between Paseo Rancho/Heritage Rd and La Media Rd (LOS E) – Proposed buildout project trips would comprise 5.2% (more than 5%) of the total segment volume, and would add 3,070 ADT (more than 800 ADT). However, the intersections of Telegraph Canyon Road / Paseo Rancho/Heritage Road and Telegraph Canyon Road / La Media Road are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Otay Lakes Road, between La Media Road and Rutger Avenue (LOS D) – Proposed buildout project trips would comprise 9.4% (more than 5%) of the total segment volume, and would add 4,830 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / La Media Road and Otay Lakes Road / Rutger Avenue are projected to

operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.

- Otay Lakes Road, between SR-125 SB Ramps and SR-125 NB Ramps (LOS D) – Proposed buildout project trips would comprise 9.4% (more than 5%) of the total segment volume, and would add 5,270 ADT (more than 800 ADT). However, the intersections of Otay Lakes Road / SR-125 SB Ramps and Otay Lakes Road / SR-125 NB Ramps are projected to operate at acceptable LOS B or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Olympic Pkwy, between SR-125 NB Ramps and Eastlake Pkwy (LOS D) – Proposed buildout project trips would comprise 0.4% (less than 5%) of the total segment volume, and would add 220 ADT (less than 800 ADT). Additionally, the intersections of Olympic Parkway / East Palomar Street and Olympic Parkway / SR-125 SB Ramps are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Otay Valley Road, between SR-125 NB Ramps and Main Street (LOS D) – Proposed buildout project trips would comprise 0.4% (less than 5%) of the total segment volume, and would add 220 ADT (less than 800 ADT). Additionally, the intersections of Otay Valley Road / SR-125 NB Ramps and Main Street / Otay Valley Road/Eastlake Pkwy are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.
- Main Street, between SR-125 NB Ramps and Eastlake Pkwy (LOS D) – Proposed buildout project trips would comprise 3.1% (less than 5%) of the total segment volume, and would add 1,700 ADT (more than 800 ADT). However, the intersections of Main Street / SR-125 NB Ramps and Main Street / Eastlake Parkway are projected to operate at acceptable LOS D or better during the peak hours. Thus, the ***project would not have a significant impact*** to this roadway segment.

Based on the City's significance criteria, none of the above roadway segments would be significantly impacted by the addition of Project traffic. With respect to County roadways, as shown in **Table 2.9-51**, all segments within the County study area are projected to operate at acceptable LOS D or better under Year 2030 Base Plus Project conditions and, therefore, the proposed ***Project would not result in significant impacts*** to County roadways.

Freeway/State Highways

Year 2030 Base Traffic Conditions

Table 2.9-52 illustrates the freeway LOS analysis results for I-805 and SR-125 under Year 2030 Base conditions. As shown in the table, all study area I-805 freeway segments would operate at acceptable LOS D or better under Year 2030 Base conditions, with the exception of the following segments:

- I-805, between Bonita Road and East H St (LOS E)
- I-805, between East H St and Telegraph Canyon Rd (LOS E)

All segments along SR-125 would operate at acceptable LOS D or better under Year 2030 Base conditions.

Year 2030 Base Plus Project (Buildout) Conditions

Table 2.9-53 illustrates the resulting LOS for I-805 and SR-125 under Year 2030 Base Plus Project (Buildout) conditions. As shown in the table, similar to base conditions, all segments along I-805 and SR-125 would continue to operate at acceptable LOS D or better under this scenario, with the exception of the following segments:

- I-805, between Bonita Road and East H St (LOS E)
- I-805, between East H St and Telegraph Canyon Rd (LOS E)

However, based on the applicable significance criteria, the addition of ***Project trips would not cause any significant traffic impact*** to the segment because the increase in v/c ratio is estimated to be less than 0.01.

Two-Lane Highways (SR-94)

Year 2030 Base Traffic Conditions

The signalization of the SR-94/Melody Road intersection would result in intersection spacing of less than 1 mile at the following three SR-94 segments and, therefore, requires that the segments be analyzed using the Two-Lane Highways with Signalized Intersection Spacing *Under One Mile* methodology, with the LOS determined by the intersection operations along the highway:

- SR-94 between Lyons Valley Road and Jefferson Road
- SR-94 between Jefferson Road and Maxfield Road
- SR-94 between Maxfield Road and Melody Road

As shown in **Table 2.9-46**, all of the intersections (Intersections #39, #40, and #41) along the above segments are projected to operate at acceptable LOS D or better under Year 2030 Base conditions. Thus, SR-94 between Lyons Valley Road and Melody Road (the three segments identified above) would operate at acceptable LOS under this scenario.

The signalized intersection spacing for the remaining segments of SR-94 within the study area, those between Melody Road and Otay Lakes Road and south of Otay Lakes Road, is more than 1 mile; thus, these segments were analyzed utilizing the Two-Lane Highways with Signalized Intersection Spacing *Over One Mile* methodology, as presented below.

Tables 2.9-54 and 2.9-56 illustrate the LOS analysis results for SR-94 under Year 2030 Base conditions. The analysis was performed using both the County and Caltrans methodologies. As shown in **Table 2.9-54**, based on the County criteria, the segment of SR-94 south of Otay Lakes Road is projected to operate at unacceptable LOS E under Year 2030 Base conditions. In

comparison, using the Caltrans/HCM methodology, as shown on **Table 2.9-56**, SR-94 from Melody Road to south of Otay Lakes Road would operate at acceptable LOS D under Year 2030 Base conditions.

Year 2030 Base Plus Project (Buildout) Conditions

As noted above, the signalization of the SR-94/Melody Road intersection would result in intersection spacing of less than 1 mile at the following three SR-94 segments and, therefore, requires the segments be analyzed using the Two-Lane Highways with Signalized Intersection Spacing *Under One Mile* methodology, with the LOS determined by the intersection operations along the highway:

- SR-94 between Lyons Valley Road and Jefferson Road;
- SR-94 between Jefferson Road and Maxfield Road; and
- SR-94 between Maxfield Road and Melody Road.

As shown in **Table 2.9-47**, all of the intersections (Intersections #39, #40, and #41) along the above segments are projected to operate at acceptable LOS D or better. Thus, SR-94 between Lyons Valley Road and Melody Road (the three segments identified above) would operate at acceptable LOS under Year 2030 Base Plus Project (Buildout) conditions.

The signalized intersection spacing for the remaining segments of SR-94 within the study area, those between Melody Road and Otay Lakes Road and south of Otay Lakes Road, is more than 1 mile; thus, these segments were analyzed using the Two-Lane Highways with Signalized Intersection Spacing *Over One Mile* methodology, as presented below.

Tables 2.9-55 and 2.9-57 illustrate the LOS analysis results for these segments of SR-94 under Year 2030 Base Plus Project (Buildout) conditions under the County and Caltrans methodologies, respectively.

As shown in **Table 2.9-55**, based on the County LOS criteria, the segment of SR-94 south of Otay Lakes Road would operate at unacceptable LOS E under Year 2030 Base Plus Project (Buildout) conditions and, therefore, the additional Project trips would cause a significant cumulative traffic impact at this location. However, this segment of SR-94 also was analyzed utilizing the Caltrans methodology; under this method, the peak-hour travel speeds were calculated at LOS D (see **Table 2.9-57**). Because peak-hour operations typically are considered by traffic engineers to be the most accurate indicator of roadway operating conditions, combined with the fact that SR-94, as a state route, is a Caltrans facility, the analysis concluded, based on the Caltrans methodology that the ***Project would not result in a significant impact*** at the subject SR-94 segment.

As shown in **Table 2.9-57**, SR-94 from Melody Road to south of Otay Lakes Road would operate at acceptable LOS D based on the Caltrans methodology and, therefore, ***the addition of Project trips would not cause a significant impact*** to SR-94 using this methodology.

Ramp Intersection Capacity Analysis

Year 2030 Base Traffic Conditions

Consistent with Caltrans requirements, the signalized I-805 freeway ramp intersections at Telegraph Canyon Road and along SR-125 at Otay Lakes Road, Olympic Parkway, Rock Mountain Road, and Otay Valley Road, were analyzed under Year 2030 Base conditions using the ILV procedures. The ILV analysis results are illustrated in **Table 2.9-58**.

As shown in the table, all of the I-805 and SR-125 ramp intersections would operate at “At Capacity” and/or “Under Capacity” during both the AM and PM peak hours under Future Year 2030 Base conditions with the exception of the following intersections, which would operate “Over Capacity”:

- I-805 SB Ramps/Telegraph Canyon Road (PM peak hour);
- I-805 NB Ramps/Telegraph Canyon Road (AM peak hour); and
- SR-125 SB Ramps / Main Street (AM peak hour).

Year 2030 Base Plus Project (Buildout) Conditions

The signalized freeway ramp intersections along I-805 at Telegraph Canyon Road and along SR-125 at Otay Lakes Road, Olympic Parkway, Rock Mountain Road, and Otay Valley Road also were analyzed under Year 2030 Base Plus Project (Buildout) conditions using the ILV procedures. ILV analysis results are illustrated in **Table 2.9-59A**.

As shown in the table, all of the I-805 and SR-125 ramp intersections would operate “At Capacity” and/or “Under Capacity” during both the AM and PM peak hours under Year 2030 Plus Project (Buildout) conditions, with the exception of the following intersections, which would operate “Over Capacity”:

- I-805 SB Ramps/Telegraph Canyon Road (PM peak hour);
- I-805 NB Ramps/Telegraph Canyon Road (AM peak hour);
- SR-125 SB Ramps / Otay Lakes Road (PM peak hour);
- SR-125 SB Ramps / Main Street (AM peak hour); and
- SR-125 NB Ramps / Main Street (PM peak hour).

However, as noted above, the ILV analysis is provided for information purposes only and is not intended to be used as a means to assess Project impacts.

Ramp Metering Analysis

Table 2.9-59B displays the ramp metering analysis conducted at the I-805 NB On-Ramp at Telegraph Canyon Road under Year 2030 Base Plus Project (Buildout) conditions. Similar to

existing conditions, and based upon field observations, it is assumed that approximately 20% of the total NB On-Ramp traffic utilizes the HOV lane and approximately 80% of the total arrival traffic (demand) utilizes the two non-HOV lanes.

As shown on **Table 2.9-59B**, the AM peak hour demand at the ramp would be greater than the capacity provided by the ramp meter under this scenario. However, based upon SANTEC/ITE Guidelines, the projected delay of 8.9 minutes (less than 15 minutes) would be acceptable. Therefore, the proposed project would not result in significant impacts at this on-ramp.

2.9.3.6 Analysis – Site Access and On-Site Circulation

This section presents analysis relative to the proposed Project site access and on-site circulation plan, including potential impacts to pedestrians and bicyclists.

Site Access

Site access to the proposed Project is proposed via three driveways to be located off of Otay Lakes Road. Based on a review of the Project site utilization plan and field conditions, the following comments on site access are provided:

- The sight distance at each of the driveways is adequate and driveway locations are acceptable given appropriate driveway control.
- The proposed geometry at each of the Project driveways is illustrated in **Figure 2.9-27**. Project driveway #1 would be signalized while driveways #2 and #3 would be roundabout controlled. Based on the analyses presented in Sections 2.9.3.2, 2.9.3.3, 2.9.3.4 and 2.9.3.5, all three driveways would operate at acceptable LOS at Project buildout.
- Otay Lakes Road will be constructed as a 4-lane (County's 4.2A Public Road Classification) roadway from Wueste Road to the second project driveway, as proposed by the project; and a 2-lane (County's 2.1C Public Road Classification) roadway from the second driveway to SR-94, as designated in the County of San Diego General Plan Update. (The proposed Project incorporates this recommendation.)

On-Site Circulation

Based on buildout of the proposed Project land uses and trip generation as shown in **Table 2.9-10**, ADT volumes were estimated for the internal roadway segments to be constructed within the proposed Project site. Project trips were distributed and assigned to the internal roadway system based on the location and characteristics of the proposed land uses. **Figure 2.9-31** displays the resulting internal roadway ADTs for the proposed Project.

Based on discussions with County staff, recommended roadway classifications were developed for each of the internal roadways. **Table 2.9-60** displays the recommended classifications and the resulting LOS for these roadways; LOS D is considered acceptable conditions for the local internal roadways within Otay Ranch.

As shown in the table, and based on the recommended classifications, all of the internal roadway segments within the proposed Project site would operate at acceptable LOS D or better under Project buildout conditions.

Pedestrians and Bicyclists

The on-site circulation plan includes a pedestrian and bicyclist circulation system designed to minimize vehicle conflicts. As noted above, the Project site would be accessed by three entry points that would create a loop accessing all neighborhoods within the village. The Project's street design would provide a parkway between the street and sidewalk to enhance pedestrian comfort. Roundabouts, raised intersections, and neckdowns also are proposed to facilitate calmed traffic flow and to enhance the pedestrian orientation of the village. All roads would be designed and constructed according to the applicable standards.

The referenced roundabouts would be located at major intersections of the village to create focal points and facilitate traffic flow. Neckdowns would be located at regularly distanced intersections throughout, creating a rhythm in both traffic flow and neighborhood aesthetics. The neckdowns would be created by projecting curb lines out to the edge of the travel lane, creating a sense of side friction or roadway narrowing, which would slow traffic. Neckdowns at intersections also would provide pedestrians with a shorter roadway crossing distance. Raised intersections would be located along interior loop streets to also slow traffic while continuing movement through the Project site. The maximum speed limit in the proposed Project is projected to be 30 mph, which would enable bicyclists to share the street with vehicles. Additionally, the Resort Village Specific Plan's Circulation Plan (**Figure 1.0-4**) includes dedicated bicycle lanes on Otay Lakes Road from the City municipal boundary to the eastern Project boundary.

Community trails located on Otay Lakes Road and multi-use pathways would be continued within the Project site. Pathways are proposed to be 10 feet in width and would extend along Strada Piazza, the main Project thoroughfare, and into the residential areas along collector streets. The pathways would connect major activity centers, including the Mixed-Use area, the Village Core, and the Resort. The pathways would be separated from the street by landscaped parkways, which would serve as a barrier between vehicular traffic and pedestrians and bicyclists.

In addition to the multi-use pathways, the proposed Project would include a series of trails on existing, disturbed roads in the Preserve area. The trails would connect residential neighborhoods and Otay Lakes Road and create a series of loops for bicyclists and pedestrians. (Specific Plan **Exhibit 20**, Trails Plan, depicts the existing, unimproved trails, and the proposed pathways and trails.)

For these reasons, the proposed Project would facilitate pedestrian and bicyclist travel and would ***not result in potentially significant impacts*** to pedestrians or bicyclists.

2.9.3.7 *Analysis – Alternative Transportation Programs*

Alternative transportation (transit use, cycling, and walking) is addressed in the County General Plan Mobility Element. The County Goal and Policies for alternative transportation are stated in the Mobility Element as follows:

GOAL M-8

Public Transit System. A public transit system that reduces automobile dependence and serves all segments of the population.

Policies

M-8.1 Maximize Transit Service Opportunities. Maximize opportunities for transit services in unincorporated communities. Coordinate with SANDAG, the CTSA, NCTD, and MTS to provide capital facilities and funding, where appropriate, to:

- Maximize the speed and efficiency of transit service through the development of transit priority treatments such as transit signal priority, transit queue jump lanes, and dedicated transit only lanes;
- Provide for transit-dependent segments of the population, such as the disabled, seniors, low income, and children, where possible; and
- Reserve adequate rights-of-way to accommodate existing and planned transit facilities including bus stops.

M-8.3 Transit Stops That Facilitate Ridership. Coordinate with SANDAG, NCTD, and MTS to locate transit stops and facilities in areas that facilitate transit ridership, and designate such locations as part of planning efforts for Town Centers, transit nodes, and large-scale commercial or residential development projects. Ensure that the planning of Town Centers and Village Cores incorporates uses that support the use of transit, including multi-family residential and mixed-use transit-oriented development, when appropriate.

M-8.5 Improved Transit Facilities. Require development projects, when appropriate, to improve existing nearby transit and/or park and ride facilities, including the provision of bicycle and pedestrian facilities, provisions for bus transit in coordination with NCTD and MTS as appropriate including, but not limited to, shelters, benches, boarding pads, and/or trash cans, and to provide safe, convenient, and attractive pedestrian connections.

GOAL M-11

Bicycle and Pedestrian Facilities.

Bicycle and pedestrian networks and facilities that provide safe, efficient, and attractive mobility options as well as recreational opportunities for County residents.

Policies

M-11.1 Bicycle Facility Design. Support regional and community-scaled planning of pedestrian and bicycle networks.

M-11.2 Bicycle and Pedestrian Facilities in Development. Require development and Town Center plans in Villages and Rural Villages to incorporate site design and on-site amenities for alternate modes of transportation, such as comprehensive bicycle and pedestrian networks and facilities, including both on-street facilities as well as off-street bikeways, to safely serve the full range of intended users, along with areas for transit facilities, where appropriate and coordinated with the transit service provider.

M-11.3 Bicycle Facilities on Roads Designated in the Mobility Element. Maximize the provision of bicycle facilities on County Mobility Element roads in Semi-Rural and Rural Lands to provide a safe and continuous bicycle network in rural areas that can be used for recreation or transportation purposes, while retaining rural character.

Based on the County's Guidelines for Determining Significance, if a proposed project does not conform to the applicable alternative transportation policies, a significant impact may occur.

With respect to pedestrian movement and bicycle facilities, the Project objectives include the creation of an internal street system that is safe and efficient, and promotes walking, biking and community cohesiveness, and requires the provision of a continuous public trail system throughout the community with access to the Resort, the Village Core, and surrounding trails. In this regard, the Specific Plan's proposed Circulation Plan incorporates vehicular and non-vehicular modes of transportation to create an integrated system of roads, bike lanes, trails, pathways, and sidewalks. The proposed Project includes a system of public and private trails and pathways that would provide for meandering pathways adjacent to landscaped parkways and unimproved trails located in natural open space areas to the east. Pathways would be provided on residential streets, including dedicated pathways along Otay Lakes Road. (See Section 2.9.3.6, Site Access and On-Site Circulation, for additional information regarding the proposed Project's pedestrian and bicyclist facilities.) On-site streets are designed with a maximum speed of 30 MPH which would allow for shared bicycled traffic; however, all streets also have sidewalks.

With respect to transit, future bus service to the proposed Project may be provided by MTS. Currently, MTS provides bus service throughout the Chula Vista Eastern Territories, including the Eastlake Business Center and Southwestern College. Future expansion of transit service to the Project site may include a bus route to the Mixed-Use Planning Area; however, no such service is anticipated at this time. The proposed Project is neither a Town Center, nor a Village Core as defined by the General Plan. There is no indication that the proposed Project would increase transit ridership such that it would decrease the performance or safety of transit facilities.

Thus, the proposed Project conforms to and is consistent with the County's alternative transportation policies. As such, the *proposed Project would not result in a significant impact* relative to alternative transportation plans.

2.9.3.8 Analysis – Parking Capacity

This section discusses the proposed Project's potential impacts associated with parking capacity, which are determined relative to compliance with applicable County zoning requirements. The

following describes the County's parking requirements for each of the Project's proposed land uses and the amount of parking to be provided by the Project:

- Single-Family Residential – The County Zoning Ordinance requires two parking spaces per dwelling unit, plus one additional space for every 10 dwelling units. The Project will provide on-site parking for each lot in the single-family residential areas, as per the County requirement.
- Mixed-Use – The County Zoning Ordinance requires the following number of parking spaces for residential and commercial uses:
 - Multi-Family Residential
 - One-and-a-half parking spaces per dwelling unit (zero to two bedrooms)
 - Two parking spaces per dwelling unit (\geq three bedrooms)
 - One additional parking space per every five dwelling units for guest parking
 - Commercial (less than 25,000 square feet)
 - Five parking spaces per 1,000 square feet

The Project will provide the required number of parking spaces, which may be adjusted relative to the above requirements to account for the shared parking potential between the residential and commercial uses.

- Resort Hotel – The County Zoning Ordinance requires one parking space per guest unit, plus eight additional spaces for a resort with between 101 and 300 guest units. The Project will provide the County required number of parking spaces on-site.
- Elementary School – The County requirement for an elementary school is one space per employee, with five visitor parking spaces. The proposed Project would reserve the school site, which would be developed by the Chula Vista Elementary School District, who is responsible to ensure that applicable parking requirements are met.
- Neighborhood Park – The County currently does not have a specific parking requirement for neighborhood parks. The Conceptual Layout for Neighborhood Park P-5 includes 26 on-site parking spaces. In addition, approximately 280 on-street parking spaces are available to serve any overflow parking needs within the Village Core.
- Pocket Parks – The County currently does not have a specific parking requirement for pocket parks. On-street parking spaces will be provided at each pocket park. Off street parking spaces will not be provided at the eight pocket parks, to encourage residents to walk to these parks.
- Village Core On-Street Parking – At the request of the County DPW and Department of Parks and Recreation (DPR), Hunsaker and Associates has prepared an on-street parking exhibit for the Village Core (along Strada Piazza and down around the school). The exhibit illustrates approximately 280 on-street parking spaces will be available to serve

the Neighborhood Park and overflow parking at the elementary school. Thus, adequate parking is provided for the Village Core.

In summary, the proposed Project would provide adequate parking per the County Zoning Ordinance and *would not result in potentially significant impacts*.

2.9.4 Cumulative Impact Analysis

The Cumulative Year (2025) analysis presented in Section 2.9.3.4 was prepared using the SANDAG Series 11 Year 2025 Transportation Model to forecast Year 2025 traffic volumes. As explained in Section 2.9.3.4, the Model Year 2025 traffic volumes are based on land use assumptions that include both existing land uses and future development projects forecast by SANDAG, as well as anticipated land development identified by both the County and City of Chula Vista to be in place by Year 2025. Therefore, the Cumulative Year (2025) analysis is, by its nature, a cumulative impact analysis. Under this scenario, the proposed Project would have a project-specific significant impact on the following locations:

- The intersection of Otay Lakes Road/Wueste Road (*direct impact - City*) - **(Impact TR-7)**
- The intersection of Otay Lakes Road / SR-94 (*cumulative impact – County/Caltrans*) - **(Impact TR-8)**
- Otay Lakes Road between Lake Crest Drive and Wueste Road (*direct impact - City*) - **(Impact TR-9)**;
- Otay Lakes Road between Wueste Road and City of Chula Vista/County boundary (*direct impact - City*) - **(Impact TR-10)**;
- Otay Lakes Road between City of Chula Vista/County boundary and Project Driveway #1 (*cumulative impact - County*) - **(Impact TR-11)**; and
- Otay Lakes Road between Project Driveway #1 and Driveway #2 (*cumulative impact - County*) - **(Impact TR-12)**.

Similarly, the 2030 Plus Project Buildout analysis presented in Section 2.9.3.5 was prepared using the SANDAG Series 11 Year 2030 Transportation Model to forecast Year 2030 traffic volumes. The Model Year 2030 traffic volumes are based on land use assumptions that include both existing land uses and future development projects forecast by SANDAG to be in place by the Year 2030. Therefore, the Year 2030 Plus Project Buildout analysis is, by its nature, also a cumulative impact analysis.

In contrast to the Cumulative Year (2025) analysis and the Year 2030 Plus Project Buildout analysis, the Existing Plus Project (Phase I) and Existing Plus Project (Buildout) analysis presented in Section 2.9.3.2 and section 2.9.3.3 respectively, was prepared using existing traffic volumes with the addition of Project traffic only. Therefore, the analysis presented under the Existing Plus Project (Phase I) and Existing Plus Project (Buildout) scenarios does not include traffic volumes from future projects and their related cumulative traffic volumes.

2.9.5 Significance of Impacts Prior to Mitigation

This section presents a brief summary of the impacts determined to be significant under each of the four analysis scenarios. Collectively, under the four scenarios, the proposed Project would result in significant impacts to one City intersection, one City road segment, one County intersection, and two County road segment.

2.9.5.1 Existing Plus Project Phase I

Impact Number	Description of Project's Effect	Significance of Impact
TR-1	Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed Phase I project trips would comprise 73.8% (more than 5%) of the total segment volume, and would also add 8,230 ADT (more than 800 ADT) to this roadway segment.	Potentially significant project-specific ¹⁸ impact
TR-2	Otay Lakes Rd, between the City of Chula Vista/County boundary and Project Driveway #1 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment.	Potentially significant direct impact
TR-3	Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS E, County) – Proposed project would add more than 200 ADT to this failing 2-lane roadway segment.	Potentially significant direct impact

2.9.5.2 Existing Plus Project Buildout

Impact Number	Description of Project's Effect	Significance of Impact
TR-4	The unsignalized Otay Lakes Road/Wueste Road intersection (LOS E, City of Chula Vista) - With the addition of Project traffic, this intersection (#20) would operate at unacceptable LOS E during the PM peak hour and the buildout Project traffic would comprise more than 5 percent of the total entering volumes.	Potentially significant project-specific impact

¹⁸ For purposes of comparison, a “project-specific” impact in the City of Chula Vista is comparable to a “direct” impact as defined by the County of San Diego.

TR-5	Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 86.0% (more than 5%) of the total segment volume, and would also add 16,310 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour.	Potentially significant project-specific impact
TR-6	Otay Lakes Rd, between Wueste Rd and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed project trips would comprise 87.0% (more than 5%) of the total segment volume, and would also add 19,540 ADT (more than 800 ADT) to this roadway segment. Additionally, the intersection of Otay Lakes Road / Wueste Road is projected to operate at unacceptable LOS E during the PM peak hour.	Potentially significant project-specific impact

2.9.5.3 Cumulative Year (2025)

Impact Number	Description of Project's Effect	Significance of Impact
TR-7	Otay Lakes Road / Wueste Road (City of CV) - This intersection (#20) would operate at unacceptable LOS F during both the AM and PM peak hours with the addition of the project traffic because the Project traffic would comprise more than 5 percent of the total entering volumes.	Potentially significant project-specific impact
TR-8	Otay Lakes Road / SR-94 (County) - This intersection (#21) would operate at unacceptable LOS E and F during the AM and PM peak hours, respectively.	Potentially significant cumulative impact
TR-9	Otay Lakes Rd, between Lake Crest Dr and Wueste Rd (LOS F, City of CV) – Proposed buildout project trips would comprise 74.7% (more than 5%) of the total segment volume, and would add 15,810 ADT (more than 800 ADT). Additionally, the intersection Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours.	Potentially significant project-specific impact

TR-10	Otay Lakes Rd, between Wueste Road and the City of Chula Vista/County boundary (LOS F, City of CV) – Proposed buildout project trips would comprise 76.5% (more than 5%) of the total segment volume, and would add 19,540 ADT (more than 800 ADT). Additionally, the intersection of Otay Lake Road / Wueste Road is projected to operate at unacceptable LOS F during the peak hours.	Potentially significant project-specific impact
TR-11	Otay Lakes Rd, between City of Chula Vista/County boundary and Project Driveway #1 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment.	Potentially significant, cumulative impact
TR-12	Otay Lakes Rd, between Project Driveway #1 and Driveway #2 (LOS F, County) – Proposed buildout project would add more than 200 ADT to this failing 2-lane roadway segment.	Potentially significant cumulative impact

2.9.5.4 Year 2030 Plus Project Buildout

The proposed Project would not result in significant impacts to any City, County or Caltrans facilities.

2.9.6 Mitigation

The following mitigation measures are proposed to reduce the significant Project impacts identified under each of the four analysis scenarios to a less-than-significant level. Because similar mitigation is proposed under the varying scenarios, it is not necessary to implement each/all of the measures identified below in order to mitigate the Project's significant impacts. Specifically, the mitigation measures proposed under the Existing plus Project Phase I scenario (mitigation measures M-TR-1 through M-TR-3) and two of the measures proposed under the Existing Plus Project Buildout scenario (mitigation measures M-TR-4 & M-TR-5) are substantively equivalent to five of the mitigation measures proposed under the Cumulative Year (2025) scenario (mitigation measures M-TR-7, and M-TR-9 through M-TR-12). Therefore, implementation of mitigation measures M-TR-1 through M-TR-5 would reduce the identified significant impacts such that it would not be necessary to also implement mitigation measures M-TR-6, M-TR-7, and M-TR-9 through M-TR-12.

2.9.6.1 Existing Plus Project Phase I

M-TR-1	Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised
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Median), such that the improvements are operational prior to issuance of the 728th building permit.

M-TR-2 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between the City/County Boundary and Project Driveway #1 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896th building permit.

M-TR-3 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Project Driveway #1 and Driveway #2 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896th building permit.

The improvements to Otay Lakes Road identified in mitigation measure M-TR-1 are consistent with the City of Chula Vista's Circulation Element. The Circulation Plan identifies the segment of Otay Lakes Road between Wueste Road and the City/County Boundary as a 6 Lane Prime road. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

If implemented, the mitigation improvements would fully mitigate the Project's Project-Specific (Direct) impacts to the segment of Otay Lakes Road between Lake Crest Drive and Wueste Road. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and Wueste Road are considered significant and unavoidable until such time as the City concurs with the mitigation.

2.9.6.2 Existing Plus Project Buildout

M-TR-4 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500th building permit.

M-TR-5 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be

constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 910th building permit.

- M-TR-6** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 728th building permit.

The improvements to Otay Lakes Road and the Otay Lakes Road / Wueste Road intersection identified in mitigation measure M-TR-4, 5 and 6 are consistent with both the City of Chula Vista's Circulation Plan and the City's Transportation Development Impact Fee ("TDIF") program. The Circulation Plan identifies the segment of Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County Boundary as a 6 Lane Prime road, and the widening of the segment between Lake Crest Drive and Wueste to a six-lane Prime is an improvement identified in the City's TDIF program. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

If implemented, the mitigation improvements would fully mitigate the Project's Project-Specific (Direct) impacts to the segment of Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary are considered significant and unavoidable until such time as the City concurs with the mitigation.

2.9.6.3 Cumulative Year (2025)

- M-TR-7** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500th building permit.
- M-TR-8** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with Caltrans to install, cause to be installed, or make a fair-share

payment towards an approved plan or program for the signalization of the intersection of Otay Lakes Road and SR-94 such that the traffic signal is operational consistent with Caltrans requirements.

The necessary improvement identified by M-TR-8 (signalization of the intersection of Otay Lakes Road / SR-94) would be located within Caltrans right-of-way as a Caltrans facility and, therefore, implementation of the improvement is outside the County's jurisdiction and control. As such, the County cannot guarantee implementation of the improvement. In addition, Caltrans does not have a plan in place to install the necessary signal, nor does it have a funding program in place into which the project applicant could pay a fair-share towards the cost of installing the improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

M-TR-9 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 910th building permit.

M-TR-10 Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 728th building permit.

M-TR-11 Otay Lakes Road, between City/County Boundary and Project Driveway #1 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

M-TR-12 Otay Lakes Road, between Project Driveway #1 and Project Driveway #2 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

As described in M-TR-2 and M-TR-3, the project includes mitigation to improve Otay Lakes Road in the County. This facility is identified by the TIF Program as a TIF eligible facility. As such, pursuant to the County TIF Program, the applicants would be entitled to credit against payment of the TIF, or for reimbursement through the TIF Program, for that work performed on Otay Lakes Road that is eligible for a TIF credit.

The improvements to Otay Lakes Road and the Otay Lakes Road / Wueste Road intersection identified in mitigation measure M-TR-7, 9 and 10 are consistent with both the City of Chula Vista's Circulation Plan and the City's Transportation Development Impact Fee ("TDIF") program. The Circulation Plan identifies the segment of Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary as a 6 Lane Prime road, and the widening of the segment between Lake Crest Drive and Wueste Road to a six-lane Prime is an improvement identified in the City's TDIF program. Widening the segment from the current two-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (six lanes) because the mitigation improvements (widen from two to four lanes) do not foreclose or conflict with the City's ultimate build-out plans or programs.

If implemented, the mitigation improvements would fully mitigate both the Project's Project-Specific (Direct) and cumulative impacts to the segment of Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary. However, because the necessary improvements would be constructed within the City of Chula Vista and, therefore, are outside of the County's jurisdiction and control, the County cannot assure that the City will permit implementation of the improvements. Therefore, although mitigation in the form of road improvements has been identified to reduce the corresponding impacts to less than significant, and although the Project applicant would implement the improvements consistent with the mitigation requirements, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary are considered significant and unavoidable until such time as the City concurs with the mitigation.

2.9.6.4 *Year 2030 Plus Project Buildout*

No mitigation measure required.

2.9.7 *Conclusion*

2.9.7.1 *Existing Plus Project (Phase I)*

With implementation of the widening of Otay Lakes Road between Wueste Road and the City of Chula Vista/County boundary from two lanes to four lanes under M-TR-1, the impacted roadway segment would operate at acceptable LOS A. Similarly, within the County, with implementation of the widening of Otay Lakes Road between City of Chula Vista/County boundary and Project Driveway #1, and between Project Driveway #1 and Driveway #2 from two lanes to four lanes under M-TR-2 and M-TR-3, both impacted roadway segments would operate at acceptable LOS A.

However, as stated above, since the mitigation measure required to mitigate TR-1 is outside of the County's jurisdiction, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Wueste Road and the City of Chula Vista/County boundary are considered **significant and unavoidable** until such time as the City concurs with the mitigation. As to the segment of Otay Lakes Road located within the County's jurisdiction (the segment between the City of Chula Vista/County boundary and Project Driveway #2, implementation of mitigation measures TR-2 and TR-3 would reduce the identified significant impacts to **less than significant**.

2.9.7.2 Existing Plus Project (Buildout)

Table 2.9-61 illustrates the LOS analysis results for the signalized mitigated intersection of Otay Lakes Road / Wueste Road under Existing Plus Project (Buildout) conditions. Calculation worksheets are provided in the TIS (located in **Appendix C-12** to this EIR). As shown in **Table 2.9-61**, after implementation of the identified improvements, the impacted intersection would operate at acceptable LOS A during both the AM and PM peak hours.

With implementation of the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road from two lanes to four lanes under M-TR-5, the impacted roadway segment would operate at acceptable LOS B. Similarly, with implementation of the widening of Otay Lakes Road between Wueste Road and the City of Chula Vista/County boundary, from two lanes to four lanes under M-TR-6, the impacted roadway segments would operate at acceptable LOS B.

However, as stated above, since the mitigation measures required to mitigate impacts TR-4 through TR-6 are outside of the County's jurisdiction, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County boundary are considered **significant and unavoidable** until such time as the City concurs with the mitigation.

2.9.7.3 Cumulative Year (2025)

Table 2.9-62 illustrates the LOS analysis results for the mitigated intersections of Otay Lakes Road / Wueste Road and Otay Lakes Road / SR-94 under Cumulative Year (2025) conditions. Calculation worksheets are provided in the TIS (located in **Appendix C-12** to this EIR). As shown in **Table 2.9-62**, with implementation of the identified improvements identified under M-TR-7 and M-TR-8, the impacted intersections would operate at acceptable LOS A and B during the AM and PM peak-hour conditions, respectively.

With implementation of the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road from two lanes to four lanes under M-TR-9, and Otay Lakes Road between Wueste Road and City of Chula Vista/County boundary from two lanes to four lanes under M-TR-10, the impacted roadway segments would operate at acceptable LOS B and LOS C, respectively.

However, as stated above, since the mitigation measures required to mitigate impacts TR-7, 9 and 10 are outside of the County's jurisdiction, for purposes of CEQA and this Draft EIR, the impacts to Otay Lakes Road between Lake Crest Drive and the City of Chula Vista/County

boundary are considered **significant and unavoidable** until such time as the City concurs with the mitigation. Similarly, since the mitigation measure required to mitigate impact TR-8 is outside of the County's jurisdiction, and because Caltrans does not have a plan or program in place to install the necessary improvements, impact TR-8 would remain **significant and unavoidable**.

Relative to Impacts TR-11 and TR-12, the County TIF program provides a mechanism for mitigating the impacts created by future growth within the unincorporated area. The TIF is a fee program designed to facilitate compliance with the CEQA mandate that development projects mitigate their indirect, cumulative traffic impacts. The County TIF program fee requirement applies to all new development resulting in new/added traffic. The primary purpose of the TIF is twofold: (1) to fund the construction of identified roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and (2) to allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts.

TIF fees are deposited into local Community Planning Area accounts, regional accounts, and regional freeway ramp accounts. TIF funds are only used to pay for improvements to roadway facilities identified for inclusion in the TIF program, which includes both County roads and Caltrans highway facilities. TIF funds collected for a specific local or regional area must be spent in the same area. By ensuring TIF funds are spent for the specific roadway improvements identified in the TIF program, the CEQA mitigation requirement is satisfied, and the Mitigation Fee Act nexus is met.

As part of the TIF program process, the transportation infrastructure needs are characterized as existing deficiencies, direct impacts of future development, or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies and cannot be addressed using impact fees. The TIF program is not intended to mitigate direct impacts which will continue to be the responsibility of individual development projects. The TIF program, therefore, is designed to address only the cumulative impacts associated with new growth.

Based on the individual area and regional TIF accounts and the incorporation of projected build-out traffic conditions into the adopted TIF Report, participation in the TIF Program is adequate mitigation for cumulative impacts on County roadways. The segments identified are within the County's jurisdiction are included in this TIF Program. Therefore, participation in the TIF Program constitutes adequate mitigation of the cumulative traffic impacts that would result from the project and with payment of the required fee, cumulative traffic impacts would be reduced to **less than significant**.

2.9.7.4 *Year 2030 Plus Project Buildout*

The Project does not cause a significant impact to the Year 2030 Plus Project Buildout conditions, therefore no mitigation measure was needed.

**Table 2.9-1
Level of Service Definitions**

LOS	Congestion/Delay	Traffic Flow Quality
A	None	Low volumes, high speeds; Speed not restricted by other vehicles; All signal cycles clear with no vehicles waiting through more than one signal.
B	None	Operating speeds beginning to be affected by other traffic; Less than 10% of signal cycles have vehicles waiting through more than one signal cycle.
C	None to minimal	Operating speed and maneuverability closely controlled by other traffic; Between 10% and 30% of signal cycles have vehicles waiting through more than one signal cycle.
D	Minimal to substantial	Tolerable operating speeds; Between 30% and 70% of signal cycles have vehicles waiting through more than one signal cycle.
E	Significant	Capacity; Maximum traffic volume an intersection can accommodate; 70% to 100% of signal cycles have vehicles waiting through more than one signal cycle.
F	Considerable	Long queues of traffic; unstable flows; travel speeds can drop to zero.

Source: Highway Capacity Manual 2000

Table 2.9-2
Signalized Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	<i>LOS A</i> describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10.1 – 20.0	<i>LOS B</i> describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
20.1 – 35.0	<i>LOS C</i> describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 – 55.0	<i>LOS D</i> describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	<i>LOS E</i> is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	<i>LOS F</i> describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: 2000 Highway Capacity Manual, TRB Special Report 2009

Table 2.9-3
Level of Service Criteria For
Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service (LOS)
≤ 10	A
> 10 and ≤ 15	B
> 15 and ≤ 25	C
> 25 and ≤ 35	D
> 35 and ≤ 50	E
> 50	F

Source: 2000 Highway Capacity Manual, TRB Special Report 2009

Table 2.9-4
County of San Diego
Roadway Segment Daily Capacity and Level of Service Standards

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
6.1	6	65 mph	Expressway	36,000	54,000	70,000	86,000	108,000
6.2	6	65 mph	Prime Arterial	22,200	37,000	44,600	50,000	57,000
4.1A	4	55 mph	Major Road with Raised Median	14,800	24,700	29,600	33,400	37,000
4.1B			Major Road with Intermittent Turn Lanes	13,700	22,800	27,400	30,800	34,200
4.2A	4	40 mph	Boulevard with Raised Median	18,000	21,000	24,000	27,000	30,000
4.2B			Boulevard with Intermittent Turn Lane	16,800	19,600	22,500	25,000	28,000
2.1A	2	45 mph	Community Collector with Raised Median	10,000	11,700	13,400	15,000	19,000
2.1B			Community Collector w/ Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000
2.1C			Community Collector w/ Intermittent Turn Lane	3,000	6,000	9,500	13,500	19,000
2.1D			Community Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.1E			Community Collector	1,900	4,100	7,100	10,900	16,200
2.2A	2	40 mph	Light Collector with Raised Median	3,000	6,000	9,500	13,500	19,000
2.2B			Light Collector with Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000
2.2C			Light Collector with Intermittent Turn Lanes	3,000	6,000	9,500	13,500	19,000
2.2D			Light Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.2E			Light Collector	1,900	4,100	7,100	10,900	16,200
2.2F			Light Collector with Reduced Shoulder	5,800	6,800	7,800	8,700	9,700
2.3A	2	35 mph	Minor Collector with Raised Median	3,000	6,000	7,000	8,000	9,000
2.3B			Minor Collector with Intermittent Turn Lane	3,000	6,000	7,000	8,000	9,000
2.3C			Minor Collector	1,900	4,100	6,000	7,000	8,000

Source: Source: County of San Diego Public Road Standard (March 2012)

Table 2.9-5
City of Chula Vista
Roadway Segment Daily Capacity and Level of Service Standards

Circulation Element Roadway Classification	Level of Service				
	A	B	C	D	E
Expressway (7- or 8-lane)	52,500	61,300	70,000	78,800	87,500
Prime Arterial (6-lane)	40,800	47,600	54,400	61,200	68,000
Major Street (6-lane)	37,500	43,800	50,000	56,300	62,500
Major Street (4-lane)	30,000	35,000	40,000	45,000	50,000
Town Center Arterial	22,500	26,300	30,000	33,800	37,500
Class I Collector (4-lane)	37,500	43,800	50,000	56,300	62,500
Class II Collector (3-lane)	22,500	26,300	30,000	33,800	37,500
Class III Collector (2-lane)	16,500	19,300	22,000	24,800	27,500

Source: City of Chula Vista

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

Table 2.9-6
Freeway and State Highway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region
v/c = vehicles to capacity ratio

Table 2.9-7
County of San Diego
Two-Lane Highway Level of Service Thresholds
With Signalized Intersection Spacing Over 1 Mile

LOS	LOS Criteria
LOS E	>16,200 ADT
LOS F	>22,900 ADT

Source: County of San Diego

Note: Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

ADT = average daily trips

Table 2.9-8
Caltrans District 11
Two-Lane State Highway Level of Service Definitions

LOS	Average Travel Speed (mph)
"A"	>55
"B"	>50 – 55
"C"	>45 – 50
"D"	>40 – 45
"E"	≤40
"F"	LOS F applies whenever the flow rate exceeds the segment capacity.

Source: Highway Capacity Manual 2000

Table 2.9-9
Traffic Flow Conditions at Ramp Intersections
at Various Levels of Operation

<i>ILV/hr</i>	Description
<i><1200: (Under Capacity)</i>	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
<i>1200-1500: (At Capacity)</i>	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
<i>>1500: (Over Capacity)</i>	Stop-and-go operation with severe delay and heavy congestion. ¹ Traffic volume is limited by maximum discharge rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual, Topic 406

¹ The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr, and the excess will be delayed in a queue.

ILV/hr = Intersecting Lane Volume per hour

**Table 2.9-10
Otay Ranch Resort Village Project
Project Trip Generation**

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Phase I - Western Development Area							
Single-Family	925 DU	10 / Unit	9,250	8	740 (222-in / 518-out)	10	925 (647-in / 278-out)
Phase I Total			9,250		740 (222-in / 518-out)		925 (647-in / 278-out)
Buildout - Western Development Area							
Single-Family	1,408 DU	10 / Unit	14,080	8	1,126 (338-in / 788-out)	10	1,408 (986-in / 422-out)
Multi-Family	57 DU	8 / Unit	456	8	36 (7-in / 29-out)	10	46 (32-in / 14-out)
Park	21.8 Acres	5 / Acre	109	4	4 (2-in / 2-out)	8	9 (4-in / 5-out)
Public Safety	2.1 Acres	229 / Acre	481	10	48 (24-in / 24-out)	8	38 (19-in / 19-out)
Elementary School	10.0 Acres	90 / Acre	900	32	288 (173-in / 115-out)	9	81 (32-in / 49-out)
Commercial	20,000 SF	120 / 1,000 SF	2,400	4	96 (58-in / 38-out)	10	240 (120-in / 120-out)
Subtotal			18,426		1,598 (601-in / 996-out)		1,822 (1,193-in / 629-out)
Buildout - Central Development Area							
Single-Family	263 DU	10 / Unit	2,630	8	210 (63-in / 147-out)	10	263 (184-in / 79-out)
Park	2.9 Acres	5 / Acre	15	4	1 (0-in / 1-out)	8	1 (1-in / 0-out)
Subtotal			2,645		211 (63-in / 148-out)		264 (185-in / 79-out)
Buildout - Eastern Development Area							
Single-Family	210 DU	10 / Unit	2,100	8	168 (50-in / 118-out)	10	210 (147-in / 63-out)
Park	3.9 Acres	5 / Acre	20	4	1 (1-in / 0-out)	8	2 (1-in / 1-out)
Resort	200 Rooms	8 / Occupied Room	1,600	5	80 (48-in / 32-in)	7	112 (45-in / 67-in)
Commercial	20,000 SF	120 / 1,000 SF	2,400	4	96 (58-in / 38-out)	10	240 (120-in / 120-out)
Subtotal			6,120		345 (157-in / 188-out)		564 (313-in / 251-out)
Buildout Total			27,191		2,154 (821-in / 1,332-out)		2,650 (1,691-in / 959-out)

Source: SANDAG Trip Generation Manual (November 2010), Chen Ryan Associates, (August 2014)

**Table 2.9-11
Otay Ranch Resort Village Project
Internal and External Project Trips**

Land Use	Quantity	Total Trips			Internal Trips				External Trips			
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Phase I												
Single Family	925 DU	9,250	740 (222-in / 518-out)	925 (647-in / 278-out)	0%	0	0	0	100%	9,250	740 (222-in / 518-out)	925 (647-in / 278-out)
Phase I Total		9,250	740 (222-in / 518-out)	925 (647-in / 278-out)		0	0	0		9,250	740 (222-in / 518-out)	925 (647-in / 278-out)
Buildout												
Single Family	1,881 DU	18,810	1,505 (451-in / 1,054-out)	1,881 (1,317-in / 564-out)	10%	1,881	150 (45-in / 105-out)	188 (132-in / 56-out)	90%	16,929	1,354 (406-in / 948-out)	1,693 (1,185-in / 508-out)
Multi-Family	57 DU	456	36 (7-in / 29-out)	46 (32-in / 14-out)	10%	46	4 (1-in / 3-out)	5 (3-in / 2-out)	90%	410	33 (7-in / 26-out)	41 (29-in / 12-out)
Park	28.6 Acres	144	6 (3-in / 3-out)	12 (6-in / 6-out)	70%	100	4 (2-in / 2-out)	8 (4-in / 4-out)	30%	44	2 (1-in / 1-out)	4 (2-in / 2-out)
Public Safety	2.1 Acres	481	48 (24-in / 24-out)	38 (19-in / 19-out)	10%	48	4 (2-in / 2-out)	4 (2-in / 2-out)	90%	433	44 (22-in / 22-out)	34 (17-in / 17-out)
Elementary School	10.0 Acres	900	288 (173-in / 115-out)	81 (32-in / 49-out)	80%	720	230 (138-in / 92-out)	65 (26-in / 39-out)	20%	180	58 (35-in / 23-out)	16 (6-in / 10-out)

**Table 2.9-11
Otay Ranch Resort Village Project
Internal and External Project Trips**

Land Use	Quantity	Total Trips			Internal Trips				External Trips			
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Commercial	40,000 SF	4,800	192 (116-in / 76-out)	480 (240-in / 240-out)	50%	2,400	96 (58-in / 38-out)	240 (120-in / 120-out)	50%	2,400	96 (58-in / 38-out)	240 (120-in / 120-out)
Resort	200 Rooms	1,600	80 (48-in / 32-out)	112 (45-in / 67-out)	5%	80	4 (2-in / 2-out)	6 (2-in / 4-out)	95%	1,520	76 (46-in / 30-out)	106 (43-in / 63-out)
Grand Total		27,191	2,154 (821-in / 1,332-out)	2,650 (1,691-in / 959-out)		5,275	492 (248-in / 244-out)	516 (289-in / 227-out)		21,916	1,663 (575-in / 1,088-out)	2,134 (1,402-in / 732-out)

Source: SANDAG Trip Generation Manual, Chen Ryan Associates (March 2015)

Table 2.9-12
Peak Hour Intersection Level of Service Results
Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. East H Street / Otay Lakes Road	34.0	C	28.5	C
2. Proctor Valley Road / Hunte Parkway	13.5	B	12.0	B
3. Telegraph Canyon Road / I-805 SB Ramps	15.7	B	40.9	D
4. Telegraph Canyon Road / I-805 NB Ramps	27.8	C	16.7	B
5. Telegraph Canyon Road / Oleander Avenue	15.5	B	16.9	B
6. Telegraph Canyon Road / Paseo Del Rey	11.9	B	27.4	C
7. Telegraph Canyon Road / Medical Center Drive	11.8	B	13.1	B
8. Telegraph Canyon Road / Paseo Ladera	33.7	C	25.3	C
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	32.2	C	23.7	C
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	27.1	C	26.4	C
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B
12. Otay Lakes Road / SR-125 SB Ramps	5.9	A	8.8	A
13. Otay Lakes Road / SR-125 NB Ramps	2.9	A	3.5	A
14. Otay Lakes Road / Eastlake Parkway	26.7	C	27.9	C
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B
17. Otay Lakes Road / Hunte Parkway	23.7	C	23.4	C
18. Otay Lakes Road / Woods Drive	14.3	B	13.4	B
19. Otay Lakes Road / Lake Crest Drive	13.4	B	13.9	B
20. Otay Lakes Road / Wueste Road*	9.2	A	9.1	A
21. Otay Lakes Road / SR-94 (County)*	10.8	B	12.7	B
22. Olympic Parkway / East Palomar Street	26.3	C	28.2	C
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A
24. Olympic Parkway / SR-125 NB Ramps	1.7	A	3.6	A
25. Olympic Parkway / Eastlake Parkway	22.0	C	22.1	C
26. Olympic Parkway / Hunte Parkway	19.6	B	20.0	C
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B

Table 2.9-12
Peak Hour Intersection Level of Service Results
Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
28. Olympic Parkway / Wueste Road	4.8	A	9.6	A
29. Lake Crest Drive / Wueste Road	12.3	B	7.7	A
30. Main Street / SR-125 SB Ramps	Does Not Exist			
31. Main Street / SR-125 NB Ramps	Does Not Exist			
32. Main Street / Eastlake Parkway	Does Not Exist			
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist			
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist			
35. Otay Mesa Road / La Media Road (SD)	44.3	D	37.8	D
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.7	A	8.5	A
37. Otay Mesa Road / SR-125 NB Ramps (SD)	2.3	A	6.3	A
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist			
39. SR-94 / Melody Road (County)	13.3	B	17.7	C
40. SR-94 / Maxfield Road (County)*	12.9	B	20.4	C
41. SR-94 / Jefferson Road (County)	12.9	B	12.2	B
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist			
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	Does Not Exist			
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	Does Not Exist			

Source: Chen Ryan Associates (March 2015)

Note: *For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Table 2.9-13
Roadway Segment Level of Service Results
Existing Conditions
(City of Chula Vista)

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	14,155	50,000	A
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	55,247	70,000	B
	I-805 NB Ramps to Oleander Ave		59,615		B
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	55,776	50,000	D
	Medical Center Dr to Paseo Ladera		47,486		C
	Paseo Ladera to Paseo Ranchero/Heritage Rd		44,404		C
	Paseo Ranchero/Heritage Rd to La Media Rd		35,495		A
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	28,912	30,000	C
	La Media Rd to Rutgers Ave	6-Ln w/ RM	42,142	50,000	B
	Rutgers Ave to SR-125 SB Ramps		41,931		B
	SR-125 SB Ramps to SR-125 NB Ramps		46,406		C
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	40,291	70,000	A
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	26,054	50,000	A
	Lane Ave to Fenton St		18,832		A
	Fenton St to Hunte Pkwy		18,627		A
	Hunte Pkwy to Woods Dr		9,672		A
	Woods Dr to Lake Crest Dr		7,546		A
	Lake Crest Dr to Wueste Rd	2-Ln	2,654	7,500	A
	Wueste Rd to City of Chula Vista/County Boundary		2,927		A
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,412	50,000	A
	E Palomar St to SR-125 SB Ramps		35,139		A
	SR-125 SB Ramps to SR-125 NB Ramps		38,154		B
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	43,506	70,000	A
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	16,289	50,000	A
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	9,936	30,000	A
	East of Olympic Vista Rd	4-Ln w/ RM	4,075	30,000	A
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/TWLTL	10,804	22,000	A
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	6,269	30,000	A

**Table 2.9-13
Roadway Segment Level of Service Results
Existing Conditions
(City of Chula Vista)**

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
	Otay Lakes Rd to Clubhouse Dr		10,897		A
	Clubhouse Dr to Olympic Pkwy		8,154		A
Hunte Pkwy	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,015	50,000	A

Source: Chen Ryan Associates (March 2015)

Notes: Bold letter indicates unacceptable LOS D, E, or F.

RM = Raised Median

TWLTL = Two-Way Left-Turn Lane

**Table 2.9-14
Roadway Segment Level of Service Results
Existing Conditions
(County of San Diego)**

Roadway	Segment	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Otay Lakes Rd	City of Chula Vista/County boundary to SR-94	2-Ln	2,927	10,900	B
Jefferson Rd	Lyons Valley Rd to SR-94	2-Ln	3,100	10,900	B
Proctor Valley Rd	SR-94 to Maxfield Rd	2-Ln	2,900	10,900	B
Maxfield Rd	Proctor Valley Rd to SR-94	2-Ln	400	10,900	A
Melody Rd	Proctor Valley Rd to SR-94	2-Ln	400	10,900	A
Honey Springs Rd	East of SR-94	2-Ln	1,600	10,900	A

Source: Chen Ryan Associates (March 2015)

Table 2.9-15
Freeway/State Highway Segment Level of Service Results
Existing Conditions

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	V/C	LOS
I-805	Bonita Road to East H Street	206,000	7.1%	14,605	0.52	5M*	0.95	7.0%	1,656	0.690	C
	East H Street to Telegraph Canyon Road	191,000	7.1%	13,542	0.52	5M*	0.95	7.0%	1,536	0.640	C
	Telegraph Canyon Road to Olympic Parkway	151,000	7.1%	10,706	0.52	4M+1Aux*	0.95	7.0%	1,351	0.563	B
	Olympic Parkway to Main Street	141,000	7.1%	9,997	0.52	4M+1Aux*	0.95	7.0%	1,264	0.527	B
SR-125	SR-54 to Mt. Miguel Road	17,500	7.0%	1,225	0.58	2M	0.95	10.3%	398	0.166	A
	Mt Miguel Road to Proctor Valley Road	16,300	7.0%	1,141	0.58	2M	0.95	10.3%	365	0.152	A
	Proctor Valley Road to Otay Lakes Road	12,600	7.0%	882	0.58	2M	0.95	10.3%	288	0.120	A
	Otay Lakes Road to Olympic Parkway	4,700	7.0%	329	0.58	2M	0.95	10.3%	111	0.046	A
	Olympic Parkway to Birch Road	4,300	7.0%	301	0.58	2M	0.95	10.3%	100	0.042	A
	Birch Road to Main Street	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Main Street to Otay Valley Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Otay Valley Road to Lone Star Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Lone Star Road to Otay Mesa Road	4,600	7.0%	322	0.58	2M	0.95	10.3%	100	0.042	A
	Otay Mesa Road to SR-905	Does Not Exist									

Source: Chen Ryan Associates (March 2015)

Notes: *2 new HOV lanes have been constructed recently. However, freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes.

This should represent the worst case scenario.

M = Mainline.

Aux = Auxiliary Lane.

Table 2.9-16
Two-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Existing Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,776	D or better
	Jefferson Road to Maxfield Road		9,049	D or better
	Maxfield Road to Melody Road		8,024	D or better
	Melody Road to Otay Lakes Road		6,945	D or better
	South of Otay Lakes Road		6,964	D or better

Source: Chen Ryan Associates (March 2015)

Table 2.9-17
Two-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Existing Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS
SR-94	Melody Road to Otay Lakes Road	6,945	8.6%	595	0.67	1	0.92	5.0%	456	49.0	C
	South of Otay Lakes Road	6,964	9.2%	644	0.67	1	0.96	5.0%	473	49.7	C

Source: Chen Ryan Associates (March 2015)

Table 2.9-18A
Ramp Intersection Capacity Analysis
Existing Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,381	<i>1200-1500: (At Capacity)</i>
	PM	1,681	<i>>1500: (Over Capacity)</i>
I-805 NB Ramps / Telegraph Canyon Road	AM	1,383	<i>1200-1500: (At Capacity)</i>
	PM	1,193	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Otay Lakes Road	AM	893	<i><1200: (Under Capacity)</i>
	PM	1,191	<i><1200: (Under Capacity)</i>
SR-125 NB Ramps / Otay Lakes Road	AM	842	<i><1200: (Under Capacity)</i>
	PM	1,121	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Olympic Parkway	AM	728	<i><1200: (Under Capacity)</i>
	PM	1,015	<i><1200: (Under Capacity)</i>
SR-125 NB Ramps / Olympic Parkway	AM	652	<i><1200: (Under Capacity)</i>
	PM	974	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Rock Mountain Road	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Rock Mountain Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	563	<i><1200: (Under Capacity)</i>
	PM	315	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Otay Mesa Road	AM	325	<i><1200: (Under Capacity)</i>
	PM	623	<i><1200: (Under Capacity)</i>

Source: Chen Ryan Associates (March 2015)

**Table 2.9-18B
Ramp Metering Analysis
Existing Conditions**

Location	Peak Hour	Demand ¹ (veh/hr)	Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay ⁴ (min)	Queue ⁵ (ft)
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,880	1,824	56	1.8	800

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

Source: Chen Ryan Associates; August 2014

**Table 2.9-19
Measures of Significant Project Impacts to Congestion on Intersections:
Allowable Increases on Congested Intersections**

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego

**Table 2.9-20
Measures of Significant Project Impacts to Congestion on Road Segments:
Allowable Increases on Congested Road Segments**

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Source: County of San Diego

**Table 2.9-21
Measures of Significant Project Impacts to Congestion:
Allowable Increases on Two-Lane Highways
With Signalized Intersection Spacing Over One Mile**

LOS	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	> 325 ADT
LOS F	> 22,900 ADT	> 225 ADT

Source: County of San Diego

Table 2.9-22
Measures of Significant Project Impacts to Congestion:
Allowable Increases on Two-Lane Highways
With Signalized Intersection Spacing Under 1 Mile

LOS	LOS Criteria
LOS E	Intersection delay of 2 seconds
LOS F	Intersection delay of 1 second, or 5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable Level of Service, when such traffic uses a significant amount of remaining road capacity.

Table 2.9-23
Measure of Significant Project Traffic Impacts

Level of Service (LOS) with Project	Allowable Change Due to Impact					
E & F (or ramp meter delays above 15 min.)	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)	Delay (min.)
	0.01	1	0.02	1	2	2

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

Table 2.9-24
Peak Hour Intersection Level of Service Results
Existing Plus Project (Phase I) Conditions

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
1. East H Street / Otay Lakes Road	36.9	D	28.6	C	34.0 / 28.5	C / C		0.6% / 0.8%		No
2. Proctor Valley Road / Hunte Parkway	13.6	B	12.0	B	13.5 / 12.0	B / B		1.9% / 3.6%		No
3. Telegraph Canyon Road / I-805 SB Ramps	20.0	B	46.2	D	15.7 / 40.9	B / D	4.3 / 5.3	0.6% / 1.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	31.5	C	17.0	B	27.8 / 16.7	C / B	3.7 / 0.3	1.3% / 1.6%		No
5. Telegraph Canyon Road / Oleander Avenue	16.0	B	17.1	B	15.5 / 16.9	B / B		1.5% / 1.8%		No
6. Telegraph Canyon Road / Paseo Del Rey	14.6	B	27.4	C	11.9 / 27.4	B / C		1.7% / 2.0%		No
7. Telegraph Canyon Road / Medical Center Drive	11.9	B	13.4	B	11.8 / 13.1	B / B		1.7% / 2.1%		No
8. Telegraph Canyon Road / Paseo Ladera	34.3	C	25.8	C	33.7 / 25.3	C / C		2.0% / 2.8%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	33.5	C	24.0	C	32.2 / 23.7	C / C		1.9% / 2.7%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	27.6	C	27.6	C	27.1 / 26.4	C / C		2.6% / 3.2%		No

Table 2.9-24
Peak Hour Intersection Level of Service Results
Existing Plus Project (Phase I) Conditions

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS			Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B	11.8 / 10.2	B / B		4.3% / 4.2%		No
12. Otay Lakes Road / SR-125 SB Ramps	6.1	A	9.2	A	5.9 / 8.8	A / A	0.2 / 0.4	5.5% / 5.3%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.0	A	3.8	A	2.9 / 3.5	A / A	0.1 / 0.3	5.9% / 5.8%		No
14. Otay Lakes Road / Eastlake Parkway	28.0	C	28.4	C	26.7 / 27.9	C / C		6.9% / 6.1%		No
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B	12.4 / 14.6	B / B		13.6% / 14.6%		No
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B	8.3 / 15.7	A / B		16.1% / 19.6%		No
17. Otay Lakes Road / Hunte Parkway	26.5	C	23.4	C	23.7 / 23.4	C / C		16.3% / 24.3%		No
18. Otay Lakes Road / Woods Drive	14.3	B	13.4	B	14.3 / 13.4	B / B		28.9% / 42.9%		No
19. Otay Lakes Road / Lake Crest Drive	15.0	B	13.9	B	13.4 / 13.9	B / B		42.1% / 53.0%		No
20. Otay Lakes Road / Wueste Road*	11.8	B	16.9	C	9.2 / 9.1	A / A		73.5% / 78.7%		No

Table 2.9-24
Peak Hour Intersection Level of Service Results
Existing Plus Project (Phase I) Conditions

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
21. Otay Lakes Road / SR-94 (County)*	15.4	C	16.5	C	10.8 / 12.7	B / B	4.6 / 3.8		EBL: +31 / +17	No
22. Olympic Parkway / East Palomar Street	28.2	C	28.6	C	26.3 / 28.2	C / C		1.9% / 1.8%		No
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A	4.6 / 7.7	A / A	0.0 / 0.0	4.4% / 2.8%		No
24. Olympic Parkway / SR-125 NB Ramps	2.4	A	5.0	A	1.7 / 3.6	A / A	0.7 / 1.4	4.8% / 4.3%		No
25. Olympic Parkway / Eastlake Parkway	22.3	C	22.2	C	22.0 / 22.1	C / C		7.9% / 7.7%		No
26. Olympic Parkway / Hunte Parkway	20.7	C	20.7	C	19.6 / 20.0	B / C		17.2% / 17.9%		No
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B	18.7 / 19.0	B / B		20.4% / 20.6%		No
28. Olympic Parkway / Wueste Road	4.89	A	9.6	A	4.8 / 9.6	A / A		57.8% / 50.2%		No
29. Lake Crest Drive / Wueste Road	20.2	C	13.9	B	12.3 / 7.7	B / A		45.3% / 53.4%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									
32. Main Street / Eastlake Parkway	Does Not Exist									

Table 2.9-24
Peak Hour Intersection Level of Service Results
Existing Plus Project (Phase I) Conditions

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	48.7	D	40.7	D	44.3 / 37.8	D / D	4.4 / 2.9			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.8	A	8.9	A	9.7 / 8.5	A / A	0.1 / 0.4			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	2.3	A	6.6	A	2.3 / 6.3	A / A	0.0 / 0.3			No
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist									
39. SR-94 / Melody Road (County)	13.3	B	17.7	C	13.3 / 17.7	B / C	0.0 / 0.0		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	15.7	C	21.6	C	12.9 / 20.4	B / C	2.8 / 1.2		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	13.0	B	12.3	B	12.9 / 12.2	B / B	0.1 / 0.1		SBL: +2 / +6	No
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist									
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	4.5	A	4.8	A	Does Not Exist				SBL: +191 / +556	No

Table 2.9-24
Peak Hour Intersection Level of Service Results
Existing Plus Project (Phase I) Conditions

Intersection	Existing + Project (Phase I)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	Does Not Exist									

Source: Chen Ryan Associates (March 2015)

Notes: Bold letter indicates unacceptable LOS E or F.

* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Table 2.9-25
Roadway Segment Level of Service Results
Existing Plus Project (Phase I) Conditions
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	14,525	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	55,617	70,000	B				No
	I-805 NB Ramps to Oleander Ave		60,540		B				No
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	56,701	50,000	E	1.6%	925	Yes	No
	Medical Center Dr to Paseo Ladera		48,504		C				No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		45,514		C				No
	Paseo Ranchero / Heritage Rd to La Media Rd		36,790		A				No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	29,375	30,000	C				No
	La Media Rd to Rutgers Ave	6-Ln w/ RM	44,177	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		43,966		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		48,626		C				No

**Table 2.9-25
Roadway Segment Level of Service Results
Existing Plus Project (Phase I) Conditions
(City of Chula Vista)**

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	43,251	70,000	A				No
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	29,384	50,000	A				No
	Lane Ave to Fenton St		22,532		A				No
	Fenton St to Hunte Pkwy		22,327		A				No
	Hunte Pkwy to Woods Dr		22,417		A				No
	Woods Dr to Lake Crest Dr		15,412		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	13,746	7,500	E	71.5%	6,660	Yes	No
	Wueste Rd to City of CV/County Boundary		11,157		F	75.0%	7,970	Yes	Yes
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,505	50,000	A				No
	E Palomar St to SR-125 SB Ramps		35,417		A				No
	SR-125 SB Ramps to SR-125 NB Ramps		38,802		B				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	44,894	70,000	A				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	18,417	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	11,416	30,000	A				No

**Table 2.9-25
Roadway Segment Level of Service Results
Existing Plus Project (Phase I) Conditions
(City of Chula Vista)**

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
	East of Olympic Vista Rd		5,555		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	11,174	22,000	A				No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	6,732	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr	4-Ln w/ RM	12,377	30,000	A				No
	Clubhouse Dr to Olympic Pkwy		9,357		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,385	50,000	A				No

Source: Chen Ryan Associates (March 2015)

Notes: Bold letter indicates unacceptable LOS D, E, or F.

RM = Raised Median

TWLTL = Two-Way Left-Turn Lane

Table 2.9-26
Roadway Segment Level of Service Results
Existing Plus Project (Phase I) Conditions
(County of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	City of Chula Vista/County boundary to Driveway #1	2-Ln	11,157	10,900	E	B	Yes (Direct)
	Driveway #1 to Driveway #2		11,157		E	B	Yes (Direct)
	Driveway #2 to Driveway #3	2-Ln	3,947	10,900	C	B	No
	Driveway #3 to SR-94		3,947		C	B	No

Source: Chen Ryan Associates (March 2015)

Notes: Bold letter indicates unacceptable LOS E, or F.

Table 2.9-27
Freeway/State Highway Segment Level of Service Results
Existing Plus Project (Phase I) Conditions

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	V/C	LOS w/ Project	LOS w/o Project	Significant Impact?
I-805	Bonita Road to East H Street	206,800	7.1%	14,662	0.52	5M*	0.95	7.0%	1,667	0.695	C	0.005	No
	East H Street to Telegraph Canyon Road	191,800	7.1%	13,599	0.52	5M*	0.95	7.0%	1,547	0.645	C	0.005	No
	Telegraph Canyon Road to Olympic Parkway	151,100	7.1%	10,713	0.52	4M+1Aux*	0.95	7.0%	1,351	0.563	B	0.000	No
	Olympic Parkway to Main Street	141,300	7.1%	10,018	0.52	4M+1Aux*	0.95	7.0%	1,264	0.527	B	0.000	No
SR-125	SR-54 to Mt. Miguel Road	18,300	7.0%	1,281	0.58	2M	0.95	10.3%	410	0.171	A	0.005	No
	Mt Miguel Road to Proctor Valley Road	16,900	7.0%	1,183	0.58	2M	0.95	10.3%	376	0.157	A	0.005	No
	Proctor Valley Road to Otay Lakes Road	13,200	7.0%	924	0.58	2M	0.95	10.3%	299	0.125	A	0.005	No
	Otay Lakes Road to Olympic Parkway	4,900	7.0%	343	0.58	2M	0.95	10.3%	111	0.046	A	0.000	No
	Olympic Parkway to Birch Road	5,200	7.0%	364	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Birch Road to Main Street	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Main Street to Otay Valley Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Otay Valley Road to Lone Star Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Lone Star Road to Otay Mesa Road	5,500	7.0%	385	0.58	2M	0.95	10.3%	122	0.051	A	0.009	No
	Otay Mesa Road to SR-905	Does Not Exist											

Source: Chen Ryan Associates (March 2015)

Notes: *2 new HOV lanes have been constructed very recently. However, freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.

M = Mainline.

Aux = Auxiliary Lane.

Table 2.9-28
Two-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Existing Plus Project (Phase I) Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,869	D or better	D or better	No
	Jefferson Road to Maxfield Road		9,234	D or better	D or better	No
	Maxfield Road to Melody Road		8,304	D or better	D or better	No
	Melody Road to Otay Lakes Road		7,405	D or better	D or better	No
	South of Otay Lakes Road		7,334	D or better	D or better	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-29
Two-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Existing Plus Project (Phase I) Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	7,405	8.9%	659	0.67	1	0.92	5.0%	484	48.9	C	C	No
	South of Otay Lakes Road	7,334	8.4%	613	0.67	1	0.96	5.0%	450	49.7	C	C	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-30A
Ramp Intersection Capacity Analysis
Existing Plus Project (Phase I) Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,392	1200-1500: (At Capacity)
	PM	1,713	>1500: (Over Capacity)
I-805 NB Ramps / Telegraph Canyon Road	AM	1,407	1200-1500: (At Capacity)
	PM	1,205	1200-1500: (At Capacity)
SR-125 SB Ramps / Otay Lakes Road	AM	938	<1200: (Under Capacity)
	PM	1,265	1200-1500: (At Capacity)
SR-125 NB Ramps / Otay Lakes Road	AM	888	<1200: (Under Capacity)
	PM	1,191	<1200: (Under Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	742	<1200: (Under Capacity)
	PM	1,034	<1200: (Under Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	697	<1200: (Under Capacity)
	PM	1,046	<1200: (Under Capacity)
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	587	<1200: (Under Capacity)
	PM	326	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Mesa Road	AM	325	<1200: (Under Capacity)
	PM	649	<1200: (Under Capacity)

Source: Chen Ryan Associates (March 2015)

Table 2.9-30B
Ramp Metering Analysis
Existing Plus Project (Phase I) Conditions

Location	Peak Hour	Demand¹ (veh/hr)	Meter Rate² (veh/hr)	Excess Demand³ (veh/hr)	Delay w/ Project⁴ (min)	Queue⁵ (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,920	1,824	96	3.2	1,400	1.8	No

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

Source: Chen Ryan Associates; August 2014

Table 2.9-31
Peak Hour Intersection Level of Service Results
Existing Plus Project (Buildout) Conditions

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS			Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
1. East H Street / Otay Lakes Road	34.3	C	28.8	C	34.0 / 28.5	C / C		1.5% / 1.9%		No
2. Proctor Valley Road / Hunte Parkway	13.7	B	12.0	B	13.5 / 12.0	B / B		4.1% / 7.9%		No
3. Telegraph Canyon Road / I-805 SB Ramps	22.1	C	52.9	D	15.7 / 40.9	B / D	6.4 / 12.0	1.5% / 2.9%		No
4. Telegraph Canyon Road / I-805 NB Ramps	31.9	C	19.7	B	27.8 / 16.7	C / B	4.1 / 3.0	2.8% / 3.6%		No
5. Telegraph Canyon Road / Oleander Avenue	15.8	B	18.2	B	15.5 / 16.9	B / B		3.4% / 4.0%		No
6. Telegraph Canyon Road / Paseo Del Rey	14.8	B	27.5	C	11.9 / 27.4	B / C		3.6% / 4.4%		No
7. Telegraph Canyon Road / Medical Center Drive	12.1	B	13.9	B	11.8 / 13.1	B / B		3.9% / 4.8%		No
8. Telegraph Canyon Road / Paseo Ladera	35.1	D	26.4	C	33.7 / 25.3	C / C		4.5% / 6.2%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	34.2	C	24.3	C	32.2 / 23.7	C / C		4.1% / 5.9%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	28.4	C	30.5	C	27.1 / 26.4	C / C		5.7% / 7.0%		No

Table 2.9-31
Peak Hour Intersection Level of Service Results
Existing Plus Project (Buildout) Conditions

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
11. Otay Lakes Road / Rutgers Avenue	11.8	B	10.2	B	11.8 / 10.2	B / B		9.2% / 9.2%		No
12. Otay Lakes Road / SR-125 SB Ramps	6.3	A	9.7	A	5.9 / 8.8	A / A	0.4 / 0.9	11.6% / 11.4%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.1	A	4.2	A	2.9 / 3.5	A / A	0.2 / 0.7	12.4% / 12.3%		No
14. Otay Lakes Road / Eastlake Parkway	29.7	C	30.2	C	26.7 / 27.9	C / C		14.3% / 13.1%		No
15. Otay Lakes Road / Lane Avenue	12.4	B	14.6	B	12.4 / 14.6	B / B		26.1% / 28.3%		No
16. Otay Lakes Road / Fenton Street	8.3	A	15.7	B	8.3 / 15.7	A / B		30.1% / 36.0%		No
17. Otay Lakes Road / Hunte Parkway	26.5	C	24.4	C	23.7 / 23.4	C / C		27.0% / 36.6%		No
18. Otay Lakes Road / Woods Drive	16.0	B	13.4	B	14.3 / 13.4	B / B		47.7% / 63.4%		No
19. Otay Lakes Road / Lake Crest Drive	15.4	B	14.8	B	13.4 / 13.9	B / B		62.0% / 72.2%		No
20. Otay Lakes Road / Wueste Road*	15.5	C	43.6	E	9.2 / 9.1	A / A		86.1% / 89.5%		Yes (Direct)

Table 2.9-31
Peak Hour Intersection Level of Service Results
Existing Plus Project (Buildout) Conditions

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
21. Otay Lakes Road / SR-94 (County)*	16.4	C	19.9	C	10.8 / 12.7	B / B	5.6 / 7.2		EBL: +65 / +44	No
22. Olympic Parkway / East Palomar Street	27.1	C	29.4	C	26.3 / 28.2	C / C		2.0% / 2.7%		No
23. Olympic Parkway / SR-125 SB Ramps	4.6	A	7.7	A	4.6 / 7.7	A / A	0.0 / 0.0	4.3% / 4.0%		No
24. Olympic Parkway / SR-125 NB Ramps	3.3	A	6.6	A	1.7 / 3.6	A / A	1.6 / 3.0	9.1% / 6.6%		No
25. Olympic Parkway / Eastlake Parkway	22.9	C	22.6	C	22.0 / 22.1	C / C		10.1% / 9.4%		No
26. Olympic Parkway / Hunte Parkway	21.6	C	22.4	C	19.6 / 20.0	B / C		16.2% / 16.2%		No
27. Olympic Parkway / Olympic Vista Road	18.7	B	19.0	B	18.7 / 19.0	B / B		31.8% / 33.3%		No
28. Olympic Parkway / Wueste Road	5.3	A	9.6	A	4.8 / 9.6	A / A		36.5% / 37.5%		No
29. Lake Crest Drive / Wueste Road	13.5	B	11.9	B	12.3 / 7.7	B / A		75.5% / 69.9%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									

Table 2.9-31
Peak Hour Intersection Level of Service Results
Existing Plus Project (Buildout) Conditions

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS							
32. Main Street / Eastlake Parkway	Does Not Exist									
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	48.7	D	40.7	D	45.0 / 38.3	D / D	8.5 / 7.0			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	1.8	A	1.5	A	1.7 / 1.5	A / A	0.2 / 1.1			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	0.4	A	1.1	A	0.4 / 1.1	A / A	0.1 / 0.7			No
38. Otay Mesa Road / Ellis Road (County)	Does Not Exist									
39. SR-94 / Melody Road (County)	13.3	B	17.7	C	13.3 / 17.7	B / C	0.0 / 0.0		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	16.2	C	23.4	C	12.9 / 20.4	B / C	3.3 / 3.0		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	13.1	B	12.4	B	12.9 / 12.2x	B / B	0.2 / 0.2		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	7.7	A	6.6	A	Does Not Exist				EBL: +59 / +144	No

Table 2.9-31
Peak Hour Intersection Level of Service Results
Existing Plus Project (Buildout) Conditions

Intersection	Existing + Project (Buildout)				Existing		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/PM	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Phase I Traffic to Critical Movements AM/PM	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS						
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	7.6	A	14.9	B	Does Not Exist				EBL: +384 / +940	No
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	3.6	A	3.8	A	Does Not Exist				EBL: +60 / +148	No

Source: Chen Ryan Associates (March 2015)

Note: *For one- or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Table 2.9-32
Roadway Segment Level of Service Results
Existing Plus Project (Buildout) Conditions
(City Of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	15,033	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	56,125	70,000	B				No
	I-805 NB Ramps to Oleander Ave		61,811		C				No
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	57,972	50,000	E	3.8%	2,196	Yes	No
	Medical Center Dr to Paseo Ladera		49,901		C				No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		47,039		C				No
	Paseo Ranchero / Heritage Rd to La Media Rd		38,569		B				No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	4-Ln w/ RM	30,010	30,000	D	3.7%	1,098	Yes	No
	La Media Rd to Rutgers Ave	6-Ln w/ RM	46,973	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		46,762		C				No
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	51,676	50,000	D	10.2%	5,270	Yes	No

Table 2.9-32
Roadway Segment Level of Service Results
Existing Plus Project (Buildout) Conditions
(City Of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	47,318	70,000	A				No
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	33,959	50,000	A				No
	Lane Ave to Fenton St		27,615		A				No
	Fenton St to Hunte Pkwy		27,627		A				No
	Hunte Pkwy to Woods Dr		23,282		A				No
	Woods Dr to Lake Crest Dr		22,256		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	18,464	7,500	F	81.5%	15,151	No	Yes (Direct)
	Wueste Road to City of CV/County boundary		22,467		F	86.9%	19,540	No	Yes (Direct)
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	33,632	50,000	A				No
	E Palomar St to SR-125 SB Ramps		35,798		A				No
	SR-125 SB Ramps to SR-125 NB Ramps		39,691		B				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	46,800	70,000	A				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	21,339	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	13,449	30,000	A				No

Table 2.9-32
Roadway Segment Level of Service Results
Existing Plus Project (Buildout) Conditions
(City Of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution >5%?	Project ADT >800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
	East of Olympic Vista Rd		7,588		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	11,682	22,000	A				No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	7,367	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr	4-Ln w/ RM	14,410	30,000	A				No
	Clubhouse Dr to Olympic Pkwy		11,009		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,893	50,000	A				No

Source: Chen Ryan Associates (March 2015)

Notes:

Bold letter indicates unacceptable LOS D, E or F.

RM = Raised Median.

TWLTL = Two-Way Left-Turn Lane.

Table 2.9-33
Roadway Segment Level of Service Results
Existing Plus Project (Buildout) Conditions
(County Of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	City of Chula Vista/County boundary to Driveway #1	4-Ln w/ RM	22,467	27,000	C	B	No
	Driveway #1 to Driveway #2		20,717		B	B	No
	Driveway #2 to Driveway #3	2-Ln	7,099	10,900	C	B	No
	Driveway #3 to SR-94		5,347		C	B	No

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-34
Freeway/State Highway Segment Level of Service Results
Existing Plus Project (Buildout) Conditions

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-805	Bonita Road to East H Street	208,000	7.1%	14,747	0.52	5M*	0.95	7.0%	1,678	0.699	C	0.009	No
	East H Street to Telegraph Canyon Road	193,000	7.1%	13,684	0.52	5M*	0.95	7.0%	1,558	0.649	C	0.009	No
	Telegraph Canyon Road to Olympic Parkway	151,200	7.1%	10,720	0.52	4M+1Aux*	0.95	7.0%	1,351	0.563	B	0.000	No
	Olympic Parkway to Main Street	141,700	7.1%	10,047	0.52	4M+1Aux*	0.95	7.0%	1,264	0.527	B	0.000	No
SR-125	SR-54 to Mt. Miguel Road	19,500	7.0%	1,365	0.58	2M	0.95	10.3%	443	0.185	A	0.019	No
	Mt Miguel Road to Proctor Valley Road	17,600	7.0%	1,232	0.58	2M	0.95	10.3%	398	0.166	A	0.014	No
	Proctor Valley Road to Otay Lakes Road	13,900	7.0%	973	0.58	2M	0.95	10.3%	310	0.129	A	0.009	No
	Otay Lakes Road to Olympic Parkway	5,100	7.0%	357	0.58	2M	0.95	10.3%	111	0.046	A	0.000	No
	Olympic Parkway to Birch Road	6,500	7.0%	455	0.58	2M	0.95	10.3%	144	0.060	A	0.018	No
	Birch Road to Main Street	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Main Street to Otay Valley Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Otay Valley Road to Lone Star Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Lone Star Road to Otay Mesa Road	6,800	7.0%	476	0.58	2M	0.95	10.3%	155	0.065	A	0.023	No
	Otay Mesa Road to SR-905	Does Not Exist											

Source: Chen Ryan Associates (March 2015)

Notes: *2 new HOV lanes have been constructed very recently, however freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.

M = Mainline.

Aux = Auxiliary Lane.

Table 2.-9-35
2-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Existing Plus Project (Buildout) Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Lyons Valley Road to Jefferson Road	16,200	10,996	D or better	D or better	No
	Jefferson Road to Maxfield Road		9,488	D or better	D or better	No
	Maxfield Road to Melody Road		8,684	D or better	D or better	No
	Melody Road to Otay Lakes Road		8,045	D or better	D or better	No
	South of Otay Lakes Road		8,600	D or better	D or better	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-36
2-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Existing Plus Project (Buildout) Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	8,405	8.9%	716	0.67	1	0.92	5.0%	547	48.4	C	C	No
	South of Otay Lakes Road	7,842	8.4%	655	0.67	1	0.96	5.0%	481	48.9	C	C	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-37A
Ramp Intersection Capacity Analysis
Existing Plus Project (Buildout) Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,410	1200-1500: (At Capacity)
	PM	1,751	>1500: (Over Capacity)
I-805 NB Ramps / Telegraph Canyon Road	AM	1,432	1200-1500: (At Capacity)
	PM	1,226	1200-1500: (At Capacity)
SR-125 SB Ramps / Otay Lakes Road	AM	998	<1200: (Under Capacity)
	PM	1,356	1200-1500: (At Capacity)
SR-125 NB Ramps / Otay Lakes Road	AM	944	<1200: (Under Capacity)
	PM	1,281	1200-1500: (At Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	760	<1200: (Under Capacity)
	PM	1,060	<1200: (Under Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	756	<1200: (Under Capacity)
	PM	1,136	<1200: (Under Capacity)
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	614	<1200: (Under Capacity)
	PM	344	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Mesa Road	AM	325	<1200: (Under Capacity)
	PM	679	<1200: (Under Capacity)

Source: Chen Ryan Associates (March 2015)

Table 2.9-37B
Ramp Metering Analysis
Existing Plus Project (Buildout) Conditions

Location	Peak Hour	Demand ¹ (veh/hr)	Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay w/ Project ⁴ (min)	Queue ⁵ (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,964	1,824	140	4.6	2,025	1.8	No

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

Source: Chen Ryan Associates; August 2014

Table 2.9-38
Approved / Pending Projects in East Otay Mesa

No.	Project Name	Location	Description
County of San Diego			
1	National Enterprises Storage and Recycling Facility (MUP98-001)	East and west side of Alta Rd north of Old Otay Mesa Rd	The project proposes to develop areas for interim use including automobile storage, scrap and recycling operations, and wood and green material recycling, and will include temporary office trailers of 720 s.f. each and 200 employee parking spaces. Project would provide space for approximately 11,000 vehicles.
2	Travel Plaza Truck Stop (TPM 20414; MUP 98-024)	East side of Enrico Fermi Drive north of Airway Rd and south of Old Otay Mesa	Four parcels, ranging from 7.35 to 42.16 acres each. Full-service truck stop travel plaza. Driver facilities, restaurant, convenience store, service bays, fuel sales, 122-room hotel, office building, parking.
3	Otay Tech Centre - Previously Sunroad Tech Centre (TM 5139)	Northeast of Otay Mesa Rd and Harvest Road	Technology business park and commercial retail on 289.5 gross acres.
4	Enrico Fermi Industrial (TM 5394)	Southwest corner of Old Otay Mesa Rd and Enrico Fermi Drive	79.37 acres of industrial development
5	Aron Construction Auto	Northwest corner of Old Otay Mesa	38.2 acres

Table 2.9-38
Approved / Pending Projects in East Otay Mesa

No.	Project Name	Location	Description
	Auction Park (MUP00-012)	Rd and Alta Rd.	
6	Airway Business Centre- (Saeed Industrial TM5304)	North side of Airway Road between Michael Faraday Drive and Paseo de las Americas	35 acres
7	PG&E Subdivision/Otay Mesa Generating Plant (TPM 2057)	East of Alta Rd. btw Loop Rd and Energy Centre Way	Natural gas-fired electric generating plan
8	Otay Mesa Generating Plant Industrial Outlots	East of Alta Rd, btw Loop Rd and Energy Centre Way	30.60 acres of industrial uses
9	Otay Hills Mineral Extraction (MUP04-004/RP04-001)	Eastern extension of Old Otay Mesa, 2.5 miles northeast of Otay Mesa crossing	Hard rock quarry on 210 acres
10	Rowland Property (MUP 03-001)	Northeast corner of Old Otay Mesa Road and Enrico Fermi Drive	Auto-storage and wrecking yard located on 40.44 acres
11	Otay 310	South of Old Otay Mesa Rd, east of Alta Rd.	311 acres mixed industrial, rural residential and SR11
12	Correctional Facility (Proposed Project)	West of Alta Rd near existing prison facility	2,112 Bed Correctional Detention Facility
13	Otay Business Park (Paragon)	South of Airway Rd, east of Enrico Fermi Drive	2202.8 KSF Business Park on 161.6 gross acres
14	Otay Logistics Industrial Park	East of Enrico Fermi Dr, BTW Airway Rd & Siempre Viva Rd.	277 ksf of warehousing
15	California Crossing (40 acres Commercial)	East of SR-125, north of Otay Mesa Road, west of Harvest Rd.	28.50 net acres of Community Shopping Center
16	Pilot Travel Centre	North quadrant of Piper Ranch & Otay Mesa Rd.	Construction of a 10,000-sq. ft. commercial center including Wendy's restaurant and driver amenities, gas station and parking (71 car and 139 truck spaces). 65 employees (18 – 20 per shift).
17	Piper Otay Park	Northeast quadrant of Piper Ranch & Otay Mesa Rd	25 gross acres (19.8 net acres) of light industrial use.
18	Donovan Health Facility	480 Alta Road	15 bed facility with approx. 1,200 staff and 75-100 visitors anticipated per day
19	International Industrial Park (TM 5549)	The project site is located in the East Otay Mesa Specific Plan Area, part of the Otay Subregional Planning Area, within unincorporated San Diego County. Parcels 1-5 would be accessed via Vann Centre Blvd. Parcel 7-10 would take access off	133 acres of Technology/Business Park

Table 2.9-38
Approved / Pending Projects in East Otay Mesa

No.	Project Name	Location	Description
		Enrico Fermi Road.	
20	RTX (S08-022).	Immediately south of Via de la Amistad, east of Enrico Fermi Drive	18.75 acres of Truck Park and Storage
City of San Diego			
21	California Terraces	North of Otay Mesa Rd, off of Ocean View Hills Pkwy	Phase I = 644 MF dus, Phase II = 1585 dus, 2.4 acres commercial
22	La Media Truck Park site	Northeast corner of La Media Road & Lonestar	Industrial use (approx 70 acres)
23	Robinhood Ridge	West side of Otay Valley Road/Heritage Road north of Otay Mesa Road	3.8 acres of neighborhood commercial, 4.6 acres of light industrial
24	La Media Truck Park II	East side of La Media Road north of Windstock Street	40 acres
25	World Petrol III	North of Otay Mesa Rd, east of La Media	22 fuelling stations, 3632 sf convenience market, 2041 restaurant, 290 sf office
26	Ingalls Property	South of Vista Santo Domingo	13 SF dus, 24 townhomes, 106 apts, 19700 sf office, 20396 sf retail, 39450 industrial
27	Otay Corporate Centre N; Otay Corporate Centre S	North and south of Otay Mesa Rd, west of Heritage Rd.	industrial park
28	San Ysidro High School (Expansion)	Southwest corner of Airway Rd & Caliente Ave	High School for 814 students
29	Semi-Trailer Storage Facility (Planned Development permit 12083)	Southwest corner of Otay Mesa Road and Inovative Drive	8.02 net acres
30	Southwestern Junior College	North of Airway Rd, btw Britannia & La Media	500 Students Higher Education Center
31	Sunroad Otay Park (TM 91-0394)	South of Otay Mesa Road and west of La Media	1,337,000 square feet of Small Industrial Park, 79.3 acres
32	Esplande	Northeast of Airway Rd & La Media Road	1,337 SF dus on 77.6 Acres
33	Interstate Industrial Centre (TPM 98-0759)	East side of Piper Ranch Road, South of Otay Mesa Road	453,000 square feet of Warehousing
34	Handler Otay Mesa	South off Otay Mesa Rd, west of Corporate Centre Dr	mixed commercial/retail/office project
35	Pardee Commercial	Southeast corner of Otay Mesa Rd/Palm Ave	16 acre commercial
36	Candlelight Villas West	West side of Caliente Ave, south of	223 MF dus on 23 Acres

Table 2.9-38
Approved / Pending Projects in East Otay Mesa

No.	Project Name	Location	Description
		San Ysidro High School	
37	Southview	Southeast of Caliente Ave and Airway Rd.	553 MF dus
38	Candlelight	Southeast of Caliente Ave and Airway Rd.	435 MF dus
39	Brownfield Tech park	South of Otay Mesa Rd, west of Britannia Blvd.	741180 SF of business park on 50 acres
40	Las Californias	South of Siempre Viva Rd, btw Britannia & La Media	374,300 sq ft small industrial park, 305,90 sq ft large industrial park

Source: County of San Diego, City of San Diego, Chen Ryan Associates (March 2015)

Table 2.9-39
Peak Hour Intersection Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour	PM Peak Hour	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM			
1. East H Street / Otay Lakes Road	36.9	D	36.2	D	36.4 / 33.6	D / C		1.4% / 1.6%		No
2. Proctor Valley Road / Hunte Parkway	47.8	D	33.5	C	45.5 / 24.6	D / C		1.5% / 3.3%		No
3. Telegraph Canyon Road / I-805 SB Ramps	23.8	C	53.3	D	17.9 / 45.6	B / D	1.8 / 17.9	1.6% / 3.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	53.3	D	28.1	C	47.9 / 23.9	D / C	7.9 / 2.0	2.7% / 3.3%		No
5. Telegraph Canyon Road / Oleander Avenue	22.3	C	25.9	C	20.8 / 23.8	C / C		3.1% / 3.8%		No
6. Telegraph Canyon Road / Paseo Del Rey	36.6	D	35.8	D	34.8 / 35.4	C / D		3.8% / 4.6%		No
7. Telegraph Canyon Road / Medical Center Drive	15.3	B	20.0	B	14.8 / 18.0	B / B		3.6% / 4.5%		No
8. Telegraph Canyon Road / Paseo Ladera	52.7	D	39.9	D	50.0 / 37.6	D / D		3.8% / 5.2%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	39.5	D	51.1	D	37.8 / 46.1	D / D		3.7% / 4.1%		No

Table 2.9-39
Peak Hour Intersection Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	49.7	D	50.7	D	43.6 / 40.8	D / D		5.1% / 5.6%		No
11. Otay Lakes Road / Rutgers Avenue	16.6	B	15.7	B	15.6 / 14.8	B / B		8.3% / 8.3%		No
12. Otay Lakes Road / SR-125 SB Ramps	6.5	A	11.0	B	6.1 / 9.9	A / A	0.4 / 1.1	11.5% / 11.7%		No
13. Otay Lakes Road / SR-125 NB Ramps	3.2	A	4.7	A	3.0 / 3.8	A / A	0.2 / 0.9	11.4% / 12.1%		No
14. Otay Lakes Road / Eastlake Parkway	39.5	D	36.0	D	32.2 / 31.8	C / C		11.3% / 11.5%		No
15. Otay Lakes Road / Lane Avenue	12.5	B	14.7	B	12.5 / 14.7	B / B		22.4% / 24.0%		No
16. Otay Lakes Road / Fenton Street	9.7	A	17.5	B	8.9 / 17.5	A / B		28.3% / 32.3%		No
17. Otay Lakes Road / Hunte Parkway	31.4	C	42.3	D	30.0 / 27.6	C / C		21.8% / 31.0%		No
18. Otay Lakes Road / Woods Drive	15.9	B	12.5	B	15.9 / 11.1	B / B		44.3% / 47.3%		No

Table 2.9-39
Peak Hour Intersection Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
19. Otay Lakes Road / Lake Crest Drive	25.8	C	52.0	D	14.9 / 14.9	B / B		56.8% / 53.3%		No
20. Otay Lakes Road / Wueste Road*	Overflow	F	Overflow	F	18.2 / 15.3	C / C		55.1% / 65.6%		Yes (Direct)
21. Otay Lakes Road / SR-94 (County)*	49.6	E	59.3	F	17.6 / 23.4	C / C	32.0 / 35.9		EBL: +65 / +44	Yes (Cumulative)
22. Olympic Parkway / East Palomar Street	27.7	C	33.9	C	27.7 / 31.3	C / C		2.6% / 3.1%		No
23. Olympic Parkway / SR-125 SB Ramps	5.4	A	6.4	A	5.4 / 6.4	A / A	0.0 / 0.0	5.3% / 4.9%		No
24. Olympic Parkway / SR-125 NB Ramps	6.2	A	11.4	B	5.5 / 8.0	A / A	0.7 / 3.4	6.0% / 7.2%		No
25. Olympic Parkway / Eastlake Parkway	34.7	C	36.7	D	32.4 / 33.8	C / C		7.8% / 7.8%		No
26. Olympic Parkway / Hunte Parkway	28.2	C	46.9	D	22.9 / 34.1	C / C		13.6% / 12.3%		No
27. Olympic Parkway / Olympic Vista Road	27.5	C	29.5	C	25.0 / 25.9	C / C		10.9% / 11.1%		No

Table 2.9-39
Peak Hour Intersection Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
28. Olympic Parkway / Wueste Road	7.7	A	6.0	A	7.7 / 6.0	A / A		45.4% / 47.6%		No
29. Lake Crest Drive / Wueste Road	24.2	C	18.0	B	12.4 / 10.6	B / B		39.1% / 36.6%		No
30. Main Street / SR-125 SB Ramps	Does Not Exist									
31. Main Street / SR-125 NB Ramps	Does Not Exist									
32. Main Street / Eastlake Parkway	Does Not Exist									
33. Otay Valley Road / SR-125 SB Ramps	Does Not Exist									
34. Otay Valley Road / SR-125 NB Ramps	Does Not Exist									
35. Otay Mesa Road / La Media Road (SD)	38.4	D	46.3	D	37.2 / 41.4	D / D	1.2 / 4.9			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	13.1	B	12.0	B	11.7 / 11.2	B / B	1.4 / 0.8			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	3.2	A	9.8	A	2.6 / 8.8	A / A	0.6 / 1.0			No
38. Otay Mesa Road / Ellis Road (County)	29.4	C	28.2	C	26.2 / 24.3	C / C			EBL: +22 / +15	No

Table 2.9-39
Peak Hour Intersection Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Intersection	Cumulative (Year 2025) + Project (Buildout)				Cumulative (Year 2025) w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Cumulative + Project Traffic to Critical Movements AM/PM	
39. SR-94 / Melody Road (County)	7.7	A	10.8	B	7.3 / 10.5	A / B	0.4 / 0.3		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	15.9	C	21.4	C	15.4 / 20.3	C / C	0.5 / 1.1		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	22.6	C	26.0	C	20.6 / 25.2	C / C	2.0 / 0.8		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	13.9	B	12.5	B	Does Not Exist				EBL: +101 / +247	No
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	8.7	A	34.8	D	Does Not Exist				EBL: +370 /+ 956	No
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	6.4	A	5.6	A	Does Not Exist				EBL: +19 / +47	No

Notes:

Bold letter indicates unacceptable LOS E of F.

* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Table 2.9-40
Roadway Segment Level of Service Results
Cumulative (Year 2025) Traffic Conditions
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution > 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln w/ RM	31,080	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln w/ RM	59,580	70,000	B				No
	I-805 NB Ramps to Oleander Ave		64,100		C				No
	Oleander Ave to Medical Center Dr	6-Ln w/ RM	60,700	50,000	E	3.6%	2,200	Yes	No
	Medical Center Dr to Paseo Ladera		58,120		E	4.2%	2,420	Yes	No
	Paseo Ladera to Paseo Ranchero / Heritage Rd		58,830		E	4.5%	2,630	Yes	No
	Paseo Ranchero / Heritage Rd to La Media Rd		52,770		D	5.8%	3,070	Yes	No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln w/ RM	33,200	30,000	A				No
	La Media Rd to Rutgers Ave		48,030	50,000	C				No
	Rutgers Ave to SR-125 SB Ramps		48,430		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		52,970		D	9.9%	5,270	Yes	No

Table 2.9-40
Roadway Segment Level of Service Results
Cumulative (Year 2025) Traffic Conditions
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution > 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	SR-125 NB Ramps to Eastlake Pkwy	7-Ln w/ RM	54,530	70,000	A				No
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	36,400	50,000	A				No
	Lane Ave to Fenton St		29,580		A				No
	Fenton St to Hunte Pkwy		28,800		A				No
	Hunte Pkwy to Woods Dr		27,910		A				No
	Woods Dr to Lake Crest Dr		31,410		A				No
	Lake Crest Dr to Wueste Rd	2-Ln	21,160	7,500	F	57.1%	15,150	No	Yes (Direct)
	Wueste Rd to City of CV/County boundary		25,540		F	76.5%	19,540	No	Yes (Direct)
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln w/ RM	35,520	50,000	A				No
	E Palomar St to SR-125 SB Ramps		54,660		D	1.2%	880	Yes	No
	SR-125 SB Ramps to SR-125 NB Ramps		56,540		E	2.7%	1,760	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	60,290	70,000	B				No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	38,050	50,000	B				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	19,610	30,000	A				No

Table 2.9-40
Roadway Segment Level of Service Results
Cumulative (Year 2025) Traffic Conditions
(City of Chula Vista)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution > 5%?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
	East of Olympic Vista Rd		10,410		A				No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ TWLTL	19,380	22,000	C				No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	13,800	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr	4-Ln w/ RM	18,510	30,000	A				No
	Clubhouse Dr to Olympic Pkwy		16,850		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	19,080	50,000	A				No

Source: Chen Ryan Associates (March 2015)

Notes:

Bold letter indicates unacceptable LOS D, E or F.

RM = Raised Median.

TWLTL = Two-Way Left-Turn Lane.

Table 2.9-41
Roadway Segment Level of Service Results
Cumulative (Year 2025) Traffic Conditions
(County of San Diego)

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	Significant Impact?
Otay Lakes Rd	City of San Diego/County boundary to Driveway #1	2-Ln	25,540	10,900	F	Yes (Cumulative)
	Driveway #1 to Driveway #2		23,790		F	Yes (Cumulative)
	Driveway #2 to Driveway #3	2-Ln	10,170		D	No
	Driveway #3 to SR-94		8,420		D	No

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-42
Freeway/State Highway Segment Level of Service Results
Cumulative (Year 2025) Traffic Conditions

Freeway/ State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2025 Base)	Significant Impact?
I-805	Bonita Road to East H Street	292,000	7.8%	22,776	0.50	5M+1HOV	0.95	7.0%	2,148	0.90	D	0.006	No
	East H Street to Telegraph Canyon Road	308,300	7.8%	24,047	0.50	5M+1HOV	0.95	7.0%	2,268	0.95	E	0.006	No
	Telegraph Canyon Road to Olympic Parkway	238,100	7.1%	16,905	0.51	4M+1Aux+1HOV	0.95	7.0%	1,774	0.74	C	0.001	No
	Olympic Parkway to Main Street	235,700	7.1%	16,735	0.51	4M+1Aux+1HOV	0.95	7.0%	1,756	0.73	C	0.002	No
SR-125	SR-54 to Mt. Miguel Road	26,700	7.0%	1,869	0.60	2M	0.95	10.3%	658	0.27	A	0.021	No
	Mt Miguel Road to Proctor Valley Road	29,400	7.0%	2,058	0.60	2M	0.95	10.3%	725	0.30	A	0.013	No
	Proctor Valley Road to Otay Lakes Road	22,400	7.0%	1,568	0.60	2M	0.95	10.3%	552	0.23	A	0.013	No
	Otay Lakes Road to Olympic Parkway	28,100	7.0%	1,967	0.60	2M	0.95	10.3%	692	0.29	A	0.004	No
	Olympic Parkway to Birch Road	28,200	7.0%	1,974	0.60	2M	0.95	10.3%	695	0.29	A	0.023	No
	Birch Road to Main Street	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Main Street to Otay Valley Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Otay Valley Road to Lone Star Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Lone Star Road to Otay Mesa Road	46,200	7.0%	3,234	0.60	2M	0.95	10.3%	1,139	0.47	B	0.023	No
	Otay Mesa Road to SR-905	12,000	7.0%	840	0.60	2M	0.95	10.3%	296	0.12	A	0.009	No

Source: Chen Ryan Associates (March 2015)

Notes: M = Mainline.

Aux = Auxiliary Lane.

HOV = High Occupancy Vehicle lane.

Table 2.9-43
2-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Cumulative (Year 2025) Traffic Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	16,200	15,980	D or better	D or better	280	No
	South of Otay Lakes Road		21,080	E	E	370 (>325)	Yes (Cumulative)

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-44
2-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Cumulative (Year 2025) Traffic Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	15,980	8.9%	1,422	0.67	1	0.92	5.0%	1,099	42.4	D	D	No
	South of Otay Lakes Road	21,080	8.4%	1,730	0.67	1	0.96	5.0%	1,271	42.0	D	D	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-45A
Ramp Intersection Capacity Analysis
Cumulative (Year 2025) Traffic Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,416	1200-1500: (At Capacity)
	PM	1,612	>1500: (Over Capacity)
I-805 NB Ramps / Telegraph Canyon Road	AM	1,469	1200-1500: (At Capacity)
	PM	1,238	1200-1500: (At Capacity)
SR-125 SB Ramps / Otay Lakes Road	AM	885	<1200: (Under Capacity)
	PM	1,225	1200-1500: (At Capacity)
SR-125 NB Ramps / Otay Lakes Road	AM	955	<1200: (Under Capacity)
	PM	1,171	<1200: (Under Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	954	<1200: (Under Capacity)
	PM	1,041	<1200: (Under Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	921	<1200: (Under Capacity)
	PM	1,130	<1200: (Under Capacity)
SR-125 SB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Main Street	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Valley Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	624	<1200: (Under Capacity)
	PM	740	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Mesa Road	AM	432	<1200: (Under Capacity)
	PM	869	<1200: (Under Capacity)

Source: Chen Ryan Associates (March 2015)

Table 2.9-45B
Ramp Metering Analysis
Cumulative (Year 2025) Traffic Conditions

Location	Peak Hour	Demand ¹ (veh/hr)	Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay w/ Project ⁴ (min)	Queue ⁵ (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	1,952	1,824	128	4.2	1,850	2.9	No

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue (Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

Source: Chen Ryan Associates; August 2014

Table 2.9-46
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. East H Street / Otay Lakes Road	40.4	D	38.1	D
2. Proctor Valley Road / Hunte Parkway	28.2	C	38.0	D
3. Telegraph Canyon Road / I-805 SB Ramps	31.1	C	36.3	D
4. Telegraph Canyon Road / I-805 NB Ramps	49.9	D	35.2	D
5. Telegraph Canyon Road / Oleander Avenue	28.5	C	41.5	D
6. Telegraph Canyon Road / Paseo Del Rey	33.0	C	52.2	D
7. Telegraph Canyon Road / Medical Center Drive	17.9	B	22.4	C
8. Telegraph Canyon Road / Paseo Ladera	39.4	D	30.2	C
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	44.7	D	40.2	D
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	36.5	D	36.6	D
11. Otay Lakes Road / Rutgers Avenue	13.1	B	12.7	B
12. Otay Lakes Road / SR-125 SB Ramps	4.4	A	8.0	A
13. Otay Lakes Road / SR-125 NB Ramps	4.5	A	4.3	A
14. Otay Lakes Road / Eastlake Parkway	39.3	D	39.0	D
15. Otay Lakes Road / Lane Avenue	19.3	B	22.7	C
16. Otay Lakes Road / Fenton Street	6.4	A	12.4	B
17. Otay Lakes Road / Hunte Parkway	27.3	C	26.2	C

Table 2.9-46
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
18. Otay Lakes Road / Woods Drive	11.2	B	5.4	A
19. Otay Lakes Road / Lake Crest Drive	17.7	B	11.4	B
20. Otay Lakes Road / Wueste Road*	4.7	A	8.4	A
21. Otay Lakes Road / SR-94 (County)*	18.9	B	28.0	C
22. Olympic Parkway / East Palomar Street	30.1	C	54.0	D
23. Olympic Parkway / SR-125 SB Ramps	9.5	A	8.9	A
24. Olympic Parkway / SR-125 NB Ramps	8.4	A	5.9	A
25. Olympic Parkway / Eastlake Parkway	28.6	C	31.3	C
26. Olympic Parkway / Hunte Parkway	30.4	C	29.9	C
27. Olympic Parkway / Olympic Vista Road	26.2	C	23.3	C
28. Olympic Parkway / Wueste Road	15.1	B	12.6	B
29. Lake Crest Drive / Wueste Road	8.3	A	8.4	A
30. Main Street / SR-125 SB Ramps	13.2	B	18.0	B
31. Main Street / SR-125 NB Ramps	18.1	B	45.1	D
32. Main Street / Eastlake Parkway	34.7	C	52.7	D
33. Otay Valley Road / SR-125 SB Ramps	11.4	B	15.4	B
34. Otay Valley Road / SR-125 NB Ramps	8.5	A	11.2	B
35. Otay Mesa Road / La Media Road (SD)	43.6	D	48.3	D
36. Otay Mesa Road / SR-125 SB Ramps (SD)	8.5	A	8.0	A
37. Otay Mesa Road / SR-125 NB Ramps (SD)	10.3	B	11.2	B
38. Otay Mesa Road / Ellis Road (County)	30.1	C	24.3	C
39. SR-94 / Melody Road (County)	9.6	A	12.6	B
40. SR-94 / Maxfield Road (County)*	15.8	C	22.9	C
41. SR-94 / Jefferson Road (County)	43.0	D	40.2	D
42. Otay Lakes Road @ Project Driveway #1 (County)	Does Not Exist			
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	Does Not Exist			
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	Does Not Exist			

Source: Chen Ryan Associates (March 2015)

Notes:

* For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Table 2.9-47
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Traffic Conditions

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/P M	Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS			Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
1. East H Street / Otay Lakes Road	41.1	D	40.4	D	40.4 / 38.1	D / D		1.6% / 1.9%		No
2. Proctor Valley Road / Hunte Parkway	28.8	C	38.4	D	28.2 / 38.0	C / D		1.9% / 2.6%		No
3. Telegraph Canyon Road / I-805 SB Ramps	34.5	C	46.6	D	31.1 / 36.3	C / D	3.4 / 10.3	1.2% / 2.3%		No
4. Telegraph Canyon Road / I-805 NB Ramps	53.5	D	37.1	D	49.9 / 35.2	D / D	3.6 / 1.9	2.7% / 3.0%		No
5. Telegraph Canyon Road / Oleander Avenue	29.5	C	48.7	D	28.5 / 41.5	C / D		3.0% / 3.3%		No
6. Telegraph Canyon Road / Paseo Del Rey	33.0	C	52.4	D	33.0 / 52.2	C / D		3.2% / 3.6%		No
7. Telegraph Canyon Road / Medical Center Drive	18.7	B	25.7	C	17.9 / 22.4	B / C		3.2% / 4.2%		No
8. Telegraph Canyon Road / Paseo Ladera	41.3	D	32.0	C	39.4 / 30.2	D / C		3.8% / 5.4%		No
9. Telegraph Canyon Road / Paseo Ranchero/Heritage Road	46.8	D	43.3	D	44.7 / 40.2	D / D		3.4% / 4.4%		No
10. Telegraph Canyon Road / Otay Lakes Road/La Media Road	40.9	D	41.5	D	36.5 / 36.6	D / D		4.8% / 6.1%		No

Table 2.9-47
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Traffic Conditions

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
11. Otay Lakes Road / Rutgers Avenue	13.4	B	12.7	B	13.1 / 12.7	B / B		8.9% / 10.8%		No
12. Otay Lakes Road / SR-125 SB Ramps	5.0	A	10.1	B	4.4 / 8.0	A / A	0.6 / 2.1	10.1% / 9.8%		No
13. Otay Lakes Road / SR-125 NB Ramps	4.5	A	5.0	A	4.5 / 4.3	A / A	0.0 / 0.7	10.9% / 10.5%		No
14. Otay Lakes Road / Eastlake Parkway	44.1	D	41.4	D	39.3 / 39.0	D / D		11.2% / 10.9%		No
15. Otay Lakes Road / Lane Avenue	19.3	B	22.7	C	19.3 / 22.7	B / C		20.6% / 22.2%		No
16. Otay Lakes Road / Fenton Street	6.4	A	12.4	B	6.4 / 12.4	A / B		24.6% / 30.1%		No
17. Otay Lakes Road / Hunte Parkway	31.9	C	34.4	C	27.3 / 26.2	C / C		25.7% / 34.2%		No
18. Otay Lakes Road / Woods Drive	11.2	B	5.4	A	11.2 / 5.4	B / A		40.6% / 51.8%		No
19. Otay Lakes Road / Lake Crest Drive	17.7	B	11.4	B	17.7 / 11.4	B / B		42.5% / 51.4%		No
20. Otay Lakes Road / Wueste Road	6.6	A	12.7	B	4.7 / 8.4	A / A		55.5% / 59.6%		No
21. Otay Lakes Road / SR-94 (County)*	24.6	C	42.1	D	18.9 / 28.0	B / C	5.7 / 14.1		EBL: +65 / +44	No

Table 2.9-47
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Traffic Conditions

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
							Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
22. Olympic Parkway / East Palomar Street	30.5	C	54.0	D	30.1 / 54.0	C / D		1.7% / 1.7%		No
23. Olympic Parkway / SR-125 SB Ramps	9.6	A	8.9	A	9.5 / 8.9	A / A	0.1 / 0.0	2.5% / 2.1%		No
24. Olympic Parkway / SR-125 NB Ramps	8.5	A	6.6	A	8.4 / 5.9	A / A	0.1 / 0.7	2.6% / 2.5%		No
25. Olympic Parkway / Eastlake Parkway	29.3	C	32.7	C	28.6 / 31.3	C / C		3.4% / 3.4%		No
26. Olympic Parkway / Hunte Parkway	31.3	C	32.3	C	30.4 / 29.9	C / C		12.1% / 13.2%		No
27. Olympic Parkway / Olympic Vista Road	26.2	C	23.3	C	26.2 / 23.3	C / C		7.0% / 8.1%		No
28. Olympic Parkway / Wueste Road	15.1	B	12.9	B	15.1 / 12.6	B / B		20.5% / 21.9%		No
29. Lake Crest Drive / Wueste Road	11.3	B	10.5	B	8.3 / 8.4	A / A		17.0% / 18.6%		No
30. Main Street / SR-125 SB Ramps	13.2	B	18.0	B	13.2 / 18.0	B / B		0.6% / 0.8%		No
31. Main Street / SR-125 NB Ramps	18.1	B	45.8	D	18.1 / 45.1	B / D		0.7% / 0.8%		No
32. Main Street / Eastlake Parkway	35.4	D	52.7	D	34.7 / 52.7	C / D		5.1% / 6.1%		No

Table 2.9-47
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Traffic Conditions

Intersection	Future Year 2030 + Project (Buildout)				Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
	AM Peak Hour		PM Peak Hour		Avg. Delay (sec.) AM/PM	LOS AM/P M	Caltrans/ San Diego	Chula Vista	County	
	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS			Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
33. Otay Valley Road / SR-125 SB Ramps	11.4	B	15.5	B	11.4 / 15.4	B / B		4.6% / 2.5%		No
34. Otay Valley Road / SR-125 NB Ramps	9.1	A	12.2	B	8.5 / 11.2	A / B		9.1% / 8.0%		No
35. Otay Mesa Road / La Media Road (SD)	44.6	D	48.3	D	43.6 / 48.3	D / D	1.0 / 0.0			No
36. Otay Mesa Road / SR-125 SB Ramps (SD)	9.4	A	8.5	A	8.5 / 8.0	A / A	0.9 / 0.5			No
37. Otay Mesa Road / SR-125 NB Ramps (SD)	10.4	B	11.5	B	10.3 / 11.2	B / B	0.1 / 0.3			No
38. Otay Mesa Road / Ellis Road (County)	32.0	C	26.1	C	30.1 / 24.3	C / C	1.9 / 1.8		EBL: +11 / +7	No
39. SR-94 / Melody Road (County)	9.7	A	13.2	B	9.6 / 12.6	A / B	0.1 / 0.6		EBL: +0 / +0	No
40. SR-94 / Maxfield Road (County)*	16.3	C	24.3	C	15.8 / 22.9	C / C	0.5 / 1.4		EBL: +0 / +0	No
41. SR-94 / Jefferson Road (County)	45.5	D	40.2	D	43.0 / 40.2	D / D	2.5 / 0.0		SBL: +6 / +14	No
42. Otay Lakes Road @ Project Driveway #1 (County)	12.3	B	15.6	B	Does Not Exist				EBL: +59 / +144	No

Table 2.9-47
Peak Hour Intersection Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Traffic Conditions

Intersection	Future Year 2030 + Project (Buildout)		Future Year 2030 w/o Project		Impact Criteria by Jurisdiction			Significant Impact?
					Caltrans/ San Diego	Chula Vista	County	
	AM Peak Hour	PM Peak Hour	Avg. Delay (sec.) AM/PM	LOS AM/P M	Change in Delay (sec.) AM/PM	Project % of Entering Volume AM/PM	Project Traffic to Critical Movements AM/PM	
43. Otay Lakes Road @ Project Driveway #2 ^{RA} (County)	8.8	A	34.7	D	Does Not Exist		EBL: +378 / +926	No
44. Otay Lakes Road @ Project Driveway #3 ^{RA} (County)	6.9	A	6.6	A	Does Not Exist		SBL: +59 / +144	No

Source: Chen Ryan Associates (March 2015)

Notes:

Bold letter indicates unacceptable LOS E or F.

* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

RA = Roundabout. Rodel software is utilized for the peak hour operational analysis.

Table 2.9-48
Roadway Segment Level of Service Results
Future Year 2030 Base Conditions
(City of Chula Vista)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln Prime	28,700	50,000	A
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln Expressway	51,300	70,000	A
	I-805 NB Ramps to Oleander Ave		58,400		B
	Oleander Ave to Medical Center Dr	6-Ln Prime	56,400	50,000	E
	Medical Center Dr to Paseo Ladera		56,300		E
Telegraph Canyon Rd	Paseo Ladera to Paseo Ranchero/ Heritage Rd	6-Ln Prime	56,700	50,000	E
	Paseo Ranchero/Heritage Rd to La Media Rd		55,400		D
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln Prime	42,800	50,000	B
	La Media Rd to Rutgers Ave		46,700		C
	Rutgers Ave to SR-125 SB Ramps		42,600		B
	SR-125 SB Ramps to SR-125 NB Ramps		50,800		D
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln Expressway	48,900	70,000	A
	Eastlake Pkwy to Lane Ave	6-Ln Prime	30,400	50,000	A
	Lane Ave to Fenton St		17,700		A
	Fenton St to Hunte Pkwy		16,800		A
	Hunte Pkwy to Woods Dr		13,200		A
	Woods Dr to Lake Crest Dr		13,000		A
	Lake Crest Dr to Wueste Rd		6,400		A
	Wueste Rd to City of CV/County Boundary		6,400		A

Table 2.9-48
Roadway Segment Level of Service Results
Future Year 2030 Base Conditions
(City of Chula Vista)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln Prime	25,900	50,000	A
	E Palomar St to SR-125 SB Ramps		46,500		C
	SR-125 SB Ramps to SR-125 NB Ramps		48,300		C
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln Expressway	50,900	70,000	D
	Eastlake Pkwy to Hunte Pkwy	6-Ln Prime	33,700	50,000	A
	Hunte Pkwy to Olympic Vista Rd		20,100		A
	East of Olympic Vista Rd		10,400		A
Main Street	SR-125 NB Ramps to Eastlake Pkwy/Otay Valley Rd	6-Ln Gateway	53,200	61,200 (LOS D)	C
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln Class I Collector	20,200	22,000	C
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln Major	11,300	30,000	A
	Otay Lakes Rd to Clubhouse Dr		17,800		A
	Clubhouse Dr to Olympic Pkwy		18,600		A
Hunte Pkwy	Olympic Pkwy to Eastlake Pkwy	6-Ln Prime	23,500	50,000	A
Otay Valley Rd	La Media Rd to SR-125 SB Ramps	4-Ln Major	25,200	30,000	B
	SR-125 SB Ramps to SR-125 NB Ramps		28,100		C
	SR-125 NB Ramps to Main Street		29,700		C

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS D, E or F.

Table 2.9-49
Roadway Segment Level of Service Results
Future Year 2030 Base Conditions
(County of San Diego)

Roadway	Segment	Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Otay Lakes Rd	City of CV/County boundary to Driveway #2	4.2A	6,400	27,000	A
	Driveway #2 to SR-94	2.1D	6,400	13,500	C

Source: Chen Ryan Associates (March 2015)

Table 2.9-50
Roadway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution $\geq 5\%$?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	6-Ln Prime	29,600	50,000	A				No
Telegraph Canyon Rd	I-805 SB Ramps to I-805 NB Ramps	7-Ln Expressway	52,200	70,000	A				No
	I-805 NB Ramps to Oleander Ave		60,600		B				No
	Oleander Ave to Medical Center Dr	6-Ln Prime	58,600	50,000	E	3.8%	2,200	Yes	No
	Medical Center Dr to Paseo Ladera		58,700		E	4.1%	2,420	Yes	No
	Paseo Ladera to Paseo Ranchero/Heritage Rd		59,300		E	4.4%	2,630	Yes	No
	Paseo Ranchero/Heritage Rd to La Media Rd		58,500		E	5.2%	3,070	Yes	No
Otay Lakes Rd	East H St to Telegraph Canyon Rd/Otay Lakes Rd	6-Ln Prime	43,900	50,000	C				No
	La Media Rd to Rutgers Ave		51,500		D	9.4%	4,830	Yes	No
	Rutgers Ave to SR-125 SB Ramps		47,400		C				No

Table 2.9-50
Roadway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution $\geq 5\%$?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Otay Lakes Rd	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Prime	56,100	50,000	D	9.4%	5,270	Yes	No
	SR-125 NB Ramps to Eastlake Pkwy	7-Ln Expressway	55,900	70,000	B				No
	Eastlake Pkwy to Lane Ave	6-Ln Prime	38,300	50,000	B				No
	Lane Ave to Fenton St		26,500		A				No
	Fenton St to Hunte Pkwy		25,820		A				No
	Hunte Pkwy to Woods Dr		26,820		A				No
	Woods Dr to Lake Crest Dr		27,740		A				No
	Lake Crest Dr to Wueste Rd		22,160		A				No
	Wueste Rd to City of CV/County boundary		25,860		A				No

Table 2.9-50
Roadway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution $\geq 5\%$?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Pkwy	La Media Rd to E Palomar St	6-Ln Prime	26,100	50,000	A				No
	E Palomar St to SR-125 SB Ramps		46,700		C				No
	SR-125 SB Ramps to SR-125 NB Ramps		48,500		C				No
	SR-125 NB Ramps to Eastlake Pkwy	8-Ln Expressway	51,100	70,000	D	0.4%	220	Yes	No
Olympic Pkwy	Eastlake Pkwy to Hunte Pkwy	6-Ln Prime	35,200	50,000	A				No
	Hunte Pkwy to Olympic Vista Rd	4-Ln Major	23,600	30,000	B				No
	East of Olympic Vista Rd		13,900		A				No
Main Street	SR-125 NB Ramps to Eastlake Pkwy/Otay Valley Rd	6-Ln Gateway	54,900	61,200 (LOS D)	D	3.1%	1,700	Yes	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln Class I Collector	21,100	22,000	C				No

Table 2.9-50
Roadway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions
(City of Chula Vista)

Roadway	Segment	Classification	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project Contribution $\geq 5\%$?	Project ADT > 800?	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln Major	12,400	30,000	A				No
	Otay Lakes Rd to Clubhouse Dr		21,300		A				No
	Clubhouse Dr to Olympic Pkwy		21,400		A				No
	Olympic Pkwy to Eastlake Pkwy	6-Ln Prime	27,900	50,000	A				No
Otay Valley Rd	La Media Rd to SR-125 SB Ramps	4-Ln Major	26,700	30,000	C				No
	SR-125 SB Ramps to SR-125 NB Ramps		29,600		C				No
	SR-125 NB Ramps to Main Street		31,500		D	0.4%	220	Yes	No

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS D, E, or F.

Table 2.9-51
Roadway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions
(County of San Diego)

Roadway	Segment	Cross-Sections	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Significant Impact?
Otay Lakes Rd	Wueste Rd to Driveway #1	4.2A	25,860	27,000	D	A	No
	Driveway #1 to Driveway #2		24,060		C	A	No
	Driveway #2 to Driveway #3	2.1D	10,500	13,500	D	C	No
	Driveway #3 to SR-94		8,850		D	C	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-52
Freeway/State Highway Segment Level of Service Results
Future Year 2030 Base Conditions

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	V/C	LOS
I-805	Bonita Road to East H Street	326,600	7.8%	25,475	0.50	5M+1HOV	0.95	1.7%	2,251	0.938	E
	East H Street to Telegraph Canyon Road	325,400	7.8%	25,381	0.50	5M+1HOV	0.95	1.9%	2,253	0.939	E
	Telegraph Canyon Road to Olympic Parkway	286,100	7.1%	20,284	0.51	4M+1Aux+1HOV	0.95	1.7%	1,996	0.832	D
	Olympic Parkway to Main Street	271,500	7.1%	19,249	0.51	4M+1Aux+1HOV	0.95	1.7%	1,890	0.788	C
SR-125	SR-54 to Mt. Miguel Road	34,600	7.0%	2,422	0.60	2M	0.95	10.3%	808	0.337	A
	Mt Miguel Road to Proctor Valley Road	29,100	7.0%	2,037	0.60	2M	0.95	10.3%	675	0.281	A
	Proctor Valley Road to Otay Lakes Road	33,600	7.0%	2,352	0.60	2M	0.95	10.3%	786	0.328	A
	Otay Lakes Road to Olympic Parkway	29,600	7.0%	2,072	0.60	2M	0.95	10.3%	686	0.286	A
	Olympic Parkway to Birch Road	38,500	7.0%	2,695	0.60	2M	0.95	10.3%	897	0.374	A
	Birch Road to Main Street	33,500	7.0%	2,345	0.60	2M	0.95	10.3%	775	0.323	A
	Main Street to Otay Valley Road	38,300	7.0%	2,681	0.60	2M	0.95	10.3%	885	0.369	A
	Otay Valley Road to Lone Star Road	51,000	7.0%	3,570	0.60	2M	0.95	10.3%	1,184	0.493	B
	Lone Star Road to Otay Mesa Road	89,200	7.0%	6,244	0.60	2M	0.95	10.3%	2,070	0.863	D
	Otay Mesa Road to SR-905	78,700	7.0%	5,509	0.60	2M	0.95	10.3%	1,826	0.761	C

Source: Chen Ryan Associates (March 2015)

Notes:

M = Mainline.

Aux = Auxiliary Lane.

HOV = High Occupancy Vehicle lane.

Table 2.9-53
Freeway/State Highway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Significant Impact?
I-805	Bonita Road to East H Street	328,700	7.8%	25,639	0.50	5M+1HO V	0.95	1.7%	2,272	0.947	E	0.009	No
	East H Street to Telegraph Canyon Road	327,500	7.8%	25,545	0.50	5M+1HO V	0.95	1.9%	2,263	0.943	E	0.004	No
	Telegraph Canyon Road to Olympic Parkway	286,300	7.1%	20,299	0.51	4M+1Aux +1HOV	0.95	1.7%	1,996	0.832	D	0.000	No
	Olympic Parkway to Main Street	271,500	7.1%	19,249	0.51	4M+1Aux +1HOV	0.95	1.7%	1,890	0.788	C	0.000	No
SR-125	SR-54 to Mt. Miguel Road	35,500	7.0%	2,485	0.60	2M	0.95	10.3%	830	0.346	A	0.009	No
	Mt Miguel Road to Proctor Valley Road	30,900	7.0%	2,163	0.60	2M	0.95	10.3%	719	0.300	A	0.018	No
	Proctor Valley Road to Otay Lakes Road	34,900	7.0%	2,443	0.60	2M	0.95	10.3%	808	0.337	A	0.009	No
	Otay Lakes Road to Olympic Parkway	30,800	7.0%	2,156	0.60	2M	0.95	10.3%	719	0.300	A	0.014	No
	Olympic Parkway to Birch Road	38,900	7.0%	2,723	0.60	2M	0.95	10.3%	908	0.378	A	0.005	No
	Birch Road to Main Street	33,900	7.0%	2,373	0.60	2M	0.95	10.3%	786	0.328	A	0.005	No
	Main Street to Otay Valley Road	38,700	7.0%	2,709	0.60	2M	0.95	10.3%	897	0.374	A	0.005	No

Table 2.9-53
Freeway/State Highway Segment Level of Service Results
Future Year 2030 Base Plus Project (Buildout) Conditions

Freeway / State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Significant Impact?
SR-125	Otay Valley Road to Lone Star Road	51,700	7.0%	3,619	0.60	2M	0.95	10.3%	1,206	0.503	B	0.009	No
	Lone Star Road to Otay Mesa Road	90,700	7.0%	6,349	0.60	2M	0.95	10.3%	2,103	0.876	D	0.014	No
	Otay Mesa Road to SR-905	80,200	7.0%	5,614	0.60	2M	0.95	10.3%	1,859	0.775	C	0.014	No

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-54
2-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Future Year 2030 Base Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS
SR-94	Melody Road to Otay Lakes Road	16,200	11,700	D or better
	South of Otay Lakes Road		20,600	E

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-55
2-Lane Highway Segment Level of Service Results
County of San Diego LOS Criteria
Future Year 2030 Base Plus Project (Buildout) Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	16,200	12,800	D or better	D or better	880	No
	South of Otay Lakes Road		21,480	E	E	880	Yes (Cumulative)

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

Table 2.9-56
2-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Future Year 2030 Base Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	%HV	Volume (pc/h/ln)	Speed (mph)	LOS
SR-94	Melody Road to Otay Lakes Road	11,700	8.90%	1,041	0.67	1	0.92	5.0%	798	44.8	D
	South of Otay Lakes Road	20,600	8.40%	1,730	0.67	1	0.96	5.0%	1,271	44.8	D

Source: Chen Ryan Associates (March 2015)

Table 2.9-57
2-Lane Highway Segment Level of Service Results
Caltrans and HCM Methodology
Future Year 2030 Base Plus Project (Buildout) Conditions

Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% HV	Volume (pc/h/ln)	Speed (mph)	LOS w/ Project	LOS w/o Project	Significant Impact?
SR-94	Melody Road to Otay Lakes Road	12,800	8.9%	1,139	0.67	1	0.92	5.0%	871	44.8	D	D	No
	South of Otay Lakes Road	21,480	8.4%	1,739	0.67	1	0.96	5.0%	1,277	44.1	D	D	No

Source: Chen Ryan Associates (March 2015)

Table 2.9-58
Ramp Intersection Capacity Analysis
Future Year 2030 Base Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,210	1200-1500: (At Capacity)
	PM	1,795	>1500: (Over Capacity)
I-805 NB Ramps / Telegraph Canyon Road	AM	1,580	>1500: (Over Capacity)
	PM	1,358	1200-1500: (At Capacity)
SR-125 SB Ramps / Otay Lakes Road	AM	908	<1200: (Under Capacity)
	PM	1,377	1200-1500: (At Capacity)
SR-125 NB Ramps / Otay Lakes Road	AM	912	<1200: (Under Capacity)
	PM	1,301	1200-1500: (At Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	903	<1200: (Under Capacity)
	PM	1,275	1200-1500: (At Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	929	<1200: (Under Capacity)
	PM	1,300	1200-1500: (At Capacity)
SR-125 SB Ramps / Main Street	AM	1,598	>1500: (Over Capacity)
	PM	1,367	1200-1500: (At Capacity)
SR-125 NB Ramps / Main Street	AM	1,215	1200-1500: (At Capacity)
	PM	1,490	1200-1500: (At Capacity)
SR-125 SB Ramps / Otay Valley Road	AM	323	<1200: (Under Capacity)
	PM	533	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Valley Road	AM	335	<1200: (Under Capacity)
	PM	548	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Mesa Road	AM	732	<1200: (Under Capacity)
	PM	772	<1200: (Under Capacity)
SR-125 SB Ramps / Otay Mesa Road	AM	567	<1200: (Under Capacity)
	PM	920	<1200: (Under Capacity)

Source: Chen Ryan Associates (March 2015)

Table 2.9-59A
Ramp Intersection Capacity Analysis
Future Year 2030 Base Plus Project (Buildout) Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Telegraph Canyon Road	AM	1,416	<i>1200-1500: (At Capacity)</i>
	PM	1,865	<i>>1500: (Over Capacity)</i>
I-805 NB Ramps / Telegraph Canyon Road	AM	1,629	<i>>1500: (Over Capacity)</i>
	PM	1,238	<i>1200-1500: (At Capacity)</i>
SR-125 SB Ramps / Otay Lakes Road	AM	1,016	<i><1200: (Under Capacity)</i>
	PM	1,545	<i>>1500: (Over Capacity)</i>
SR-125 NB Ramps / Otay Lakes Road	AM	1,025	<i><1200: (Under Capacity)</i>
	PM	1,447	<i>1200-1500: (At Capacity)</i>
SR-125 SB Ramps / Olympic Parkway	AM	924	<i><1200: (Under Capacity)</i>
	PM	1,304	<i>1200-1500: (At Capacity)</i>
SR-125 NB Ramps / Olympic Parkway	AM	966	<i><1200: (Under Capacity)</i>
	PM	1,351	<i>1200-1500: (At Capacity)</i>
SR-125 SB Ramps / Main Street	AM	1,603	<i>>1500: (Over Capacity)</i>
	PM	1,380	<i>1200-1500: (At Capacity)</i>
SR-125 NB Ramps / Main Street	AM	1,225	<i>1200-1500: (At Capacity)</i>
	PM	1,502	<i>>1500: (Over Capacity)</i>
SR-125 SB Ramps / Otay Valley Road	AM	350	<i><1200: (Under Capacity)</i>
	PM	569	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Otay Valley Road	AM	370	<i><1200: (Under Capacity)</i>
	PM	594	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Otay Mesa Road	AM	776	<i><1200: (Under Capacity)</i>
	PM	819	<i><1200: (Under Capacity)</i>
SR-125 SB Ramps / Otay Mesa Road	AM	590	<i><1200: (Under Capacity)</i>
	PM	1,004	<i><1200: (Under Capacity)</i>

Source: Chen Ryan Associates (March 2015)

Table 2.9-59B
Ramp Metering Analysis
Future Year 2030 Base Plus Project (Buildout) Conditions

Location	Peak Hour	Demand ¹ (veh/hr)	Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay w/ Project ⁴ (min)	Queue ⁵ (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Telegraph Canyon Road	AM	2,097	1,824	273	8.9	3,950	5.4	No

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
5. Queue(Per Ramp Lane) = (Excess Demand) X 29 ft/veh/# of non-HOV lanes.

Source: Chen Ryan Associates; August 2014

Table 2.9-60
Resort Village Internal Roadway Segment Performance

Internal Roadway	Estimated ADT	Recommended Classification	LOS D Threshold	LOS
“A”	13,500	4.2A	27,000	C
“B”	11,800	2.2B	13,500	D
“C”	9,600	2.2E	10,900	D
“D”	5,900	2.3C	10,900	D
“E”	5,400	2.3C	10,900	D
“F”	2,700	Residential Collector	Design Capacity – LOS C at 4,500	C or better
“G”	3,100	Residential Collector	Design Capacity – LOS C at 4,500	C or better
“H”	2,800	Residential Collector	Design Capacity – LOS C at 4,500	C or better
“I”	2,300	Residential Collector	Design Capacity – LOS C at 4,500	C or better
“J”	1,100	Residential Collector	Design Capacity – LOS C at 4,500	C or better
“K”	4,600	2.3C	7,000	D
“L”	6,200	2.3C	7,000	D

Source: Chen Ryan Associates (March 2015)

Table 2.9-61
Mitigated Intersection Level of Service
Existing Plus Project (Buildout) Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
Otay Lakes Road / Wueste Road	15.5	C	43.6	E	8.4	A	8.7	A

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

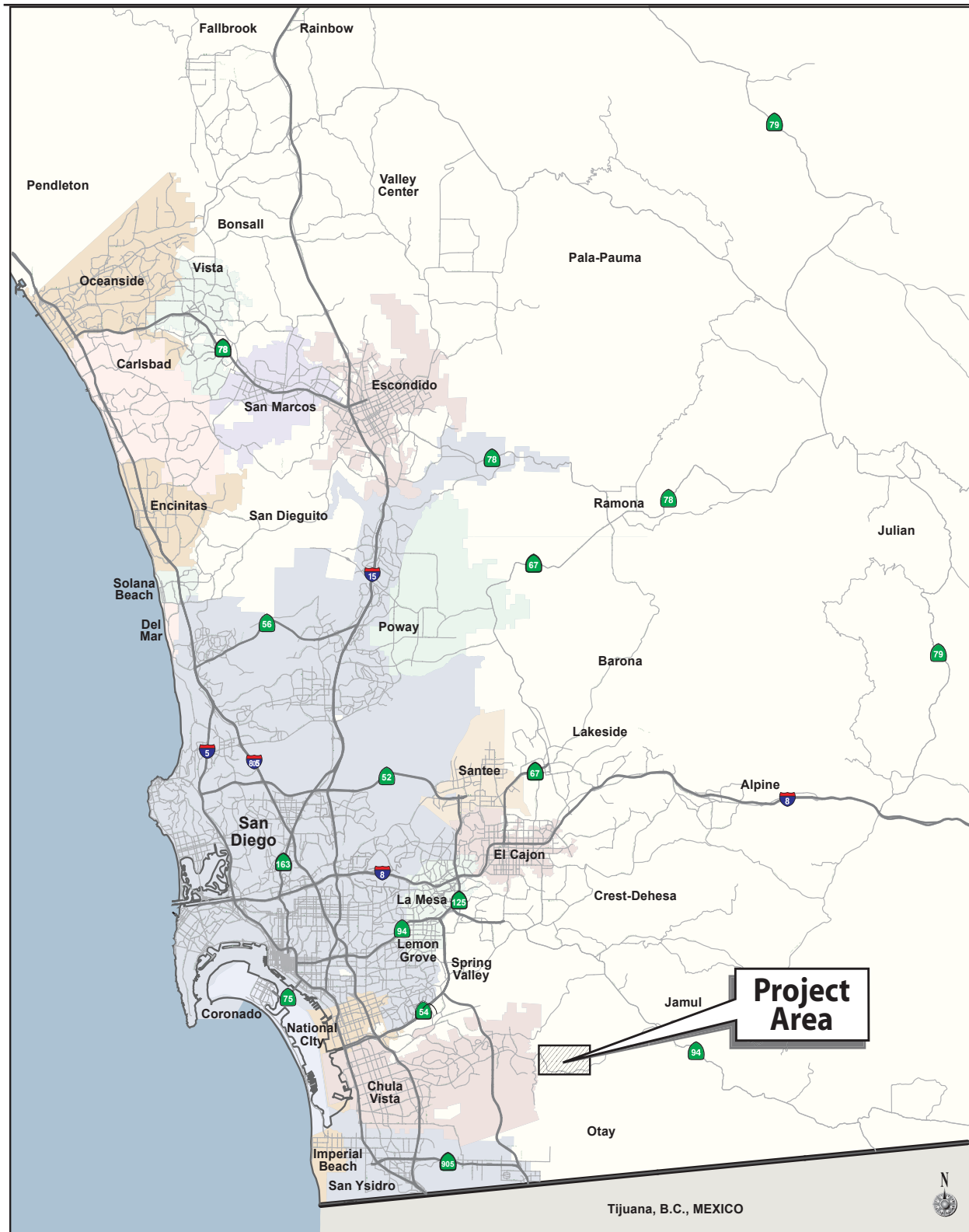
Table 2.9-62
Mitigated Intersection Level of Service
Near-Term Cumulative Year (2025) Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
Otay Lakes Road / Wueste Road	42.9	E	49.8	E	8.4	A	10.3	B
Otay Lakes Road / SR-94	49.6	E	59.3	F	8.2	A	10.6	B

Source: Chen Ryan Associates (March 2015)

Note: Bold letter indicates unacceptable LOS E or F.

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Source: Chen Ryan Associates, 2015



Figure 2.9-1
Project Regional Location

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Source: Chen Ryan Associates, 2015



Figure 2.9-2
Project Trip Distribution - Existing Network

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Source: Chen Ryan Associates, 2015

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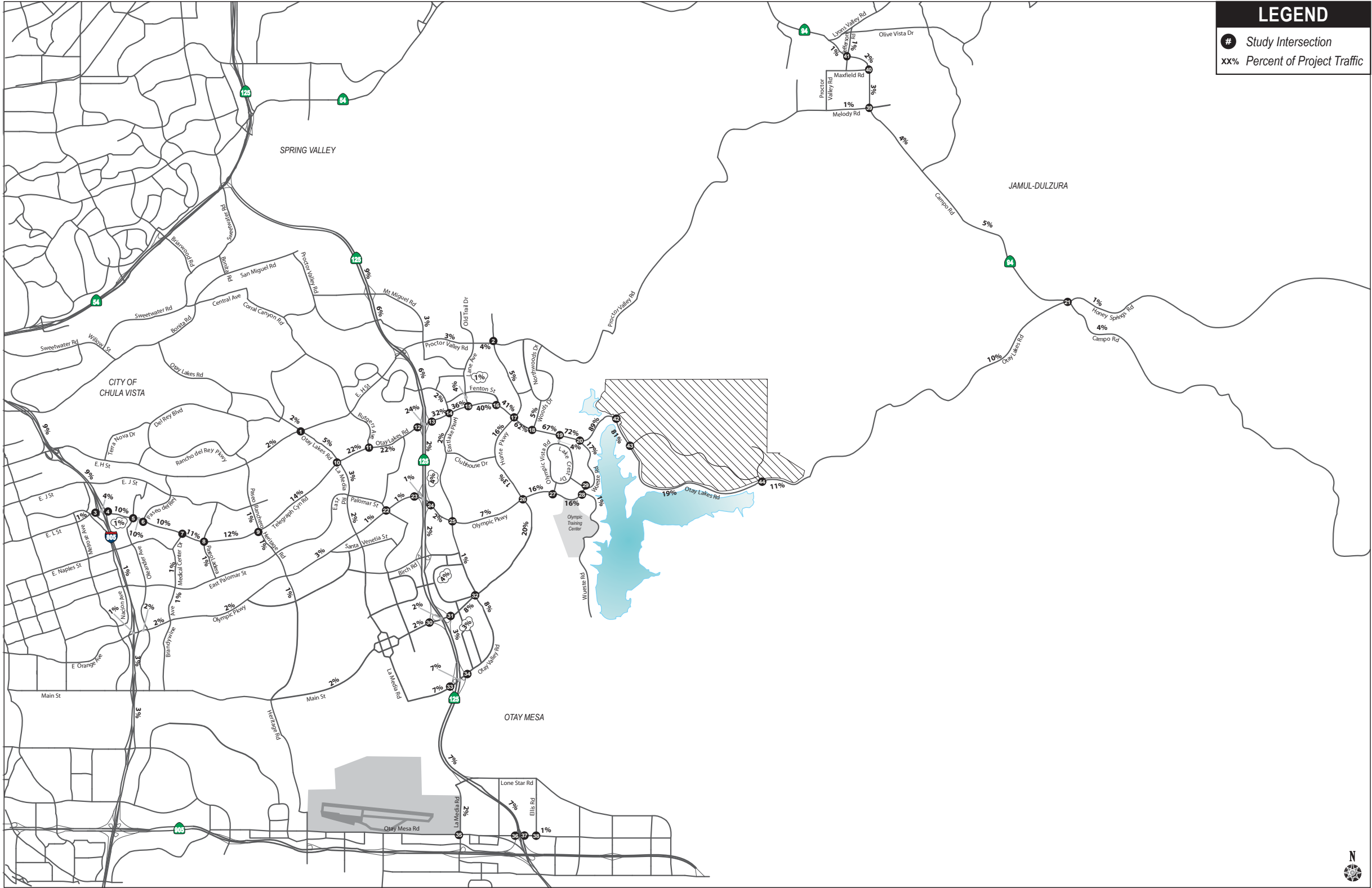


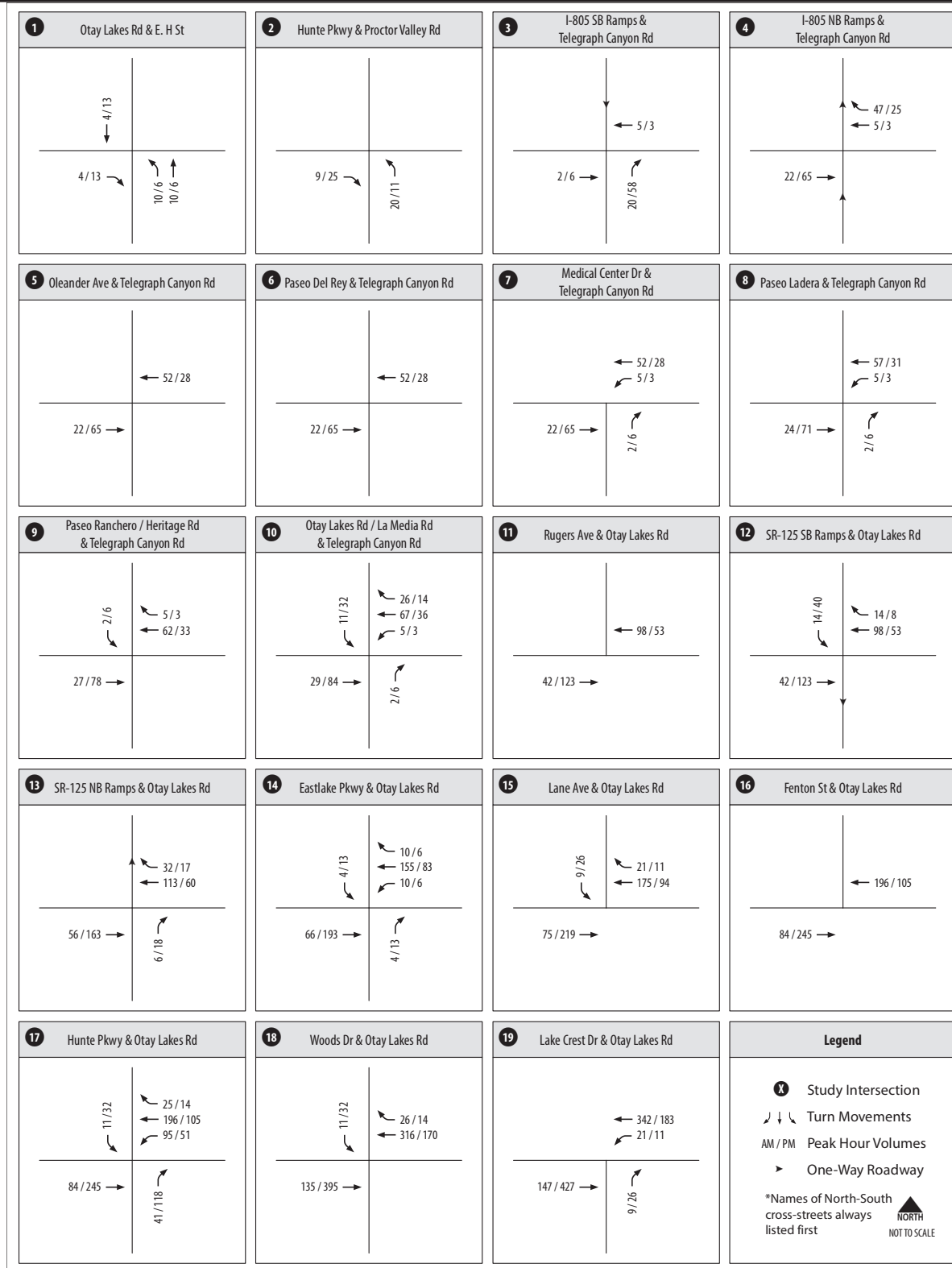
Figure 2.9-4
Project Trip Distribution - Year 2030 Network



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Source: Chen Ryan Associates, 2015

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Source: Chen Ryan Associates, 2015



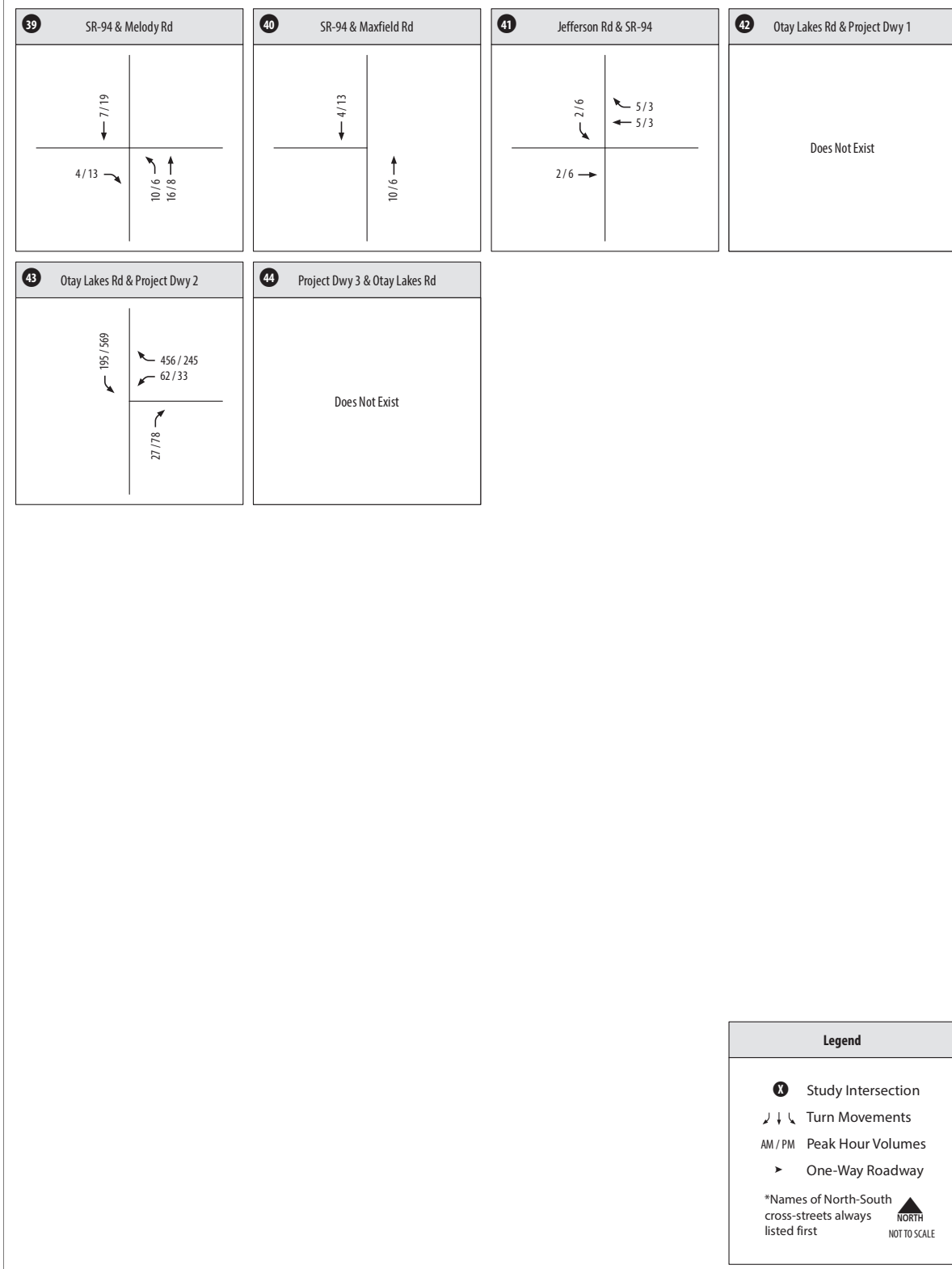
Figure 2.9-6
Project (Phase I) Trip Assignment (Intersection) -
Existing Network (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-6
Project (Phase I) Trip Assignment (Intersection) -
Existing Network (Intersections 20-38)

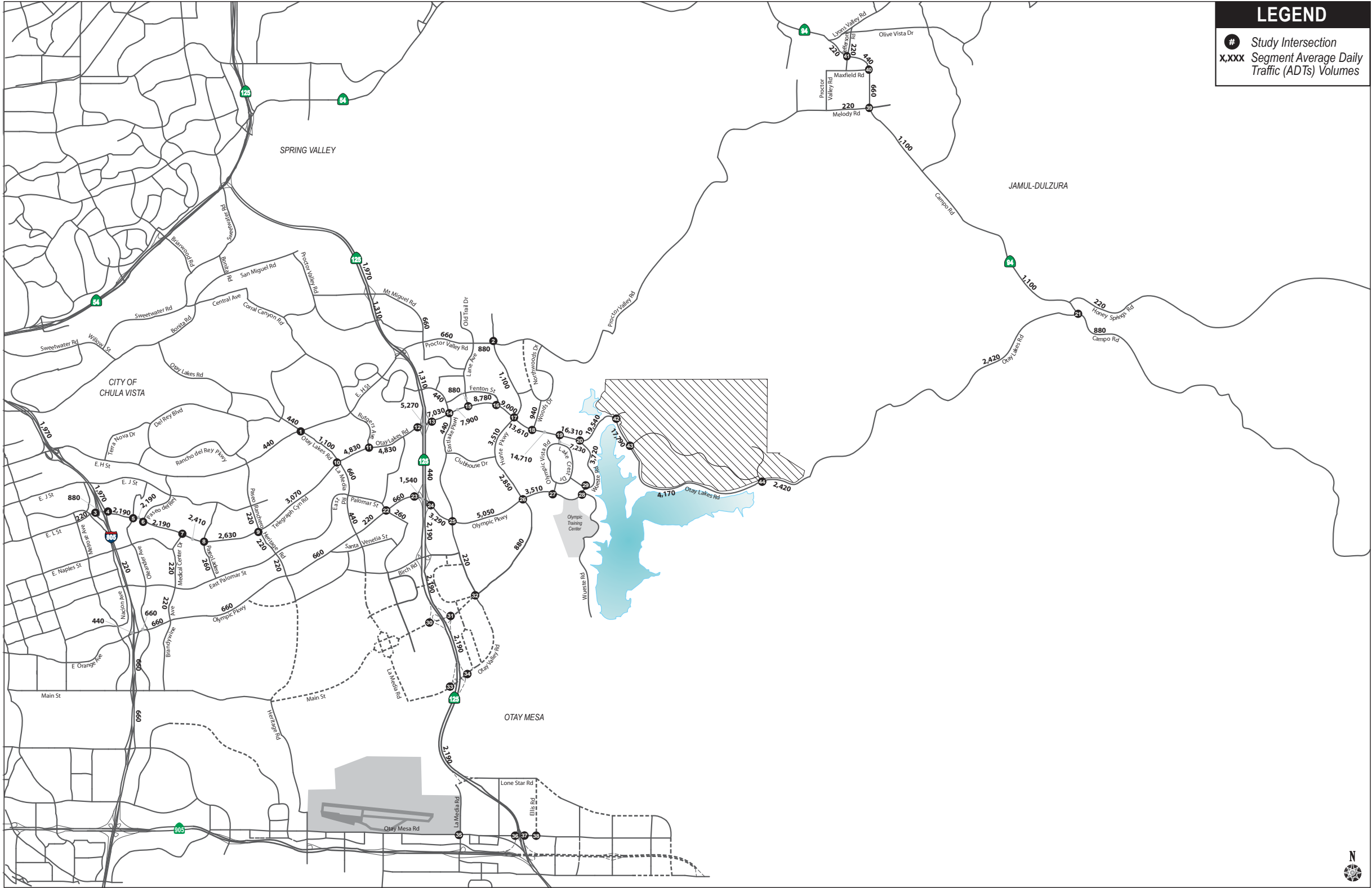


Source: Chen Ryan Associates, 2015



Figure 2.9-6
Project (Phase I) Trip Assignment (Intersection) -
Existing Network (Intersections 39-44)

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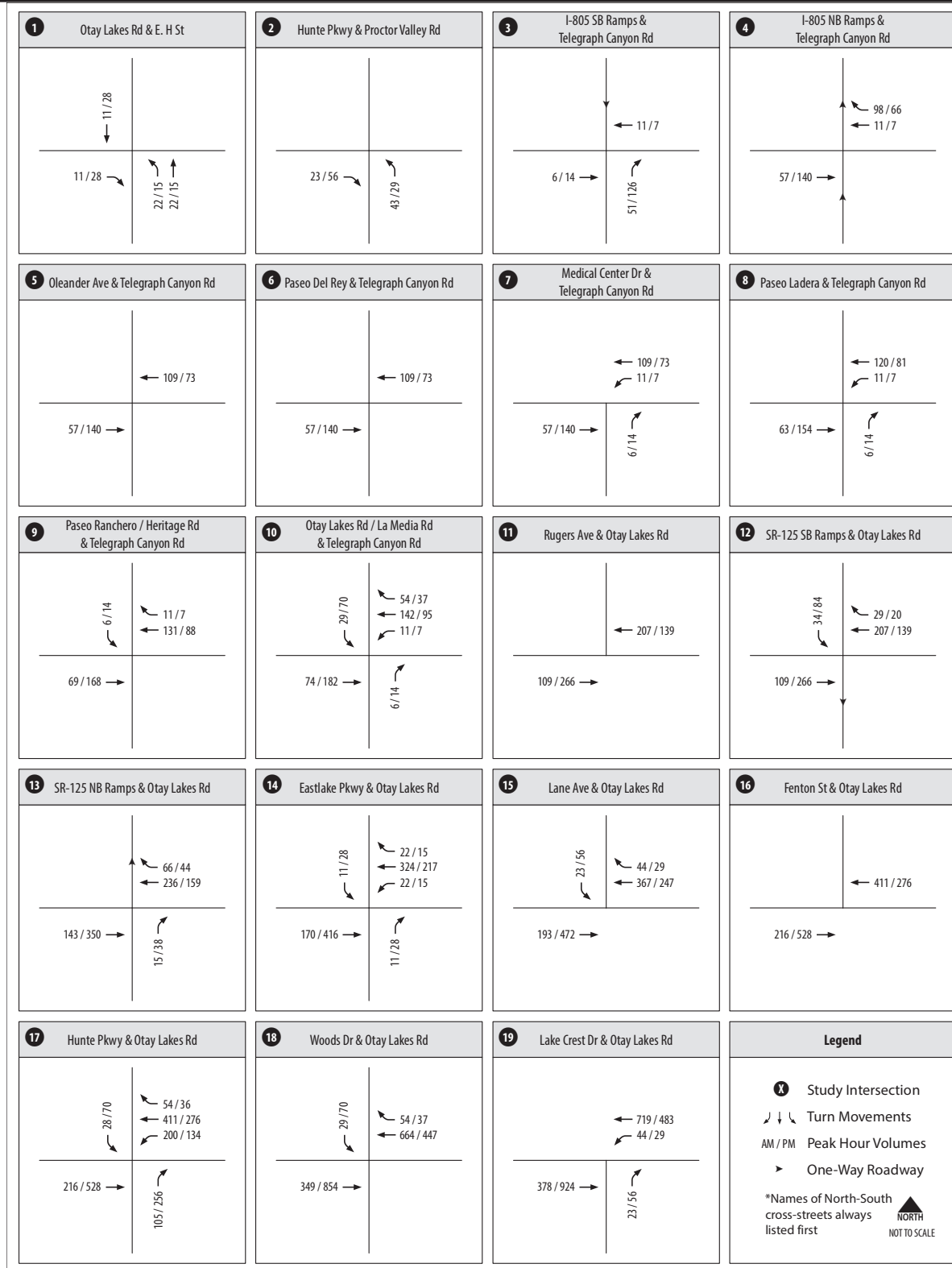


Source: Chen Ryan Associates, 2015



Figure 2.9-7
Project (Buildout) Trip Assignment (Roadway) - Existing Network

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Source: Chen Ryan Associates, 2015



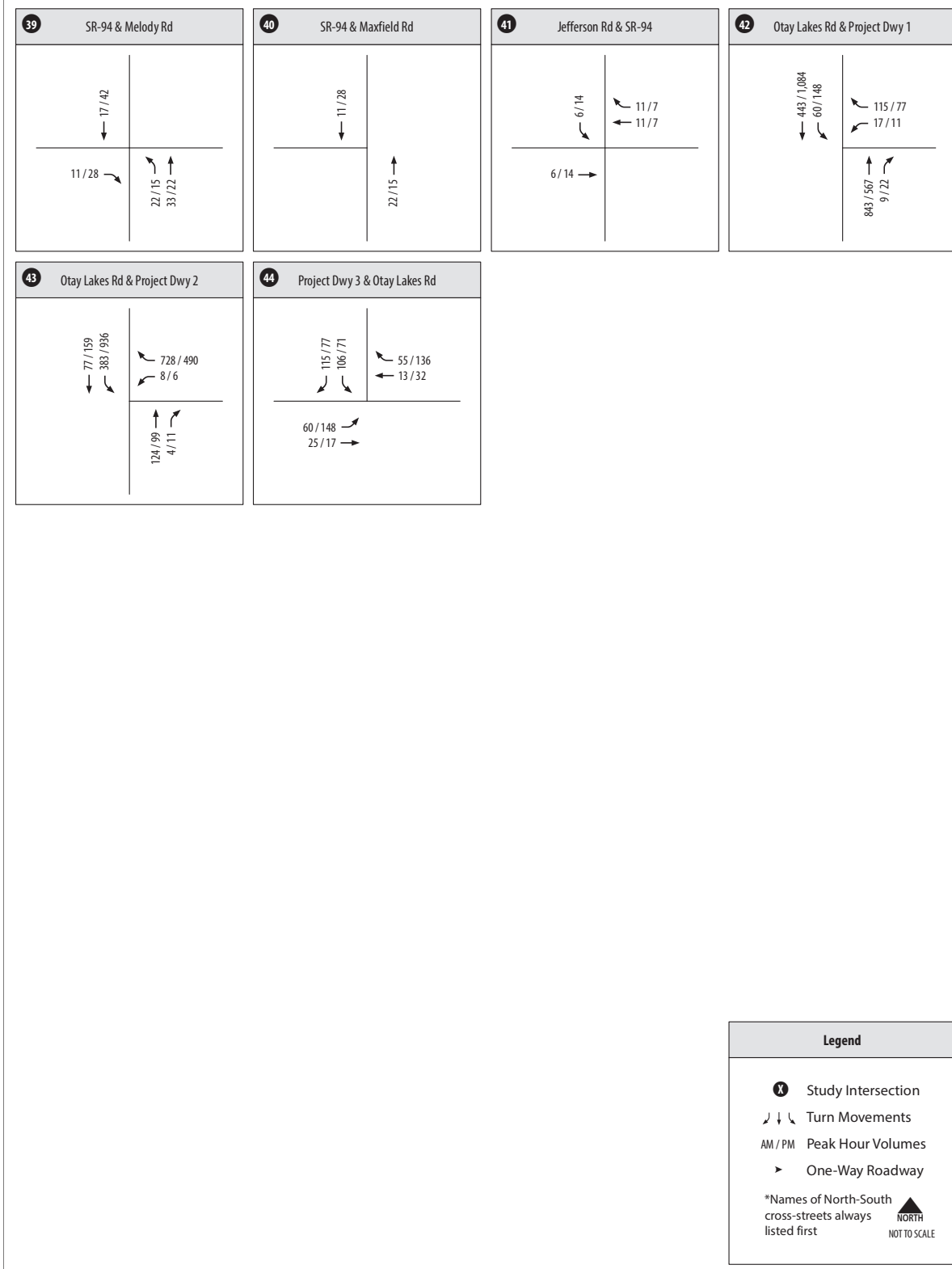
Figure 2.9-8
Project (Buildout) Trip Assignment (Intersection) -
Existing Network (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-8
Project (Buildout) Trip Assignment (Intersection) -
Existing Network (Intersections 20-38)



Source: Chen Ryan Associates, 2015



Figure 2.9-8
Project (Buildout) Trip Assignment (Intersection) -
Existing Network (Intersections 39-44)

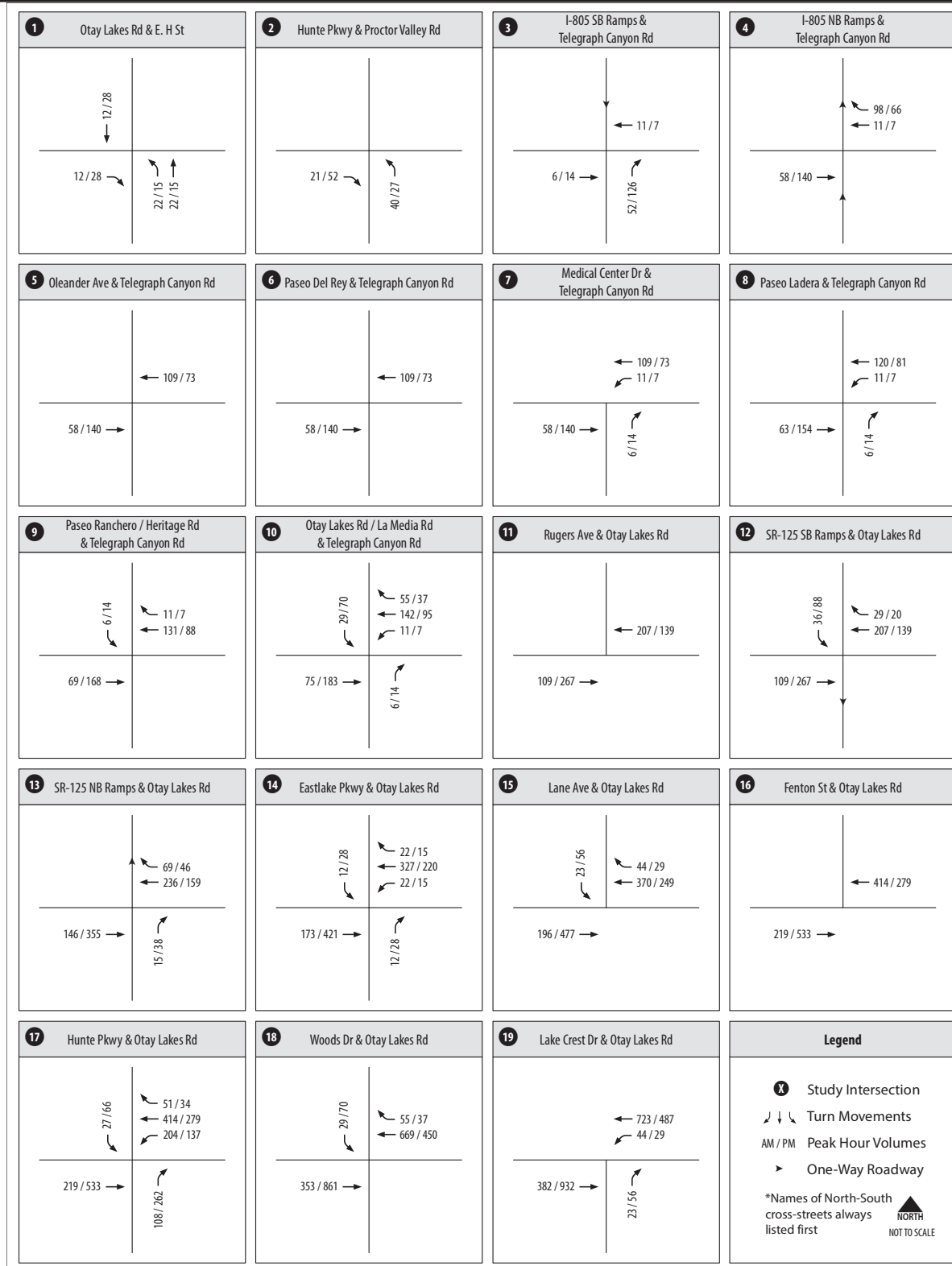
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Source: Chen Ryan Associates, 2015

Figure 2.9-9

Project (Buildout) Trip Assignment (Roadway) - Cumulative (Year 2025) Network

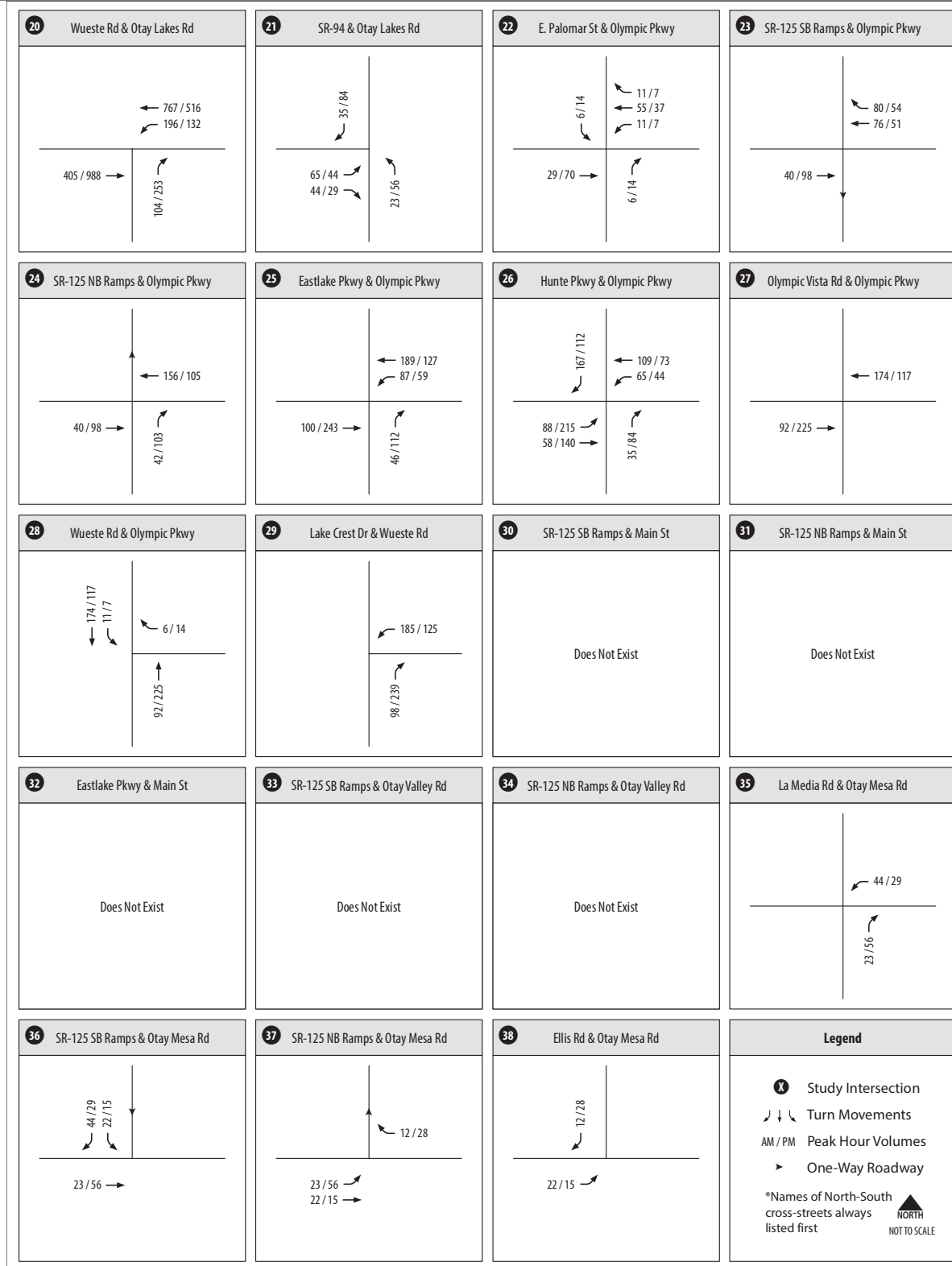
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Source: Chen Ryan Associates, 2015



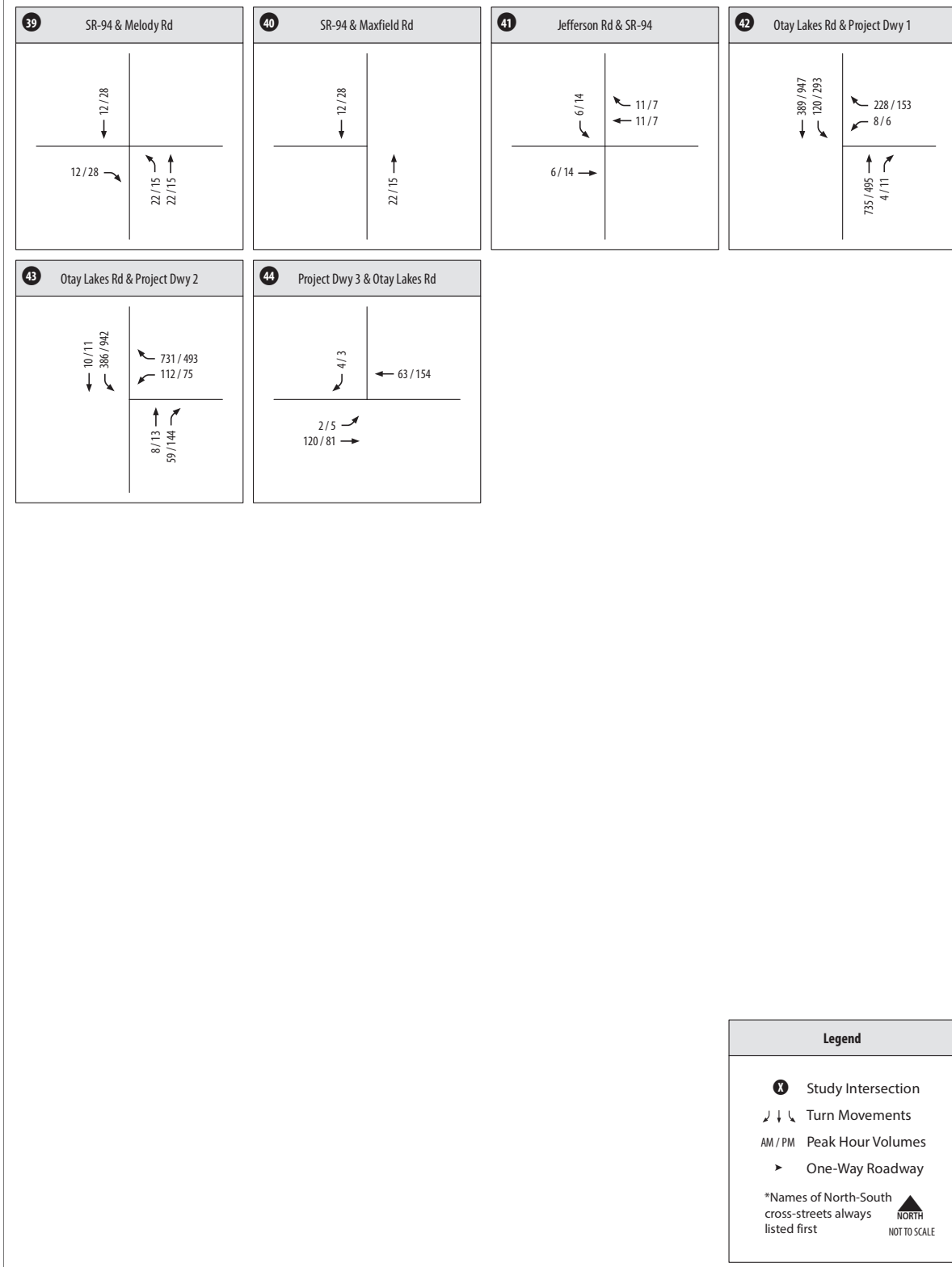
Figure 2.9-10
Project (Buildout) Trip Assignment (Intersection) -
Cumulative (Year 2025) Network (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-10
Project (Buildout) Trip Assignment (Intersection) -
Cumulative (Year 2025) Network (Intersections 20-38)

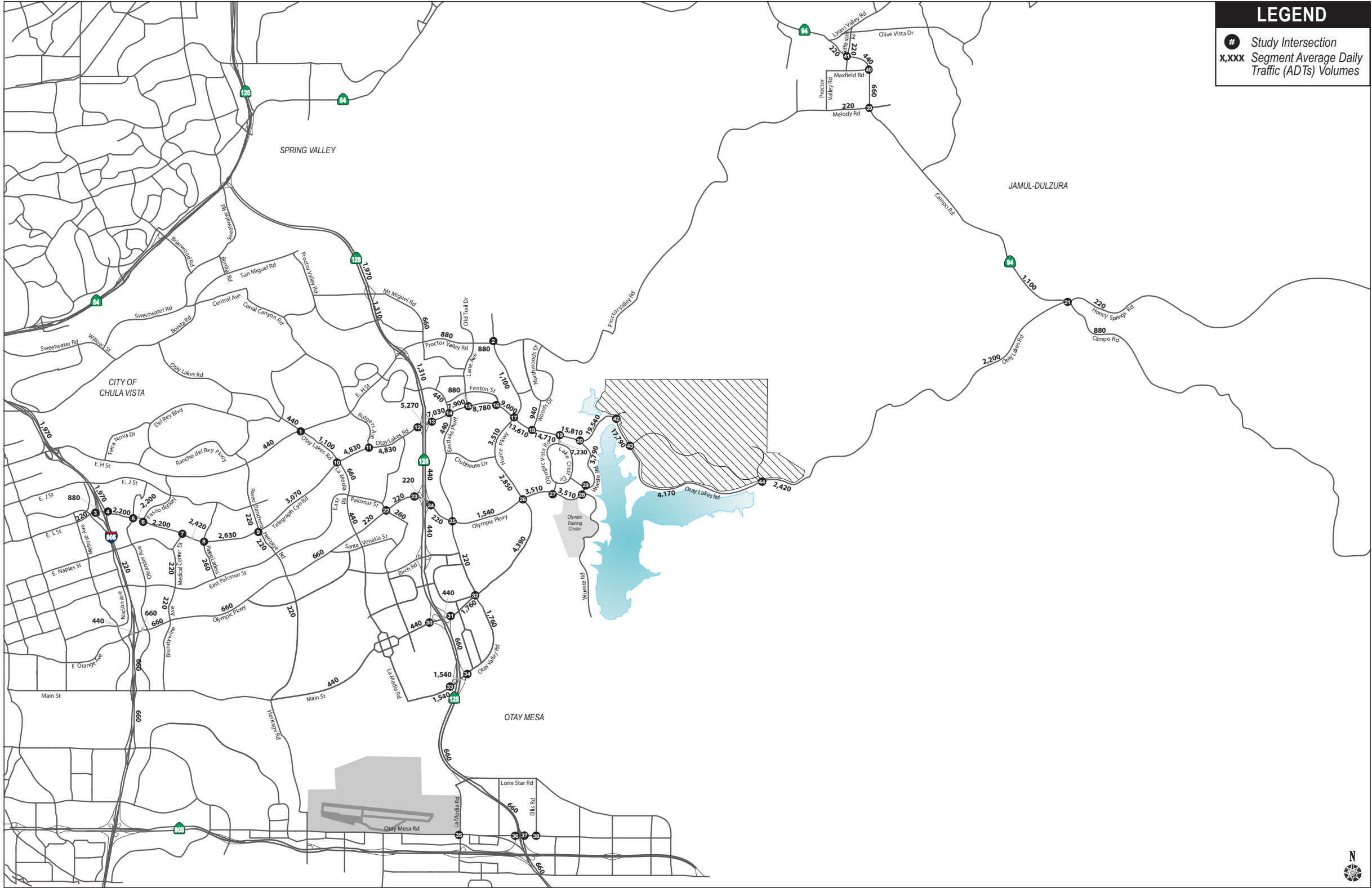


Source: Chen Ryan Associates, 2015



Figure 2.9-10
Project (Buildout) Trip Assignment (Intersection) -
Cumulative (Year 2025) Network (Intersections 39-44)

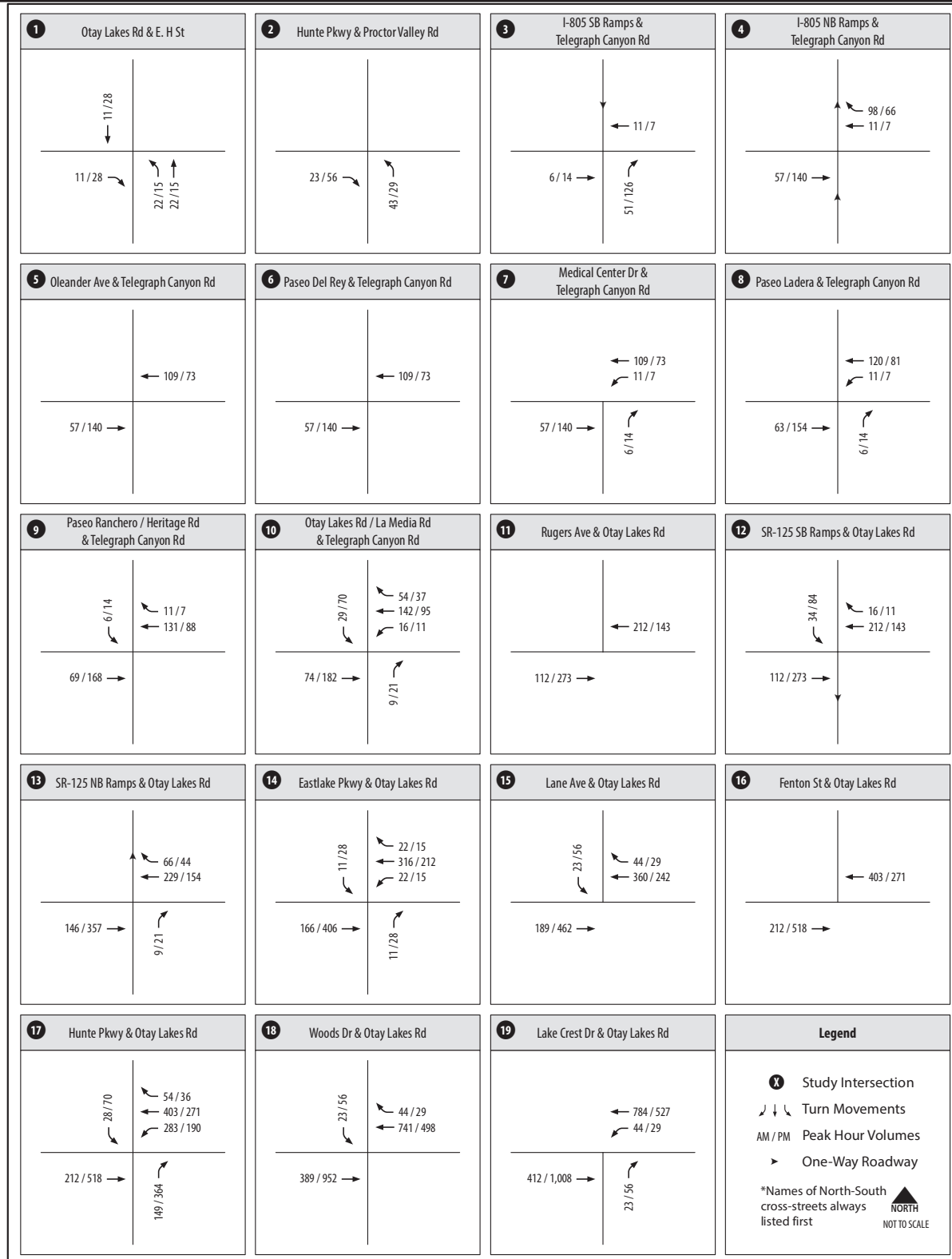
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Source: Chen Ryan Associates, 2015

Figure 2.9-11
Project (Buildout) Trip Assignment - Year 2030 Network

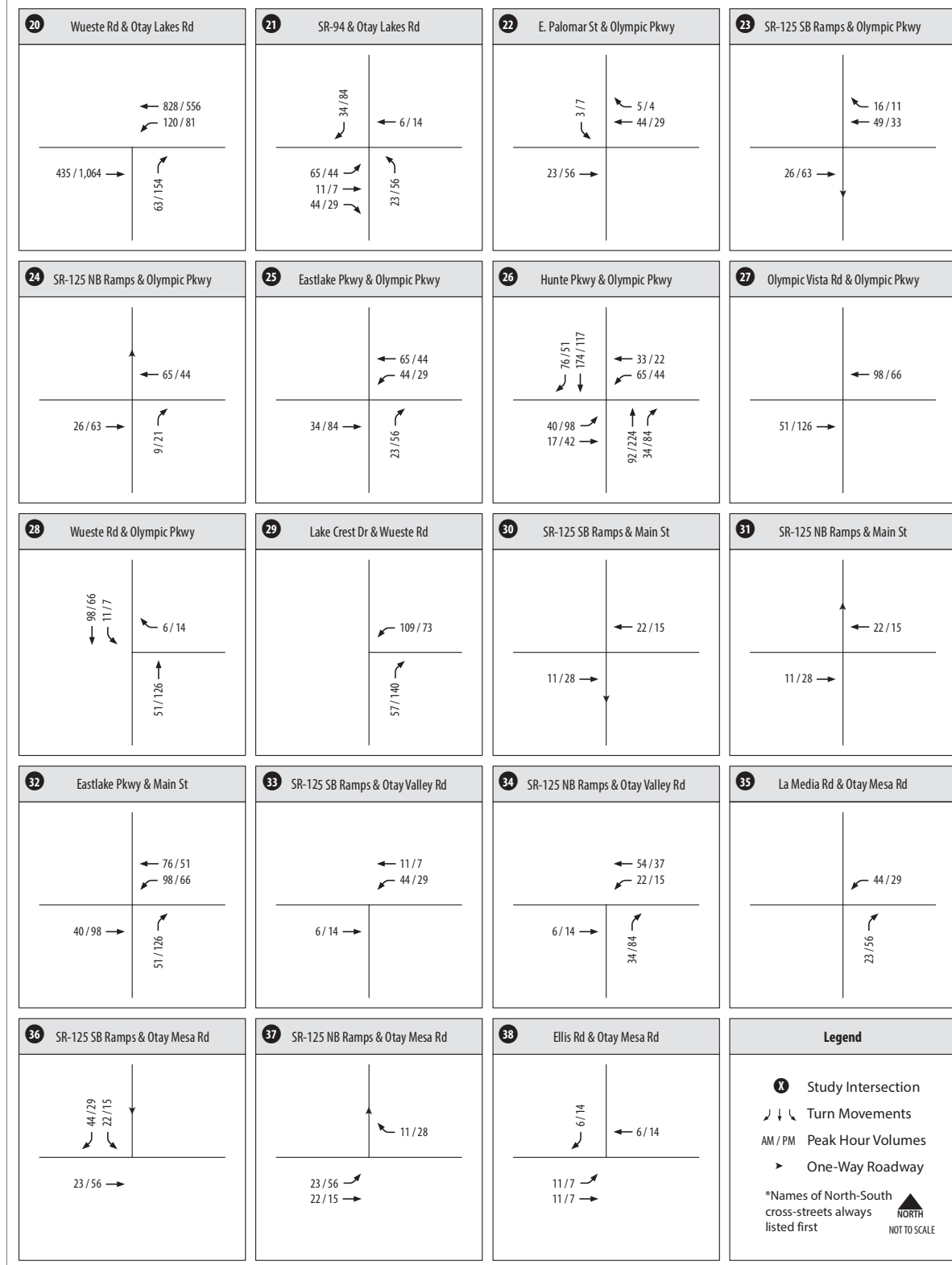
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Source: Chen Ryan Associates, 2015



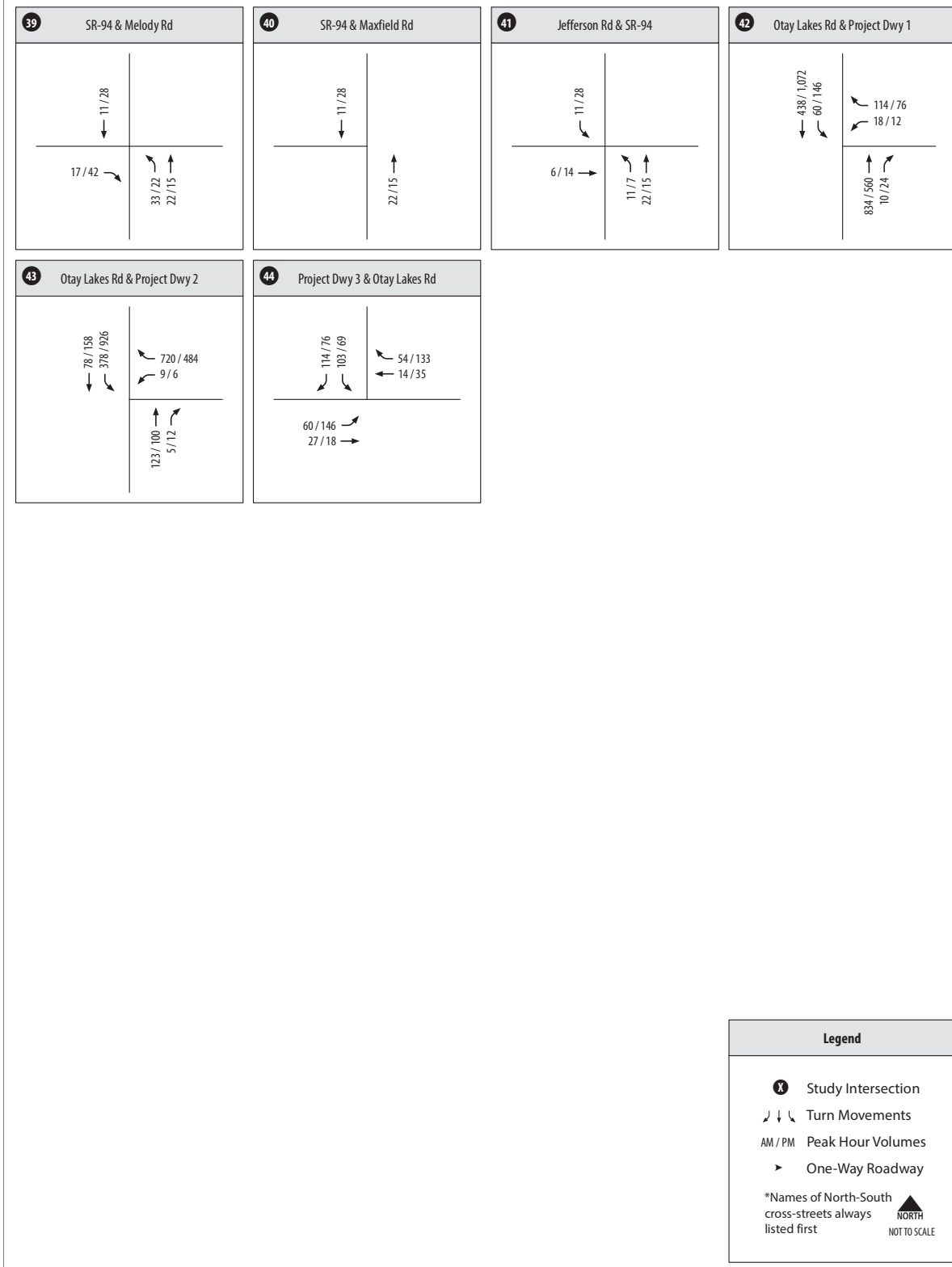
Figure 2.9-12
Project (Buildout) Trip Assignment (Intersection) -
Year 2030 Network (Intersections 1-19)



Source: Chen Ryan Associates, 2015



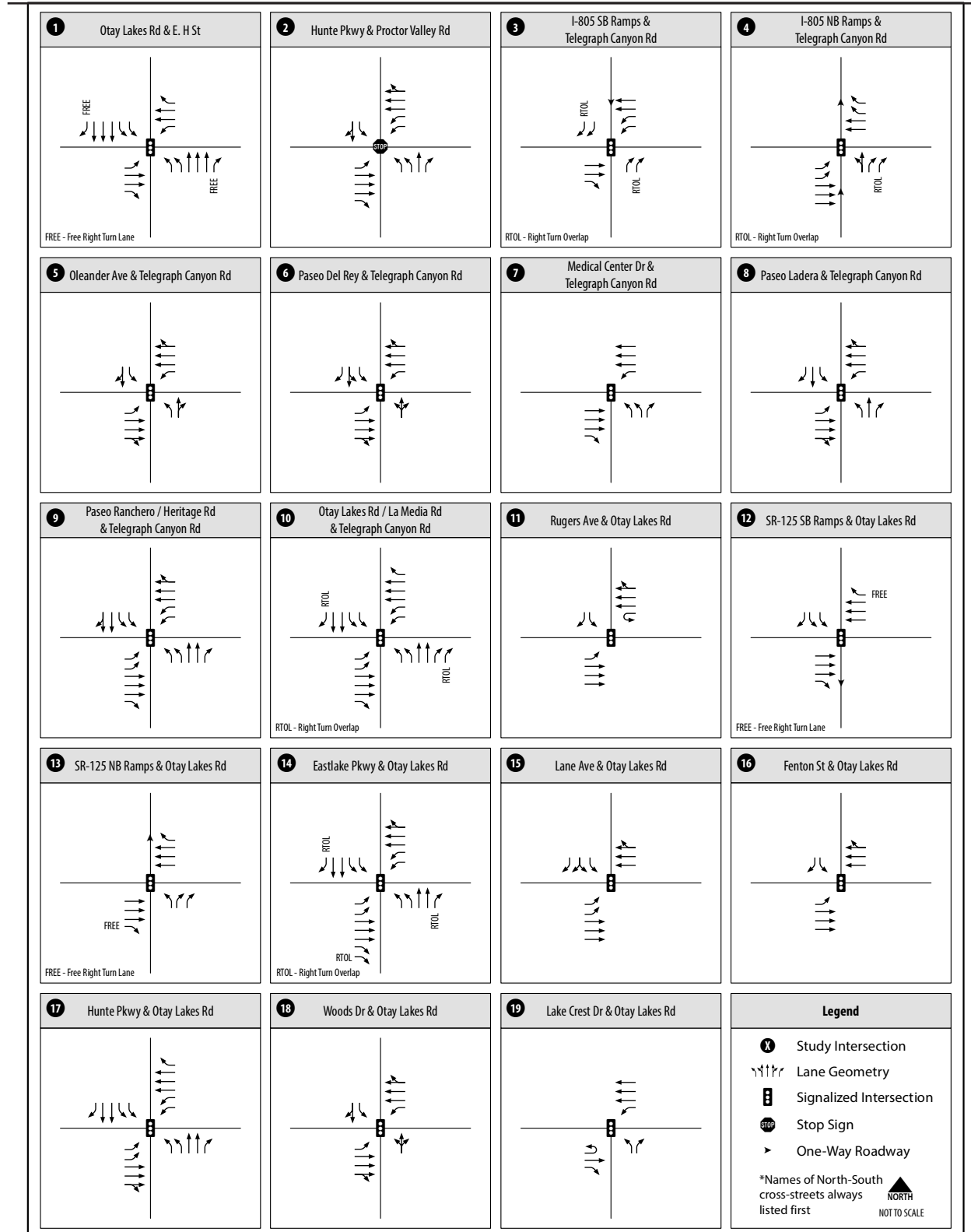
Figure 2.9-12
Project (Buildout) Trip Assignment (Intersection) -
Year 2030 Network (Intersections 20-38)



Source: Chen Ryan Associates, 2015



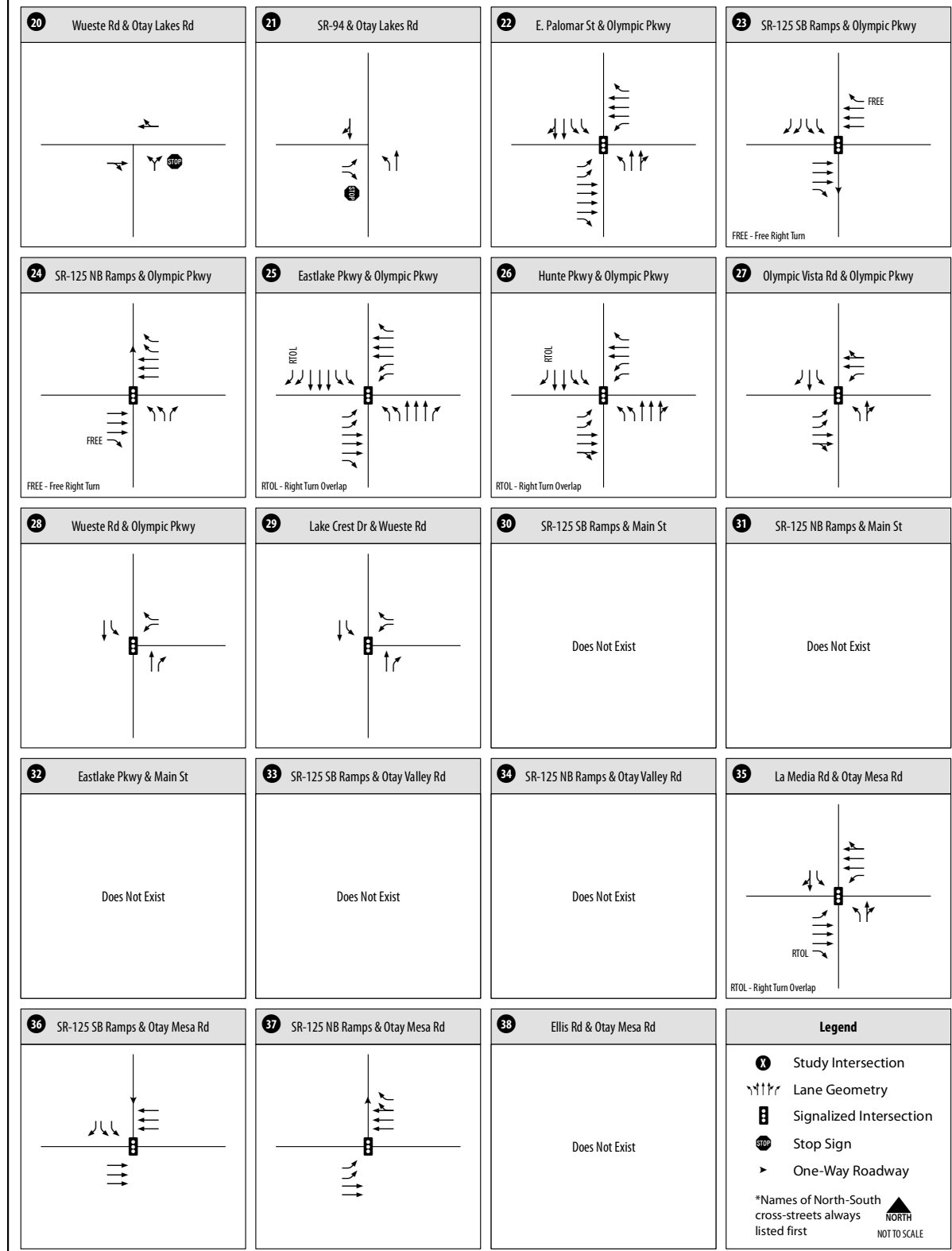
Figure 2.9-12
Project (Buildout) Trip Assignment (Intersection) -
Year 2030 Network (Intersections 39-44)



Source: Chen Ryan Associates, 2014



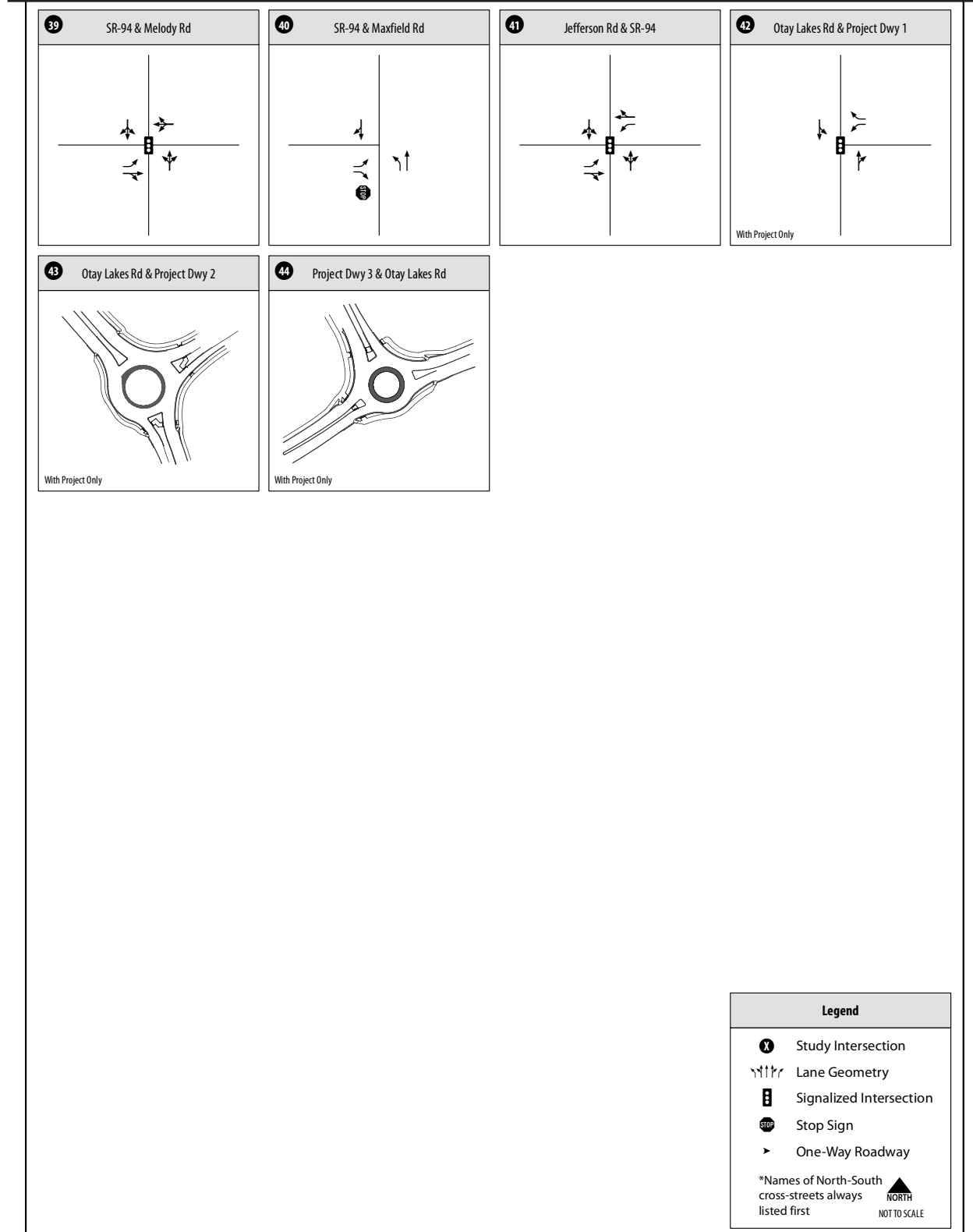
Figure 2.9-13
Intersection Geometrics -
Existing Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2014



Figure 2.9-13
Intersection Geometrics -
Existing Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2014



Figure 2.9-13
Intersection Geometrics -
Existing Conditions (Intersections 39-44)

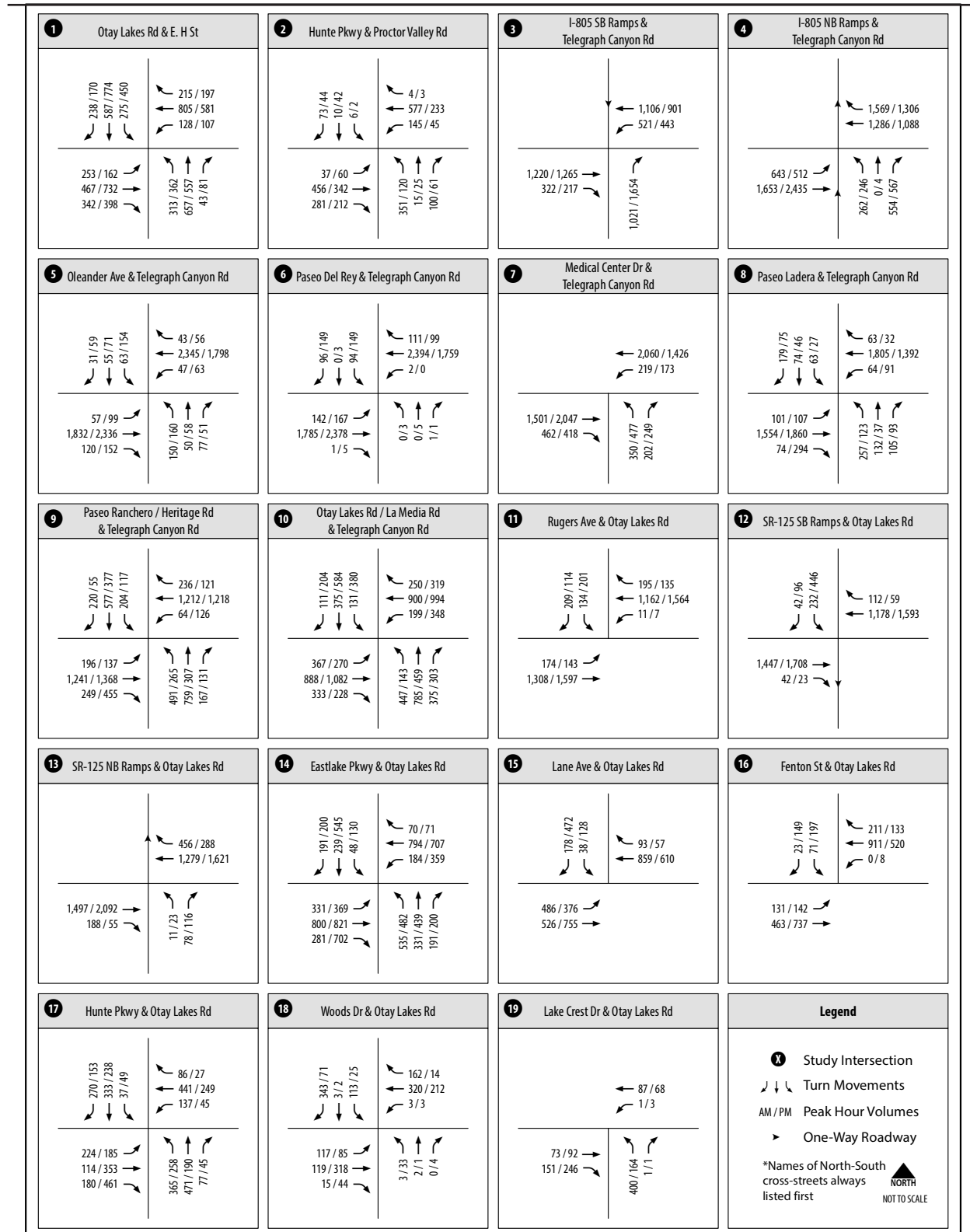


Source: Chen Ryan Associates, 2014



Figure 2.9-14
Roadway Geometrics - Existing Conditions

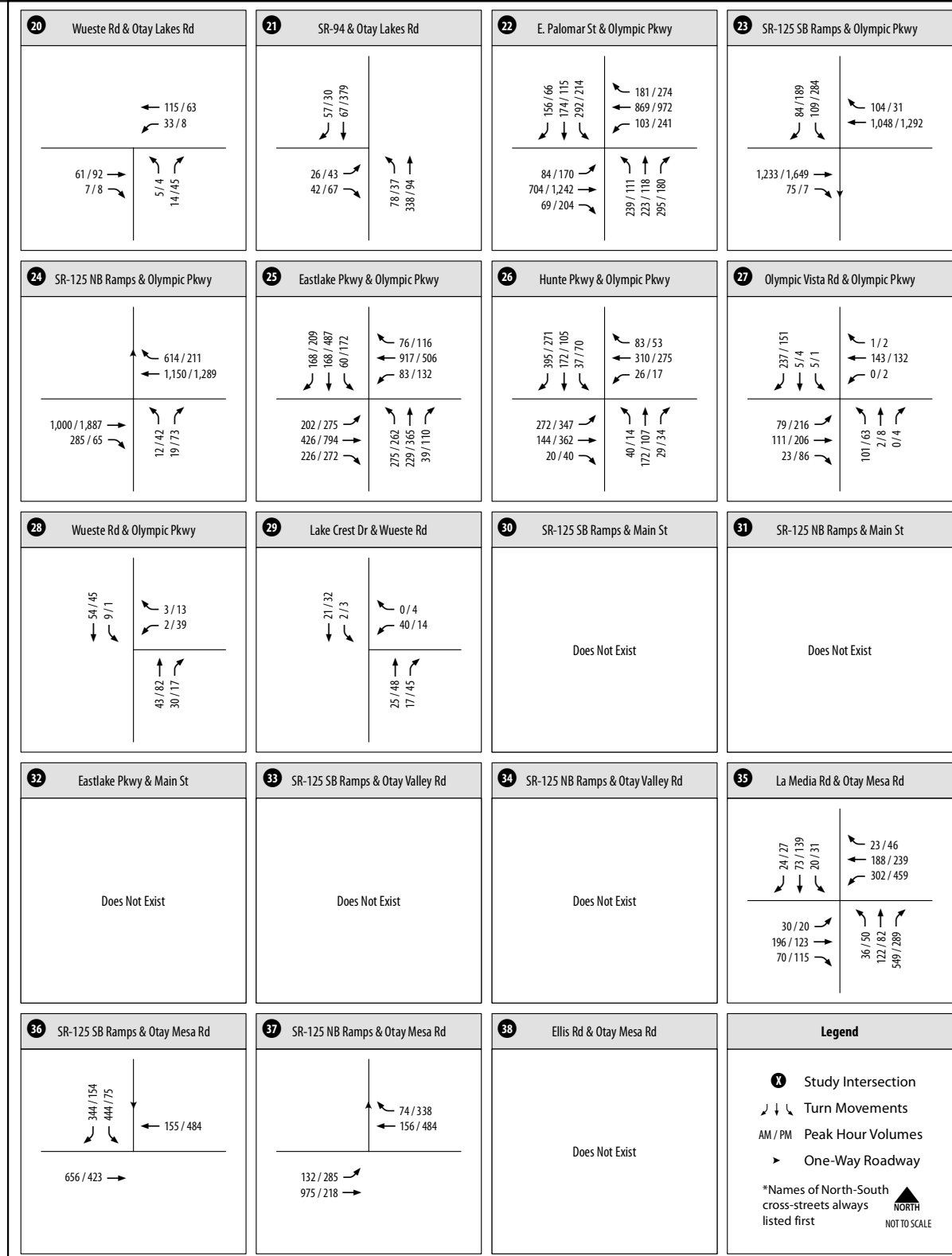
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Source: Chen Ryan Associates, 2014



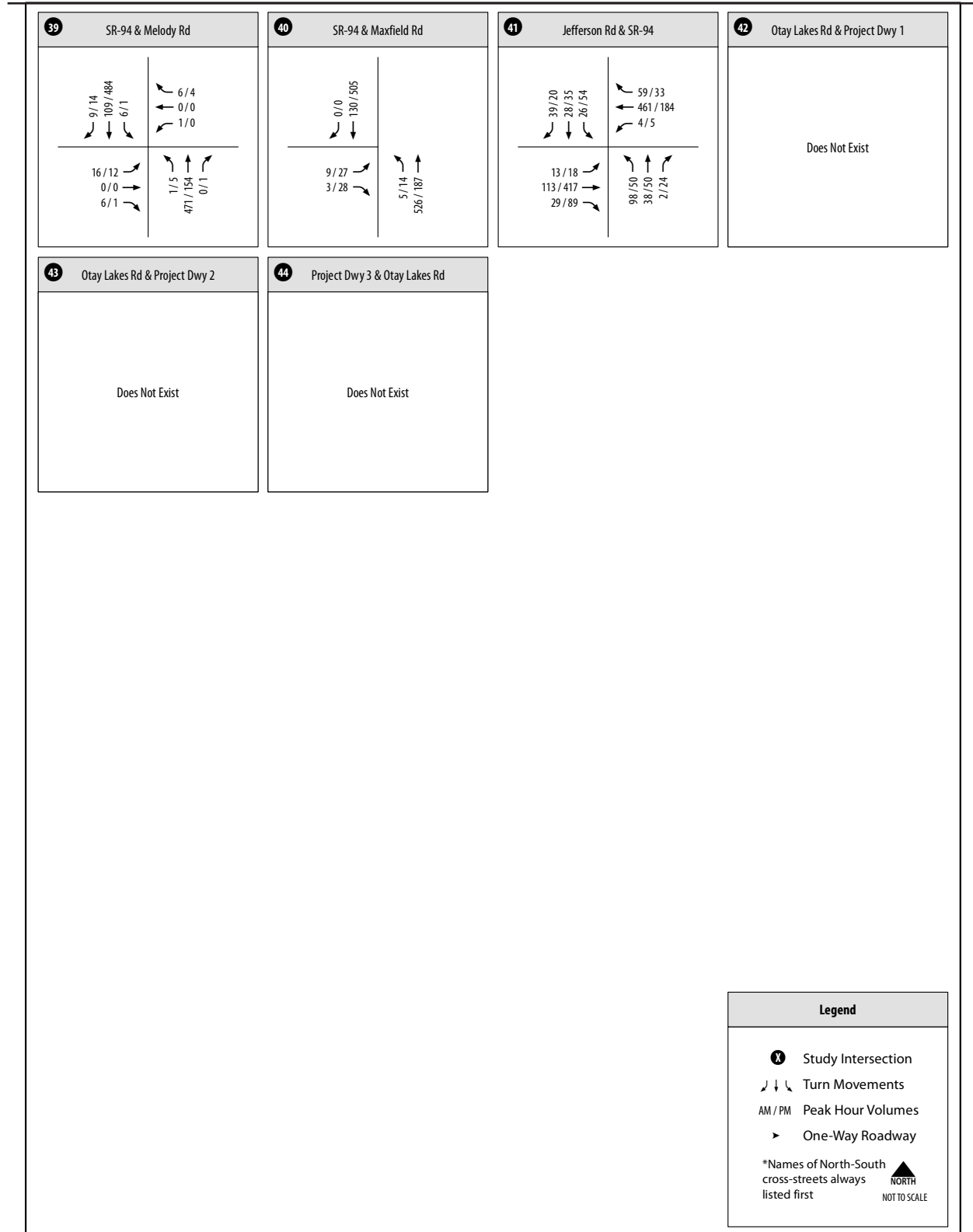
Figure 2.9-15
Intersection Peak Hour Traffic Volumes -
Existing Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2014



Figure 2.9-15
Intersection Peak Hour Traffic Volumes -
Existing Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2014



Figure 2.9-15
Intersection Peak Hour Traffic Volumes -
Existing Conditions (Intersections 39-44)

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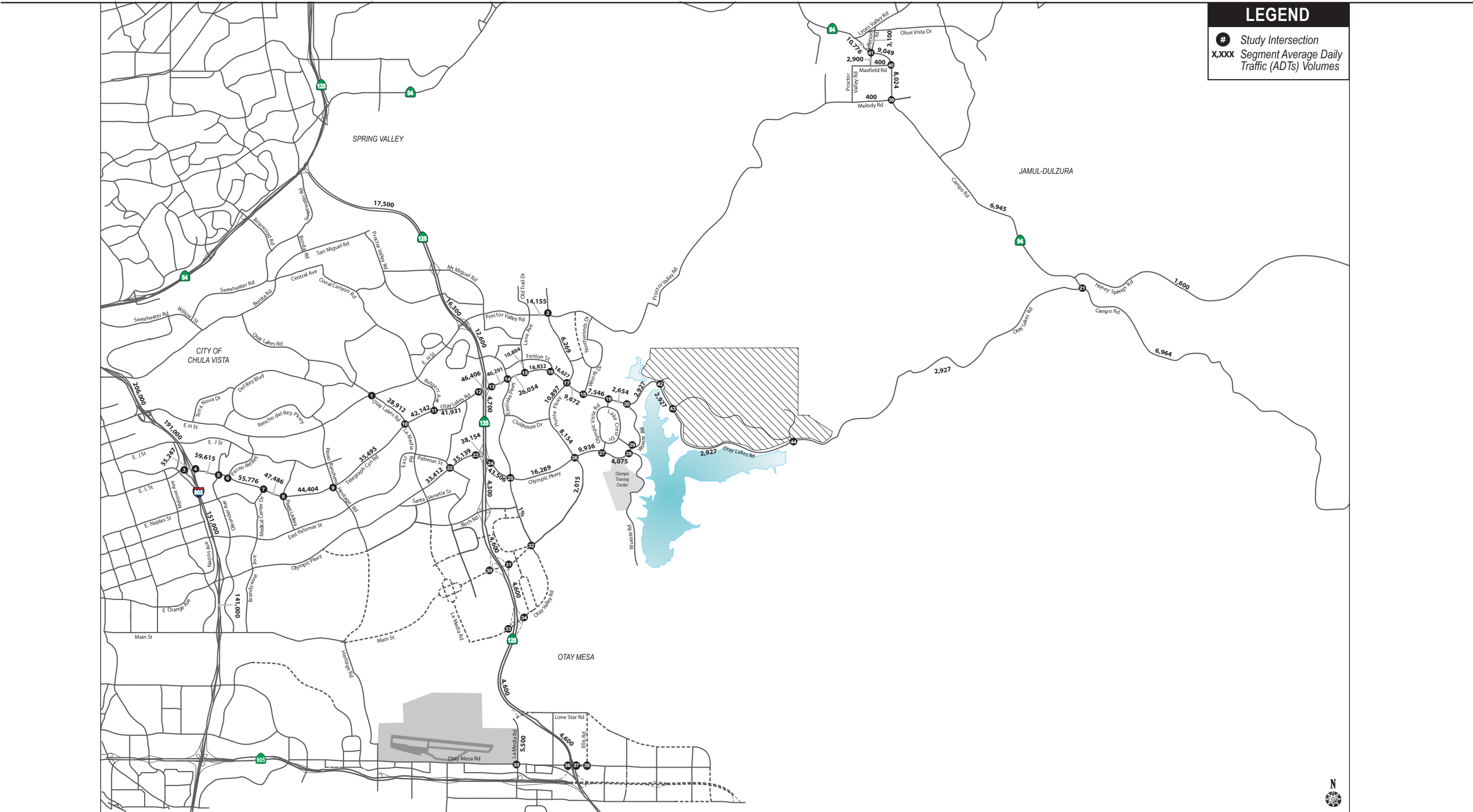
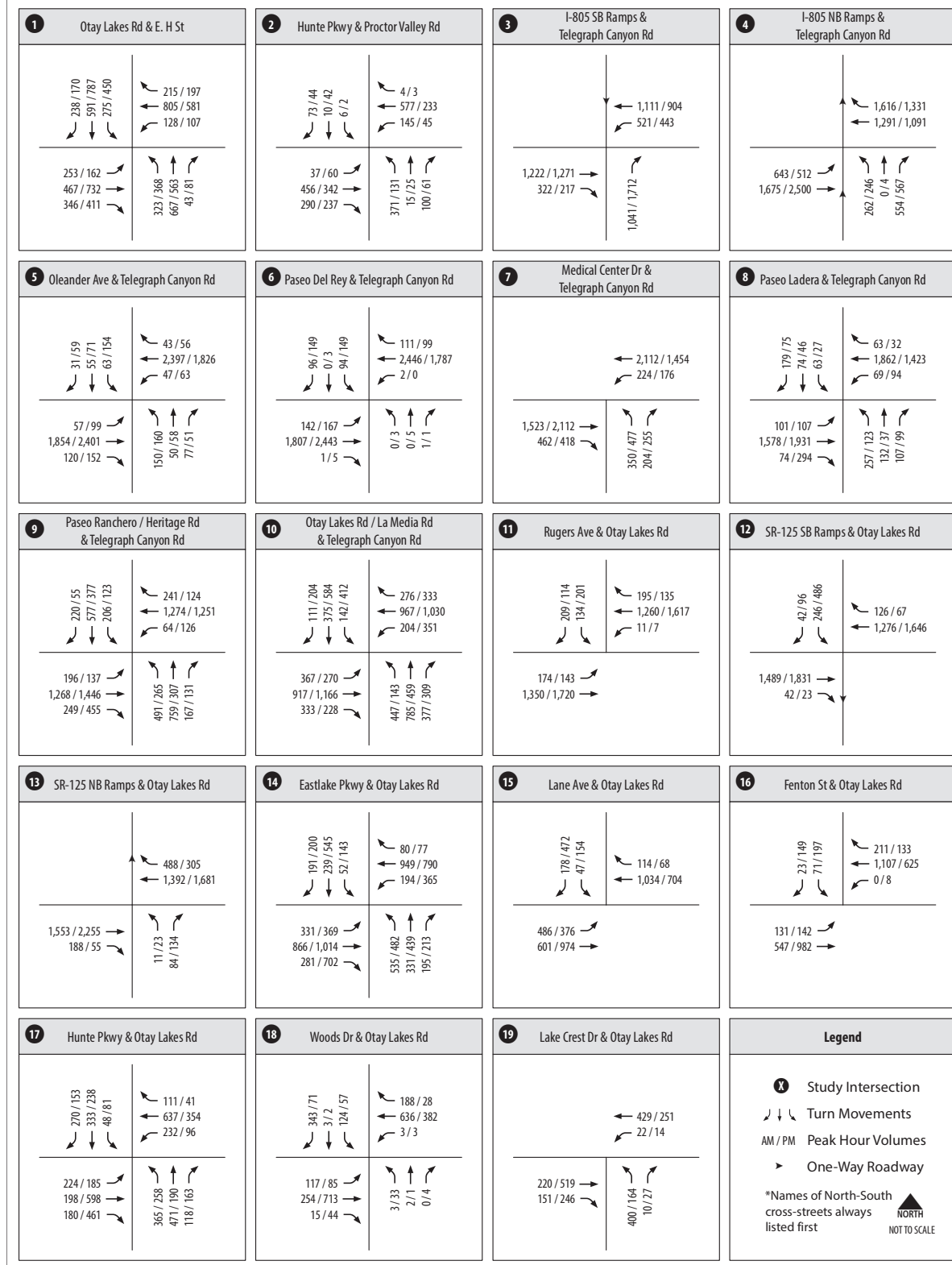


Figure 2.9-16
Average Daily Traffic Volumes - Existing Conditions

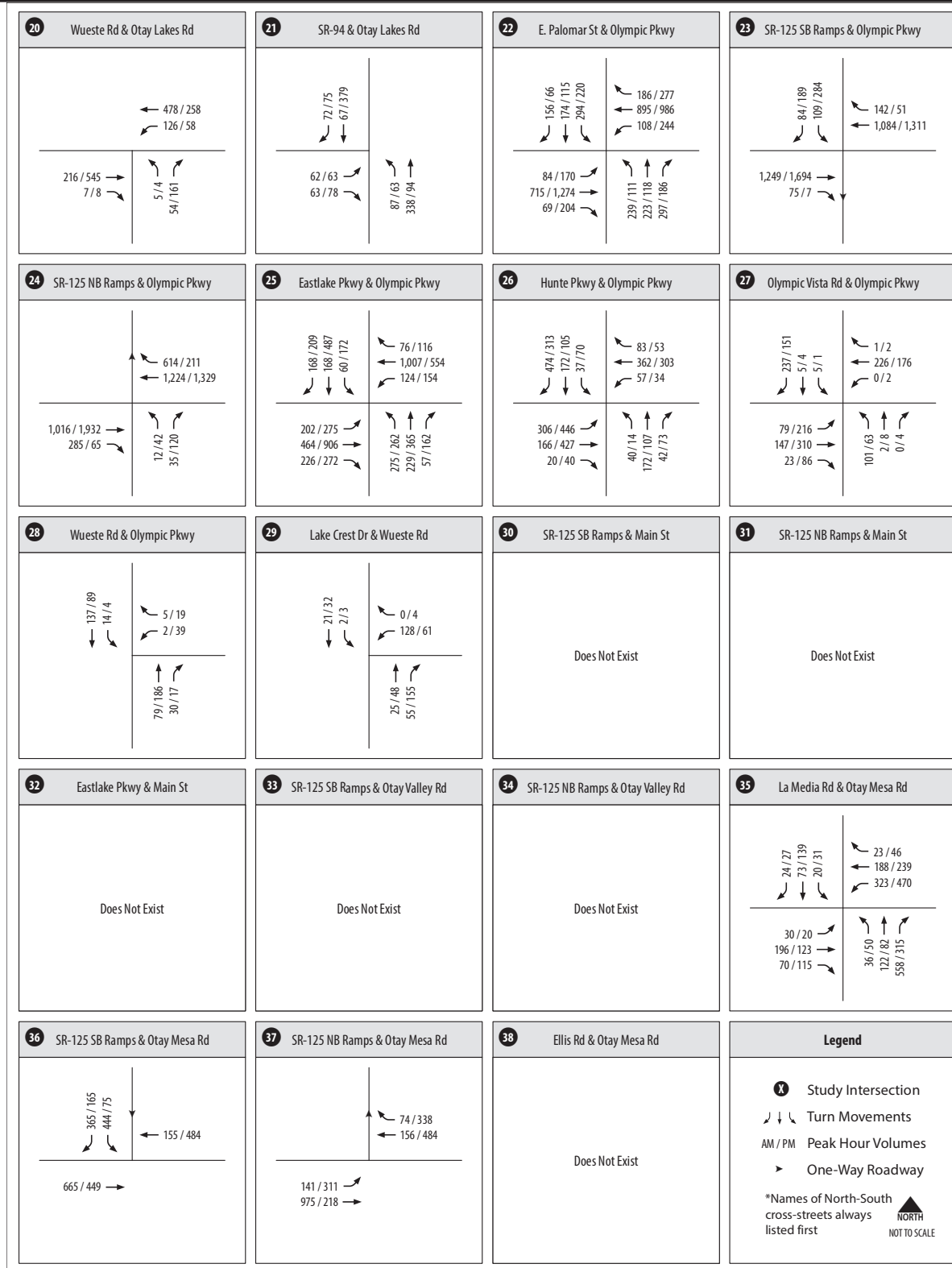
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Source: Chen Ryan Associates, 2015



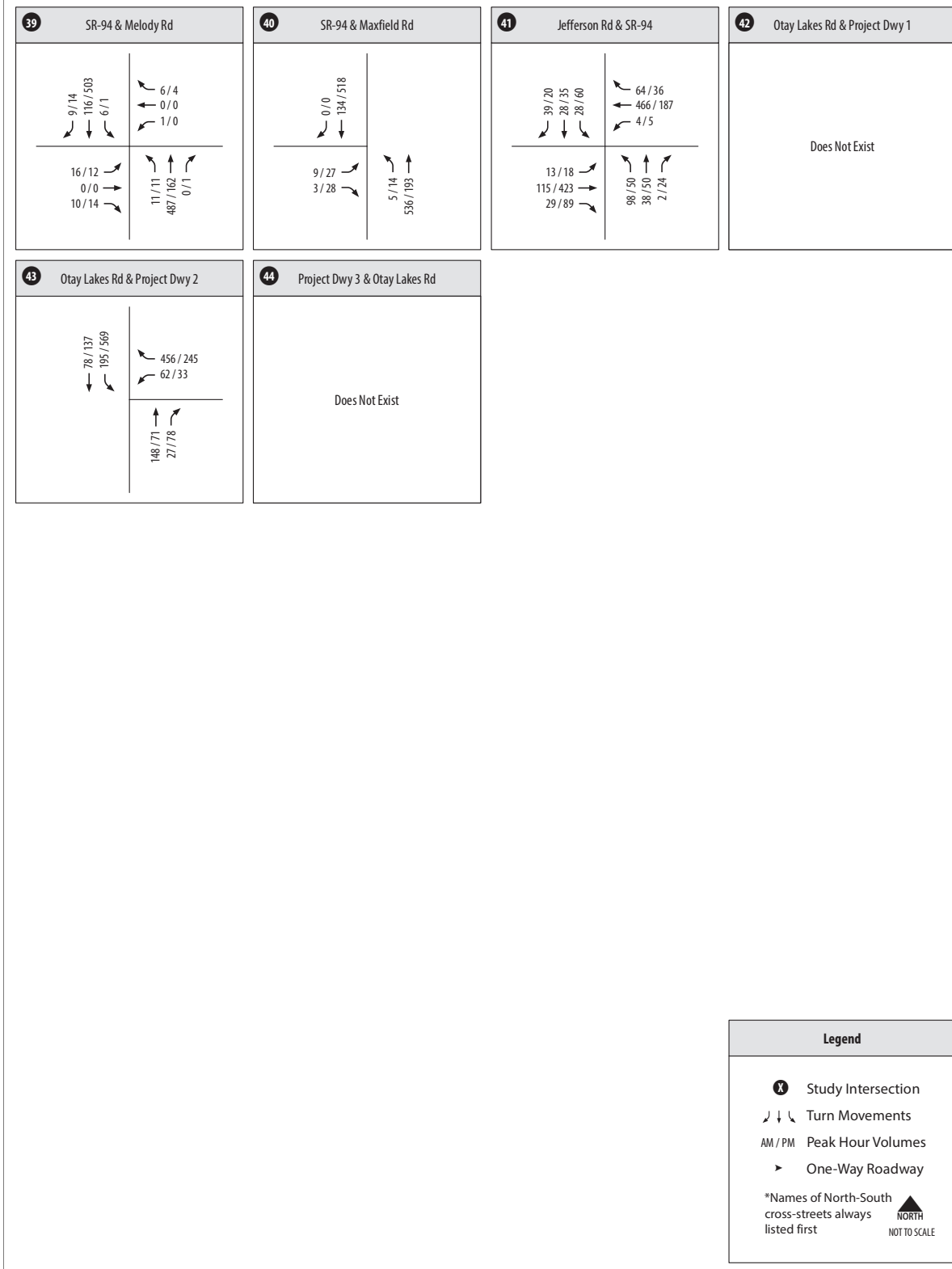
Figure 2.9-17
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase I) Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-17
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase I) Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2015

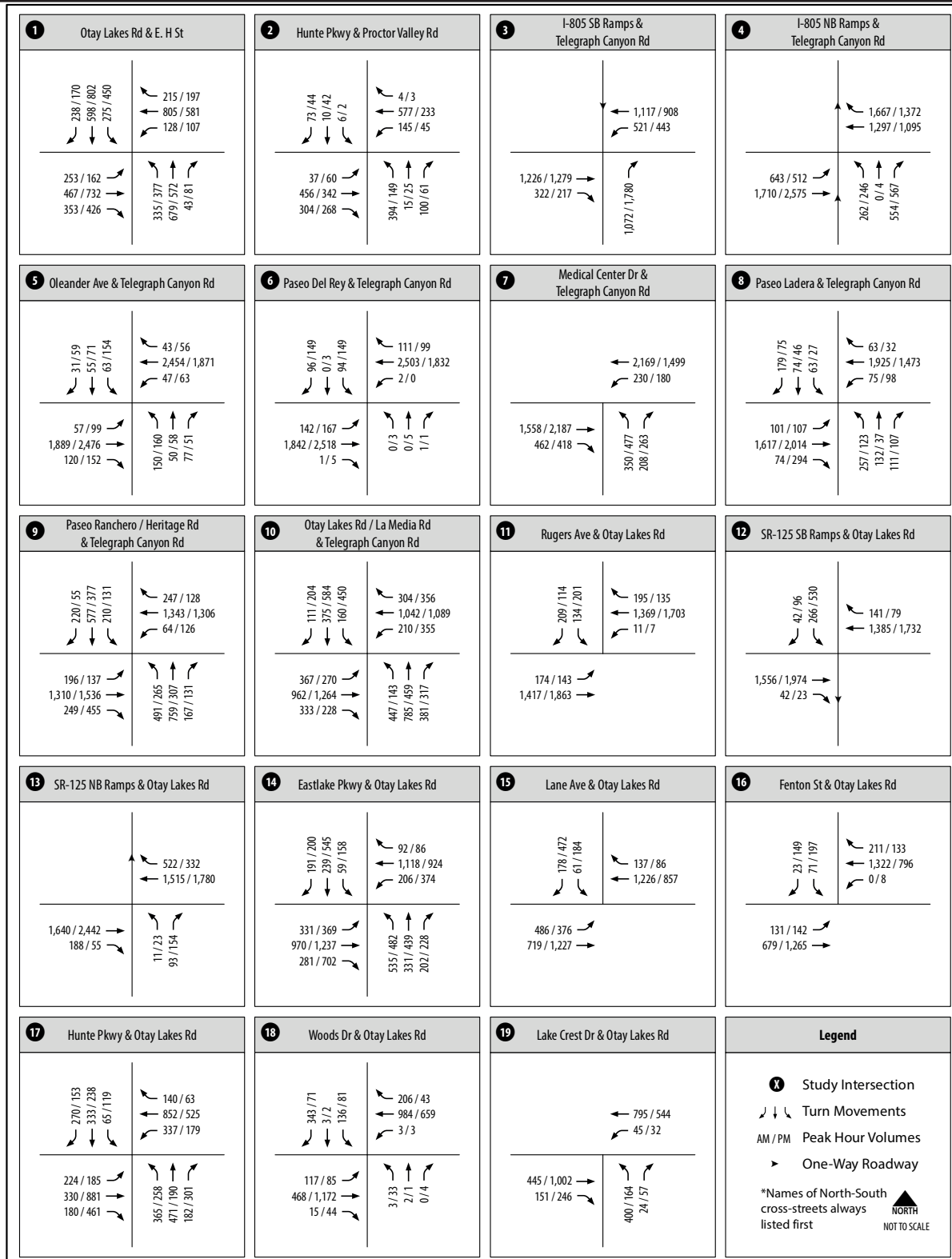


Figure 2.9-17
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase I) Conditions (Intersections 39-44)

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Source: Chen Ryan Associates, 2015

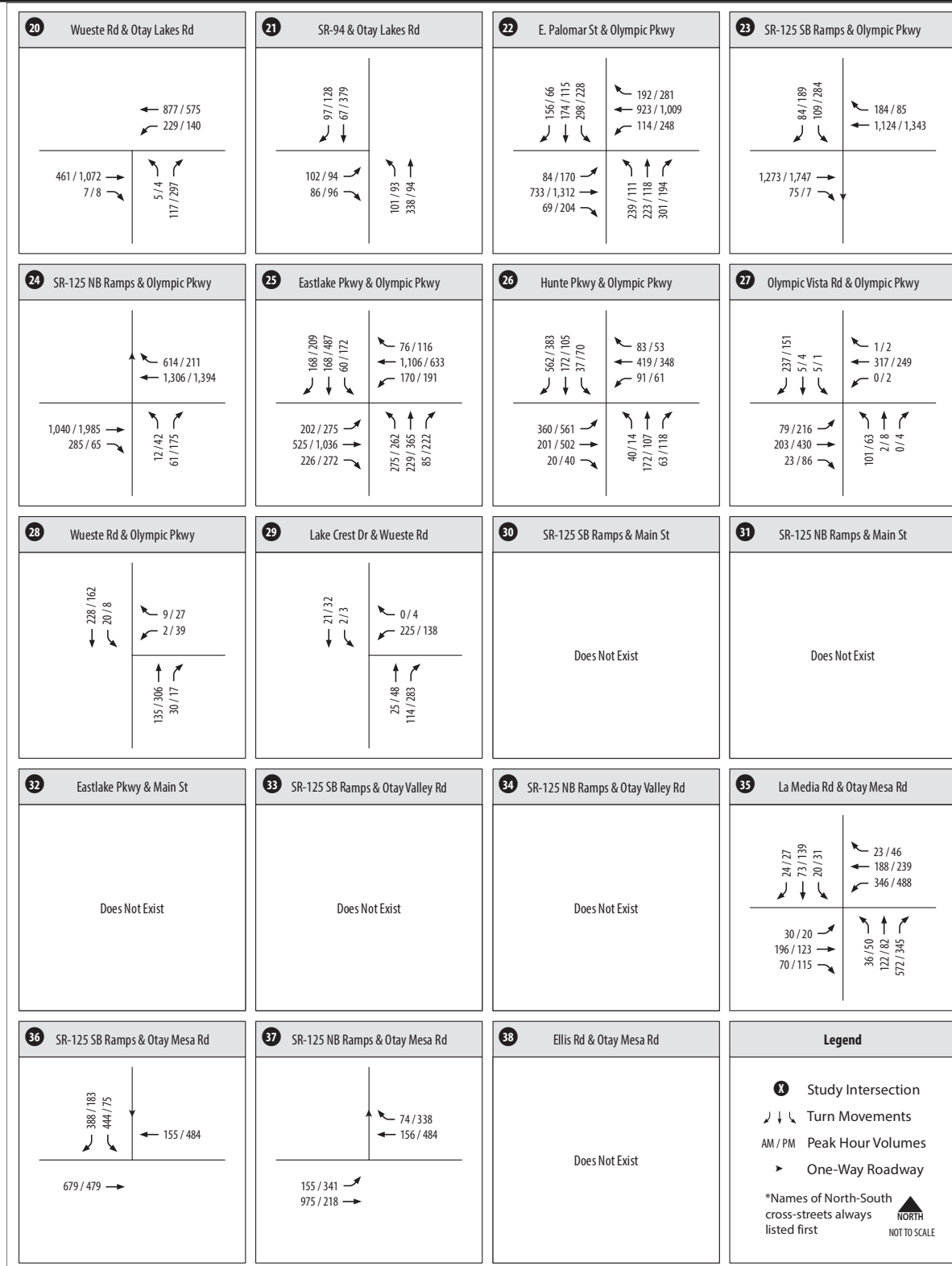
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Source: Chen Ryan Associates, 2015



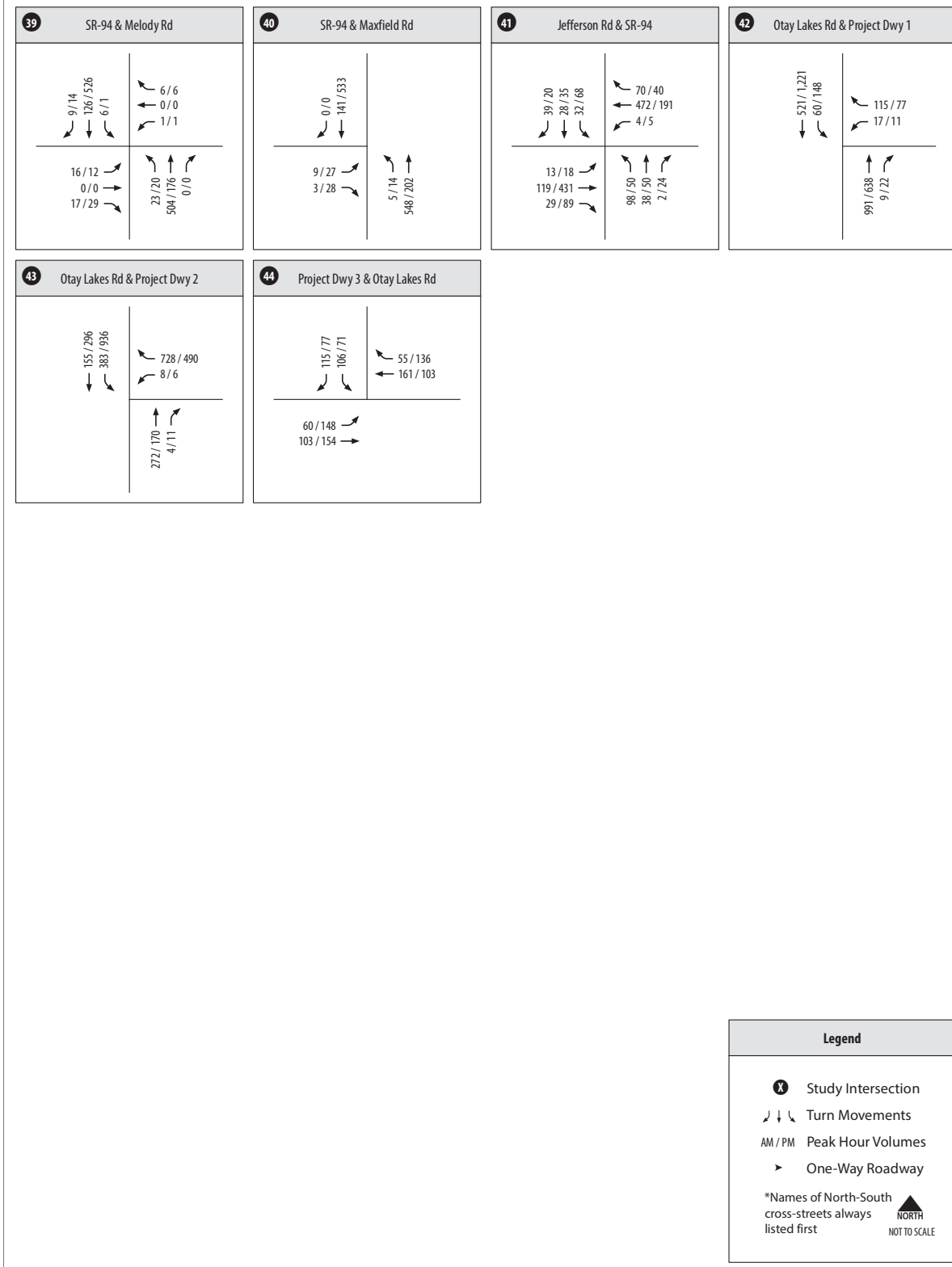
Figure 2.9-19
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Buildout) Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-19
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Buildout) Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2015



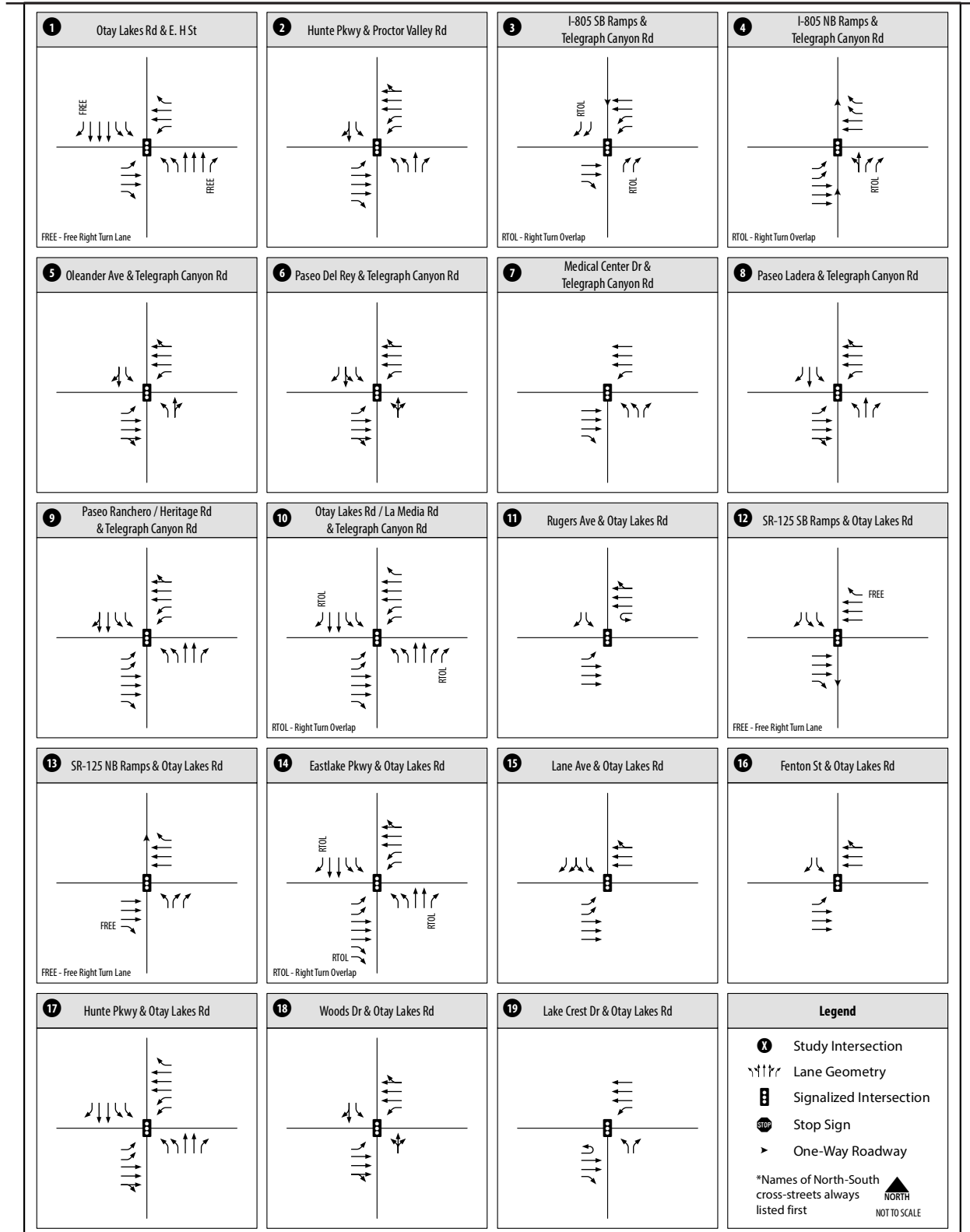
Figure 2.9-19

**Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Buildout) Conditions (Intersections 39-44)**

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Source: Chen Ryan Associates, 2015

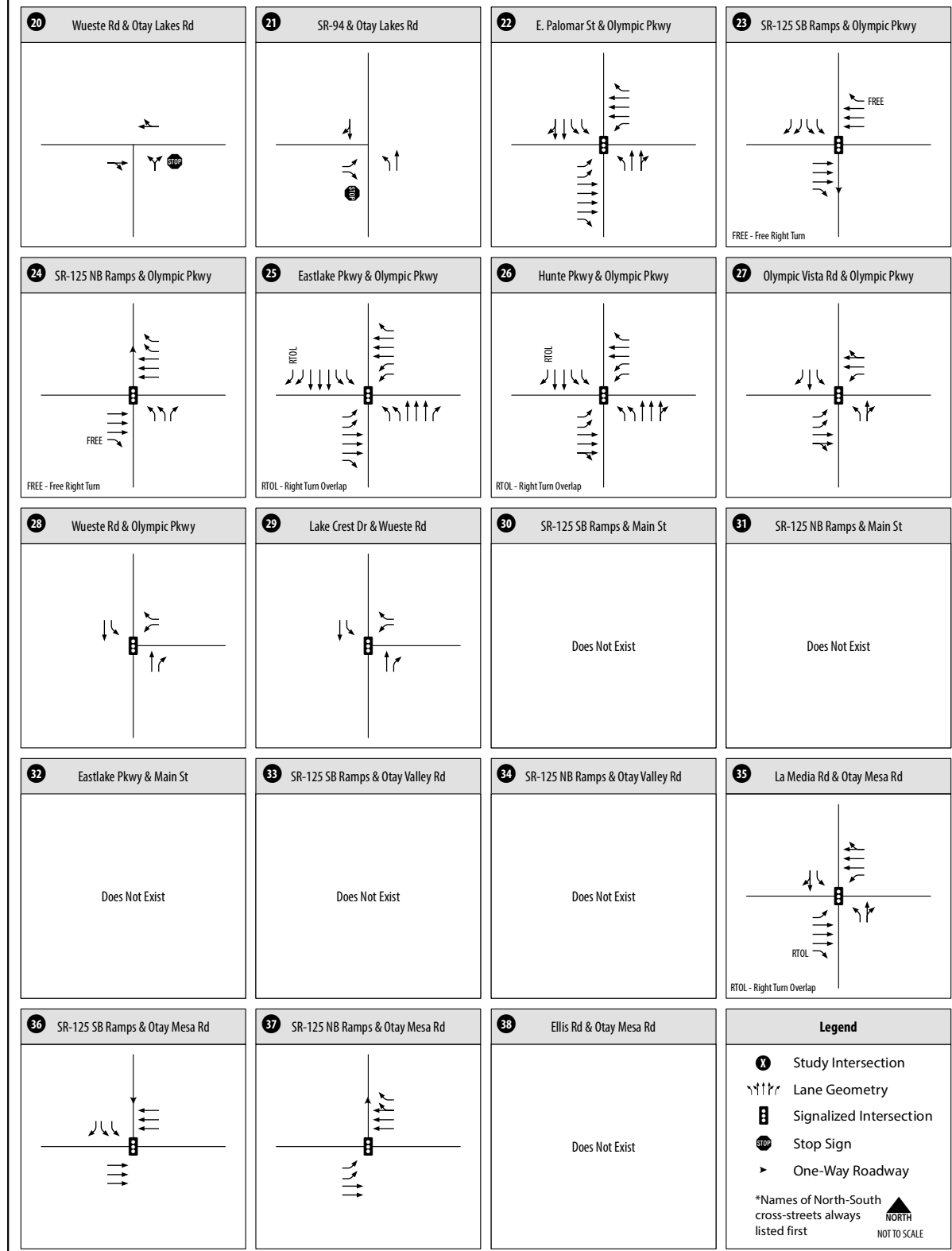
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Source: Chen Ryan Associates, 2014



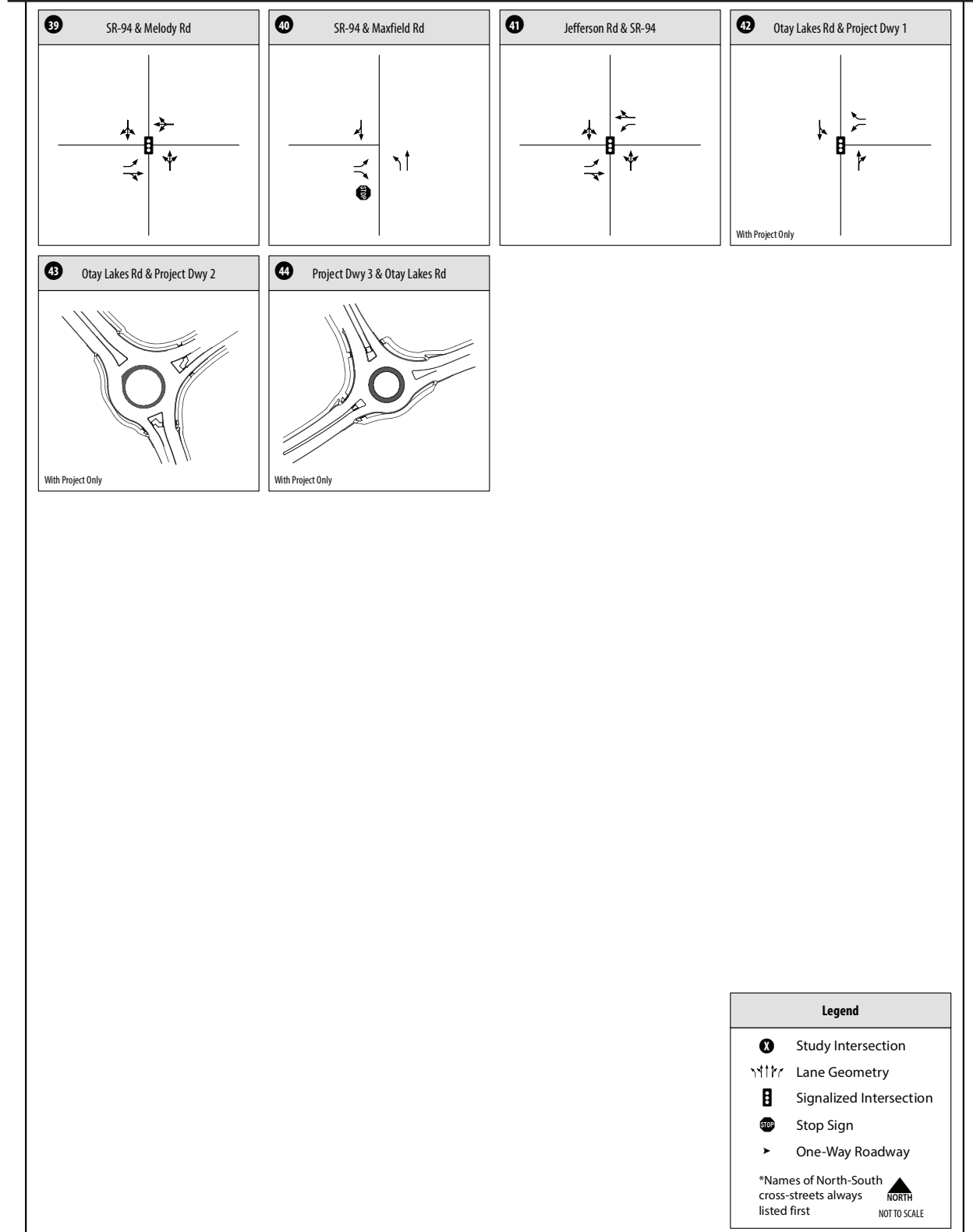
Figure 2.9-21
Intersection Geometrics -
Cumulative (Year 2025) Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2014



Figure 2.9-21
Intersection Geometrics -
Cumulative (Year 2025) Conditions (Intersections 20-38)

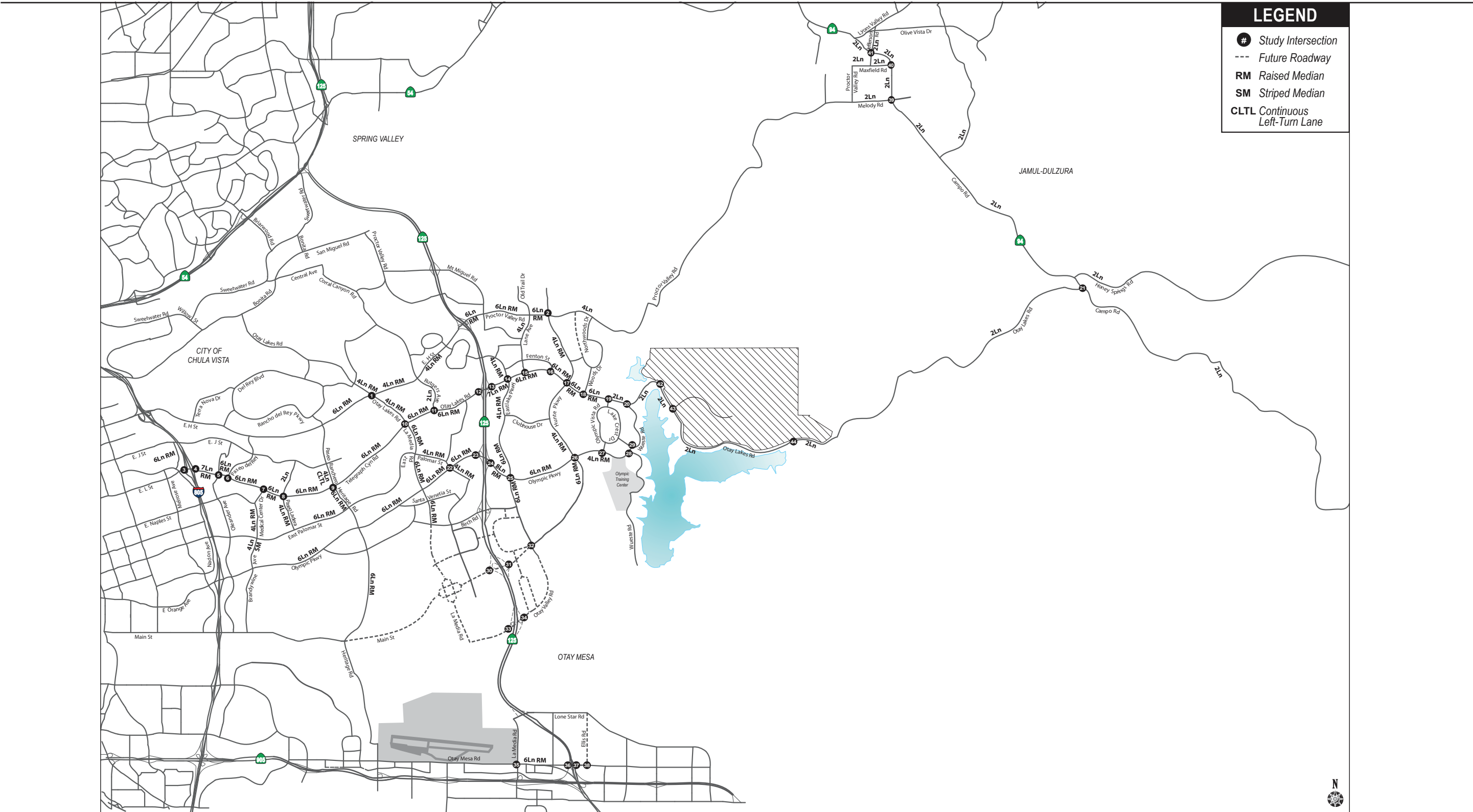


Source: Chen Ryan Associates, 2014



Figure 2.9-21
Intersection Geometrics -
Cumulative (Year 2025) Conditions (Intersections 39-44)

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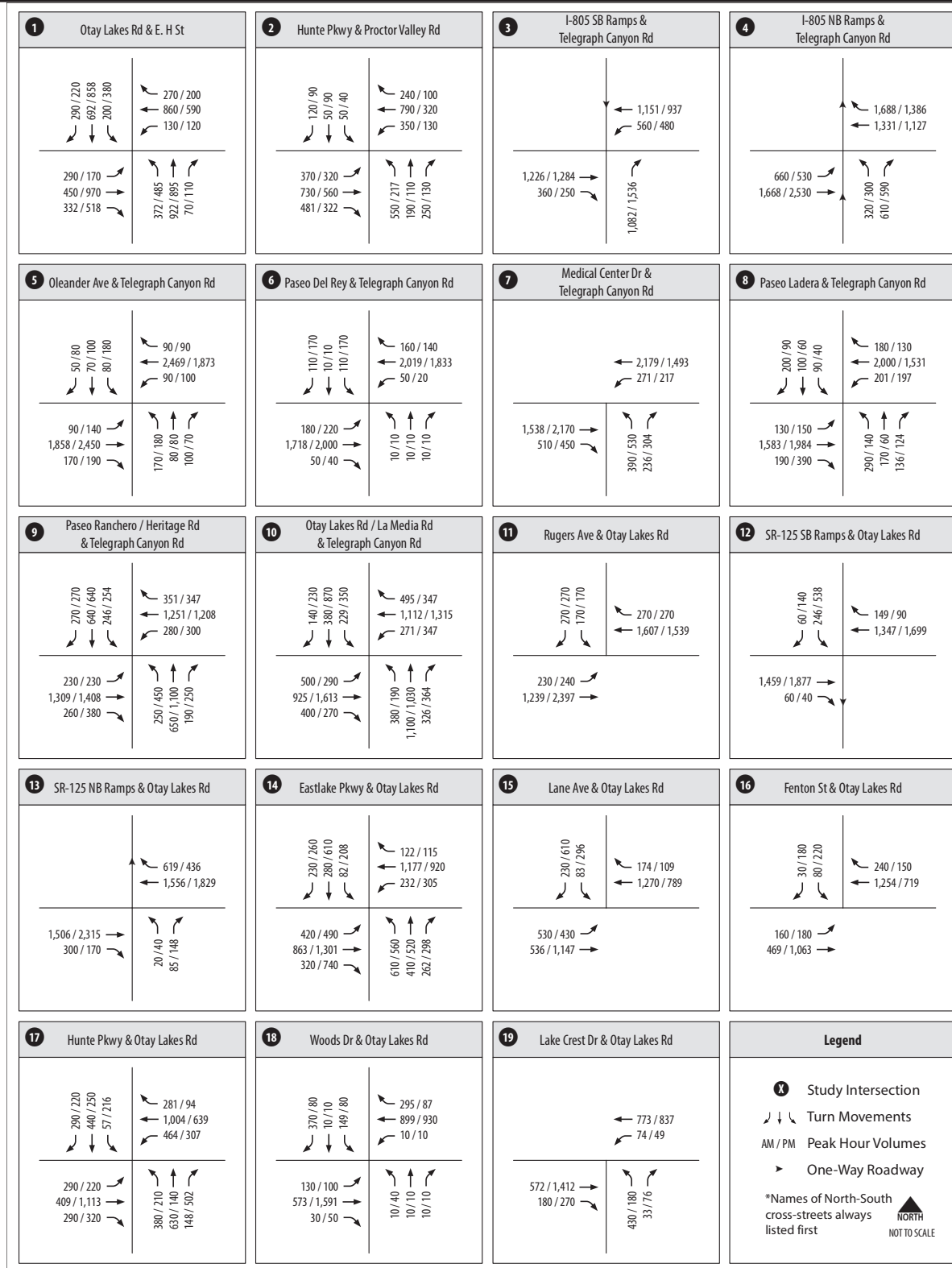


Source: Chen Ryan Associates, 2014



Figure 2.9-22
Roadway Geometrics - Cumulative (Year 2025) Conditions

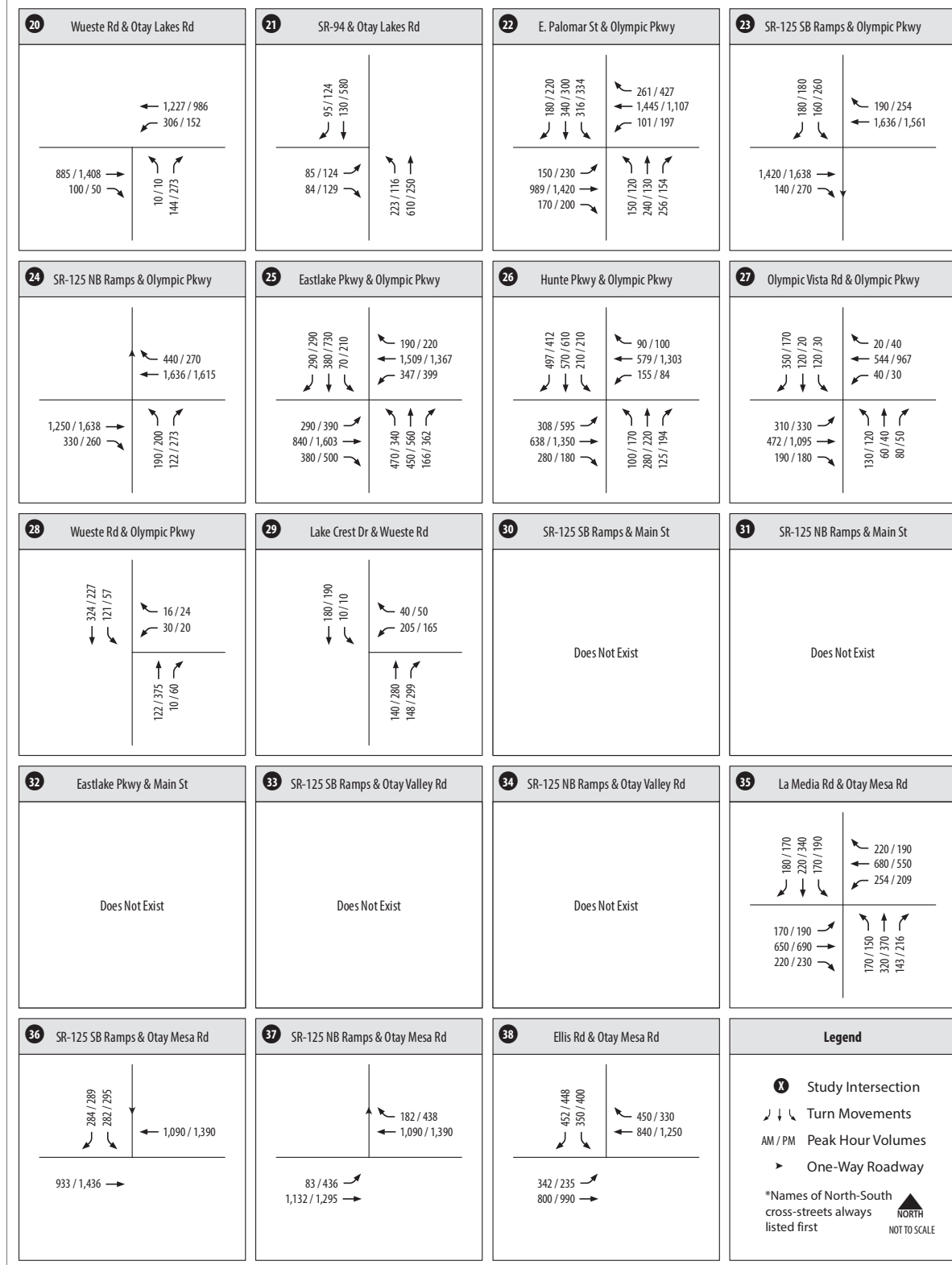
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Source: Chen Ryan Associates, 2015



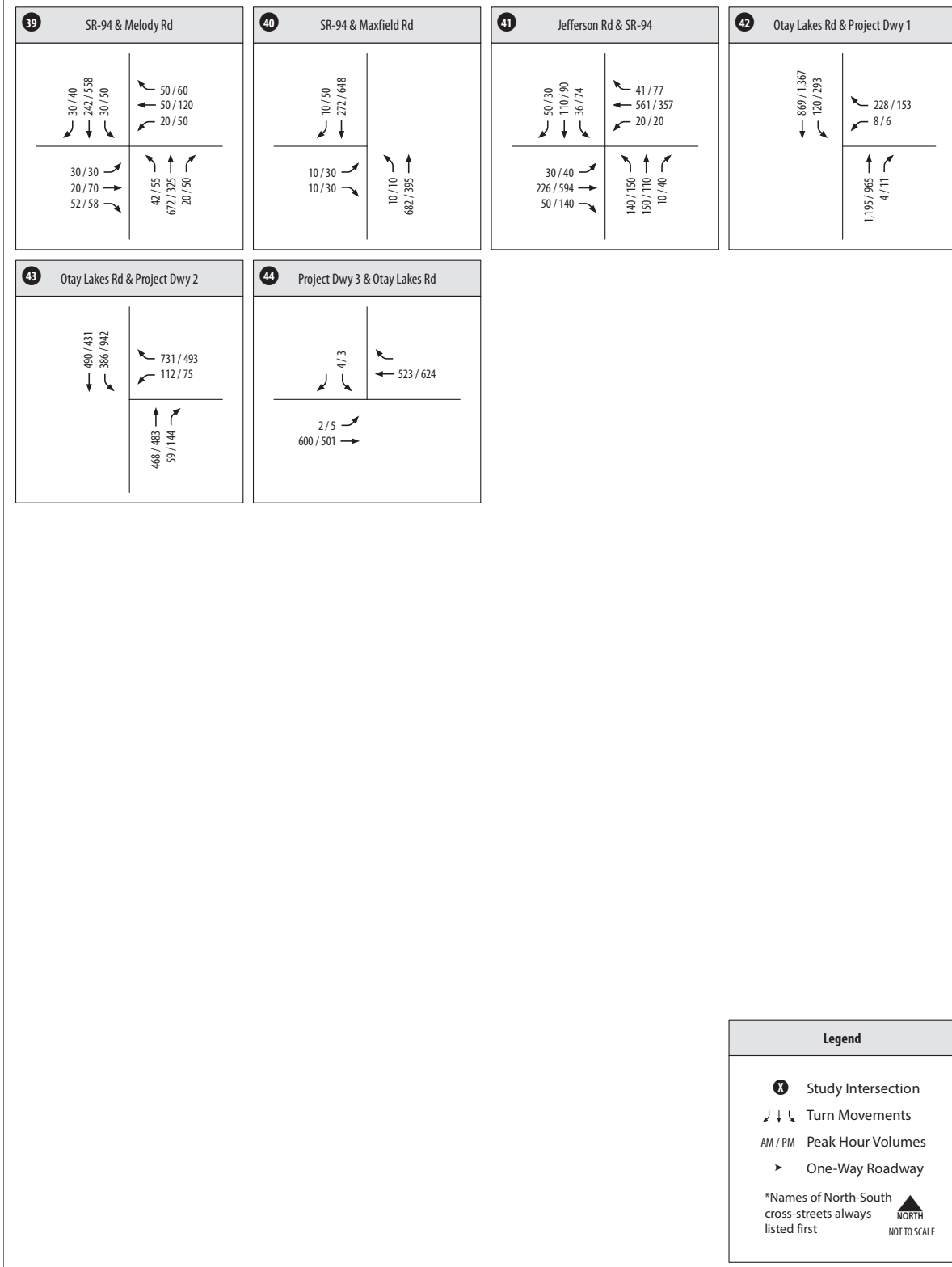
Figure 2.9-23
Intersection Peak Hour Traffic Volumes -
Cumulative (Year 2025) Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-23
Intersection Peak Hour Traffic Volumes -
Cumulative (Year 2025) Conditions (Intersections 20-38)

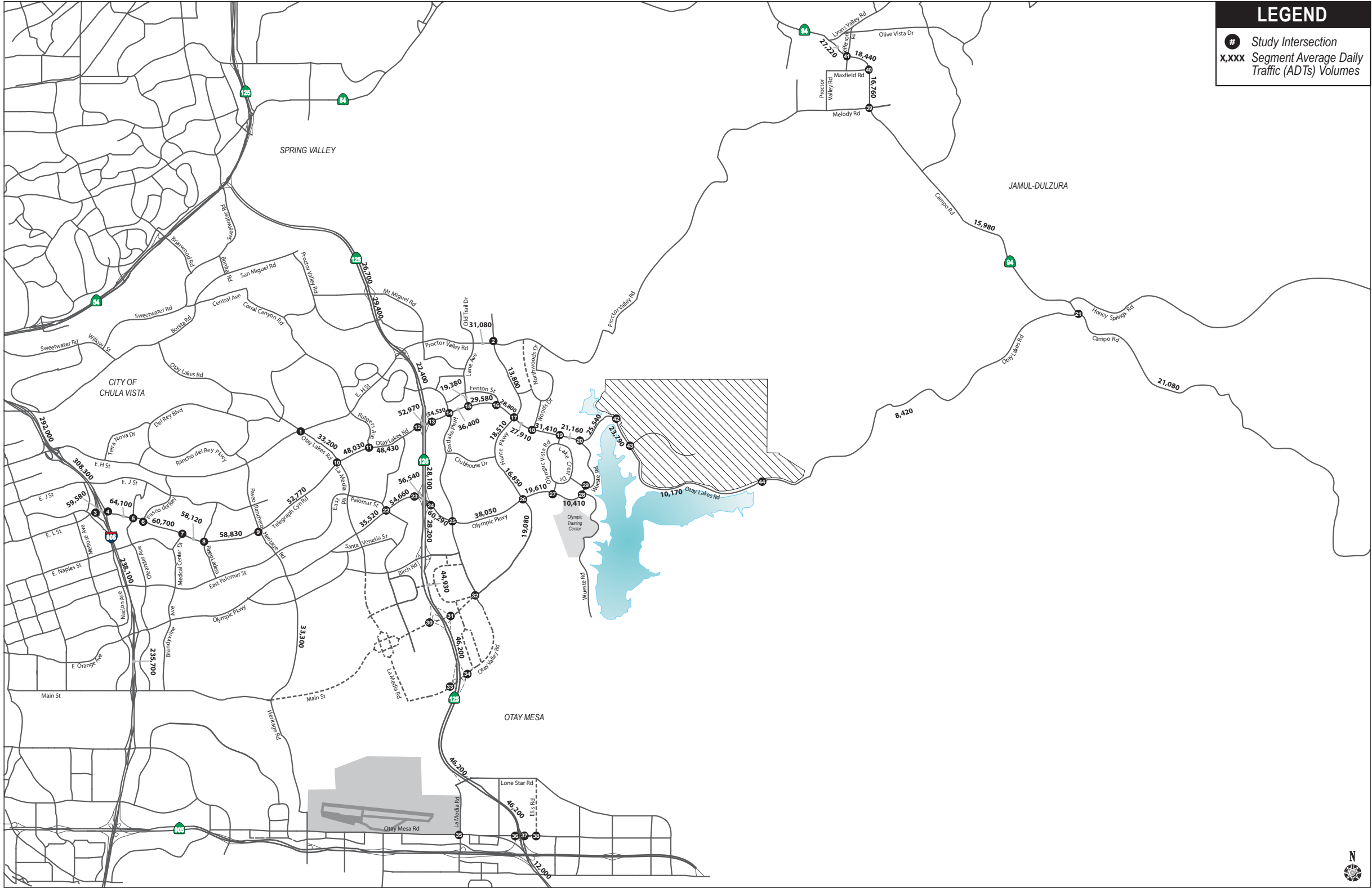


Source: Chen Ryan Associates, 2015



Figure 2.9-23
Intersection Peak Hour Traffic Volumes -
Cumulative (Year 2025) Conditions (Intersections 39-44)

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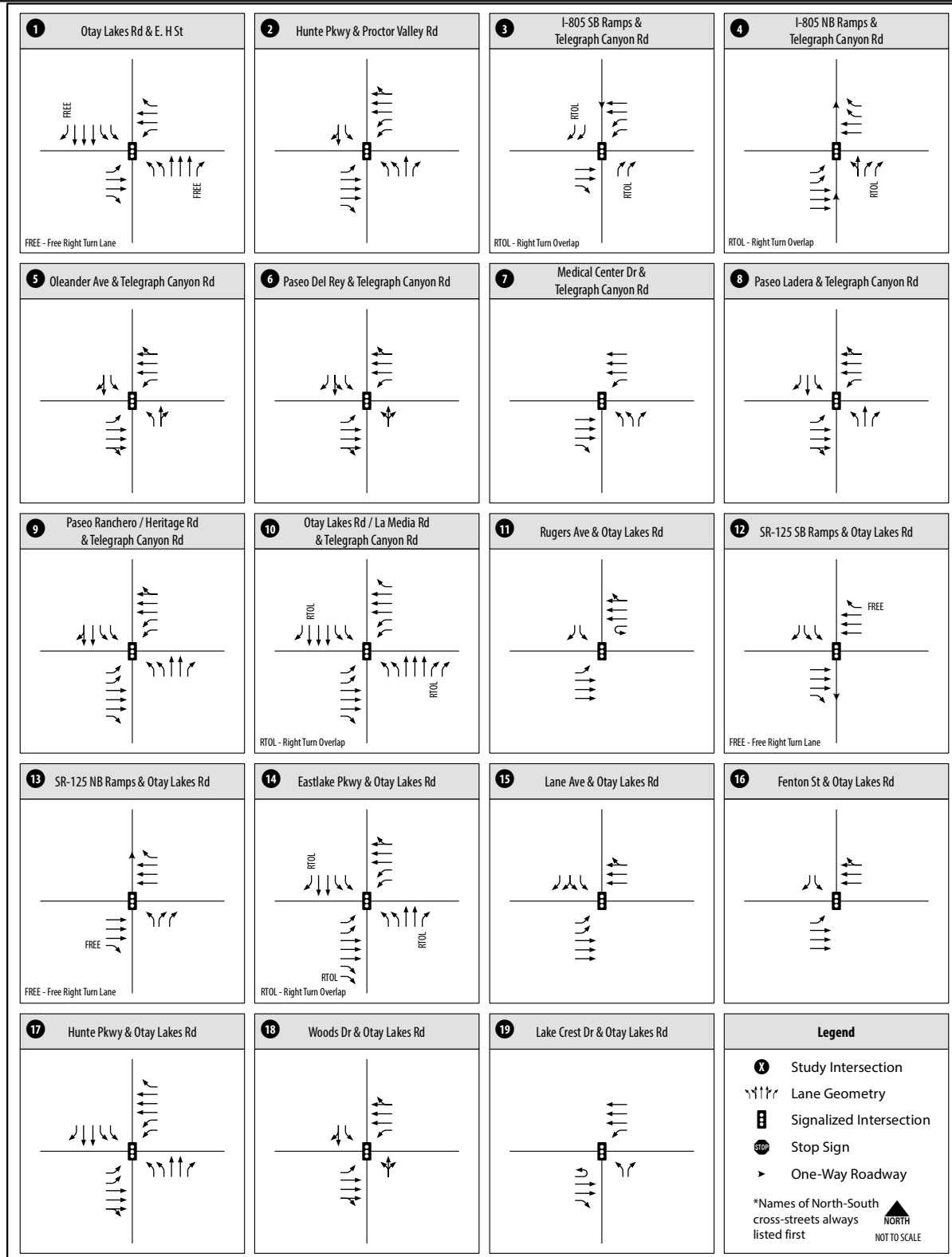


Source: Chen Ryan Associates, 2015



Figure 2.9-24
Average Daily Traffic Volumes - Cumulative (Year 2025) Base Plus Project (Buildout) Conditions

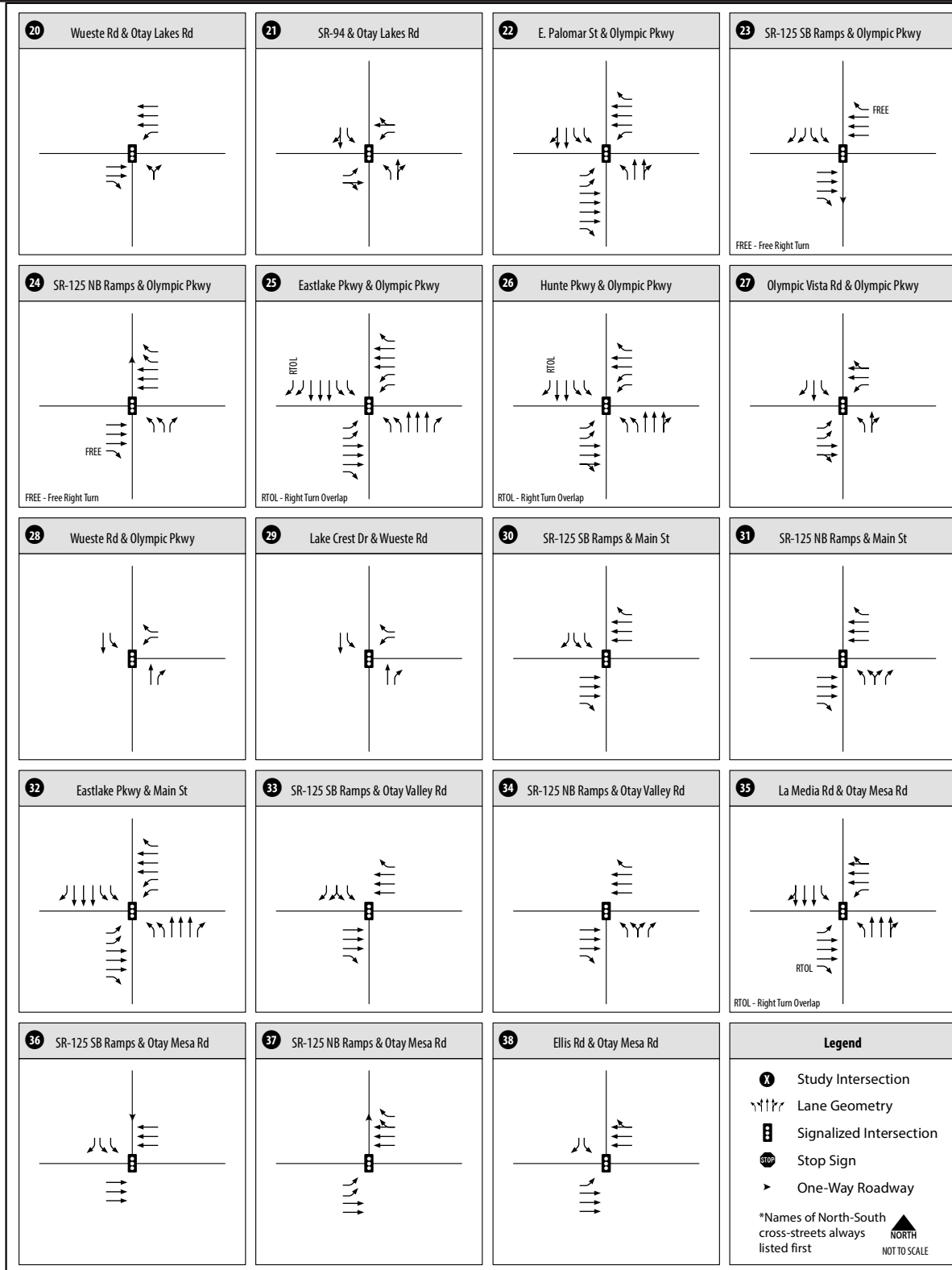
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Source: Chen Ryan Associates, 2015



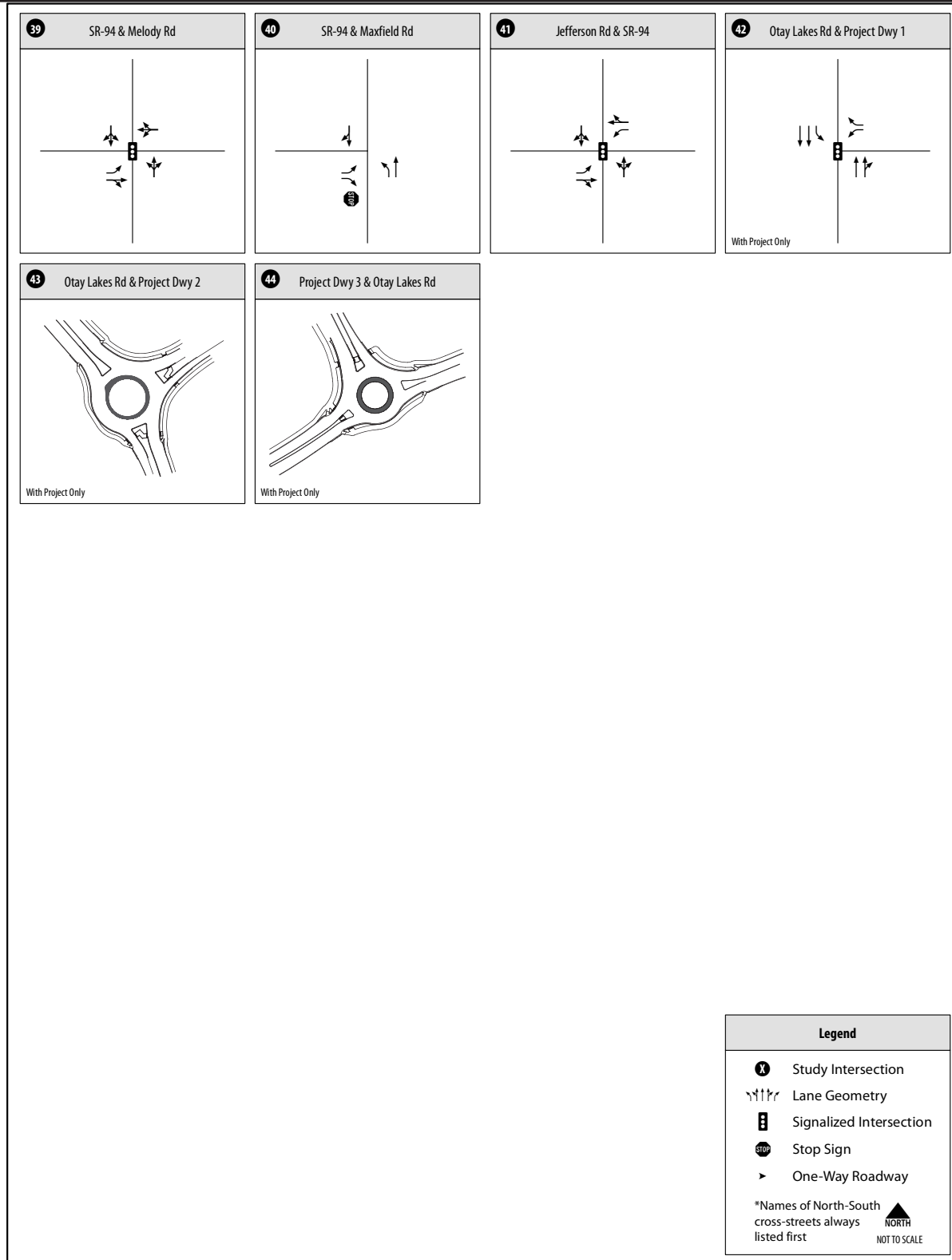
Figure 2.9-25
Intersection Geometrics -
Future Year 2030 Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-25
Intersection Geometrics -
Future Year 2030 Conditions (Intersections 20-38)

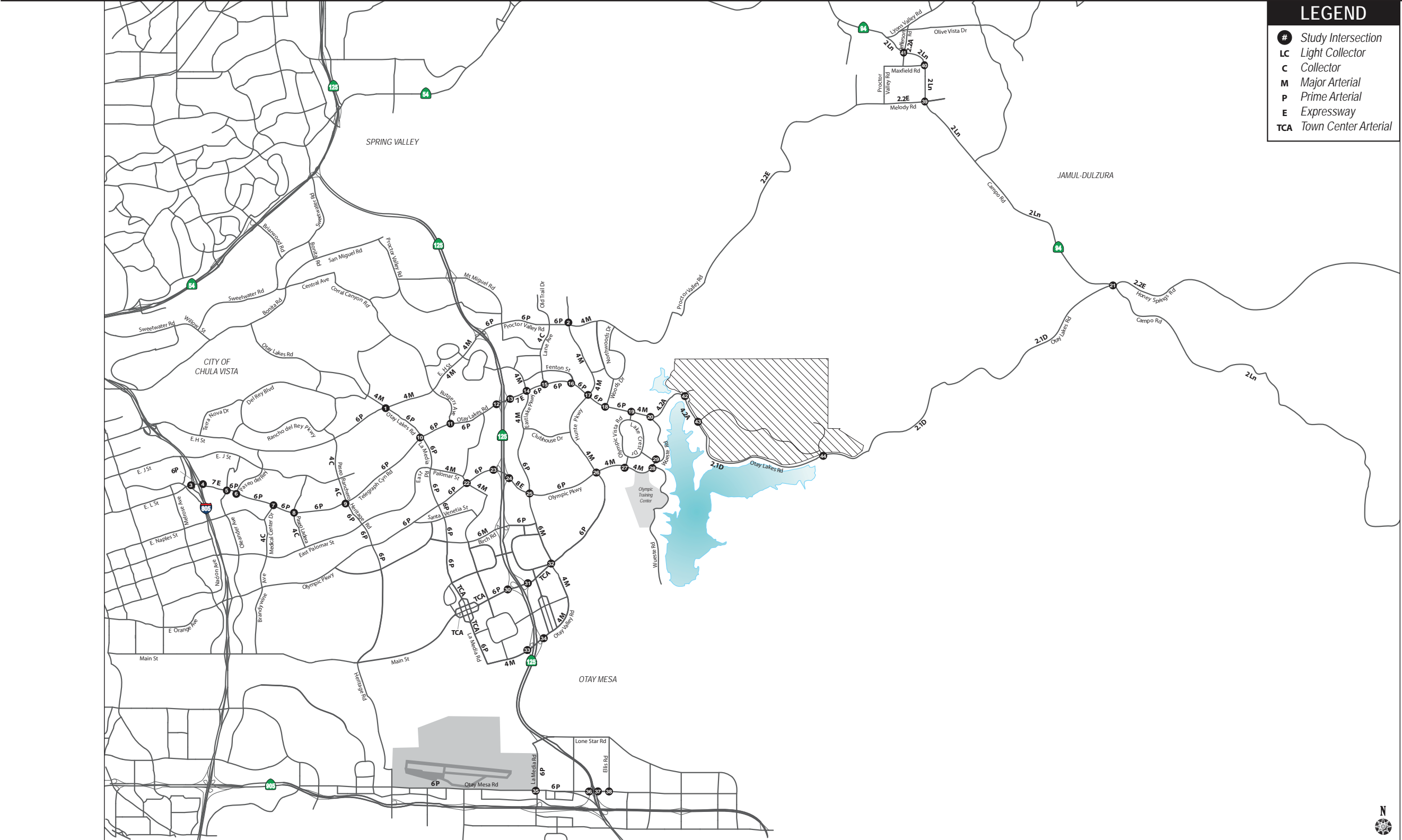


Source: Chen Ryan Associates, 2015



Figure 2.9-25
Intersection Geometrics -
Future Year 2030 (Intersections 39-44)

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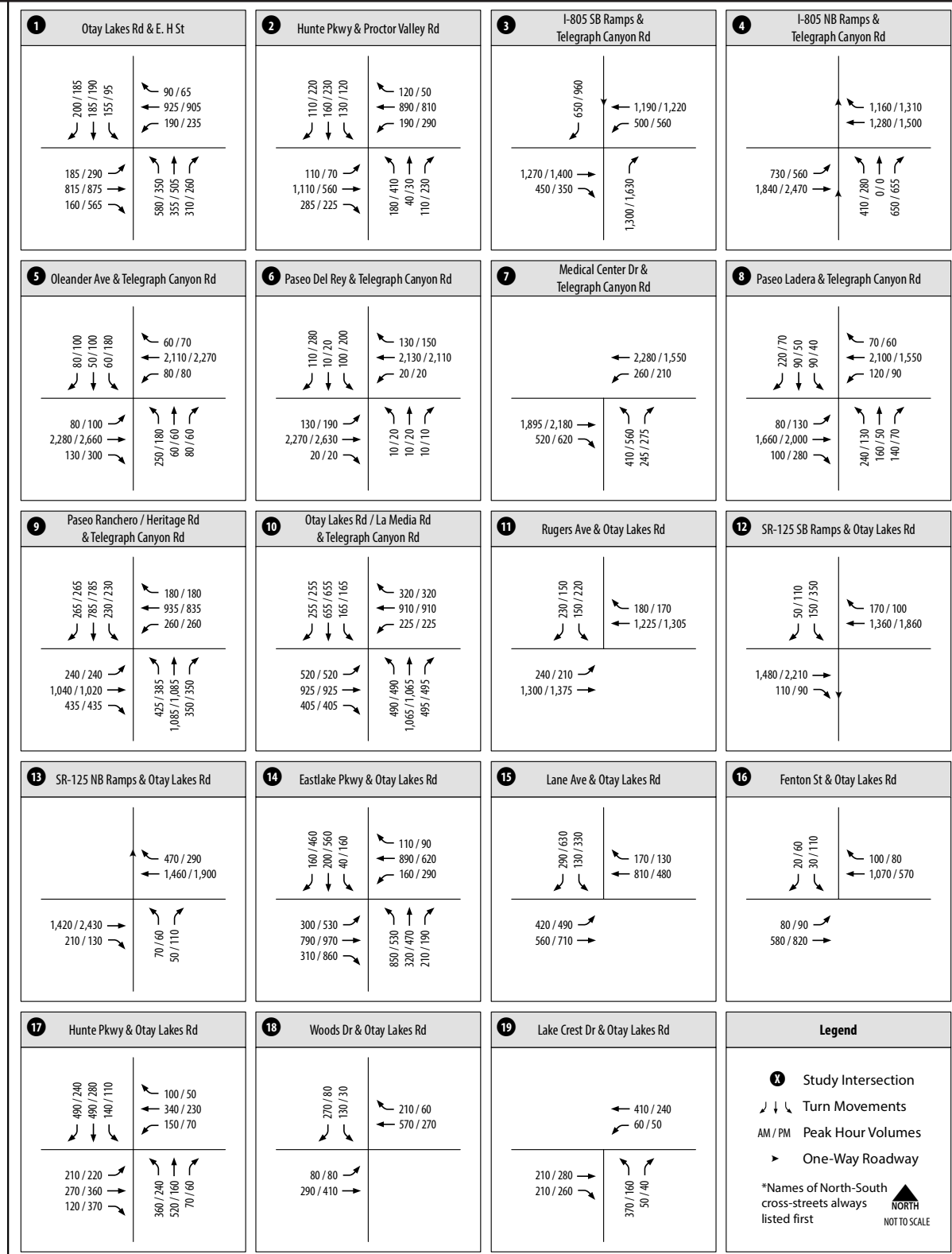


Source: Chen Ryan Associates, 2014



Figure 2.9-26
Roadway Geometrics - Future Year 2030 Conditions

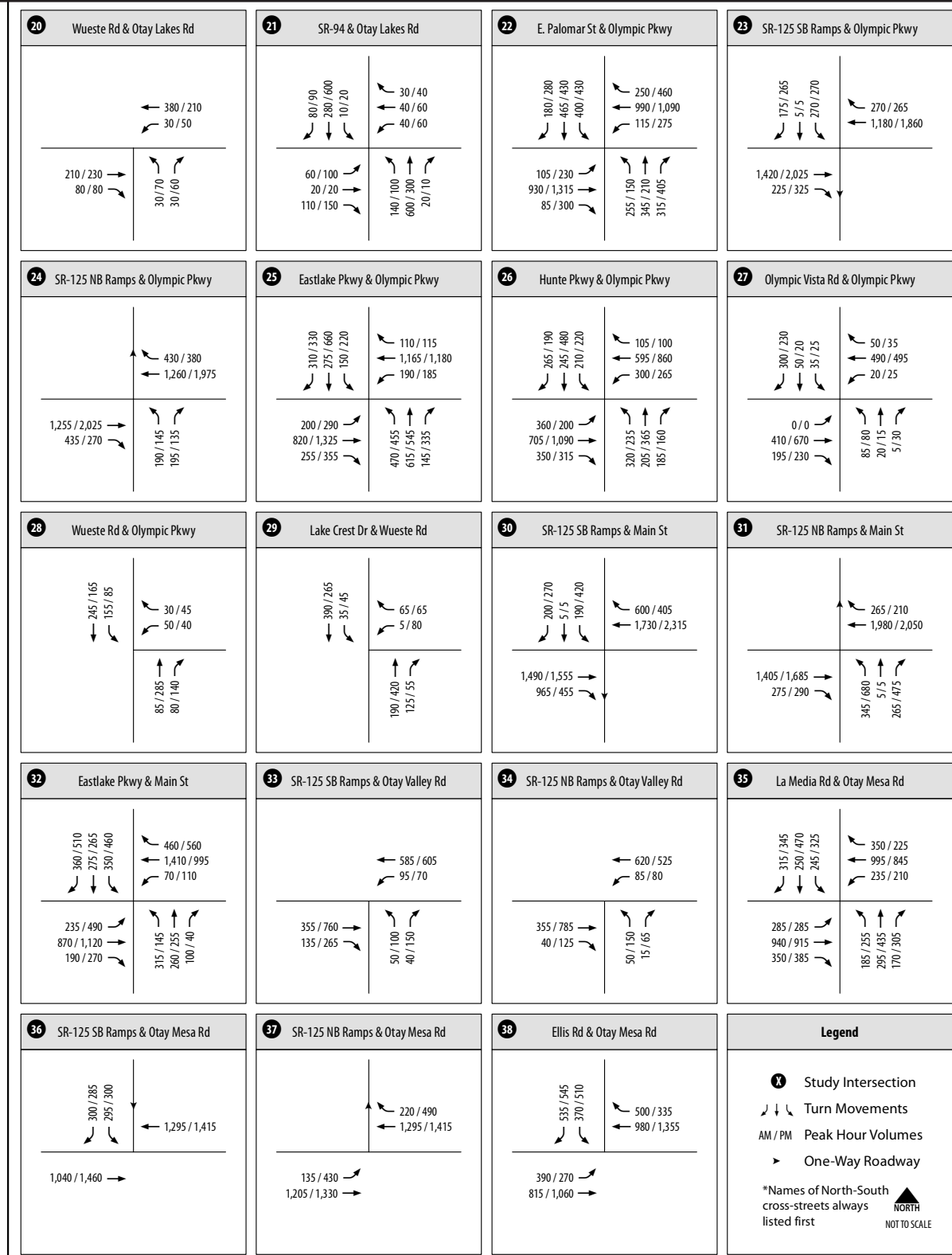
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Source: Chen Ryan Associates, 2014



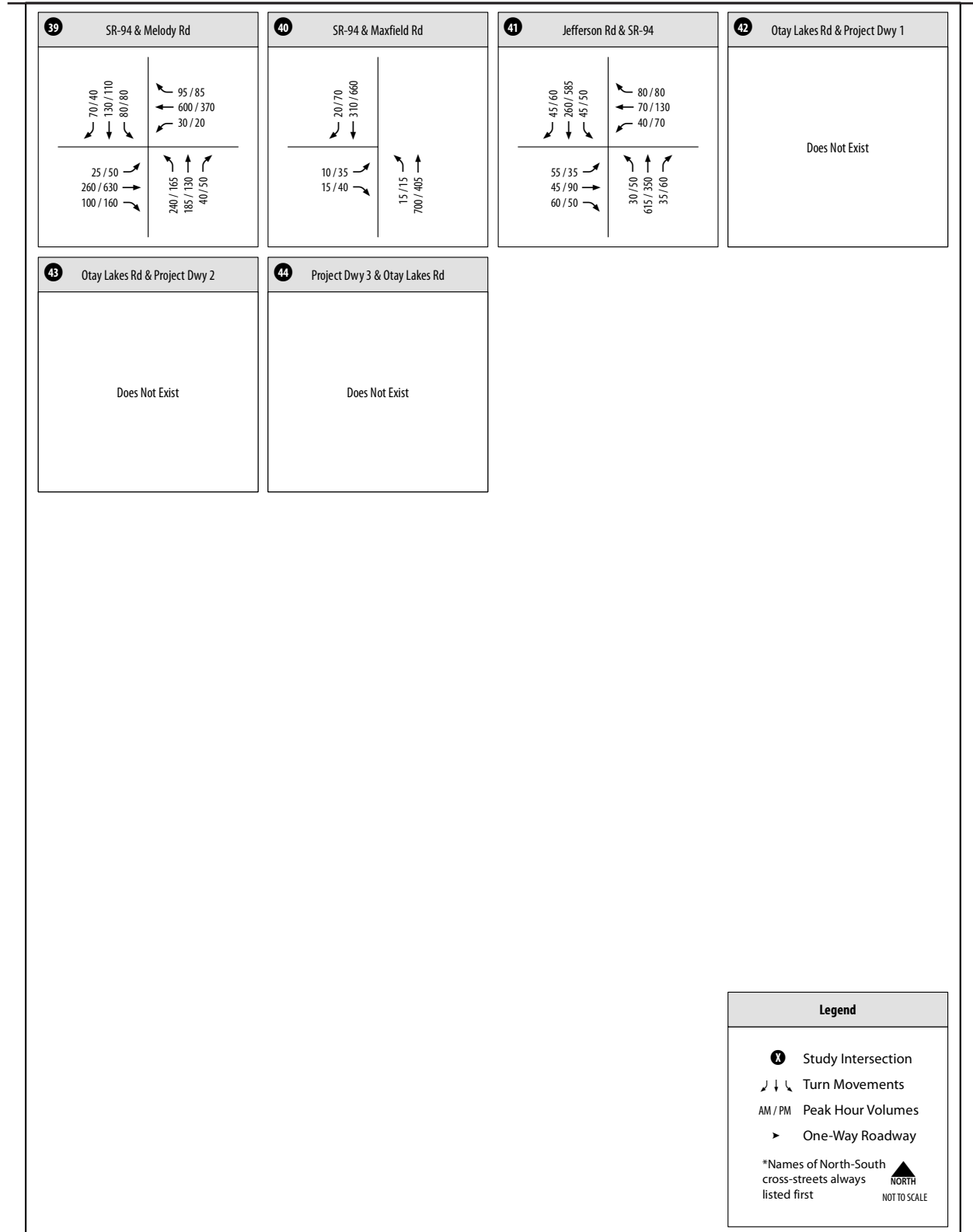
Figure 2.9-27
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2014



Figure 2.9-27
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2014



Figure 2.9-27
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Conditions (Intersections 39-44)

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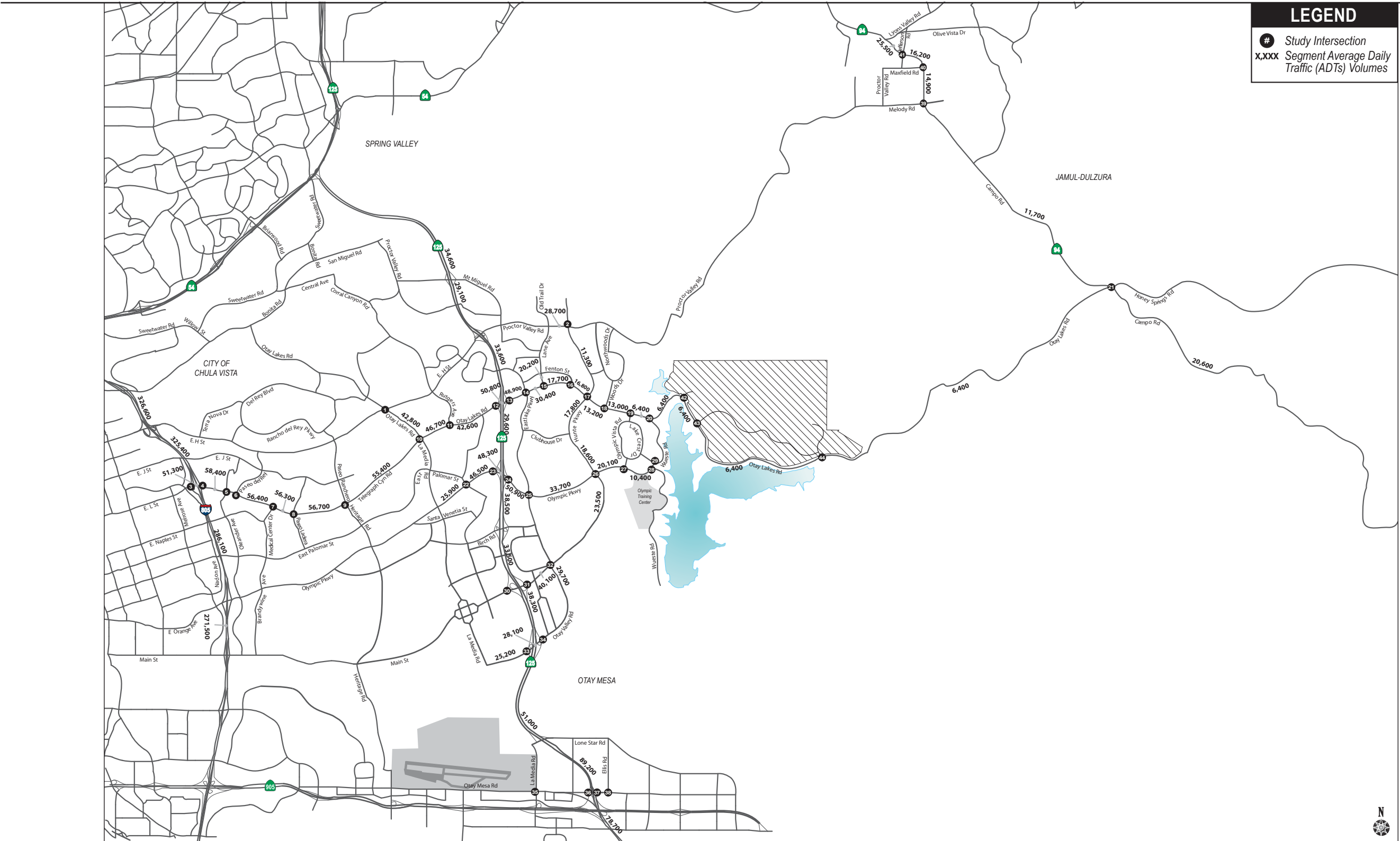
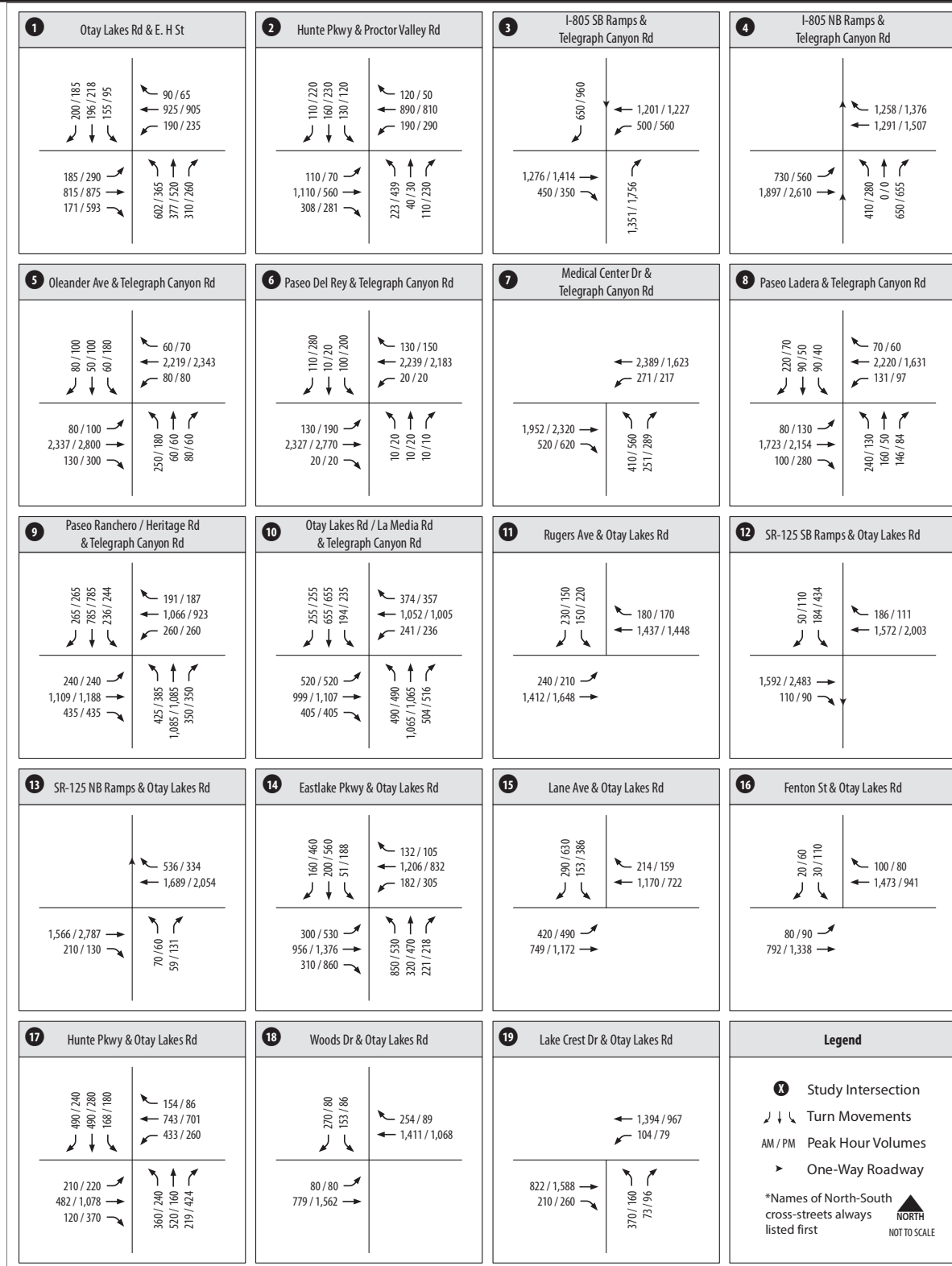


Figure 2.9-28
Average Daily Traffic Volumes - Year 2030 Base Conditions



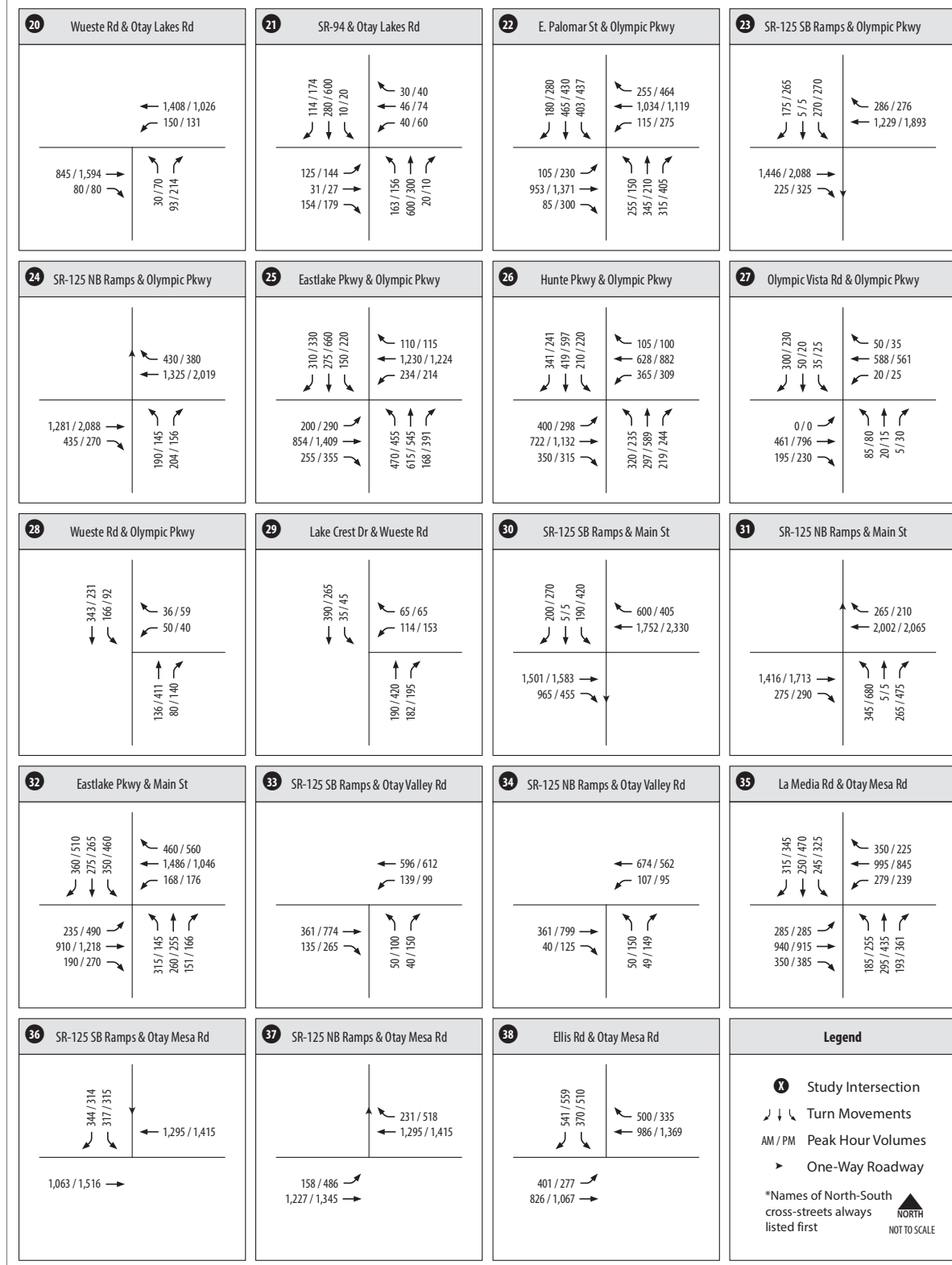
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Source: Chen Ryan Associates, 2015



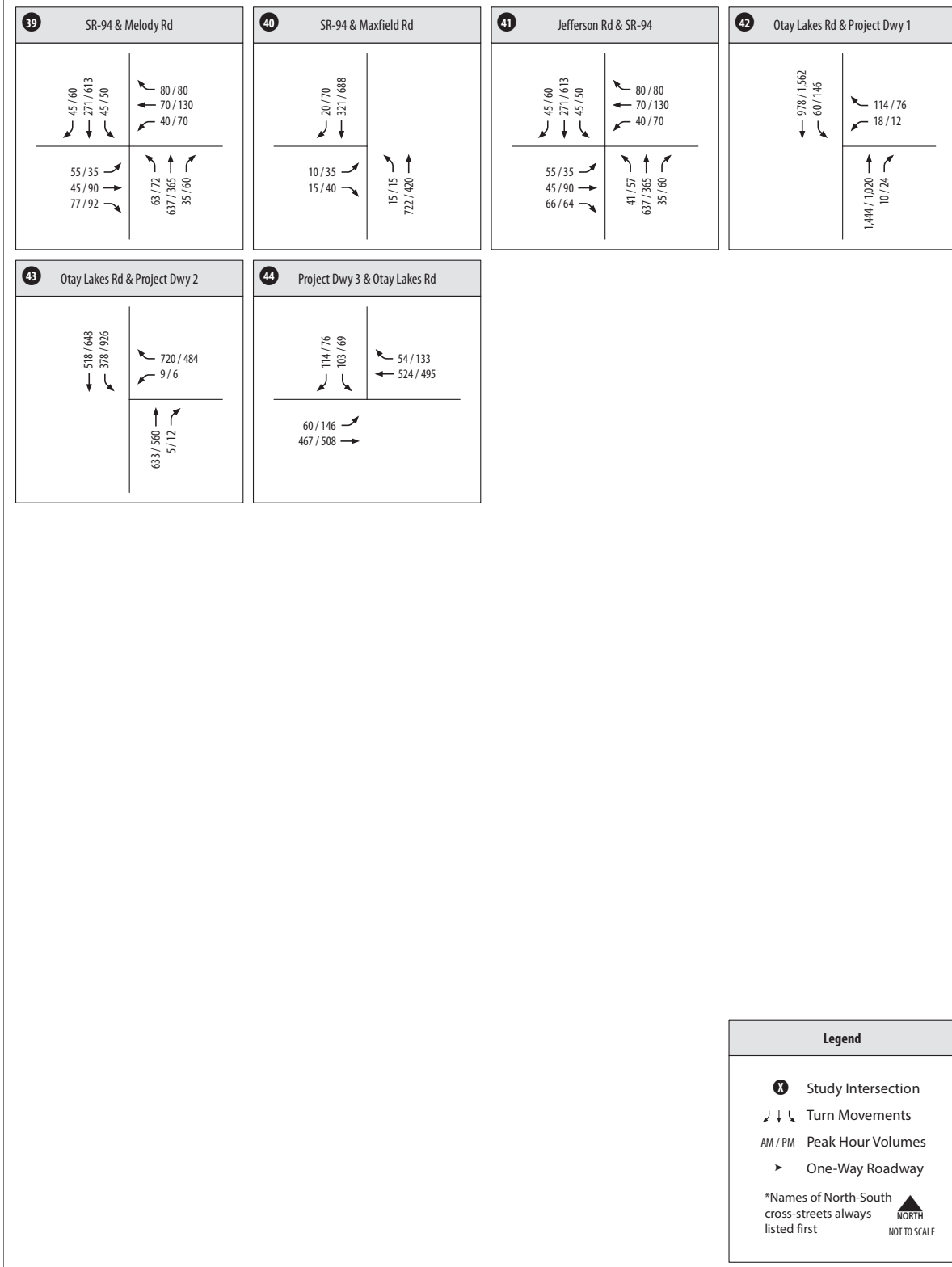
Figure 2.9-29
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 1-19)



Source: Chen Ryan Associates, 2015



Figure 2.9-29
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 20-38)



Source: Chen Ryan Associates, 2015



Figure 2.9-29
Intersection Peak Hour Traffic Volumes -
Future Year 2030 Base Plus Project (Buildout) Conditions (Intersections 39-44)

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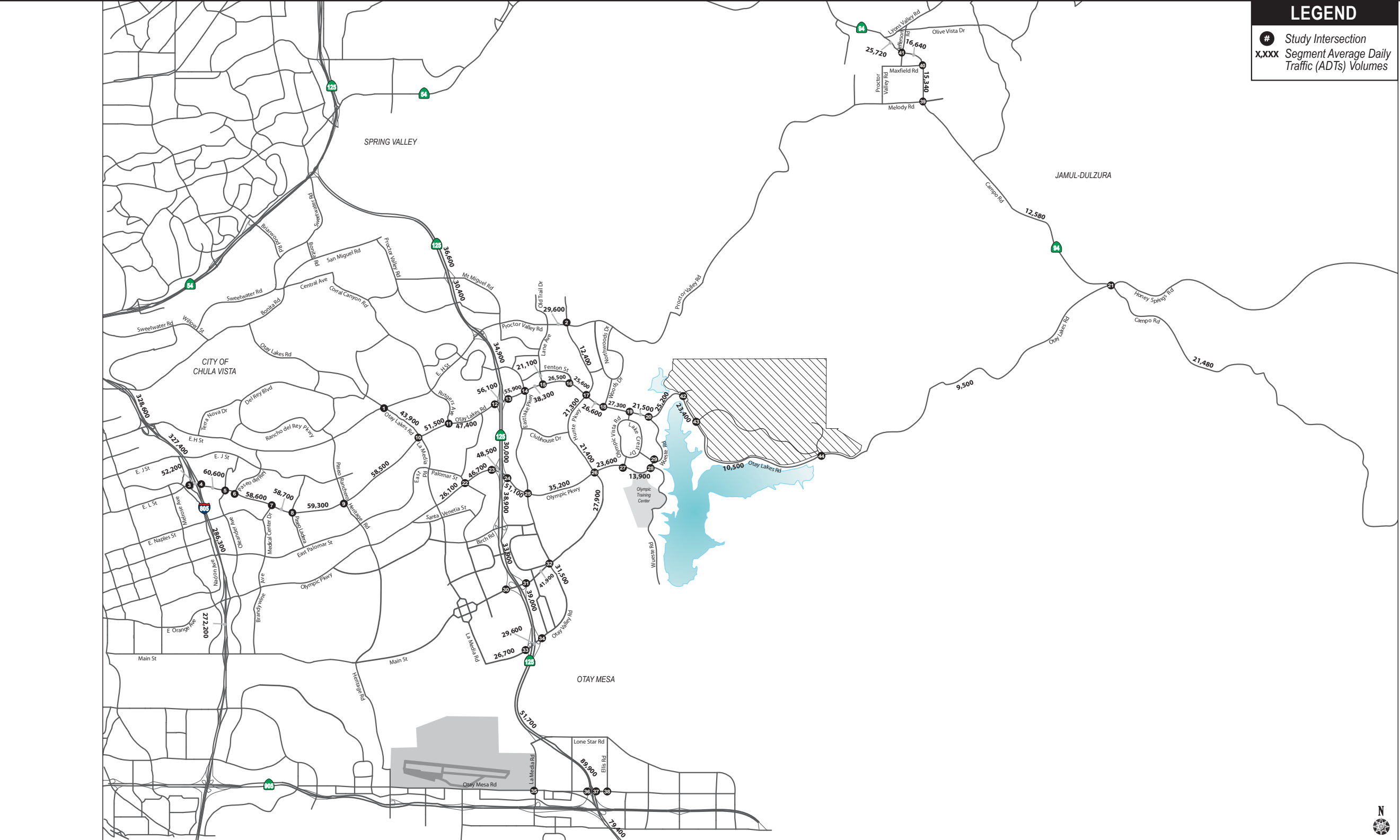
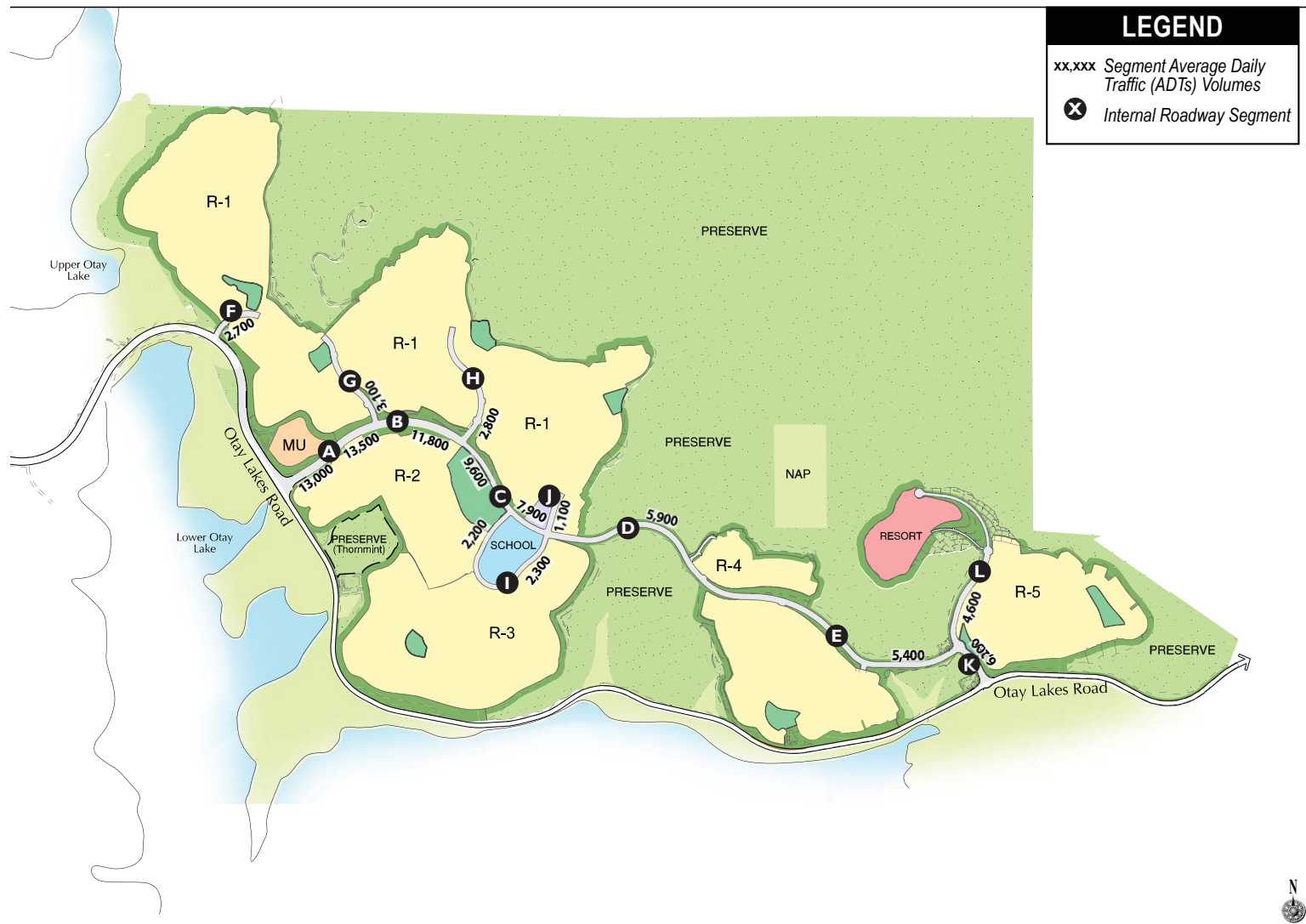


Figure 2.9-30
Average Daily Traffic Volumes - Year 2030 Base Plus Project Conditions

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Source: Chen Ryan Associates, 2014



Figure 2.9-31
Resort Village Internal Roadway ADTs

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CHAPTER 3.0 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

Effects found not to be significant during the EIR preparation process are Agricultural Resources, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Utilities and Service Systems, and Climate Change. These topics are analyzed in this Chapter.

3.1 Agricultural Resources

The following section provides an analysis of the potential significant impacts to agricultural resources that may result from implementation of the proposed Project. The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to agricultural resources for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR identified significant direct and cumulative impacts on agricultural resources. As a result, the PEIR included mitigation measures to reduce the significant impacts, including a mitigation measure requiring the preparation of an Agricultural Plan for future Specific Plans affecting on-site agricultural resources. The proposed Project's compliance with the mitigation measure is discussed below. The Otay Ranch PEIR determined that, even with implementation of the mitigation measures, the permanent loss of agricultural land was a significant and unavoidable impact within the Otay Ranch area. The Otay Ranch PEIR is incorporated by reference into this EIR, and is available for public inspection and review at the County of San Diego, PDS, 5510 Overland Ave., San Diego, California.

This agricultural analysis is different than the PEIR, as it specifically considers the proposed Project site. This section references and uses information provided in the PEIR; however, the analysis and conclusions are based specifically on the agricultural resources associated with the Project site and vicinity and the potential impact the proposed Project might have on those resources.

3.1.1 Existing Conditions

3.1.1.1 *On-Site Agricultural Uses*

Much of the historical agricultural information in this section is based on the Otay Ranch Resort Village Phase I Environmental Site Assessment (Phase I), included as **Appendix C-9** to this EIR, and the Otay Ranch Resort Village Phase I Environmental Site Assessment West Residential Area Parcels A and B, included as **Appendix C-10** to this EIR. Historically, the Project site was primarily used for cattle ranching. Ranching operations are estimated to have begun in the 1930s and continued intermittently over the next few decades. In 1989, a cattle feed and water shed was constructed on-site and long-horn cattle were grazed on the land until 1999. Cattle grazing has not occurred on the Project site since 1999; however, the Project site is designated "Grazing Land," pursuant to the Farmland Mapping and Monitoring Program (FMMP), as described below.

A small portion of the Project site also was used for dry farming. Throughout portions of the 1930s and 1940s, lima beans, hay, and grain were known to have been grown on-site. In 1960, approximately 200 acres in the southwest portion of the Project site were tilled and used for dry farming. Dry farming of this area is estimated to have lasted only a few years, and was terminated by 1963. Crop production was limited to hay and grains due to limited water availability.

3.1.1.2 Farmland Mapping and Monitoring Program

The California Department of Conservation (CDC) established the FMMP in 1982 to carry on the “Important Farmland” mapping efforts initiated in 1975 by the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS). The intent of the USDA was to map and categorize the nation’s farmlands. The FMMP is a nonregulatory program providing a consistent and impartial analysis of agricultural land use and land use changes throughout California. Pursuant to the FMMP, agricultural resources are separated into the following categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. The FMMP also includes Grazing Land, Urban and Built-up Land, Other Land, and Water, which are not considered agricultural resources. The Project site contains no land that has been designated Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Urban or Built-up Land, Other Land, or Water.

Grazing Land

Grazing Land is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen’s Association, University of California Cooperative Extension, and other groups interested in grazing activities. The minimum mapping unit for Grazing Land is 40 acres. The entire Project site is designated as Grazing Land.

Figure 3.1-1 depicts the 2010 FMMP mapping data for the Project site and surrounding area using the categories described above. As shown, the Project site consists of land designated as Grazing Land, with a small triangle of MSCP Cornerstone land associated with Lower Otay Lake shown as “Water.” Based on existing conditions within the Project site, this “Water” designation is not appropriate, as no portion of a perennial water body extends into the Project site. Although shown as “Water,” this area is similar to the rest of the Project site, which is designated by the FMMP as Grazing Land. Neither the Grazing Land nor Water designations are considered agricultural resources by the FMMP.

3.1.1.3 Surrounding Agricultural Resources

The Project site is surrounded primarily by open space areas or areas recently developed with urban uses. Agricultural operations do not occur in the area immediately surrounding the Project site.

The area surrounding the Project site is designated as Grazing Land by the FMMP. Farmland of Local Importance and Urban and Built-up Land exists approximately 0.5 mile to the west of the Project site, beyond adjacent Grazing Land and across Lower Otay Lake. A small area of Other

Land designates the John Nichols Field airfield that exists south of the southeastern portion of the Project site.

3.1.1.4 Soil Suitability for Agriculture

CDC publishes a list of soils that meet the soil-quality criteria for Prime Farmland soils and soils of Statewide Importance that are unique to each county. In San Diego County, 44 local soils qualify for the Prime Farmland designation and 65 soils qualify for the Farmland of Statewide Importance designation. The Project site contains six soil types:

- Diablo-Olivenhain complex; 9 to 30 percent slopes (DoE)
- Friant rocky fine sandy loam; 9 to 30 percent slopes (FxE)
- Friant rocky fine sandy loam; 30 to 70 percent slopes (FxG)
- Olivenhain cobbly loam; 9 to 30 percent slopes (OhE)
- Redding Cobbly loam; 9 to 30 percent slopes (ReE)
- San Miguel-Exchequer rock silts loams; 9 to 70 percent slopes (SnG)

None of the soil types found on the Project site qualifies for either the Prime Farmland or the Farmland of Statewide Importance designation (County of San Diego 2007).

3.1.1.5 Regulatory Setting

The California Land Conservation Act of 1965, also known as the Williamson Act (Government Code section 51200 et seq.), was adopted as an incentive program to encourage the preservation of the state's agricultural lands. The Williamson Act allows local governments to contract with private landowners to limit the use of agricultural land for agricultural purposes. Pursuant to the Williamson Act, the parties may enter into a land conservation contract whereby a county or city agrees to stabilize the property taxes on qualifying lands in return for the landowner's guarantee to use the land for agricultural purposes or related open space use for a 10-year period. Unless a notice of nonrenewal is filed, the 10-year period of the contract is automatically renewed each year. The Project site is not subject to any Williamson Act contracts.

Compliance with Otay Ranch PEIR Mitigation

As mentioned above, the Otay Ranch PEIR included a mitigation measure requiring the preparation of an Agricultural Plan prior to the approval of any Specific Plan affecting on-site agricultural resources. Elements of the plan would include the type of agricultural activity allowed as an interim use, and buffering guidelines designed to prevent potential land use interface impacts related to noise, odors, dust, insects, rodents, and chemicals that may accompany agricultural activities and operations. Because the proposed Project site does not include agricultural resources or ongoing active agricultural operations, nor does the Project propose any activity or use that affects agricultural resources, the Agricultural Plan contained in the Specific Plan is simplified, stating that grazing or other agricultural activities do not occur on the Project site or adjacent property.

3.1.2 Analysis of Project Effects and Determination as to Significance

The following discussion analyzes potential impacts related to implementing the proposed Project and makes determinations regarding the significance of the proposed Project's agricultural resource impacts. A significant impact to agricultural resources would occur from the Project due to the following:

- The Project site has important agricultural resources as defined by the County's Local Agricultural Resource Assessment (LARA) Model; and the Project would result in the conversion of agricultural resources that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, as defined by the FMMP; and, as a result, the Project would substantially impair the ongoing viability of the site for agricultural use.
- The Project proposes a non-agricultural land use within one-quarter mile of an active agricultural operation or land under a Williamson Act contract and, as a result of the Project, land use conflicts between the agricultural operation or Williamson Act contract land and the proposed Project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.
- The Project proposes a school, church, day care, or other use that involves a concentration of people at certain times within 1 mile of an agricultural operation or land under a Williamson Act contract and, as a result of the proposed Project, land use conflicts between the agricultural operation or a Williamson Act contract land and the proposed Project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.
- The Project would involve other changes to the existing environment, which, due to their location or nature, could result in the conversion of off-site agricultural resources to a non-agricultural use or could adversely impact the viability of agriculture on land under a Williamson Act Contract.
- The Project conflicts with a Williamson Act contract or the provisions of the California Land Conservation Act of 1965 (Williamson Act).

3.1.2.1 Impacts to Important On-Site Agricultural Resources

Guidelines for the Determination of Significance

A significant impact to agricultural resources would occur from the Project due to the following:

- The Project site has important agricultural resources as defined by the County's Local Agricultural Resource Assessment (LARA) Model; and the Project would result in the conversion of agricultural resources that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, as defined by the FMMP; and, as a result, the Project would substantially impair the ongoing viability of the site for agricultural use.

Rationale for Selection of Guidelines

The significance threshold for important on-site agricultural resources is based on the County of San Diego Guidelines for Determining Significance, Agricultural Resources (County of San Diego 2007). This guideline requires evaluation of the Project site per the County LARA Model, as well as consideration of site-specific soil criteria to determine if there are any on-site agricultural resources that could be impaired if the Project were to be implemented.

Analysis

The LARA Model was developed to evaluate the importance of agricultural resources based on the unique and varied characteristics specific to San Diego County. The LARA Model considers three primary factors: water, climate, and soil quality. Three complementary factors also are considered: surrounding land uses, land use consistency, and topography.

The County's LARA Model was completed for the proposed Project. Based on all the Project-specific information, the LARA Model found that the site is not an important agricultural resource. The primary factors of climate ranked high, water ranked moderate, and soils ranked low. The complementary factors of surrounding land use ranked high, land use consistency ranked low, and topography ranked moderate. Because the primary soil factor ranked low, the Project site is not considered an important agricultural resource pursuant to the LARA Model.

As described above, the soil types found on the Project site do not meet the soil-quality criteria for Prime Farmland or Farmland of Statewide Importance as defined by the FMMP.

While development of the Project would impair the viability of the site for future agricultural use, the site is not considered an important agricultural resource per the LARA Model, and the site does not contain soils of high agricultural quality. Thus, pursuant to the above guidelines for the determination of significance, the Project impact to important agricultural resources is considered *less than significant*.

3.1.2.2 Indirect Impacts to Agricultural Resources

Guidelines for the Determination of Significance

A significant impact to agricultural resources would occur from the Project due to the following:

- The Project proposes a non-agricultural land use within one-quarter mile of an active agricultural operation or land under a Williamson Act contract and, as a result of the Project, land use conflicts between the agricultural operation or Williamson Act contract land and the proposed Project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.
- The Project proposes a school, church, day care, or other use that involves a concentration of people at certain times within 1 mile of an agricultural operation or land under a Williamson Act contract and, as a result of the proposed Project, land use conflicts between the agricultural operation or a Williamson Act contract land and the

proposed Project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.

- The Project would involve other changes to the existing environment, which, due to their location or nature, could result in the conversion of off-site agricultural resources to a non-agricultural use or could adversely impact the viability of agriculture on land under a Williamson Act Contract.

Rationale for Selection of Guidelines

The significance thresholds for indirect impacts to agricultural resources are based on the County of San Diego Guidelines for Determining Significance, Agricultural Resources (County of San Diego 2007). These guidelines specifically address the potential for a non-agricultural project to influence surrounding land uses and possibly result in the conversion of agricultural land to a non-agricultural use. The first guideline requires consideration of land use conflicts due to the proximity of a non-agricultural project to agricultural operations or Williamson Act contract lands, which could result in the conversion of that land. The second guideline addresses potential land use conflicts between agricultural operations and public gathering locations, which could result in conversion of the agricultural land. The third guideline requires evaluation of a project's potential to adversely influence surrounding agricultural resources or impair the ongoing viability of surrounding agriculture use.

Analysis

The Project site is not bounded by active agricultural operations. There are no Williamson Act contract lands within one-quarter mile of the Project site. Land uses surrounding the site generally include urban development to the west; the Otay Valley Regional Park, Lower Otay Lake, and a water and recreation reservoir to the south; and an ultra-light gliding and parachuting airstrip, an inactive quarry, and large parcels of open space to the east. Because the Project site is surrounded with developed areas or open space not used for farming, the development of non-agricultural uses on the Project site would not result in land use conflicts with agricultural operations or the conversion of agricultural resources to non-agricultural uses, and ***no significant impact*** would result.

The Project proposes uses that involve a concentration of people, including a school, parks, and resort facilities. However, these uses would not be located within one mile of an active agricultural operation or Williamson Act contract land, as there are no such lands located within the immediate Project vicinity. Therefore, no land use conflicts or resulting conversion of agricultural uses to non-agricultural uses would result due to the Project's proposed facilities, and ***no significant impact*** would result.

The Project proposes the development of urban uses on the Project site. The Project site is generally surrounded by large areas of natural open space, with existing residential development to the west of the Project site. Historically, grazing and dry farming occurred on the Project site and surrounding area. However, currently, there are no active agricultural operations in the immediate vicinity of the Project that could be impacted by development of the Project site or that would be influenced to convert to a non-agricultural use. Due to the lack of active

agricultural operations on the Project site or in its immediate vicinity, the potential to cause the conversion of off-site agricultural resources to a non-agricultural use or adversely impact the viability of agriculture on land under a Williamson Act contract is considered *less than significant*.

3.1.2.3 Conflicts with Agricultural Zoning and Williamson Act Contracts

Guidelines for the Determination of Significance

A significant impact to agricultural resources would occur from the Project due to the following:

- The Project conflicts with a Williamson Act contract or the provisions of the California Land Conservation Act of 1965 (Williamson Act).

Rationale for Selection of Guidelines

The significance threshold for zoning and Williamson Act contract lands is based on the County of San Diego Guidelines for Determining Significance, Agricultural Resources (County of San Diego 2007). This guideline requires that any Williamson Act contract lands in the area surrounding a project be identified, and addresses the project's potential impact on those lands or the applicable provisions of the Williamson Act.

Analysis

The Project site is not subject to any Williamson Act contracts and there are no Williamson Act contract lands in the immediate vicinity of the Project site. Although grazing activities occurred on the Project site, it does not lie within an "agricultural preserve," as designated by County Policy I-38. Additionally, the Project site is zoned by the County as S88 Specific Plan and S80 Open Space, which are not agricultural zones. Therefore, the Project would have *no impact* related to Williamson Act contracts or agricultural zoning.

3.1.3 Cumulative Impact Analysis

The Project site and vicinity are within a coastal area climate zone, which is one of the few areas in California and the United States where off-season crops are grown. This climate zone has been subject to continued conversion of agricultural lands to urban development, and will continue to be subject to such pressures in the foreseeable future. As described in the previously certified Otay Ranch PEIR, there continues to be significant permanent loss of agricultural land within the Otay Ranch area. A variety of urban development projects, including the Otay Ranch Project, have resulted in the conversion of land available for agricultural operations to non-agricultural uses.

However, as discussed in the agricultural analysis above, implementation of the proposed Project would not result in impacts to agricultural resources. There are no significant agricultural soils on the Project site, the Project site is not subject to any Williamson Act contracts nor is the site adjacent to lands under a Williamson Act contract, and the Project site was found not to be a

significant agricultural resource by the LARA Model. In addition, the Project site is not currently in agricultural production, nor is any of the land immediately surrounding the site. Because the proposed Project would not result in any significant impacts to agricultural resources or convert other land currently in agricultural use, it would not have a considerable contribution to cumulative agricultural resources impacts that may accrue from other projects in the region. Therefore, implementation of the ***proposed Project would not result in a significant cumulative impact*** to agricultural resources.

3.1.4 Significance of Impacts Prior to Mitigation

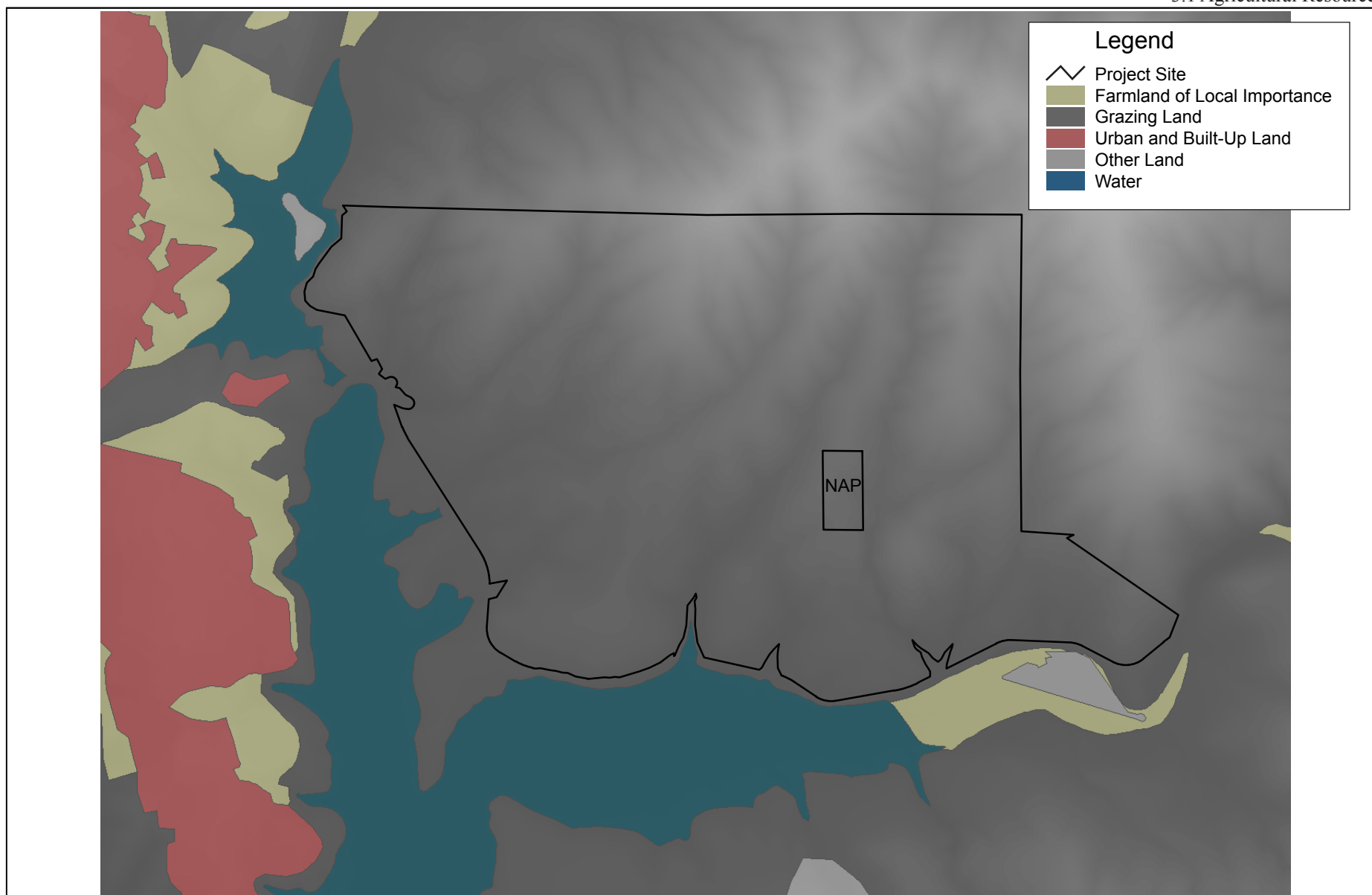
Based on the above analysis, implementation of the proposed Project would not result in any significant direct, indirect, or cumulative impacts to agricultural resources.

3.1.5 Mitigation

As discussed above, implementation of the proposed Project would not result in any significant impacts to agricultural resources. Therefore, no mitigation is required.

3.1.6 Conclusion

As described above, the Project site was found not to be a significant agricultural resource pursuant to the LARA Model. There are no on-site soils that meet the designation for Prime Farmland or Statewide Importance soils. The Project site and immediate surrounding vicinity are not subject to any Williamson Act contracts. In addition, the Project site is not zoned for agricultural uses. No agricultural operations currently occur on-site or in the immediate vicinity of the Project site. Therefore, implementation of the proposed Project would ***not result in any significant impacts*** to agricultural resources.



SOURCE: Farmland Mapping and Monitoring Program 2002

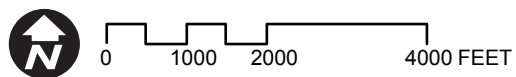


Figure 3.1-1
Farmland Mapping and Monitoring Program Categories

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3.2 Hydrology and Water Quality

The following section provides a Project-level analysis of the potential impacts related to hydrology and water quality that may result from implementation of the proposed Project. The potential impacts of the proposed Project related to hydrology and water quality are evaluated in detail in the Otay Ranch Resort Village Drainage Study and the Major Stormwater Management Plan (SWMP), which includes a Hydromodification Management Plan for the Project and portions of Otay Lakes Road that will be widened and realigned by the Project. Copies of the two reports are provided as **Appendix C-13 and C-14**, respectively, to this EIR.

The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to hydrology and water quality for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR included a Water Resources and Water Quality section and identified potential hydrologic impacts from inundation of Project features, changes in surface water flow rates, surface water quality, and groundwater quantity and quality. The PEIR identified as mitigation the preparation of a comprehensive drainage master plan with the first development project and preparation of detailed hydrologic and hydraulic studies with each phase of development. Implementation of an urban runoff system was required to prevent dry weather urban runoff from impacting the Otay Lakes. Impacts to the groundwater from a decrease in recharge from developed areas within the 23,088-acre Otay Ranch were determined to be partially mitigated by utilizing unlined natural channels and water quality basins wherever possible. This recharge system was intended to partially replace the Project impact of a 25 percent reduction in runoff being diverted from the Otay Lakes. The PEIR concluded that the potential hydrology and water quality impacts could be mitigated to less-than-significant levels with incorporation of site-specific mitigation measures into the design and construction of each project within Otay Ranch. The Otay Ranch PEIR is incorporated by reference in this EIR, and is available for public inspection and review at the County of San Diego, PDS, 5510 Overland Ave., San Diego, California.

3.2.1 Existing Conditions

3.2.1.1 *Hydrologic Setting*

The Project site is located in the southwestern portion of the San Diego Basin. The San Diego Basin is divided into 11 hydrologic units and 54 hydrologic subunits, which are based primarily on surface water drainage basins. The Project site is located within the Savage Hydrologic Subarea, Dulzura Hydrologic Area, and Otay Hydrologic Unit of the San Diego Hydrologic Basin (Basin No. 910.31).

The Project site is currently undeveloped. The existing topography of the Project site is characterized by steep hills, incised canyons, and mostly natural vegetation, dominated by coastal sage scrub with substantial amounts of grassland and chaparral. Surface drainage of the Project site is to the south-southwest, toward Lower Otay Lake. The area analyzed by the Project's Drainage Study and SWMP includes the Project site and an approximately 4.2-mile

section of Otay Lakes Road that will be widened and realigned by the proposed Project. Runoff from the site and drainages upstream of Otay Lakes Road drains via 23¹⁹ existing culverts under Otay Lakes Road to Lower Otay Lake. 16 of the 23 existing culverts are currently undersized for existing drainage conditions, which would result in potential roadway overtopping during a 100-year storm event. Accordingly, the existing culverts require upsizing to prevent roadway overtopping. Currently, no development exists in off-site areas that drain through the Project site or into culverts affected by the widening and realignment of Otay Lakes Road as a result of the Project.

Lower Otay Lake serves as both a drinking water reservoir approximately 50,000 acre-feet in volume (which is owned and operated by the City of San Diego Water Department) and the southern terminus of the San Diego County Water Authority (SDCWA) Second San Diego Aqueduct (which carries imported water to the San Diego area). Thus, water in Lower Otay Lake is a blend of water from the local watershed and water imported from the Colorado River and the California State Water Project. As discussed below, the City of San Diego has prepared Source Water Protection Guidelines (SWPG) to guide new development activities on properties that drain into reservoirs such as Lower Otay Lake.

3.2.1.2 Water Quality Setting

The beneficial uses identified in the RWQCB Water Quality Plan for Lower Otay Lake and upstream unnamed tributaries include municipal and domestic supply, agricultural supply, industrial process supply, industrial service supply, recreational uses, cold and warm freshwater habitat, wildlife habitat, biological habitats of special significance (unnamed tributaries only), and rare species habitats (unnamed tributaries only).

The Project site and the associated watershed were compared to the current published federal Clean Water Act (CWA) Section 303(d) List of Water Quality Limited Segment (Section 303[d] List), which lists the surface waters that do not meet applicable water quality standards, required pursuant to Section 303(d) of the CWA. Lower Otay Lake has been identified on the Section 303(d) List as sensitive to color, iron, manganese, nitrogen, ammonia, and high pH. As a result, primary pollutants of concern consist of heavy metals and nutrients. Secondary pollutants of concern include sediment, organic compounds, trash and debris, oxygen-demanding substances, viruses and bacteria, oil and grease, and pesticides.

Additionally, under the City of San Diego SWPG, the highest priority pollutants of concern include nutrients (nitrogen and phosphorus), total organic carbon (TOC) derived from excess nutrients, decaying vegetation, algae growth, metabolic activities of living organisms or chemicals, and total dissolved solids (TDS). Primary sources for TDS in the drainage basin are residential development to the west of the Reservoir and agricultural runoff and leaching of soil contamination. The most common chemical constituents are calcium, phosphates, nitrates,

¹⁹ A 24th culvert, (culvert #3), exists off-site underneath Otay Lakes Road to the west of the Project site. The culvert is a set of twin box culverts running underneath Otay Lakes Road that conveys flows from Upper Otay Lake to Lower Otay Lake. Although this culvert is not affected by drainage from the Project site, it would require lengthening as part of the widening of Otay Lakes Road in that area.

sodium, potassium, and chloride. For the purpose of this analysis, the adverse impact from TDS is also referred to as “salt loading”.

3.2.1.3 Regulatory Setting

Federal Regulations

FEMA Flood Plain Management Standards

The Federal Emergency Management Agency (FEMA) is the primary federal agency with the responsibility of administering programs and coordinating with communities to establish effective flood plain management standards. FEMA is responsible for developing the Flood Insurance Rate Map (FIRM), which delineates Special Flood Hazard Areas and flood risk zones. State and local agencies are responsible for implementing regulations, ordinances, and policies in compliance with FEMA requirements to address floodplain management issues.

Federal Clean Water Act

The Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), was adopted in 1972 and established basic guidelines for regulating discharges of pollutants into waters of the United States. The CWA set up a system of water quality standards, discharge limitations, and permits to protect the designated beneficial uses of water resources. The CWA also requires that states adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the CWA.

The CWA was amended in 1987, which established the NPDES permit program, authorized by Section 402 of the CWA. Other relevant provisions of the CWA include Section 401, which requires that applicants for federal permits relating to the construction or operation of a facility that may result in the discharge of a pollutant obtain certification of those activities from the state in which the discharge originates. Section 404 of the CWA establishes a permitting program to regulate the discharge of dredged or filled material into waters of the United States, which is administered by the USACE and enforced by USEPA. In California, USEPA has authorized the State Water Resources Control Board (SWRCB) to implement the NPDES program.

Federal Antidegradation Policy

The federal antidegradation policy has been in existence since 1968. The policy protects existing uses, water quality, and national water resources. It directs states to adopt a statewide policy that includes the following primary provisions:

- maintain and protect existing instream uses and the water quality necessary to protect those uses;
- where existing water quality is better than necessary to support fishing and swimming conditions, maintain and protect water quality unless the state finds that allowing lower water quality is necessary for important local economic or social development; and

- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, maintain and protect that water quality.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) was established to create a regulatory program to protect water quality and beneficial uses of the state's waters. Accordingly, the Act established the responsibilities and authorities of the SWRCB and the nine RWQCBs.

State Water Resources Control Board

The SWRCB issues stormwater permits in accordance with the NPDES program, which requires regulated entities to obtain coverage under an NPDES stormwater permit and implement a storm water pollution prevention plan (SWPPP) or a storm water management plan (SWMP), and to utilize Best Management Practices (BMPs) to reduce or prevent the discharge of pollutants into receiving waters, as described further below.

San Diego Regional Water Quality Control Board

The San Diego RWQCB is responsible for implementing and enforcing the laws and regulations regarding water quality in the San Diego region. With regard to storm water runoff, RWQCB requires compliance with RWQCB regulations and the applicable provisions of the federal CWA, including NPDES criteria and permitting. The RWQCB San Diego Basin Plan is the Water Quality Control Plan for the San Diego Basin and establishes the beneficial uses and water quality objectives for surface and groundwater resources. The beneficial uses for Lower Otay Lake are described above in Section 3.2.1.2.

The NPDES Storm Water Program addresses non-agricultural sources of storm water runoff that adversely affect the quality of the Country's waters. Under the NPDES Program, regulated entities must obtain coverage under an NPDES storm water permit and implement a SWPPP or a SWMP, and must utilize BMPs to reduce or prevent the discharge of pollutants into receiving waters. NPDES storm water permit regulations generally cover the following classes of storm water dischargers: operators of municipal separate storm sewer systems (MS4), operators of certain industrial facilities, and operators of construction activities that disturb 1 or more acre of land. Implementation of the proposed Project requires conformance with the NPDES Storm Water Program's Construction General Permit and the Municipal Permit, as defined and described below.

Construction General Permit

Dischargers whose projects disturb 1 or more acres of soil, or less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain

coverage under the SWRCB's Order 2012-0006-DWQ (amending Order 2009-0009-DWQ as amended by 2010-0014-DWQ), the Construction General Permit (SWRCB 2012). Construction and demolition activities subject to this permit include clearing, grading, grubbing, and excavation, or any other activity that results in a land disturbance equal to or greater than 1 acre.

Permit applicants are required to submit a Notice of Intent to the SWRCB and to prepare a SWPPP. The SWPPP must identify BMPs that are to be implemented to reduce construction impacts on receiving water quality based on potential pollutants. The SWPPP also must include descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases are completed at a site (post-construction BMPs).

The Construction General Permit includes several additional requirements (as compared to the previous Construction General Permit, 2009-0009-DWQ), including risk-level assessment for construction sites, a storm water effluent monitoring and reporting program, rain event action plans, and numeric action levels for pH and turbidity.

San Diego County Municipal Storm Water Permit (R9-2013-0001)

Under Phase I of its storm water program, USEPA published NPDES permit application requirements for municipal storm water discharges for municipalities that own and operate separate storm drain systems serving populations of 100,000 or more, or that contribute significant pollutants to waters of the U.S. The proposed project is subject to the San Diego Municipal Storm Water NPDES Permit (Municipal Permit) under Order R9-2013-0001. The proposed project design would have to comply with requirements and measures outlined in this municipal permit to minimize impacts to water quality and runoff hydrology for the construction and operational phases of the proposed project life.

The Municipal Permit requires that each copermittee covered under the permit (i.e., a variety from San Diego, Orange, and Riverside counties) prepare Water Quality Improvement Plans (WQIPs), establish action levels for non-storm water and storm water pollutants, monitor and assess program requirements, and update Jurisdictional Urban Runoff Management Plans (JURMPs). JURMPs address water pollution management for construction activities, development planning, and existing development management.

The local jurisdictions within the San Diego region regulate water quality through a variety of ordinances and guidelines, including but not limited to, jurisdictional urban runoff management programs and storm water standards. In accordance with the provisions of the Municipal Permit, the County of San Diego developed a Standard Urban Storm Water Mitigation Plan (SUSMP) (County of San Diego 2011a). The SUSMP identifies mitigation strategies required to protect storm water quality for new development and significant redevelopment within the San Diego region. Development within each respective County of San Diego municipality is subject to each respective SUSMP, accordingly.

Local Regulations and Standards

San Diego County General Plan

The Safety Element of the San Diego County General Plan includes goals and policies regarding flood hazards to minimize personal injury and property damage losses resulting from flood events; and to maintain adequate capacity in floodways and floodplains to accommodate flood events. Policy LU-6.5, Sustainable Stormwater Management, in the Land Use Element states: “Ensure that development minimizes the use of impervious surfaces and incorporates other Low Impact Development techniques as well as a combination of site design, source control, and stormwater best management practices, where applicable and consistent with the County’s Low Impact Development (LID) Handbook.”

County of San Diego Flood Damage Prevention Ordinance

The Flood Damage Prevention Ordinance (County Code of Regulatory Ordinances Section 811.101-811.104) identifies Special Flood Hazard Areas throughout the County as having a special flood or flood-related erosion/sedimentation hazard and as being shown on a FIRM or on a County floodplain map. The ordinance also defines methods to reduce flood losses. By complying with the requirements of this ordinance, a project is considered to be in compliance with FEMA regulations.

County of San Diego Grading Ordinance

The Grading Ordinance (County Code of Regulatory Ordinances sections 87.601-87.608) combines regulations affecting grading and land clearing with activities affecting watercourses.

County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance

The San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) defines the storm water management requirements that are legally enforceable by the County in the unincorporated areas. As referenced in Section 67.810 of the WPO, the County prepared a detailed Storm Water Standards Manual (SSM), which is a guidance document addressing the use of pollution prevention practices and BMPs for specific activities or facilities. The WPO also addresses connections for, and disposal of, storm water, and incorporates the County’s LID Handbook, which is a guidance document that provides a comprehensive list of LID planning and storm water management techniques that emphasize storm water infiltration, conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic conditions.

County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects

The County developed the Standard Urban Storm Water Mitigation Plan (SUSMP) for proposed land development and public improvement projects. The SUSMP is mandated for significant new development and redevelopment projects, including “Priority Projects,” which are defined in the NPDES Municipal Permit to include residential development of ten or more dwelling units or commercial development greater than 1 acre. The proposed Project is classified as a Priority Project and, therefore, is subject to the SUSMP requirement to prepare a Major Stormwater Management Plan, which has been prepared for the proposed Project and is included as **Appendix C-14** of this EIR.

The County’s SUSMP is focused on improving the quality of stormwater runoff through BMPs for project design and related post-construction activities. The SUSMP requires a project applicant to develop and submit a SWMP that complies with the requirements of the WPO and the SSM. The SWMP serves as the basis for long-term water quality improvements and the SUSMP requires that Priority Projects be designed to minimize, to the maximum extent practicable, the introduction of pollutants and creation of conditions that may result in significant impacts generated from site runoff to the stormwater conveyance system. Priority Projects also must control post-development peak stormwater runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion and to protect stream habitat. Thus, the proposed Project must implement site design, source control, and treatment control BMPs to address both water quality and hydrologic impacts.

San Diego County Hydrology Manual

The San Diego County Hydrology Manual (County of San Diego 2003) provides uniform procedures for analyzing flood and stormwater conditions in the County. Specific elements of these procedures include methods to estimate storm flow peaks, volumes, and time distributions. These data are used in the design of stormwater management facilities to ensure appropriate dimensions and capacity (typically 100-year storm flow volumes), pursuant to applicable requirements in the San Diego County Drainage Design Manual (County of San Diego 2005).

San Diego County Hydromodification Management Plan

San Diego Regional Water Board Order R9-2007-0001 requires that hydromodification and its influence on water quality be addressed through the implementation of a Hydromodification Management Plan (HMP) to manage increases in runoff discharge rates and durations (10% of Q2 to Q10 rainfall events) from priority development projects. The HMP is required to identify increased frequencies and durations of runoff that could cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force. The HMP must establish standards to control flows and avoid erosion. Supporting analyses must be based on continuous hydrologic simulation modeling. Consistent with this directive, the County has prepared the San Diego County HMP.

The Final HMP (County of San Diego 2011c) exempts certain project discharges to Lower Otay Lake from the County's hydromodification management requirements. However, this exemption only applies to outfalls with a proposed invert elevation below the lake's high water level of 490.7 feet AMSL at the spillway with gates closed. Based on this threshold, the Project has nine (9) Points of Compliance requiring hydromodification analysis. Four outfall locations along Otay Lakes Road (culverts 1a, 1b, 19, and 20), one along Wueste Road, and four internal outfalls along Strada Piazza, proposed by the Project are subject to hydromodification analysis since they are designed with culvert outlet elevations above this level.

City of San Diego Source Water Protection Guidelines

The City of San Diego, which owns and operates Lower Otay Lake as a public water supply reservoir, has conditioned development projects upstream of the reservoir to protect it from stormwater pollution through a non-degradation policy with regard to TDS. The City also has developed Source Water Protection Guidelines to guide future activities, including development projects, in San Diego County watersheds that drain into drinking water reservoirs. The guidelines provide a simplified BMP selection process to ensure that preferred source water protection BMPs are considered. Although use of these guidelines is voluntary, the water quality protection principles included in the guidelines are intended to ensure project consistency with state and local stormwater permit requirements.

Otay River Watershed Management Plan

The Otay River Watershed Management Plan (Otay River Watershed Management Plan Joint Exercise of Powers Agreement Public Agencies 2006) was prepared pursuant to a Joint Exercise of Powers Agreement between the County, the cities of San Diego, Chula Vista, and Imperial Beach, and the San Diego Unified Port District. The purpose of the plan is to provide a comprehensive framework management plan to guide on-going watershed uses; source water protection; and other resource protection, enhancement, and restoration activities. To achieve that purpose, the plan does the following: (1) characterizes the watershed's various natural resources and land uses; (2) identifies key goals; (3) assesses and prioritizes threats to existing beneficial uses and natural resources; (4) identifies strategies for the protection, enhancement, and restoration of beneficial uses and natural resources in the watershed, including source water protection and a water quality monitoring strategy; (5) provides adaptive management strategies and objectives to monitor and evaluate the effectiveness of the strategies and proposes potential remedial actions; and (6) prepares the plan so that it can be easily updated to reflect changes in physical, biological, chemical, land use, and regulatory conditions.

The Otay River Watershed Management Plan is not a regulatory document. Rather, it is a policy document intended to be consistent with the regulatory requirements under the NPDES Municipal Permit, applicable local general plans, and local resource plans and programs. As such, it is designed to serve as a programmatic advisory document for decision makers to use as a tool. The strategies outlined in the plan are only recommendations that may need to be refined by each jurisdiction.

San Diego Integrated Regional Water Management (IRWM) Plan, including Appendix 7-B (Integrated Flood Management Planning Study)

The San Diego IRWM Plan was prepared under the direction of a Regional Water Management Group consisting of the San Diego County Water Authority, the County of San Diego, and the City of San Diego. The IRWM Plan builds on local water and regional management plans within the San Diego Region and is aimed at developing long-term water supply reliability, improving water quality, and protecting natural resources. The Statewide IRWM Program is supported by bond funding provided by the California Department of Water Resources (DWR) to fund competitive grants for projects that improve water resources management.

The goals of the IRWM Plan include the following:

- Improve the reliability and sustainability of regional water supplies;
- Protect and enhance water quality;
- Protect and enhance our watersheds and natural resources, and
- Promote and support sustainable integrated water resource management.

Appendix 7-B of the IRWM Plan, Integrated Flood Management Planning, is a guidance document aimed to facilitate an integrated water resources approach to flood management. The planning document defines general applicable strategies and approaches, as well as provides planning level tools, to guide flood management decision making on a watershed basis. The focus of integrated planning is a balance between community flood management needs with environmental constraints and watershed resources to ensure an acceptable solution with the flexibility to adapt to future changes.

Construction Dewatering Permit

Construction dewatering discharges must be permitted either by the San Diego RWQCB under the general Order 2001-96 (NPDES No. CAG919002) for construction dewatering discharge to surface waters or authorized to discharge to local publicly owned treatment works (i.e., industrial or sanitary sewer system of municipal wastewater treatment plants). Discharge via either of these mechanisms must meet applicable water quality objectives, constituent limitations, and pretreatment requirements.

3.2.2 Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

Hydrology

A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on hydrology, absent specific evidence of such effect:

- The project will substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.
- The project will increase water surface elevation in a watercourse within a watershed equal to or greater than 1 square mile by 1 foot or more in height, and, in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River, and Otay River, 2/10 of a foot or more in height.
- The project will result in increased velocities and peak flow rates exiting the Project site that would cause flooding downstream or exceed the stormwater drainage system capacity serving the site.
- The project will result in placing housing, habitable structures, or unanchored impediments to flow in a 100-year floodplain area or other special flood hazard area, as shown on a FIRM, a County Flood Plain Map, or County Alluvial Fan Map, which would subsequently endanger health, safety, and property due to flooding.
- The project will place structures within a 100-year flood hazard or alter the floodway in a manner that would redirect or impede flow resulting in any of the following:
 - Alter the Lines of Inundation resulting in the placement of other housing in a 100-year flood hazard; or
 - Increase water surface elevation in a watercourse with a watershed equal to or greater than 1 square mile by 1 foot or more in height and, in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River, and Otay River, 2/10 of a foot or more in height.

Rationale for Selection of Guidelines

The significance guidelines for hydrology are from the County of San Diego Guidelines for Determining Significance for Hydrology, dated July 30, 2007.

Water Quality

A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on water quality, absent specific evidence of such effect:

- The project is a development project, as defined in the WPO, County of San Diego Code of Regulatory Ordinances (Regulatory Ordinances) Section 67.803, and does not comply with the standards set forth in the County SSM or the Additional Requirements for Land Disturbance Activities set forth in the WPO, Regulatory Ordinances Section 67.811.
- The project would drain to a tributary of an impaired water body listed on the Clean Water Act Section 303(d) List, and will contribute substantial additional pollutant(s) for which the receiving water body is already impaired.

- The project would drain to a tributary of a drinking water reservoir and will contribute substantially more pollutant(s) than would normally run off from the Project site under natural conditions.
- The project will contribute pollution in excess of that allowed by applicable state or local water quality objectives or will cause or contribute to the degradation of beneficial uses.
- The project does not conform to applicable federal, state, or local “Clean Water” statutes or regulations including, but not limited to, the federal Water Pollution Control Act, California Porter-Cologne Water Quality Control Act, and the County WPO.

Rationale for Selection of Guidelines

The significance guidelines for water quality identified above are based on the County of San Diego Guidelines for Determining Significance for Surface Water Quality, dated July 30, 2007.

3.2.2.1 Hydrology

Guideline for the Determination of Significance

A significant impact to hydrology would occur if the project would do the following:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

Analysis

Development of the Project, including the widening and realignment of an approximately 4.2-mile section of Otay Lakes Road from Lake Crest Drive in the City of Chula Vista to the Project’s eastern boundary, would not divert drainage to or away from Lower Otay Lake, however, it would result in alterations to drainage patterns and drainage areas as compared to the existing drainage patterns on the Project site and along Otay Lakes Road as shown in **Figure 3.2-1** (Existing) and **Figure 3.2-2** (Proposed).

Under existing conditions, all runoff from the proposed Project drains to Lower Otay Lake via 23 existing culverts located under Otay Lakes Road. Some of the existing culverts are undersized, resulting in overtopping of Otay Lakes Road during peak runoff events. A 24th culvert, a set of twin box culverts denoted as Crossing #3, exists under Otay Lakes Road to the west of the Project site that would be upgraded by the widening and realignment of Otay Lakes Road, however the drainage area for this culvert would not be affected by these road improvements or development of the Project site. The locations of the 24 culverts can be seen in **Figure 3.2-3**.

Development of the Project would internally alter the course of drainage areas, but not in a manner that would result in a substantial increase in erosion or siltation on- or off-site. The Project would consolidate 23 existing culverts under Otay Lakes Road into 14 new upgraded culverts sized to convey the 100-year storm event and extend an existing set of twin box culverts

(Crossing #3) with the widening of Otay Lakes Road. The locations of the 14 new upgraded culverts and the set of extended twin box culverts (Crossing #3) can be seen in **Figure 3.2-4**. Of the 14 culverts in the proposed condition, 10 culverts would discharge below the high water surface elevation of 490.7 feet for the Reservoir. Therefore, the erosion potential at these submerged points would be minimal to non-existent. Out of the 795 total acres of developed/disturbed area for the Project, runoff from approximately 771.3 acres (97%) would be tributary to these 10 culverts. In other words, 97% of the Project's disturbed/developed area would be effectively discharging treated runoff directly into Lower Otay Lake at these 10 culverts which are at the high water mark of the Reservoir. Of the 771.3 acres of the Project's development runoff, 659.9 acres would be treated in bioretention basins, 63.8 acres would be treated at a storm drain inlet treatment control device (e.g., Filterra Unit or equivalent inlet treatment device), and the remaining 47.5 acres would be "self-treating" irrigated landscaped slopes with typical manufactured slope drainage control.

The remaining 23.7 acres (3%) of the Project's developed/disturbed area would contribute runoff to one of the four culverts along Otay Lakes Road (1a, 1b, 19, and 20) that are above Lake's high water mark and/or culverts internal to the Project site and, therefore, were analyzed for the potential to create downstream erosion. In addition to the four culverts along Otay Lakes Road, four additional culverts proposed along Strada Piazza (internal to the Project site), and an off-site area along the future realignment of Wueste Road—nine "Points of Compliance" (POCs) in total—have outlets that are above the reservoir's high water surface elevation. As such, these areas were analyzed to comply with hydromodification requirements. The locations of these areas are shown in **Figure 3.2-5A** and **3.2-5B**.

For these nine POCs, the San Diego Hydrology Model (SDHM) was used, along with requirements within the County of San Diego Final HMP, to run a continuous simulation model of the pre-Project and post-Project conditions. The post-Project SDHM model is required to demonstrate that post-Project discharge rates and durations at each Point of Compliance (POC) will not exceed the pre-Project discharge rates and durations by more than 10 percent for the range of storm events beginning with a 2-year event and up to a 10-year event.

The drainage areas that contribute runoff to culverts 19 and 20, the remaining two of the four culverts under Strada Piazza, and the area at Wueste Road (POC's 1, 2, 5, 6, and 9), all decrease in size as a result of the proposed Project improvements and, therefore, reduce the erosion potential at these outfalls. Hydromodification analysis conducted for these five POCs showed that the proposed frequency and duration curves would not exceed the existing conditions and, therefore, hydromodification measures are not required for these areas of the Project.

In the remaining four locations (1a and 1b along Otay Lakes Road and two of the culverts under the Project's internal backbone street "Strada Piazza", POCs 3, 4, 7, and 8, respectively), comprising approximately 11.5 acres in total, the Project would increase the impervious surface of the drainage area, and, therefore, would be subject to hydromodification requirements. Appropriate water quality/hydromodification basins in the form of vegetated roadside bioretention swales with flow-control outlet devices have been designed for these areas which would prevent erosion from occurring downstream of the outfalls for these basins.

The Project's bioretention basins, vegetated roadside bioretention swales, and Filterra Units constitute the Project's storm water capture and treatment BMPs (**Treatment Control BMPs**). The locations of these BMPs can be seen in **Figure 3.2-6**. Internally, the Project's proposed drainage system and storm water capture and treatment BMPs for onsite areas and the improvements to Otay Lakes Road are designed to prevent a substantial increase in erosion on-site. Under the developed condition, the Project's streets are designed to drain directly into the Project's storm drain system. The storm drain system is designed to capture runoff from the developed portions of the Project area, including graded homesites/building pads and impervious surfaces such as rooftops, roads, and parking lots and direct that runoff into the Project's storm water capture and treatment BMPs. Prior to discharge, most of the Project's runoff is directed into bioretention basins and the remainder of the Project's runoff is directed into vegetated roadside swales or storm drain inlet treatment control devices (e.g., Filterra Units or equivalent inlet treatment devices) prior to discharge into the Reservoir or into natural drainages feeding the Reservoir. By directing runoff from developed areas directly into the Project storm drain system and capturing and treating that runoff in storm water BMPs prior to discharge, the proposed Project will prevent any significant increase in erosion on-site.

As discussed above, a small percentage of the Project site and portions of Otay Lakes Road would discharge treated storm water runoff above the high water mark of the reservoir and are, therefore, subject to hydromodification requirements. Runoff at these locations would be directed into vegetated roadside swales for treatment and hydromodification attenuation. The vegetated roadside swales will be outfitted with flow control devices to control the rate of discharge out of the basin for those higher frequency storms subject to hydromodification requirements (10% of Q2 up to Q10) to prevent the downstream erosion and scouring that tends to occur without hydromodification attenuation upstream during these storm events. The outlet devices will ensure that post-development flows will not exceed pre-development flows for those higher frequency storms, thereby preventing downstream erosion and scouring.

The treatment and detention of storm water runoff by the Project would ensure that flows from developed areas, including those widened and realigned portions of Otay Lakes Road, receive pollutant treatment and removal and, where applicable, hydromodification attenuation before discharging runoff into onsite and offsite drainages and ultimately into Lower Otay Lake. The Project's storm water treatment system would also trap any sediment, trash, and debris in the runoff from the developed areas, thereby preventing these pollutants from entering Lower Otay Lake. Finally, it is important to note that runoff from the 4.2-mile section of Otay Lakes Road to be widened and realigned will be subject to water quality treatment in vegetated roadside swales and storm drain treatment control devices (e.g., Filterra Units). Currently, runoff from the road flows directly into Lower Otay Lake or nearby drainages without any treatment or hydromodification attenuation. Thus, the proposed Project would result in a substantial decrease in the amount of pollutants entering the Reservoir today in runoff from the existing Otay Lakes Road.

While the proposed Project would alter the existing drainage pattern of the Project site and certain offsite areas affected by the widening and realignment of Otay Lakes Road, runoff from 97% of the Project's developed/disturbed area will be discharged below the high water mark of the Reservoir, thereby minimizing any potential to cause erosion off-site, and runoff from those

four areas of the Project that would be discharged above the high water mark of the Reservoir would be subject to hydromodification attenuation, thereby preventing any increased in erosion on- or off-site at these locations. The Project's drainage system and storm water capture and treatment system (BMPs) are designed to prevent any significant increase in erosion on-site.

As is the case with erosion potential, the Project is also designed to prevent a substantial increase in siltation on- or off-site. As stated above, the Project's storm drain system would isolate and direct runoff into the Project's water quality basins (bioretention basins and vegetated roadside swales) or, in some cases, storm drain inlet treatment devices (e.g., Filterra Units or equivalent inlet treatment devices). The Project's water quality basins and storm drain inlet treatment devices are designed to trap and remove sediment in runoff from the developed areas of the Project.

In most cases, natural runoff from the undeveloped areas of the Project site would continue to drain directly to Lower Otay Lake and would not mix with untreated runoff from the developed areas until downstream of the proposed basins. In some cases however, to avoid duplication of storm drain piping, runoff from contributing natural areas upstream of developed areas, comprising approximately 338 acres in total, would be collected by the Project's storm drain system and directed to a bioretention basin with Project runoff. In such cases, the Project's proposed basins are designed to be large enough to treat the Project runoff as well as the additional volume of runoff from the contributing natural areas. Accordingly, runoff from these natural areas draining into the basins would undergo sediment removal prior to discharge into Lower Otay Lake, providing an additional benefit to the Reservoir. According to San Diego County SUSMP (Sept. 2012), water quality basins (bioretention basins and vegetated roadside swales) have a high pollutant removal efficiency for coarse and fine sediment/particles and Filterra Units have a high pollutant removal efficiency for coarse sediments and a medium pollutant removal efficiency for fine sediment/particles. Thus, the incorporation of bioretention basins, vegetated roadside swales, and Filterra Units (or equivalent inlet treatment control device) to capture and treat runoff from the developed areas as well as runoff from some natural areas would prevent any substantial increase in siltation on- or off-site and ultimately into Lower Otay Lake.

It is important to note that, with the reduction in the number of culverts, peak storm flows at individual culverts would increase, however the internal diversion between the culverts is not significant because all proposed culverts would be sized to safely convey the 100-year peak storm flows with the Project in its developed state. Rip-rap improvements would be required at all culvert discharges as a standard condition of development, further reducing the erosion potential at the outfall of these structures. The locations of the new upsized culverts are shown on **Figure 3.2-4**. **Table 3.2-2** shows the 100-year peak flow discharge velocities at the culverts under the existing condition and with full development of the proposed Project and lists the existing and proposed Project culvert sizes needed to accommodate the increased volume of runoff from the Project.

As shown in **Table 3.2-1**, when all of the individual post-development peak flows are combined, the Project would increase 100-year peak flow by an estimated 617 cubic feet per second (cfs) from approximately 2,900 cfs in the pre-development condition to 3,517 cfs in the post-

development condition. In addition, alterations to the internal drainage pattern would result from development of the Project site through the conversion of natural surfaces to impervious surfaces and through activities such as grading, excavation, and construction. However, the proposed Project would not result in a change to the overall drainage area draining into Lower Otay Lake and many potentially erodible reaches of intermittent creeks would be reduced as a consequence of development of the Project. Therefore, some erosion that may be taking place under existing conditions would not occur in post-development conditions.

The proposed Project would also incorporate design considerations, such as construction and post-construction BMPs, as detailed in the SWMP prepared for the proposed Project and as discussed further below, which would avoid or reduce erosion and sedimentation associated with the increase in stormwater runoff.

In summary, the proposed Project would not substantially alter the existing drainage pattern of the site or the area in manner that would cause substantial erosion or siltation on- or off-site. The proposed Project would result in alterations to the internal drainage pattern of the Project site or portions of Otay Lakes Road to widened and realigned that have the potential to result in erosion, however, as discussed above, 97% of the Project's developed/disturbed areas will be discharging below the high water mark of the Reservoir, those areas of the Project discharging above the high water mark will be directed into vegetated roadside swales to prevent hydromodification/erosion downstream, and the Project's drainage system and storm water capture and treatment BMPs are designed to comply with all applicable regulations, including the standards in the County's Drainage Design Manual and SSM, to prevent onsite erosion. As set forth in the SWMP, Treatment Control BMPs (bioretention basins, vegetated roadside swales, and storm drain inlet treatment devices such as Filterra Units) which have a high to medium removal efficiency for sediment, as well as source control BMPs would be incorporated into the proposed Project design (described further below) to capture sediment and other pollutants prior to runoff being discharged from the Project site. Finally, the 14 new culverts would be sized to safely convey 100-year peak flows and rip rap would be required at the outlet of all culverts to prevent downstream erosion. Therefore, the alterations in the drainage pattern as a result of the proposed Project are not likely to result in substantial erosion or siltation on-site or off-site, and impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to hydrology would occur if the project would do the following:

- The project will increase water surface elevation in a watercourse within a watershed equal to or greater than 1 square mile by 1 foot or more in height, and, in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River, and Otay River, 2/10ths of a foot (0.2 foot) or more in height.

Analysis

As discussed above, development of the Project site would internally alter certain drainage areas discharging into the culverts located under Otay Lakes Road. After flowing under Otay Lakes

Road, runoff would discharge to Lower Otay Lake, which is a man-made drinking water reservoir managed by the City of San Diego Public Utilities Department. The reservoir collects and stores water from upstream areas totaling 98 square miles, including the Project site (approximately 2.95 square miles) and operates under conditions of fluctuating water levels. However, as shown in **Table 3.2-1**, and as discussed above and further below, the proposed Project would not substantially alter the drainage pattern or substantially increase the overall amount of runoff draining into Lower Otay Lake. Moreover, the capacity of Lower Otay Lake is sufficient to convey any potential peak flow increases, due to the ability of the reservoir operators to fluctuate water levels through the use of the spillways as well as outletting water to the City's water treatment plant. Thus, the proposed Project would not have an adverse effect on the water surface elevation in Lower Otay Lake and impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to hydrology would occur if the project would do the following:

- The project will result in increased velocities and peak flow rates exiting the project site that would cause flooding downstream or exceed the stormwater drainage system capacity serving the site.

Analysis

As discussed above and as shown in **Figure 3.2-6**, the proposed Project would implement a storm drain system and treatment control BMPs to capture and treat runoff from the developed areas of the Project site. Much of the runoff from those areas of the Project site to remain undeveloped/natural would be conveyed directly to Lower Otay Lake. A portion of runoff from natural areas would be captured by the Project's storm drain system and detained and treated in conjunction with runoff from developed areas by the Project's bioretention basins. As discussed above, the proposed Project would replace the existing 23 culverts with 14 new upgraded culverts and extend a set of existing twin box culverts (Crossing #3). The new and upgraded culverts would be sized to accommodate 100-year peak flows so that overtopping of the roadway is eliminated.

Table 3.2-2, shows that 10 of 23 discharge locations affected by development of the Project would have increased peak flows that would require upgrading of the existing culverts, with only four of those having significantly increased peak flow rates. However, under existing conditions, as stated above, peak flow rates at some existing culverts exceed the capacity of these culverts to accommodate these peak flows, which causes the elevation of the water at the inlet to the culvert to eventually exceed that of Otay Lakes Road, resulting in runoff either overtopping the road or sheet flowing on top of the road to the next low point, where it eventually flows into Lower Otay Lake. The upgraded culverts would eliminate the overtopping and the excessive erosion associated with overtopping by being sized and designed to safely discharge all 100-year peak flows.

In addition, as detailed in **Table 3.2-1**, the proposed Project would result in an approximately 21 percent increase (617 cfs net increase in peak flows) in the combined 100-year event peak flows

into Lower Otay Lake in comparison to the pre-development condition. The existing 100-year peak flow from the total contributing watershed to Lower Otay Lake is approximately 20,000 cfs. The Project's overall increase in flow rates would not impact the capacity of Lower Otay Lake as it has sufficient volume to accept the peak flow increases. Lower Otay Lake has a capacity of 49,850 acre-feet when full and the City of San Diego Long-Range Planning and Water Resources Division has provided data that the average volume of water storage in Lower Otay Lake between 1980 and 2010 was 40,300 acre-feet (City of San Diego 2012). In addition, the maximum water surface elevation is 490.7 feet in a high rainfall year. To accommodate increased winter and spring storm runoff, by October 1 of each year the reservoir's water surface elevation is lowered to at least 484.2 feet through the use of the spillways, which have a capacity of 49,400 cfs. Therefore, due to the large storage volume provided by Lower Otay Lake and the ability of the City of San Diego to control the volume of the reservoir through the use of its spillways, the potential for flooding downstream of the Project site is considered to be minimal, eliminating the need for flood control detention facilities for this Project.

In summary, while development of the Project site would increase design flow rates as compared to pre-development conditions, the increases would not cause downstream flooding or exceed the stormwater drainage system capacity serving the site. The increased flow rates would be accommodated by the substantial runoff capacity and built-in flood control of the Lower Otay Reservoir eliminating a need for flood control for the Project. Furthermore, the increased flow rates would be further accommodated by implementing the Project's BMPs, by increasing the capacity of the culverts under Otay Lakes Road to accommodate the 100-year storm event and eliminate overtopping of the roadway during major storm events, and by installing erosion control in the form of rip-rap at all culvert discharges. Therefore, implementation of the proposed Project would not result in increased velocities or peak flow rates that would cause flooding downstream or exceed the stormwater drainage system capacity serving the Project site. The proposed Project would also eliminate the localized roadway flooding along Otay Lakes Road caused by the existing, undersized culverts under Otay Lakes Road. Therefore, impacts related to increased velocities and flow rates are considered *less than significant*.

Guidelines for the Determination of Significance

A significant impact to hydrology would occur if the project would do the following:

- Result in placing housing, habitable structures, or unanchored impediments to flow in a 100-year floodplain area or other special flood hazard area, as shown on a FIRM, a County Flood Plain Map, or County Alluvial Fan Map, which would subsequently endanger health, safety, and property due to flooding.
- Place structures within a 100-year flood hazard or alter the floodway in a manner that would redirect or impede flow resulting in any of the following:
 - Alter the Lines of Inundation resulting in the placement of other housing in a 100-year flood hazard; or
 - Increase water surface elevation in a watercourse with a watershed equal to or greater than 1 square mile by 1 foot or more in height and, in the case of the

San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River, and Otay River, 2/10 of a foot or more in height.

Analysis

The Project site is located outside any FEMA floodplain boundaries, as depicted in **Figure 3.2-7**, and would not place housing within a 100-year flood hazard area. In addition, prior to recordation of final maps, 100-year flood lines would be established for any lot encumbered by a drainage channel conveying a watershed area in excess of 25 acres. Any such drainage channel floodplain boundary would be clearly delineated on the non-title information sheet of the final maps. Therefore, the impacts related to these issues are considered *less than significant*.

3.2.2.2 Water Quality

Guideline for the Determination of Significance

A significant impact to water quality would occur if the project would do the following:

- The project is a development project, as defined in the WPO, County of San Diego Code of Regulatory Ordinances (Regulatory Ordinances) Section 67.803, and does not comply with the standards set forth in the County SSM or the Additional Requirements for Land Disturbance Activities set forth in the WPO, Regulatory Ordinances Section 67.811.

Analysis

Compliance with the SSM and Additional Requirements for Land Disturbance Activities set forth in the WPO ensures that the proposed Project complies with all applicable state and federal laws that protect surface water quality. The SSM sets out, in detail by project category, the requirements for a discharger to comply with the WPO so as to minimize impacts to surface water quality to a less-than-significant level. The SSM addresses the use of pollution prevention practices and BMPs for specific activities or facilities, and connections for, and disposal of, stormwater. The proposed Project design is consistent with the applicable standards presented in the SSM and the Additional Requirements for Land Disturbance Activities set forth in the WPO.

A SWMP has been prepared for the proposed Project that describes the implementation of the BMPs required by the WPO. Specifically, as required by the SSM and WPO, and as detailed in the SWMP, the proposed Project would implement the following BMPs.

Construction-Phase BMPs

These BMPs would include silt fence, fiber rolls, street sweeping and vacuuming, protection of open graded slopes, storm drain inlet protection, stockpile management, solid waste management, stabilized gravel construction entrance/exit with steel shaker plates, vehicle and equipment maintenance areas, gravel bag berms, material delivery and storage areas, and best practices for spill prevention and control, concrete waste management, water conservation, and paving and grinding operations. These BMPs are proposed to prevent sediment and non-

stormwater pollutants through the use of erosion control, sediment control, waste management, and good housekeeping measures.

Site Design Measures and LID BMPs

The proposed Project is a Priority Project and must be designed to minimize, to the maximum extent practicable, the introduction of pollutants generated from site runoff to the stormwater conveyance system. Site design components can significantly reduce such impacts. In addition, LID components may also be incorporated into a project to significantly reduce the impact of the project on the environment. LID is an innovative stormwater management approach that focuses on infiltrating a portion of the stormwater runoff into the Project site to reduce off-site stormwater runoff, recharge groundwater, and clean runoff naturally through infiltration into landscape areas or other pervious surfaces. The principle behind LID is to manage rainfall runoff at the source using uniformly distributed decentralized micro-scale controls. The goal of LID is to mimic a site's pre-development hydrology by using design practices and techniques that effectively capture, filter, store, evaporate, detain, and infiltrate runoff close to its source. Following is a list of the LID principles from the County's LID Handbook and a description of how the Project would comply with the design principle:

- ***Conserve natural resources that provide valuable natural functions associated with controlling and filtering stormwater.***

The Project includes the on-site preservation of 1,089 acres (approximately 60 percent of the Project site) of undisturbed natural open space, including the preservation of natural drainages, wetland habitat, and upland habitat.

- ***Minimize and disconnect impervious surfaces.***

The Project includes 795 acres of disturbed/developed areas, approximately 321 acres (40%) of which are considered impervious surfaces (e.g., rooftops and pavement). This equates to an overall impervious area of approximately 16.75 percent of the 1,917-acre Project area. Where it is safe and appropriate and would not damage or cause adverse impacts to any existing or proposed structures, slopes, pavements, or other Project features, prior to discharging to the storm drain system, the Project would minimize directly connected impervious areas where landscaping is proposed and direct runoff from rooftops, impervious parking lots, sidewalks, walkways, and patios into adjacent landscaping or pervious/natural drainage swales.

- ***Direct runoff to natural and landscaped areas conducive to infiltration.***

The Project uses distributed small-scale controls or Integrated Management Practices (IMPs) to mimic the site's pre-project hydrology. These IMPs include vegetated roadside swales, bioretention basins, and, where appropriate, directing runoff from impervious areas into adjacent vegetation or pervious/natural drainage swales.

- ***Stormwater education leads to pollution prevention.***

Stormwater capture and treatment BMP's would be located throughout the Project site and would be an integral and visible part of the Project's infrastructure. Clean water ("No Dumping") notices would be stenciled on storm drain entrances as a reminder to residents that dumping pollutants, trash, waste water, etc., into storm drains is strictly prohibited. New homebuyers would be provided with educational material on the stormwater treatment, control, and infiltration infrastructure both on their lot and throughout the Project. This educational material would also include information on the clean water regulations that apply to all owners, residents, and visitors. The HOA and Covenants, Conditions, and Restrictions (CC&R's) for the Project would further restrict owners, residents, and visitors from removing or modifying stormwater treatment, control and infiltration infrastructure, including on their own property; and the CC&R's would include strict prohibitions on releasing pollutants, trash, and wastewater into the stormwater conveyance system. The CC&R's would also incorporate by reference the clean water regulations that all owners, residents, and visitors must follow.

In addition to the measures above, the Project would include the following design features and grading and construction techniques that advance the design principles of LID:

- The proposed Project would minimize soil compaction in landscaped areas by scarifying the topsoil layer at least 6 inches in areas disturbed by construction prior to installation of the final landscape palette. If upper layers of topsoil exist or are imported, these topsoil materials would be incorporated to avoid stratified layers.
- The Project site has been designed to protect slopes and channels for purposes of energy dissipation and erosion control. Methods of accomplishing this goal include the use of natural drainage systems to the maximum extent practicable, stabilizing permanent channel crossings, planting native or drought-tolerant vegetation on slopes, and using energy dissipaters, such as rip-rap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels. All Project site slopes would be stabilized by erosion-control measures. All outfalls would be equipped with an energy dissipation device and/or rip-rap pad to prevent high-velocity erosion.
- The proposed Project would incorporate a rural swale system, urban curb swale system, or a dual drainage system for private roads. Residential driveways and guest parking on residential lots would be designed so that runoff would drain to landscaping or pervious/natural drainage swales prior to being discharged to the Project's drainage system. Steep hillsides that are disturbed by Project development would be landscaped with deep-rooted, drought-tolerant, and/or native vegetation selected for erosion control. These design features would be installed/implemented and maintained by the contractor until the homeowner's association is established.

Source Control BMPs

Source control BMPs would be incorporated into the proposed Project, including storm drain inlet stenciling and signage, use of alternative methods other than use of pesticides for proposed

landscaping, drought-tolerant landscaping and weather-based irrigation controls to minimize irrigation runoff, and providing regular street sweeping.

The proposed Project would incorporate storm drain inlet stenciling and signage, such as concrete stamping or the equivalent, for all storm drain inlets within the Project site using prohibitive language. In compliance with the County Model Landscape Ordinance, the Project would include drought-tolerant low water use landscaping in all common areas, parkways, and, where feasible, in public and community spaces. All common area landscaping will be controlled by weather-based irrigation controllers to minimize overwatering and water waste. Compliance with the County's Model Landscape Ordinance will ensure that irrigation runoff onto impervious surfaces, which contains pollutants, is minimized.

Integrated Pest Management (IPM) is an ecosystem-based pollution-prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitation manipulation, modification of cultural practices, and/or the use of resistant plant varieties. Pesticides are used only after monitoring indicates that they are needed to be applied according to established guidelines. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM includes planting pest-resistant or well-adapted plant varieties such as native plants, discouraging pests by modifying site and landscape design, and distributing educational materials to future residents.

Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris, debris from pressure washing shall be collected to prevent entry into the storm drain system, and any washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not to the Project's storm drain system.

All proposed source control BMPs would be installed and maintained by the developer/builder and a homeowner's association would be established and responsible for ongoing maintenance of the Project's private improvements for the life of the Project.

Storm Water Capture and Treatment Control BMP Design

The proposed Project's BMP design would include both flow-based and volume-based BMPs and certain landscaped areas/pervious surfaces that are either self-treating or provide treatment for impervious surfaces such as parking lots and roofs. Flow-based BMPs are designed to decrease the maximum flow rate of runoff produced from a storm event having rainfall intensity of 0.2 inch per hour. Flow-based BMPs are designed to treat up to the peak flow rate, while volume-based BMPs treat up to the peak volume of the storm. As discussed above under Source Control BMPs, landscape areas will be subject to the County's Model Landscape Ordinance to minimize runoff as well as IMP practices to minimize the application of pesticides and ensure the long-term survival of landscape areas.

As described in Section 3.2.2.1 and in greater detail in the Project's Major SWMP, the proposed Project would implement a system of treatment control BMPs that would consist of bioretention basins, vegetated roadside swales for hydromofication attenuation and water quality purposes,

and hi-rate biofilters (e.g., Filtterra Units or equivalent storm drain inlet treatment control devices). The Project's proposed basins and storm drain inlet treatment control devices are depicted in **Figures 3.2-6**. Design details and the maintenance and operational protocols for the basins and inlet devices are provided in the Major SWMP in this EIR, **Appendix C-14**.

The proposed Project would include fifteen (15) water quality BMPs comprising seven (7) volume-based bioretention basins and eight (8) vegetated roadside bioretention swales that treat 671.4 acres (84.5%) of the Project's 795 acres of developed/disturbed area. Volume-based BMPs are designed to settle the runoff volume produced from the 85th percentile storm event, between 24 and 96 hours. The 85th percentile rainfall has been calculated for the Project site to be 0.65 inch of rain in a 24-hour period. This volume would be stored below the basin spillway elevation (riser, weir, etc.). The runoff volumes contained below the overflow elevation of the basin riser would be slowly discharged from the treatment control basin via low-flow orifice(s) in the basin riser. After passing through the riser, an outlet pipe would discharge runoff to the receiving storm drain.

Runoff would be detained in the water quality basins and treated during the time it takes to drain completely. Treatment would include the settling of pollutants within the basins and filtering through the heavy vegetation at the bottom of each basin. A trash and debris rack would be fitted to the base of each structure to prevent clogging of the low-flow orifices. In this way, stormwater pollutant, trash and debris removal would occur prior to discharge into Lower Otay Lake. Outlet structures at each basin would be sized and designed to convey runoff from the 100-year storm event.

Due to topographic constraints that make water quality basins infeasible, runoff from the remainder of the Project's developed/disturbed area (63.8 acres or 15.5% of the total 795 acres) including runoff from certain portions of Otay Lakes Road and Strada Piazza would be treated via Filtterra Units or equivalent storm drain inlet treatment control devices and then discharged into natural drainages conveying flows into Lower Otay Lake. A Filtterra Unit is flow-based storm drain inlet treatment control device that is a stand-alone system that accepts surface sheet flow from both streets and parking lots. A standard Filtterra Unit treats the 85th percentile rainfall event and includes a bypass structure for higher flows.

The Project's water quality basins (bioretention basins and vegetated roadside swales), treating 84.5% of the Project's developed/disturbed area, provide a high removal efficiency for coarse sediment, trash and debris, a high removal efficiency for pollutants that tend to associate with fine particles during treatment including fine sediment, undissolved nutrients, heavy metals, organic compounds, oxygen demanding substances, bacteria, oil and grease, and pesticides, while providing medium pollutant removal efficiency for dissolved nutrients. The Project's high-rate biofilters, treating another 8.0% of the Project's developed/disturbed area, provide a high removal efficiency for coarse sediment, trash and debris, a medium pollutant removal efficiency for pollutants that tend to associate with fine particles during treatment including fine sediment, undissolved nutrients, heavy metals, organic compounds, oxygen demanding substances, bacteria, oil and grease, and pesticides, and low pollutant removal efficiency for dissolved nutrients. Finally, the remaining 7.5% of the Project's developed/disturbed areas consisting of vegetated and irrigated slopes within the Project's development footprint that will

not receive runoff from the project's streets and roads and will be self-treating and natural landscaped slopes.

In summary, as a result of implementation of the proposed BMPs discussed above, the proposed Project would comply with the standards set forth in the County SSM or the Additional Requirements for Land Disturbance Activities set forth in the WPO. Therefore, impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to water quality would occur if the project would do the following:

- Drain to a tributary of an impaired water body listed on the Clean Water Act Section 303(d) List, and will contribute substantial additional pollutant(s) for which the receiving water body is already impaired.

Analysis

As discussed above, runoff from the proposed Project would drain to Lower Otay Lake, which is identified on California's 2010 List of Water Quality Limited Segments as impaired for color, iron, manganese, nitrogen, ammonia, and high pH.

Additionally, under the City of San Diego SWPG, the highest priority pollutants of concern for the City's drinking water reservoirs include nutrients (nitrogen and phosphorus), Total Organic Compounds (TOCs), and Total Dissolved Solids (TDS). Accordingly, the following pollutants are considered primary pollutants of concern under the CWA Section 303(d) List and the SWPG: nutrients, TDS, Total Organic Compounds (TOCs), and heavy metals. Secondary pollutants of concern include sediments, trash and debris (except leaves and decaying vegetation), oxygen-demanding substances, bacteria, oil and grease, and pesticides.

The Project area, including those portions of Otay Lakes Road to be widened and realigned, is a 1917-acre area that contributes runoff into Lower Otay Lake from the 2,491-acre watershed shown in **Figure 3.2-2**. An analysis of urban runoff, including TDS, into Lower Otay Lake was conducted for the proposed Project (Dexter Wilson Engineering, Inc. 2012). Approximately 1,009.5 acres of the proposed Project site would be tributary to the Project's proposed water quality basins, of which approximately 671.4 acres are proposed for development and 338.1 acres would be natural open space (see **Table 3.2-3**). The Project's stormwater BMPs (bioretention/water quality basins, Filterra units, source control BMPs, Site Design & LID BMPs, etc.) have been selected and designed in accordance with the City's SWPG.

As discussed in more detail above, runoff from the majority of the developed portions of the site (84.5%) would receive treatment in water quality basins (bioretention basins and vegetated roadside swales). Runoff from certain portion of Stradda Piazza and Otay Lakes Road would be treated by storm drain inlet inserts such as Filterra Units or an equivalent flow-based treatment device. Finally, four outfalls of the project area were determined to be subject to hydromodification attenuation. Vegetated roadside swales that provide water quality treatment

and hydromodification attenuation are proposed for these four areas. The locations of the proposed bioretention basins, storm drain inlet inserts, and vegetated roadside swales are shown in **Figure 3.2-6**.

The bioretention basins are volume-based treatment facilities that would detain and treat the 85th percentile storm flow rate to ensure that solids have adequate time to settle out within the basins before being discharged into Lower Otay Lake. The bioretention basins have a high pollutant removal efficiency for heavy metals and TOCs (two of the four primary pollutants of concern), a high removal efficiency for all of the secondary pollutants of concern identified above, and a medium pollutant removal efficiency for dissolved nutrients and TDS (the remaining two primary pollutants of concern). The vegetated swales are also volume-based water quality basins sized to detain and treat the 85th percentile storm flow rate as well as perform hydromodification attenuation. The vegetated swales have a high pollutant removal efficiency for heavy metals and TOCs (two of the four primary pollutants of concern), a high removal efficiency for all of the secondary pollutants of concern identified above, and a medium pollutant removal efficiency for dissolved nutrients and TDS (the remaining two primary pollutants of concern). Finally, the Filterra Units are flow-based treatment devices and do not perform any detention, however the Filterra Units have a medium pollutant removal efficiency for heavy metals and TOCs (two of the four primary pollutants of concern), a high removal efficiency for sediments and trash and debris (two of the six secondary pollutants of concern), a medium removal efficiency for oxygen demanding substances, bacteria, oil and grease, and pesticides (the remaining four secondary pollutants of concern), and a low pollutant removal efficiency for dissolved nutrients and TDS (the remaining two primary pollutants of concern).

Finally, implementation of the proposed Project would reduce certain impacts occurring without the Project. Runoff from Otay Lakes Road in its current condition receives no pollutant removal treatment prior to it entering Lower Otay Lake. The proposed widening and realignment of Otay Lakes Road with implementation of the Project would result in Treatment Control BMPs (vegetated roadside swales and Filterra Units) being implemented for roadway runoff, resulting in a substantial reduction in pollutants entering the Lake from Otay Lakes Road with the proposed Project. Additionally, the proposed Project would capture and treat runoff from approximately 338 acres of land to remain undeveloped in its bioretention basins. While these lands are not a significant source of pollutants, the bioretention basins have a high removal efficiency for coarse sediment and will, therefore, reduce sediment impacts to the Lake from these lands when compared to the sediment contribution these lands have on the Lake today.

In conjunction with the Project's *Treatment Control BMPs* (water quality basins and Filterra Units) discussed above, the Project would also implement the BMPs described above under Construction-Phase BMPs, *Site Design Measures and LID BMPs*, and *Source Control BMPs* to reduce the amount of primary and secondary pollutants of concern entering the storm drain system and thereby requiring treatment by the Project's *Treatment Control BMPs*. As discussed above, the Project's water quality basins (bioretention basins and vegetated roadside swales) and Filterra Units have a high to medium pollutant removal efficiency for the primary and secondary pollutants of concern with exception of TDS and dissolved nutrients. The Project's BMPs have a medium to low pollutant removal efficiency for TDS and dissolved nutrients. Accordingly, a separate analysis of urban runoff into Lower Otay Lake was performed for these types of

pollutants to determine whether the Project would have a significant effect on the Lake as a drinking water reservoir.

The analysis of urban runoff into Lower Otay Lake, included as Appendix 3 to the Major SWMP (**Appendix C-14**) conducted for the Project utilized the City's SWPG as the guidance document to evaluate what effects the Project might have on TDS, nitrogen, and phosphate levels in the Lake as a drinking water reservoir. The analysis evaluated the potential impacts of the Project under three scenarios: when the reservoir is full, when the reservoir is at an average storage elevation, and when the reservoir is at its 30th percentile storage volume (low). The analysis indicates that the full development of the Project would increase the average yearly runoff into Lower Otay Lake by 251.1 acre-feet and would constitute less than 1% of the total volume of water entering the reservoir. In an average year, the increased level of salt in this runoff would be approximately 594,750 pounds per year (lb/yr). Although the increased runoff from the Project would reduce the amount of water that needs to be imported into the reservoir, thereby resulting in a reduction in the salt loading from the imported water, an overall increase in salt loading would still occur. The net increase in salt loading as a result of the Project would be approximately 253,787 lb/yr. This amount of salt represents an approximately 0.4 percent increase in the amount of salt in Lower Otay Lake when the reservoir is full, a 0.5 percent increase when the reservoir is at its average storage level, and a 0.6 percent increase when the reservoir is at its 30th percentile storage level (Dexter Wilson Engineering, Inc. 2012).

The urban runoff analysis also evaluated the potential impacts to Lower Otay Lake from the presence of nitrogen and phosphate in stormwater runoff from the Project. The results of the analysis indicate that the increased nitrogen loading from Project runoff would be 1,608 lb/yr. As with salt loading, offsetting the imported water with Project runoff would result in a net increase in nitrogen loading as a result of the Project of approximately 1,403 lb/yr or an approximately 2.3 percent increase in the amount of nitrogen in Lower Otay Lake when the reservoir is full, a 2.8 percent increase when the reservoir is at its average storage level, and a 3.1 percent increase when the reservoir is at its 30th percentile storage level. For phosphate, imported water contains a negligible amount of this inorganic chemical and no data were available on the existing phosphate levels in the reservoir. The increased phosphate loading from Project runoff would be 58 lb/yr (Dexter Wilson Engineering, Inc. 2012) and the effect of this additional phosphate in the Project runoff is anticipated to have a negligible impact on the reservoir's phosphate concentration.

The results of the Project's salt and nutrient loading analysis have been reviewed by the City of San Diego Long-Range Planning and Water Resources Division. Their analysis evaluated the volume of salt and nitrogen loading based on the average volume of water storage in Lower Otay Lake from 1980 through 2010 of 40,300 acre-feet and the 30th percentile storage volume during this same period of 37,200 acre-feet. The results of the City's analysis, which is included as Appendix 3 to the Storm Water Management Plan (**Appendix C-14**) showed that the percentage increase in salt and nitrogen loading from Project runoff would be 0.5 percent and 2.8 percent, respectively, at average storage volume in Lower Otay Lake, and 0.6 percent and 3.1 percent at the 30th percentile of storage volume (City of San Diego 2012). A comparison of these findings is shown in **Table 3.2-4**.

The proposed Project site drains to Lower Otay Lake, which is an impaired water body listed on the CWA Section 303(d) List as well as a drinking water reservoir subject to the City of San Diego's SWPGs. As described above and in compliance with the County's SSM, the Project would implement *Site Design Measures and LID BMPs*, *Source Control BMPs*, and *Treatment Control BMPs*, the latter of which have a high to medium pollutant removal efficiency for both primary and secondary pollutants of concern with the exception of dissolved nutrients and TDS. Implementation of the Project's *Treatment Control BMPs* would also substantially reduce certain water quality impacts occurring today as a result of untreated runoff from Otay Lakes Road entering Lower Otay Lake and from undeveloped land on the Project site contributing sediment to the Lake. In the case of dissolved nutrients and TDS, the analysis above and included as Appendix 3 to the Project's Major SWMP demonstrates that, despite the low pollutant removal efficiency of the Project's *Treatment Control BMPs* for dissolved nutrients and TDS, the Project would not result in a significant increase in salt or nutrient levels within the Reservoir. Therefore, with implementation of the Project's BMPs, the Project would not contribute substantial additional pollutant(s) for which the receiving water body is already impaired and impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to water quality would occur if the project would do the following:

- Drain to a tributary of a drinking water reservoir and will contribute substantially more pollutant(s) than would normally run off from the project site under natural conditions.

Analysis

Runoff from the Project site drains into Lower Otay Lake, a drinking water reservoir. However, as discussed above, runoff from the proposed Project would be subject to a comprehensive set of BMPs, including *Construction-Phase BMPs*, *Site Design Measures and LID BMPs*, *Source Control BMPs*, and *Treatment Control BMPs* to remove potential pollutants from the Project's storm water runoff prior to the runoff entering the Reservoir. Furthermore, as discussed in the previous section addressing the Project's runoff to a CWA Section 303(d)-listed impaired water body, the proposed Project would not contribute substantially more pollutant(s) than would normally run off from the Project site to Lower Otay Lake under natural conditions and, therefore, impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to water quality would occur if the project would do the following:

- Contribute pollution in excess of that allowed by applicable state or local water quality objectives or will cause or contribute to the degradation of beneficial uses.

Analysis

As stated above, the beneficial uses identified in the RWQCB San Diego Basin Plan for Lower Otay Lake and upstream unnamed tributaries (Basin No. 910.31) include municipal and domestic supply, agricultural supply, industrial process supply, industrial service supply, recreational uses, cold and warm freshwater habitat, wildlife habitat, biological habitats of special significance (unnamed tributaries only), and rare species habitats (unnamed tributaries only). The Basin Plan also sets forth water quality objectives for the Otay Hydrologic Unit.

The proposed Project is expected to add pollutants to runoff from urban development. The addition of these pollutants to Lower Otay Lake could violate water quality objectives required to sustain the beneficial uses without a properly designed water quality treatment system. Runoff from the developed portion of the Project site would be subject to a comprehensive set of BMPs including *Construction-Phase BMPs*, *Site Design Measures and LID BMPs*, *Source Control BMPs*, and *Treatment Control BMPs* as discussed in detail above to reduce and remove potential pollutants from the Project's runoff. As described above, with incorporation of these BMPs, the proposed Project would not contribute substantially more pollutants than would normally run off from the Project site to Lower Otay Lake under natural conditions. Thus, development of the Project site would not degrade potential beneficial uses of downstream water bodies as designated by RWQCB and impacts related to this issue are considered *less than significant*.

Guideline for the Determination of Significance

A significant impact to water quality would occur if the project would do the following:

- Not conform to applicable federal, state, or local "clean water" statutes or regulations including, but not limited to, the federal Water Pollution Control Act, California Porter-Cologne Water Quality Control Act, and the County WPO.

Analysis

According to the City of San Diego Source Water Protection Guidelines (SWPG), the Project is considered a Tier 3 project, which requires the highest level of pre-treatment and post-treatment BMPs to enhance the effectiveness of the Project's pollutant treatment controls. All proposed BMPs for this Project were designed according to the Tier 3 BMP recommendations, as is shown within the SWPG worksheet in Attachment I of the Major SWMP for Otay Ranch Resort Village (**Appendix C-14** of this EIR).

Implementation of the proposed Project would include construction-related activities such as grading and other earth-moving activities. These activities would generate sediment and dust that could affect water quality. In addition, the proposed Project would result in an increase in post-construction pollutants related to development of the property and the effects of automobile use. Runoff from paved surfaces may contain both sediment in the form of silt and sand, and a variety of pollutants transported by the sediment. Landscape activities by homeowners would be an additional source of sediment and pollutants. To reduce the potential impacts to water quality,

the proposed Project would be required to comply with the SWRCB Construction General Permit and the NPDES Municipal Permit, as described above.

To be covered under the Construction General Permit, a Notice of Intent must be filed with the SWRCB. Compliance with the permit requires that a SWPPP be prepared and implemented for the proposed Project, and that construction BMPs, post-construction BMPs, inspections, sampling, and monitoring for water quality be addressed. A SWPPP must be prepared and submitted to the SWRCB and a Waste Discharge Identification Number (WDID) must be received prior to construction.

To address post-construction water quality impacts during operation of the Project from pollutants related to urban development, automobile use, and landscaping activities, the proposed Project would be required to comply with the requirements of the Municipal Permit, and the County's WPO and SUSMP requirements pursuant to the Municipal Permit.

The RWQCB, County of San Diego, and City of San Diego require treatment of the 85th percentile runoff at the Project site prior to discharge into Lower Otay Lake. To address this requirement, as discussed above, the proposed Project would divert runoff from the developed portions of the Project site for treatment via bioretention basins, vegetated roadside swales, and storm drain inlet water quality treatment devices (e.g., Filterra Units or equivalent treatment control devices). Runoff in excess of the 85th percentile, which is considered to be clean water, would overtop the basin risers within the water quality basins, and drain to Lower Otay Lake through the proposed storm drain system. The Project's vegetated swales are designed to attenuate flows for up to a 10-year rainfall event to prevent downstream erosion and scouring (hydromorfication).

In summary, the proposed Project has been designed to comply with all applicable water quality standards and guidelines for storm water runoff. As discussed above, the Project includes a comprehensive set of *Construction-Phase BMPs*, *Site Design and LID BMPs*, *Treatment Control BMPs*, and *Source Control BMPs*. These applicable BMPs are in compliance with the standards set forth in the NPDES permit requirements, the County SUSMP requirements, and the City of San Diego Source Water Protection Guidelines (SWPG). Thus, implementation of the Project's BMPs conforms to applicable federal, state, and local water quality statutes and regulations and, therefore, impacts related to this issue are considered *less than significant*.

3.2.3 Cumulative Impact Analysis

The proposed Project is located within the Otay Hydrologic Unit (Basin No. 910.31), and runoff from this unit, including the proposed Project site, drains to Lower Otay Lake. Therefore, the scope of the cumulative impacts analysis area includes all development within the Otay Hydrologic Unit that drains into Lower Otay Lake.

Implementation of the proposed Project would increase the amount of soil disturbance and the impervious surfaces within the Project area, thereby increasing the amount of runoff from the Project area. Without BMPs and compliance with County, state and federal regulations, these effects could potentially cause a substantial increase erosion, runoff, flooding hazards, and

pollutant concentrations within the Otay Hydrologic Unit. However, as discussed above, the Project's drainage system and storm water capture and treatment system would be designed to meet the County's Drainage Design Manual and Stormwater Standards Manual design requirements as well as applicable state and federal water quality and flood control regulations. Furthermore, 97% of the Project area would discharge runoff below the high water mark of Lower Otay Lake and the remaining 3% of the Project area would be subject to hydromodification attenuation to prevent downstream erosion. The Project's BMPs are designed to trap sediment and minimize downstream sedimentation. The capacity of Lower Otay Lake in conjunction with its spillways is sufficient to accommodate any peak flow increases as a result of the Project and prevent any downstream flooding, and the Project site is outside any FEMA floodplain boundaries and would not place housing within a 100-year flood hazard area. Thus, it was determined that the Project's direct hydrology impacts would be less than significant.

The Project impact as a contributor to Lower Otay Lake is addressed under the second water quality guideline in Section 3.2.2.2 of this EIR. Under the City of San Diego SWPG, the highest priority pollutants of concern in runoff to Lower Otay Lake are nutrients, TOC, and TDS. The Lake is also listed on the CWA Section 303(d) List as being impaired for heavy metals and nutrients. In the case of nutrients and TDS, an analysis of urban runoff was conducted for the Project by Dexter Wilson Engineering and the results of the Project's salt and nutrient loading analysis have been reviewed by the City of San Diego Long-Range Planning and Water Resources Division. Their analysis showed that the percentage increase in salt and nitrogen loading from Project runoff would be 0.5 percent and 2.8 percent, respectively, at the average storage volume in Lower Otay Lake (City of San Diego 2012). In the case of heavy metals and other pollutants of concern, the Project's *Treatment Control BMPs* have a high to medium removal efficiency these pollutants. Furthermore, as discussed above, as part of the proposed Project, the widening and realignment of Otay Lakes Road would result in *Treatment Control BMPs* being installed to treat the runoff from the road that is not currently receiving any treatment, resulting in a substantial reduction of pollutants entering the Reservoir from those improved portions of Otay Lakes Road. Thus, with implementation of the Project's BMPs and in light of the analysis demonstrating that the Project's TDS and nutrient contributions to the Reservoir would have a less than significant impact on the levels of these pollutants in the Reservoir, it was determined that the Project's direct water quality impacts to Lower Otay Lake would be *less than significant*.

As shown in **Figure 3.3-2** in the Land Use and Planning section of this EIR, the majority of the adjacent properties that drain to the Otay Lakes are designated by the Otay Community Plan as either Open Space (Conservation) or Public Agency Lands; and the nearest adjacent private lands within the Project boundary and lands adjacent to the east are designated Rural Lands (RL-80), which permits 1 dwelling unit per 80 acres. As with the proposed Project, all related cumulative projects in the unincorporated County area would also be required to implement the federal, state, and local regulatory requirements, including the Construction General Permit, the Municipal Permit, and the related County ordinances and standards outlined above. Specific requirements include BMPs to treat and detain runoff from the 85th percentile design storm event, to, where applicable, design detention facilities or basins to attenuate flows to prevent hydromodification, to prevent downstream flooding, erosion, and siltation, and to reduce the volume of post-development runoff containing pollutant loads that cause or contribute to an

exceedance of water quality objectives in the receiving waters to the maximum extent practicable. In addition, urban runoff management plans to reduce runoff and contaminant discharges to the maximum extent practicable would also be required and implemented as watershed-based strategies for other land development projects within the local Project area and the region. BMPs for the cumulative projects would be consistent with regional surface water, stormwater, and groundwater planning and permitting processes that have been established to improve the overall water quality in County watersheds.

Therefore, adherence to all applicable flood-control and storm water regulatory requirements by all development Projects within the Otay Hydrologic Unit that drains into Lower Otay Lake minimizes the cumulative impacts to hydrology and water quality resulting from multiple projects. As a result, no cumulatively considerable hydrology or water quality impacts have been identified. Thus, the proposed Project, in conjunction with other related cumulative projects, would not cause cumulatively considerable runoff or degradation of water quality in the Otay Hydrologic Unit subarea and *the cumulative Project impact would be less than significant*.

3.2.4 Significance of Impacts Prior to Mitigation

With implementation of the BMPs discussed above, as required by federal, state, and local regulations, the proposed Project is not expected to result in significant Project-related or cumulative impacts.

3.2.5 Mitigation

No mitigation measures are proposed because the proposed Project design (i.e., *Construction-Phase BMPs, Site Design and LID BMPs, Treatment Control BMPs, and Source Control BMPs*) avoids all potentially significant Project-related impacts associated with hydrology and water quality. BMPs would be implemented by the proposed Project and other related cumulative projects in accordance with applicable laws and regulations to avoid significant hydrology and water quality impacts during construction and operation.

3.2.6 Conclusion

The proposed Project would implement BMP's as required to comply with applicable NDPES Permit requirements and RWQCB regulations, as well as County and City of San Diego procedures, standards, and regulations. As described above, compliance with these requirements would reduce potential Project-related and cumulative impacts to *less than significant levels*.

Table 3.2-1
Summary of Pre- vs. Post-Development Flows to Lower Otay Lake

Condition	Tributary Area (acres)	100-Year Peak Flow (cfs)
Pre-Developed	2,461.8	2,871.4
Post-Developed	2,486.5	3,516.9
DIFFERENCE	+ 24.7*	+ 645.5
Adjusted Pre-Development	2,486.5	2,900.2
DIFFERENCE (after adjustment)	0	+ 616.7

Source: Otay Ranch Resort Village Drainage Study, Hunsaker & Associates

* Areas do not match because small changes in alignment and section of Otay Lakes Road and pre-development area draining to culvert 3 not considered in the analysis. Pre-development peak flow proportional to the area in the adjusted area.

cfs = cubic feet per second

Table 3.2-2
Summary of Pre-Development and Post-Development 100-Year
Peak Culvert Flows and Upgrades at Otay Lakes Road

Culvert #	100- Year Existing Peak Flow (cfs) and Discharged Velocity (ft/s)*	100- Year Developed Peak Flow (cfs) & Discharged Velocities (ft/s)** **** *****	Existing Culvert size	Proposed Culvert Size
1A ^	43.9 / 11.6	46.9 / 10.4 / 11.5 / 10.0	24" CMP pipe	30" RCP pipe
1B ^	11.1 / 9.3	14.5 / 7.6 / 7.6 / 6.3	24" CMP pipe	24" RCP pipe
2 ^	53.7 / 14.7	47.97 / 10.3 / 6.8 / 6.8	24" CMP pipe	36" RCP pipe
3 *	Not affected by Development	Not affected by Development	2 – 10' x 10' boxes	Extension of the 2 – 10' by 10' boxes
4 ^	172.0 / 11.9	48.22 / 10.3 / 6.8 / 6.8	24" CMP pipe	36" RCP pipe
5	48.4 / 13.1	0 (diverted to 4)	24" CMP pipe	none
6 ^	194.9 / 13.6	436.3 / 17.0 / 15.4 / 15.4	24" CMP pipe	72" RCP pipe
7 ^	568.6 / 20.3	937.9 / 20.4 / 15.2 / 14.5	36" RCP pipe	8'x10' Box
8	34.4 / 5.2	0 (diverted to 7)	12" CMP pipe	none
9 ^	121.9 / 15.6	199.9 / 14.1 / 13.8 / 13.3	24" RCP pipe	54" RCP pipe
10	18.8 / 8.3	0 (diverted to 12)	21" CMP pipe	none
11	10.9 / 10.5	0 (diverted to 12)	18" CMP pipe	none
12 ^	22.1 / 15.5	20.4 / 8.1 / 8.1 / 7.5	18" CMP pipe	24" RCP pipe
13	14.9 / 13.7	0 (diverted to 14)	18" RCP pipe	none
14 ^	20.4 / 13.6	30.2 / 9.1 / 8.9 / 7.6	18" RCP pipe	30" RCP pipe
15 ^	296.5 / 14.5	256.3 / 4.8 / 1.2 / 1.5	18" RCP pipe	Contech 23A6
16 ^	97.8 / 11.2	223.3 / 14.9 / 11.4 / 11.4	24" CMP pipe	60" RCP pipe
16A	14.2 / 11.6	0 (diverted to 16)	18" CMP pipe	none
17	30.6 / 9.8	0 (diverted to 16)	24" CMP pipe	none
17A	11.0 / 12.6	0 (diverted to 16)	15" PVC pipe	none
18 ^	896.5 / 18.7	1,198.5 / 14.3 / 11.6 / 9.8	66" CMP pipe	Contech 23A6-6
18A	16.5 / 7.6	0 (diverted to 18)	18" HDPE pipe	none
19 ^	85.4 / 13.4	11.7 / 7.4 / 7.1 / 5.8	24" CMP pipe	24" RCP pipe
20 ^	86.9 / 10.3	44.8 / 10.1 / 9.6 / 8.1	9'x5' Box	36" RCP pipe

cfs: cubic feet per second; ft/s: feet per second; CMP: corrugated metal pipe; RCP: reinforced concrete pipe; HDPE: high-density polyethylene

*- Not included in the 23 culverts described under the first hydrology significance guideline that receive runoff from the project site.

^- One of the 14 culverts that would be upgraded by the project described under the first hydrology significance guideline.

Table 3.2-3
Salt Loading Calculations from Urban Runoff to Lower Otay Lake

Post-Development Description	Total Area ¹	Pre-Development Condition					Post-Development Conditions				
		Type	Area ¹	Avg Year Runoff ²	TDS Loading ³	TDS Loading ⁴	Type	Area ¹	Avg Year Runoff ²	TDS Loading ³	TDS Loading ⁴
Natural Area not tributary to WQ basin	1,343	Natural	1,343	50.5	200	27,429	Natural	1,343	50.5	200	27,429
Natural Area tributary to WQ basin	333	Natural	333	12.5	200	6,789	Natural	333	12.5	200	6,789
Developed Area not tributary to WQ basin	132	Otay Lakes Rd	13	7.9	800	17,164	Pervious	66	6.7	800	14,556
		Natural	119	4.5	200	2,444	Not Pervious	66	40.0	800	86,904
Developed Area tributary to WQ basin	683	Natural	683	25.7	200	13,959	Pervious	341.5	34.9	800	75,824
							Not Pervious	341.5	207.6	800	451,032
TOTAL	2,491	---	2,491	101.1	---	67,785	---	2,491	352.2	---	662,534
INCREASE									251.1		594,749
OFFSET IMPORTED WATER SUPPLY									251.1	500	340,962
NET EFFECTIVE INCREASE									251.1		253,787

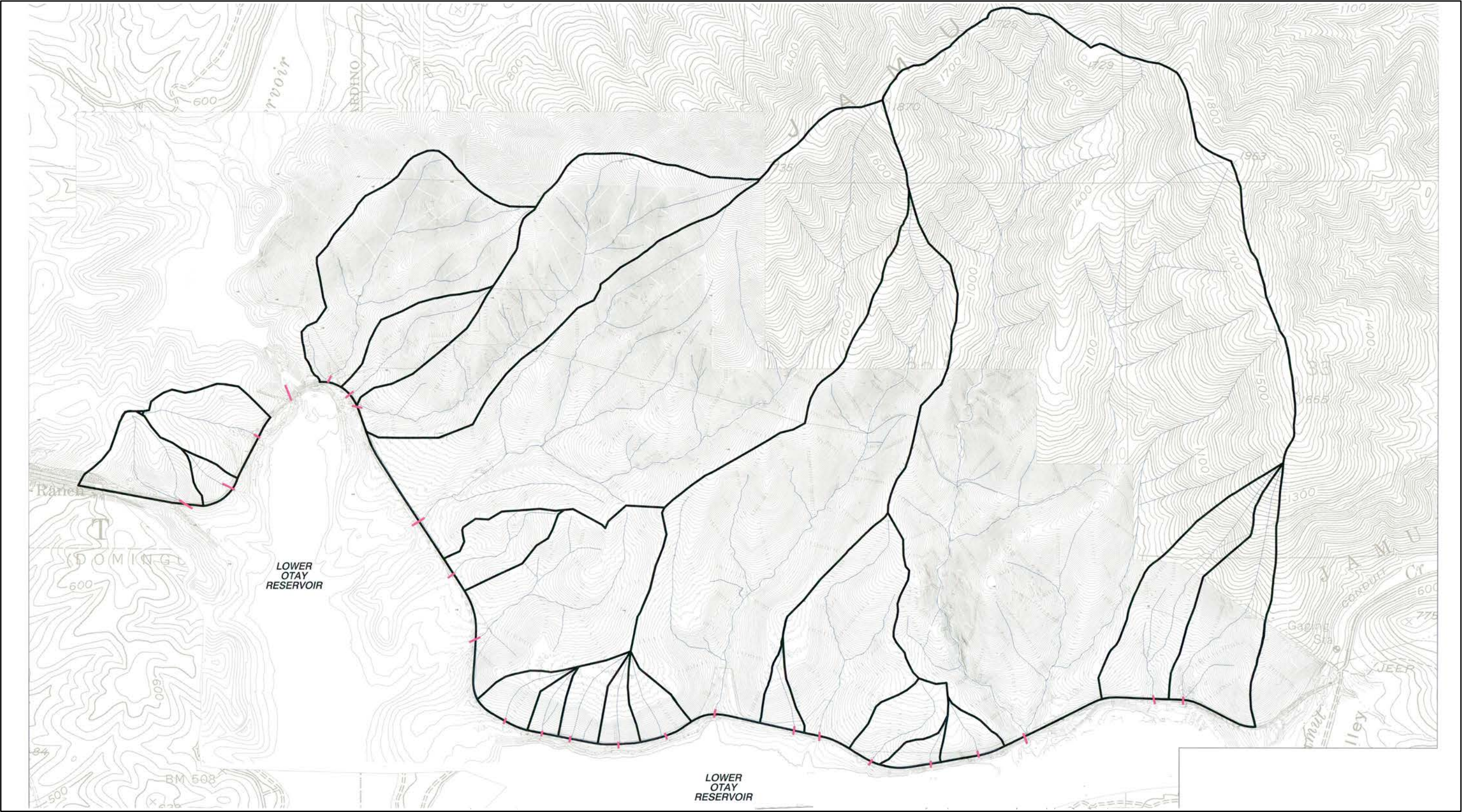
¹ acres² acre-feet (af)³ milligrams/liter (mg/l)⁴ pounds

Table 3.2-4
Comparison of Project Percentage of Salt and Nitrogen Loading in Otay Reservoir

	Increased Load to Otay Reservoir	Dexter Wilson Engineering, Inc.	City of San Diego ¹	
		49,850 acre-feet ²	40,300 acre-feet ³	37,200 acre-feet ⁴
Salt (TDS)	254,000 lb/yr	0.4%	0.5%	0.6%
Nitrogen	1,400 lb/yr	2.3%	2.8%	3.1%

¹ Per Memorandum from Long-Range Planning and Water Resources Division (February 13, 2012)² Volume of water in reservoir when full³ Volume of water in reservoir at average storage from 1980 to 2010⁴ Volume of water in reservoir at 30th percentile storage

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SOURCE: Hunsaker & Associates 2005



Figure 3.2-1
Existing Conditions Watershed Map

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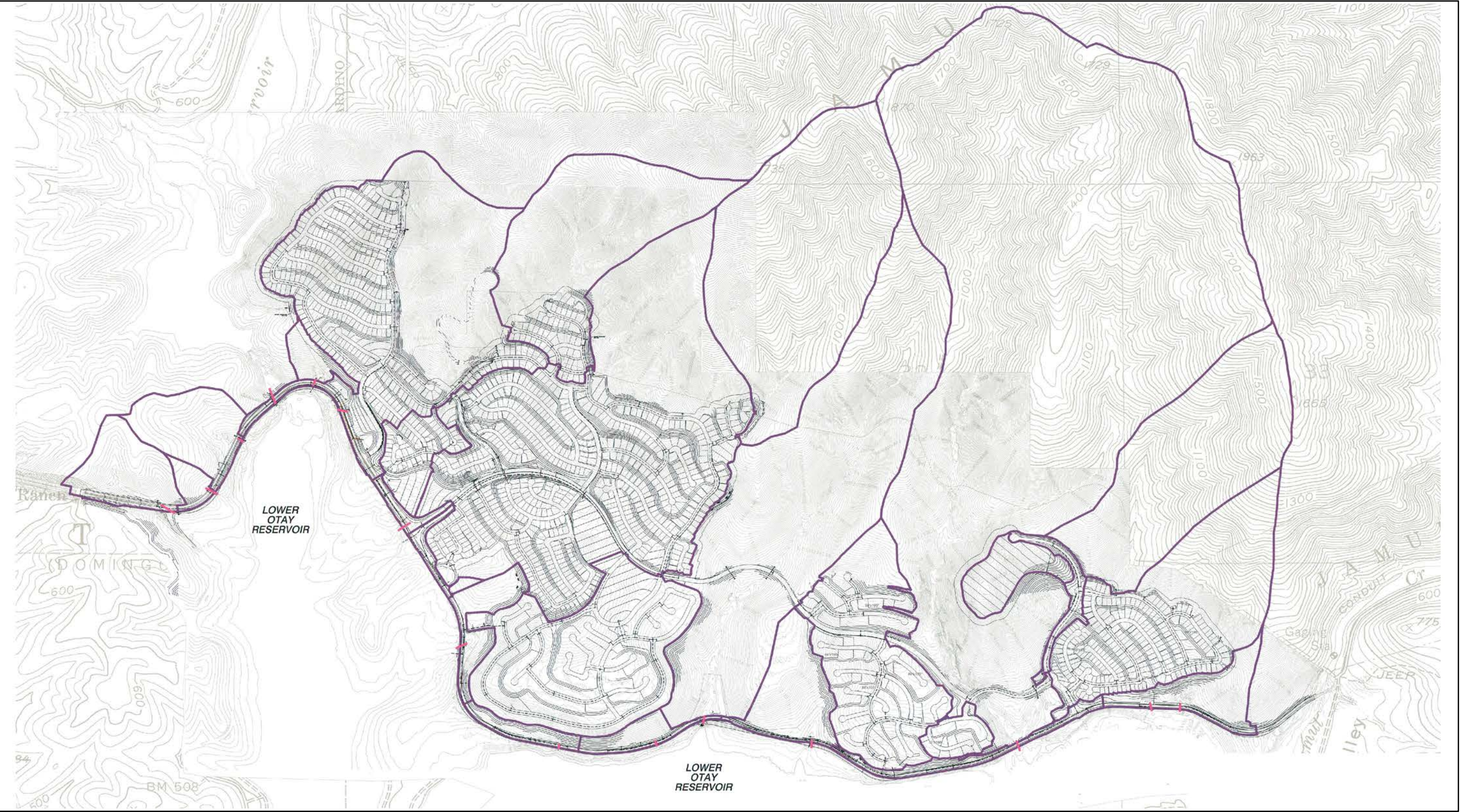


Figure 3.2-2
Proposed Drainage Areas and Patterns

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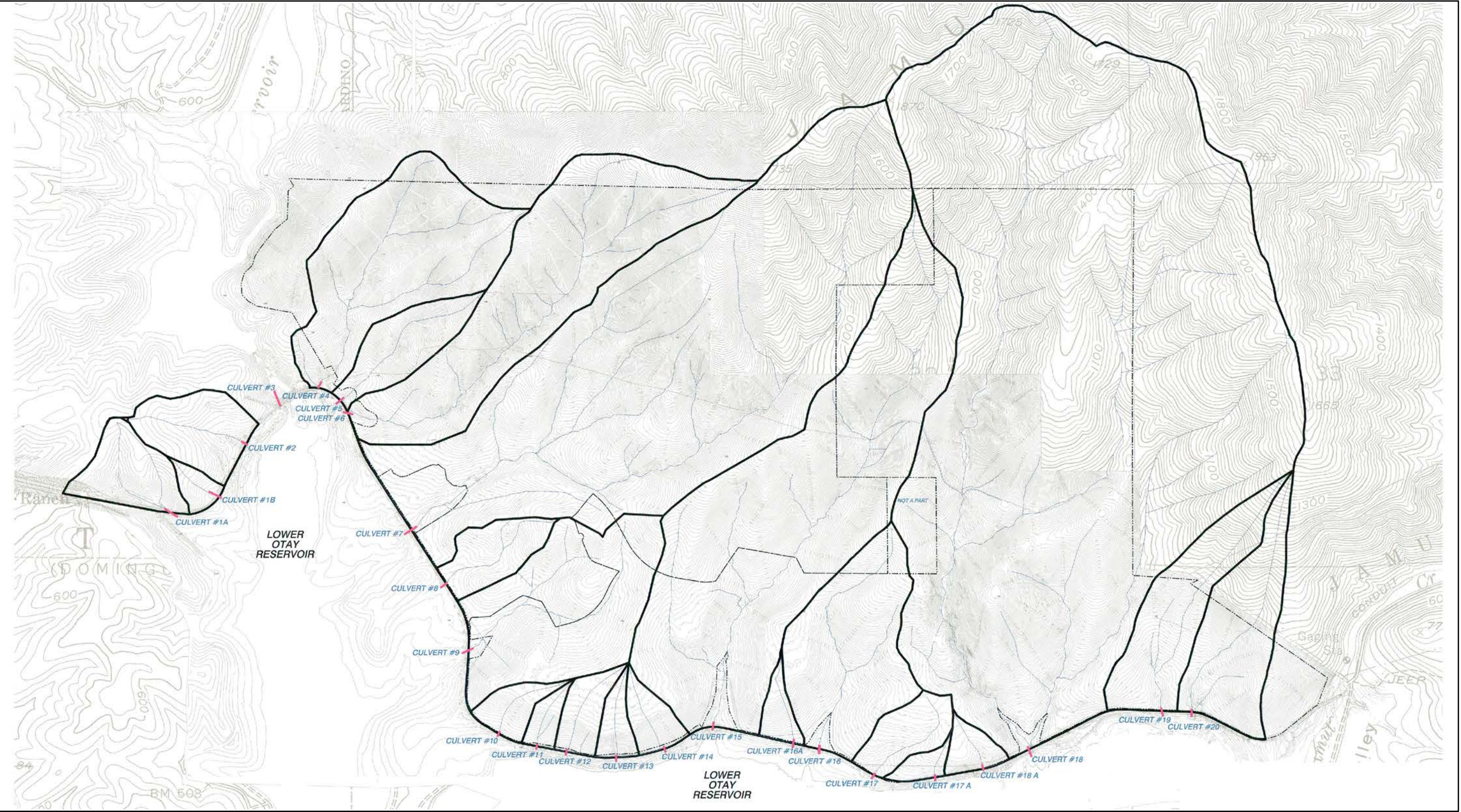


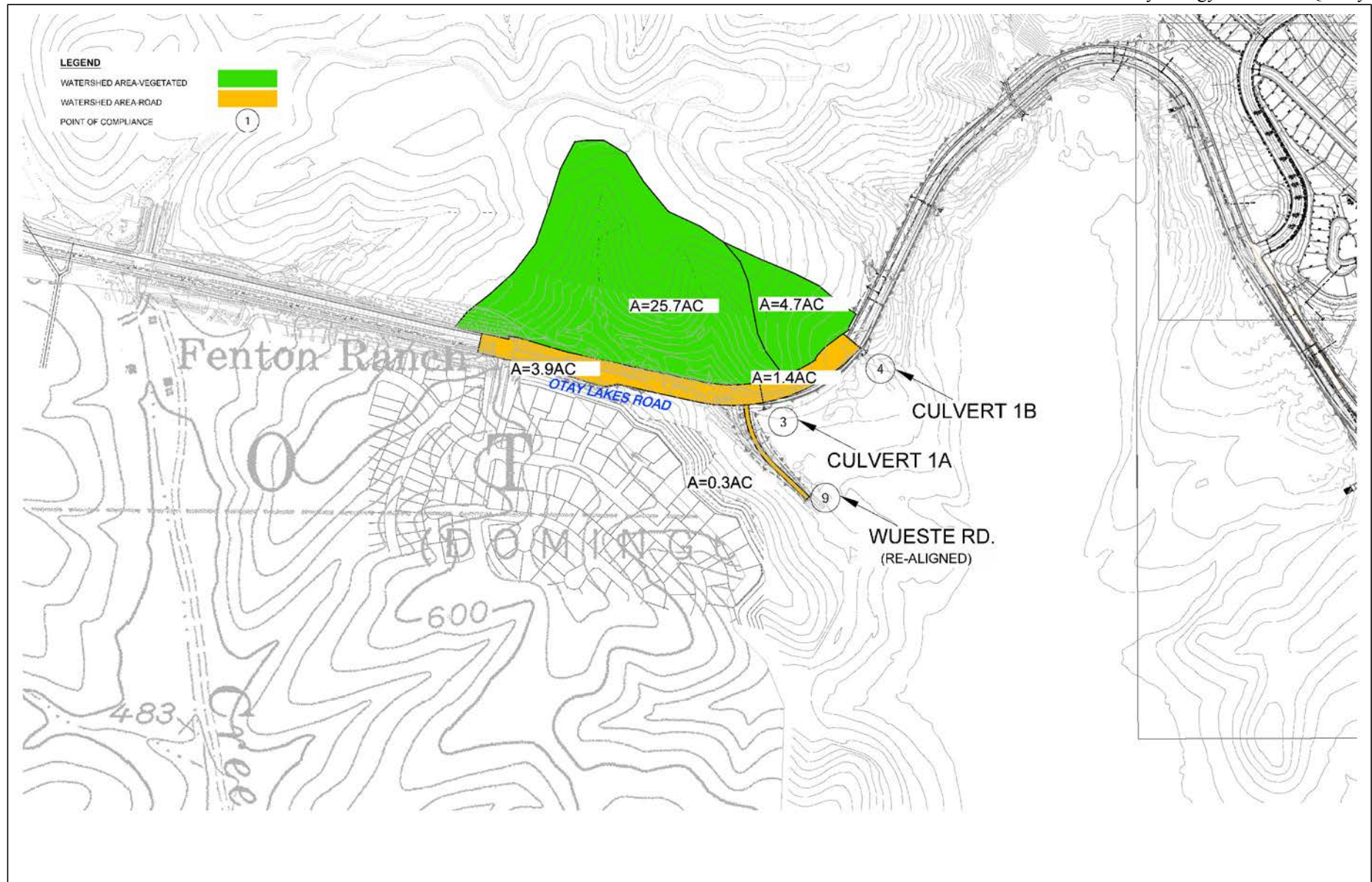
Figure 3.2-3
Existing Culvert Locations

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Figure 3.2-4
Proposed Culvert Locations

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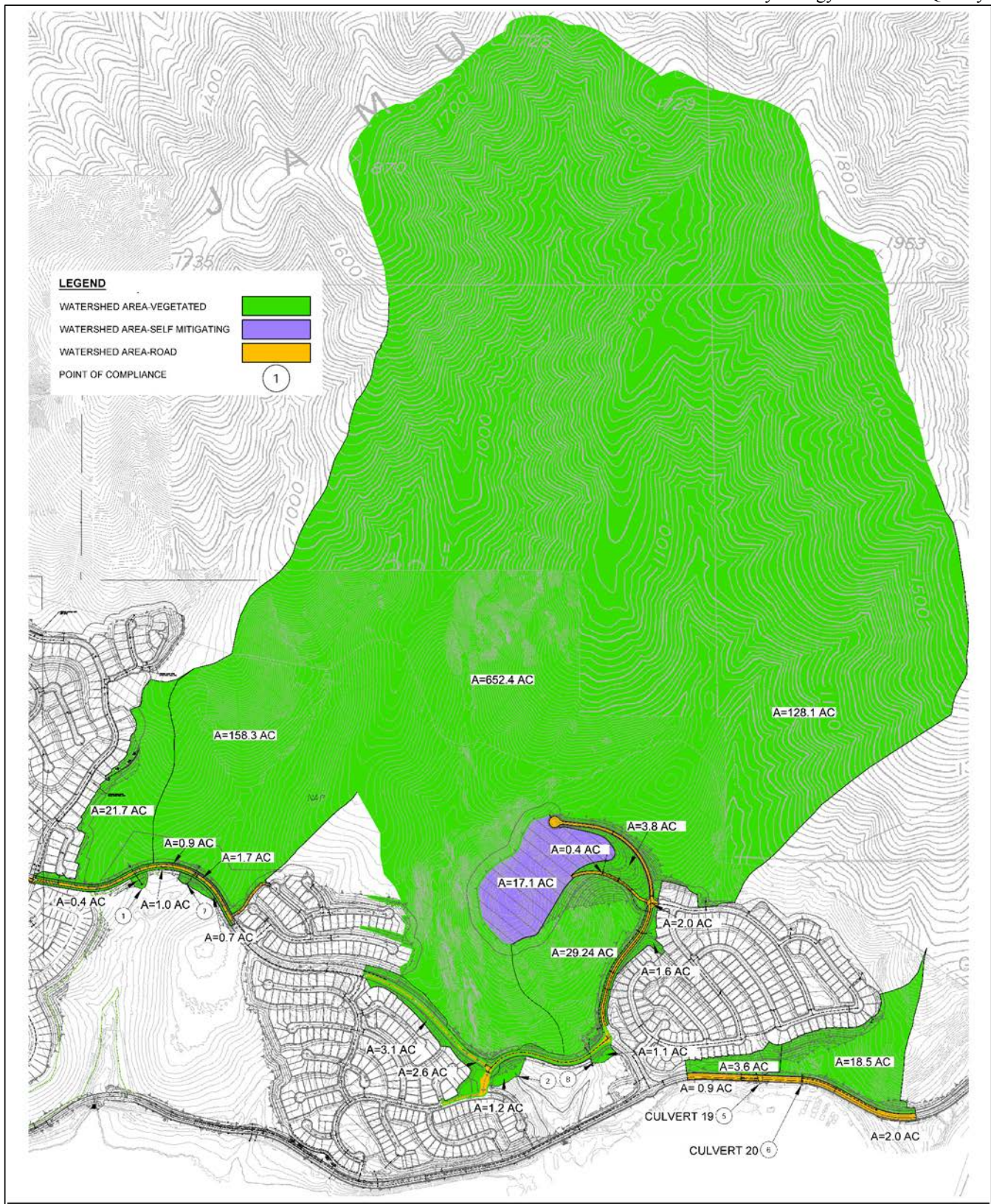


SOURCE: Hunsaker & Associates 2014



No Scale

Figure 3.2-5A
Hydromodification Points of Compliance

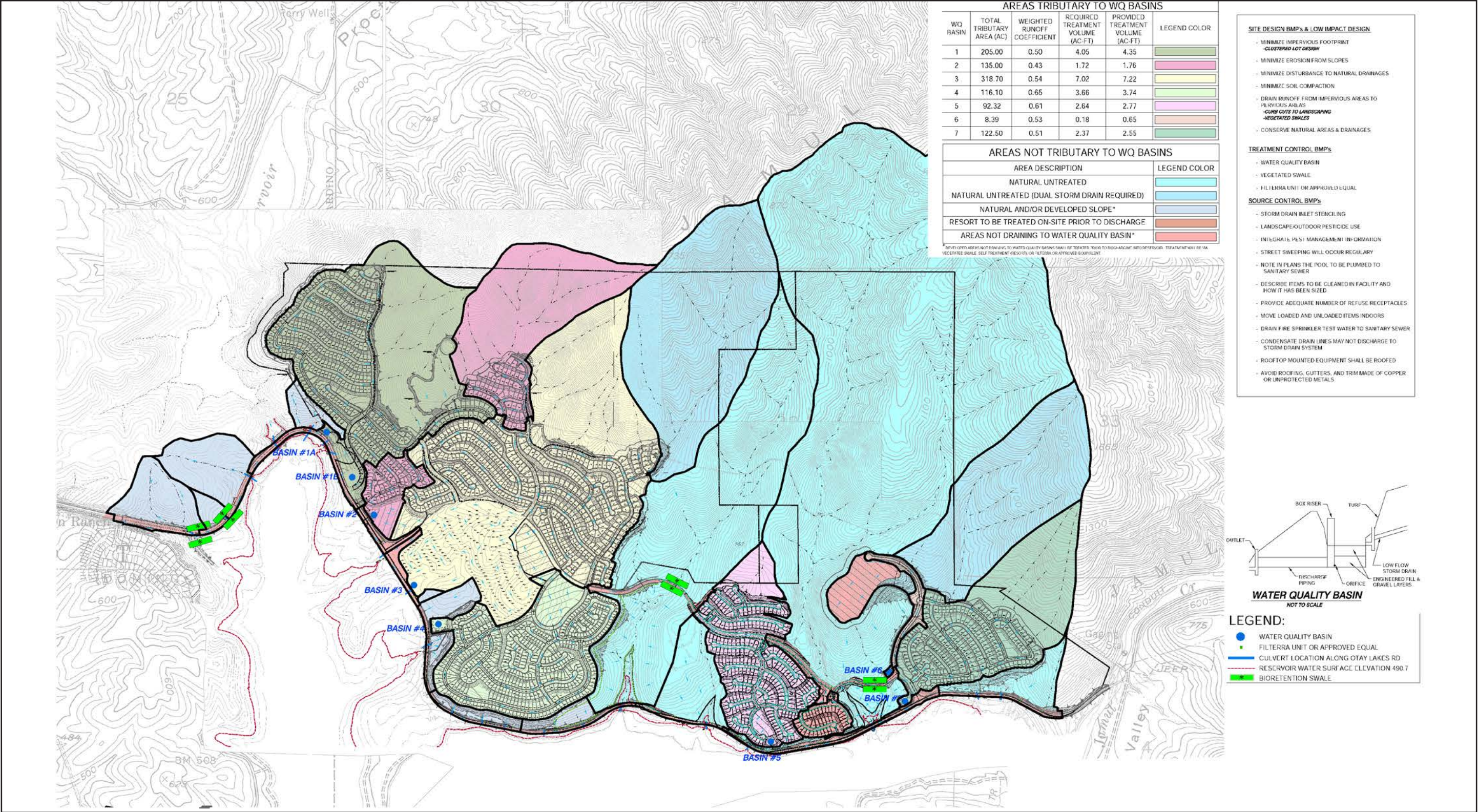


SOURCE: Hunsaker & Associates 2014



No Scale

Figure 3.2-5B
Hydromodification Points of Compliance

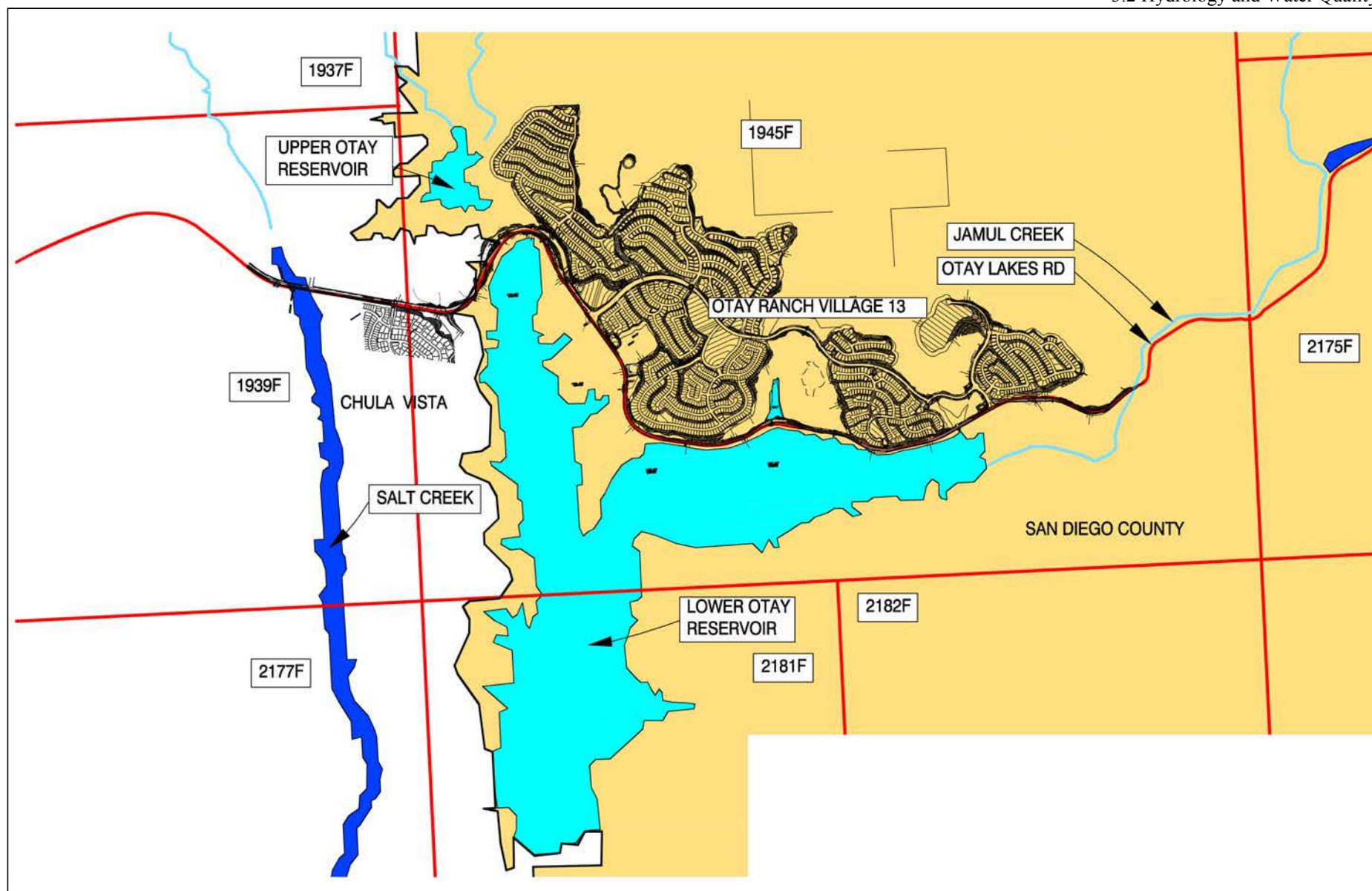


SOURCE: Hunsaker & Associates 2005



Figure 3.2-6
Treatment Control BMPs

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SOURCE: Hunsaker & Associates 2005



No Scale

Figure 3.2-7
FEMA Floodplain Map

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3.3 Land Use and Planning

The following analysis describes, at a project level, the existing land uses and policies associated with the Project site and within its vicinity; identifies guidelines for determining the significance of land-use-related impacts; and evaluates the proposed Project's potential significant land use impacts, including any significant cumulative land use impacts. The consistency of adopted plans has also been evaluated in other sections of this EIR, as applicable (e.g., traffic, air quality, noise, biology, water quality, and water supply). These evaluations are cross-referenced in this section where appropriate.

In 1993, the Otay Ranch PEIR was certified and provided a program-level analysis related to land use and planning for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR determined that land use impacts as a result of implementation of the Otay Ranch plan would be significant and unavoidable. This land use and planning analysis is different than the PEIR, as it specifically considers the proposed Project site. This section references and uses information provided in the PEIR; however, the analysis and conclusions are based specifically on the proposed Project's impacts with existing plans and policies.

3.3.1 Existing Conditions

3.3.1.1 *Regional Setting*

The proposed Project is located in unincorporated San Diego County, in the Proctor Valley Parcel of the Otay SRP. The Project site is ¼-mile east of the Chula Vista municipal boundary. Access to the Project site is provided via Otay Lakes Road, which forms the southern boundary of the Project site. SR-125 is located approximately 3 miles west of the Project site. Traveling west from the Project site, Otay Lakes Road transitions to Telegraph Canyon Road and provides access to Chula Vista and SR-125. Traveling east from the Project site, Otay Lakes Road provides access to SR-94 and the eastern County communities of Jamul, Dulzura, Tecate, Potrero, Campo, and Boulevard.

The Project site consists of approximately 1,869 acres and includes a broad mesa sloping to the south, with several steep canyons draining from north to south. Portions of the relatively flat mesa extend north into the Jamul Mountains. The proposed Project's development footprint ranges in elevation from approximately 500 feet AMSL at the southern end of the site to approximately 900 feet AMSL in the northern portions of the site. The areas designated for open space and Preserve include elevations up to approximately 1,600 feet AMSL. The Project site is currently undeveloped with vegetation consisting primarily of coastal sage scrub, chaparral, and grassland habitats.

The Project site is located at the interface of urban development and scenic open space. The Otay Valley Parcel of Otay Ranch, the Eastlake Vistas residential community, the Eastlake Woods residential community, and the U.S. Olympic Training Center comprise the edge of urban development to the west. Lower Otay Lake, a recreational reservoir and water supply owned by the City of San Diego, is located to the south. Upper Otay Lake is located to the northwest. A temporary ultra-light gliding and parachuting airport is located at the eastern end of the Lower

Otay Lake on City of San Diego property. An inactive quarry operation is located farther to the east. In addition, the MSCP Preserve is located north of the Project site and the City of San Diego's MSCP "Cornerstone properties" are located to the south and west.

3.3.1.2 *Regulatory Setting*

Applicable Land Use Plans and Policies

This subsection describes the adopted regulatory plans and policies applicable to the proposed Project. The applicable plans are: (a) the San Diego County General Plan, including the Otay SRP (implemented by the following Otay Ranch Associated Documents as defined in Board Policy I-109: the Village Phasing Plan, Facility Implementation Plan, Otay Ranch RMP [Phases 1 and 2], Service Revenue Plan, and Otay Ranch Overall Design Plan), and the County Zoning Map; (b) the San Diego County MSCP Subarea Plan South County Segment; (c) the City of San Diego MSCP Subarea Plan; (d) the City of Chula Vista MSCP Subarea Plan; (e) the Otay River Watershed Management Plan (ORWMP); (f) the Otay Valley Regional Park Concept Plan; (g) the Municipal Permit (San Diego County NPDES Municipal Storm Water Permit, Order No. R9-2007-1000); (h) the Basin Plan; (i) SANDAG's Regional Comprehensive Plan; and (j) applicable LAFCO policies. Other adopted plans are addressed in separate sections of this EIR.

The County RPO (effective October 10, 1991) contains regulations designed to provide protection to the County's wetlands, floodplains, steep slopes, sensitive habitat areas, and certain historic or prehistoric sites. However, the County Board of Supervisors approved the Otay Ranch RMP to be implemented in lieu of the County RPO. Thus, the County RPO is not applicable to the proposed Project.

San Diego County General Plan, Zoning, and Otay Subregional Plan

San Diego County General Plan

The County's updated General Plan was adopted on August 3, 2011, and contains six Elements: Land Use, Mobility, Conservation and Open Space, Housing, Safety, and Noise.

Land Use Element

The Land Use Element of the County General Plan applies the land use designations of Village, Rural, and Semi-Rural to the County's private lands. **Figure 3.3-1** shows that a portion of the Project site is designated as Semi-Rural, which is described as follows:

The Semi-Rural category identifies areas of the County that are appropriate for lower-density residential neighborhoods, recreation areas, agricultural operations, and related commercial uses that support rural communities. Semi-Rural areas often function as a transition between the Village and Rural Lands categories, providing opportunities for development, but without the intensity and level of public services expected in Villages and with design approaches that blend the development with the natural landscape. Semi-Rural residential densities are derived in consideration of the physical conditions, community character, and availability of

public services, roads, and other infrastructure. Higher densities within the allowable range should be located near Village areas, while lower densities should be located near Rural Land areas. Site design methods that reduce on-site infrastructure costs and preserve contiguous open space or agricultural operations are encouraged.

As depicted in **Figure 3.3-2**, the land use plan for the County General Plan, Otay Community Plan Area designates the Project site as Specific Plan Area and Open Space - Conservation. The Specific Plan Area designation is described in the General Plan as:

This designation is applied to areas where a Specific Plan was adopted by the County prior to the adoption of this General Plan. Specific Plans may contain residential, commercial, industrial, public, institutional, and/or open space uses; and detailed land use regulations are contained within each adopted specific plan document. Specific Plans... are useful planning tools allowed for by State law [which] may be developed for areas of the County to provide more precise guidance for land development, infrastructure, amenities, and resource conservation consistent with the use types and densities specified by the Land Use Designations and the goals and policies of the General Plan. The intention is to retain the underlying densities on the General Plan Land Use Plan to clearly show the area's relationship within the context where it is located.

The Open Space – Conservation designation is described in the General Plan as:

This designation is primarily applied to large tracts of land, undeveloped and usually dedicated to open space, that are owned by a jurisdiction, public agency, or conservancy group. Allowed uses include habitat preserves, passive recreation, and reservoirs. Grazing and other uses or structures ancillary to the primary open space use may be permitted if they do not substantially diminish protected resources or alter the character of the area. Such ancillary uses within this designation will typically be controlled by use-permit limitations.

Mobility Element

Otay Lakes Road is classified by the County General Plan Mobility Element as a four-lane Major Road with Intermittent Turn Lane (4.1B) between the County/City boundary and the second Project driveway; and a two-lane Community Collector with Improvement Options (2.1D) east of the second Project driveway.

County of San Diego Zoning Map

Current zoning for the Project site is S88 Specific Plan and S80 Open Space. **Figure 3.3-3** depicts existing County zoning for the Project site. The S88 designation “allows limited uses, and after adoption of a specific plan, any use allowed by the specific plan.” The S80 designation is “intended for recreation areas or areas with severe environmental constraints.”

Otay SRP

The Otay SRP establishes the land use pattern for the overall Otay Ranch area through a series of villages with specific goals and objectives for each village. The Otay SRP is part of the County General Plan and governs the land uses, circulation, and development intensities permitted under the County General Plan for the Otay Ranch community, including the Project site.

Land uses specified in the Otay SRP for the Project site (identified as Village 13 in the Otay SRP) include resort and residential components.²⁰ The Otay SRP specifies that permitted uses include a resort with hotel, including a maximum of 800 rooms, shops, restaurants, and conference facilities, on 134.1 acres in the central portion of the Project site. The residential component calls for a maximum of 2,066 homes (658 single-family residential homes and 1,408 multi-family residential homes), with a buildout population of approximately 5,269 residents. The specified land uses also identify two neighborhood parks and commercial areas. The Otay SRP allows for the possibility of a 27-hole golf course but does not require its inclusion. **Figure 3.3-4** depicts the existing Otay SRP Village 13 land use designations.

In the adopted Otay SRP, Village 13 includes the Birch Family Estate Parcel, located west of the Project site within the City of Chula Vista. This 135-acre parcel is identified as a specialty conference center/community center, with low-density residential uses and open space, consistent with the residential densities of the nearby areas. There are 128 single-family homes (of the 658 single-family homes mentioned above) allowed on this parcel. Because the Birch Family Estate Parcel is geographically separated from the Project site, lies within the City of Chula Vista, is owned by a different entity, and is not currently proposed for development, it is not included as a part of the proposed Project; thus, it is not analyzed in this EIR.

Four Otay Ranch Associated Documents were adopted by the County concurrent with the Otay SRP: (1) Village Phasing Plan, (2) Facility Implementation Plan, (3) Otay Ranch RMP, and (4) Service Revenue Plan. Another Associated Document, the Otay Ranch Overall Design Plan, was adopted by the County Board of Supervisors on March 6, 1996. These documents provide discussion, analysis, and background in support of the goals, objectives, and policies contained in the adopted Otay SRP. Each document is described further below.

Otay Ranch Implementation Documents

The Otay Ranch Village Phasing Plan is an implementation requirement of the Otay SRP Growth Management Chapter. The purpose of the Village Phasing Plan is to phase development of villages in a logical order to respond to market forces, ensure timely provision of public facilities, ensure the efficient use of public fiscal resources, and promote the viability of Otay Ranch villages. The Village Phasing Plan designates Village 13/Resort Village as part of the First Eastern Phase. The First Eastern Phase was conceptually expected to begin between the first and second Western Phase (i.e., after Villages 1 and 5, before Villages 2, 3, 6 and 11).

²⁰ The referenced land uses and dwelling units reflect the 2001 SRP amendment, the history of which is summarized in the County MSCP Subarea Plan South County Segment discussion of the Baldwin Letter Agreement.

The Otay Ranch Facility Implementation Plan provides a framework for the provision of public facilities and services to support the development of Otay Ranch. The Facility Implementation Plan addresses issues pertaining to development of public facilities and services within Otay Ranch, including service thresholds and processing requirements.

The Otay Ranch Phase 1 and Phase 2 RMP constitute a comprehensive plan for mitigation of overall impacts related to Otay Ranch, and for the conservation and management of sensitive biological and cultural resources within Otay Ranch, including creation of the 11,375-acre Otay Ranch Preserve system.

The Otay SRP and Otay Ranch RMP contemplate that implementation of the RMP would be a two-phase process. The Otay Ranch Phase 1 RMP was adopted by the County Board of Supervisors on October 28, 1993, concurrent with approval of the Otay SRP. In 1996, the Phase 2 RMP was prepared in conjunction with the first Otay Ranch Sectional Planning Area (SPA) Plan, which is within Chula Vista. The Chula Vista City Council approved the Otay Ranch Sectional Planning Area One Plan, including the Phase 2 RMP, on June 4, 1996. On March 6, 1996, the County Board of Supervisors approved the Preserve Conveyance Schedule and Preserve Financing Plan components of the Phase 2 RMP.

The Phase 1 RMP amplifies and supports various conservation policies contained in the Otay SRP and provides the policy framework for the conservation of natural resources and creation and management of the Otay Ranch Preserve. The Phase 2 RMP encompassed a series of studies, plans, and programs and other activities primarily related to implementation of the Otay Ranch Preserve system, including preserve management, conveyance, and funding.

To create the Otay Ranch Preserve, property owners are required to convey land and fund Preserve management. The Phase 2 RMP establishes a conveyance ratio of 1.188 acres of Preserve land for each 1 acre of development area. This calculation excludes common use lands as defined in the Phase 2 RMP, such as schools, major roads, and parks. These requirements have resulted in offers for the conveyance of Preserve land within Otay Ranch. Chula Vista and the County have been designated as the POM. The conveyance and management of the Otay Ranch Preserve are actively coordinated between the County and Chula Vista.

In February 1996, the Board of Supervisors amended the Otay SRP and Phase 1 RMP to eliminate parcel-wide cultural resource surveys on Otay Ranch's two eastern parcels. On December 5, 2007, the Board of Supervisors amended the Phase 1 and Phase 2 RMP to essentially eliminate the Conveyance Schedule and coastal sage scrub restoration requirements. The County Board of Supervisors has not yet considered and approved the entire Phase 2 RMP.

The Service Revenue Plan identifies the estimated costs and revenue characteristics associated with implementation of the Otay SRP.

The Otay Ranch Overall Design Plan identifies the major design influences that shape Otay Ranch and serves as a design context for more detailed design programs to be implemented as part of the Specific Plan process.

Final Multiple Species Conservation Program Plan

The Final MSCP Plan is a comprehensive HCP that addresses multiple species' habitat needs and the preservation of native vegetation communities for a 900-square-mile planning area in San Diego County. Completed in August 1998, the Final MSCP Plan examined 582,000 acres, with a goal of acquiring 171,917 acres of open space for conservation within the MSCP planning area, including more than half of all remaining natural habitat areas (167,667 acres) and 4,250 acres of other open spaces (such as disturbed and agricultural lands) that contribute to conservation objectives.

Local jurisdictions and special districts implement their respective portions of the Final MSCP Plan through subarea plans, which describe specific implementing mechanisms for the MSCP. The MSCP subarea plans collectively contribute to the conservation of vegetation communities and species in the MSCP planning area. The conservation measures specified in the MSCP provide for "coverage" of 85 plant and animal species (i.e., "covered species") identified in the federal and state Endangered Species Acts. The MSCP also provides for a preserve management program to actively maintain habitat quality and reduce threats to covered species, and a subregional biological monitoring program to gauge the progress of the program toward meeting its biological objectives. Additional information regarding the MSCP, as well as the HCP, NCCP, and the Otay Ranch RMP, is provided in Section 1.2.1.3 of this EIR.

County MSCP Subarea Plan South County Segment

The County MSCP Subarea Plan governing the proposed Project is the South County Segment. This Subarea Plan outlines conservation and management requirements for biological resources and provides regulatory "take" authorization for impacts to species under the federal and state Endangered Species Acts. On October 22, 1997, the County Board of Supervisors adopted the County MSCP South County Subarea Plan, and on March 17, 1998, the County entered into an Implementing Agreement with the appropriate wildlife agencies. This agreement implements the MSCP within specified areas of unincorporated San Diego County, including the Project site.

In the mid-1990s, the County and Chula Vista contemplated enacting MSCP subarea plans under the NCCP program of CDFG. In anticipation of the eventual enactment of MSCP subarea plans, the applicant's predecessor in interest (The Baldwin Company) worked with USFWS and CDFG (i.e., the Wildlife Agencies) to modify the Otay SRP to meld the Otay Ranch RMP and MSCP into a unified conservation strategy.

The parties met throughout 1995, leading to the November 10, 1995, "Baldwin Letter." The basic elements of this letter agreement were as follows: (1) elimination and reduction of development areas in the Proctor Valley and San Ysidro Mountains Parcels, including the eastern portion of Village 13; (2) increase in development footprints on the Otay Valley Parcel; (3) realignment of Otay Valley Road/Hunte Parkway; (4) apportionment of Preserve management responsibilities; (5) elimination of the special study area in Village 13; and (6) elimination of the requirements for restoration of coastal sage scrub. The Wildlife Agencies endorsed the basic elements of this letter agreement in a joint February 22, 1996, letter from USFWS and CDFG.

Although not a formal, binding agreement, the Baldwin Letter was incorporated into the County MSCP South County Subarea Plan. The City of Chula Vista's MSCP Subarea Plan's preserve design and mitigation and management requirements also reflect the elements of the Baldwin Letter Agreement.

On July 18, 2001, the County Board of Supervisors adopted an amendment to the Otay SRP reducing the development footprint in the eastern portion of Village 13 as agreed upon in the Baldwin Letter. Previously, Chula Vista had adopted amendments to the Otay Ranch General Development Plan (GDP) implementing the provisions of the Baldwin Letter as they applied to land within City jurisdiction. While the County's MSCP Plan was amended to reflect the reduced development footprint, the General Plan Land Use Map was mistakenly not updated to reflect the elimination of approximately 135 acres of development. As a result, the County General Plan and County MSCP show different development areas for Village 13.

The QCB was not included as a covered species in the MSCP. The QCB was listed as an endangered species on January 16, 1997. The species was thought to be extinct but was rediscovered in 1990. The QCB was historically distributed throughout the coastal slopes of southern California, including Los Angeles, Orange, Riverside, San Diego, and San Bernardino counties, and northern Baja California, Mexico. At the time the butterfly was listed, the MSCP planning process was nearing completion. It was deemed impractical and unnecessary to delay adoption of the MSCP to include coverage for the butterfly. It was impractical because the species was listed January 1997 while the San Diego City Council convened MSCP hearings in March 1997.

Subsequently, the County of San Diego received a grant from USFWS to prepare an amendment to the County MSCP Subarea Plan South County Segment that would result in coverage for this species. The County continues to work on the draft Quino Amendment. The Project applicants have worked with County staff and USFWS to ensure that the proposed Project development footprint is consistent with the draft Quino Amendment. The draft Plan depicts the Resort Village development footprint as a "0% Conservation Area," which is where conservation of QCB or its habitat will not be required, but conservation of viable occupied QCB habitat will be encouraged. Additionally, where impacts to occupied QCB habitat occur within "0% Conservation Area," mitigation will be required as outlined in Section 2.3, Biological Resources.

City of San Diego MSCP Subarea Plan

The City of San Diego MSCP Subarea Plan encompasses 206,124 acres within the County MSCP Subarea Plan. The City's Preserve area represents a "hardline" preserve, in which boundaries have been specifically determined. It is considered an urban preserve, which is constrained by existing or approved development, and is composed of linkages connecting several large areas of habitat.

The City of San Diego currently owns Preserve lands surrounding Upper and Lower Otay Lakes (managed by the City of San Diego Water Department). Upper and Lower Otay Lakes are included within the City's MSCP "Cornerstone" properties, which total 10,400 acres and are

considered essential building blocks for creating a viable habitat preserve system. Cornerstone properties have been largely maintained by the City of San Diego Water Department in an undisturbed natural condition to serve as watershed for Lake Hodges, San Vicente, and Upper and Lower Otay Lakes. Conservation of City of San Diego lands around Upper and Lower Otay Lakes will form a natural open space corridor in the South Bay area. The Upper and Lower Otay Lakes component of the Cornerstone properties comprises 1,800 acres. The proposed Project abuts Cornerstone properties on its western and southern edges along Otay Lakes Road.

The City of San Diego MSCP identifies compatible land uses within the Cornerstone properties, including passive recreation, utility lines and roads, limited water facilities and other essential public facilities, limited low-density residential uses, brush management, and limited agriculture. These land uses are considered compatible with the biological objectives of the City's MSCP. In addition, the City of San Diego MSCP includes general planning policies and design guidelines for road and utilities; construction and maintenance policies; fencing, lighting, and signage; materials storage; mining, extraction, and processing facilities; and flood control. These policies and guidelines are to be used in planning and design to avoid or limit impacts to the City's MSCP.

City of Chula Vista MSCP Subarea Plan

The City adopted the Chula Vista MSCP Subarea Plan in 2003. The Chula Vista MSCP Subarea Plan also incorporates the Otay Ranch RMP, including the Otay Ranch Preserve and, as discussed in this EIR, it reflects the components of the Baldwin Letter. The Chula Vista MSCP Subarea Plan planning area includes the entire Otay Ranch; however, the City does not have authority over the portions of Otay Ranch located within unincorporated San Diego County.

City of Chula Vista General Plan – Circulation Plan

The City of Chula Vista General Plan planning area includes the entire Otay Ranch; however, the City does not have land use authority over the portions of Otay Ranch located within unincorporated San Diego County. Otay Lakes Road is identified by the City's General Plan Circulation Plan – East as a six-lane Prime Arterial to the City/County municipal boundary.

Otay River Watershed Management Plan

The Project site is located within the Otay River watershed. The Otay River watershed is an approximately 145-square-mile watershed (92,920 acres) located in southern San Diego County near the international border with Mexico. This watershed includes unincorporated County land, and land within the jurisdictions of the cities of Chula Vista, San Diego, Imperial Beach, Coronado, and National City. To further evaluate and consider strategies for protecting, enhancing, restoring, and managing the watershed's natural resources, on March 24, 2004, the County, the cities of Chula Vista and Imperial Beach, and the San Diego Unified Port District entered into a Joint Exercise of Powers Agreement (JEPA) to develop and adopt the Otay River Watershed Management Plan. Subsequently, the City of San Diego entered into this agreement as well. The plan is intended to guide jurisdictional efforts to identify and protect, enhance,

restore, and manage the watershed's beneficial uses, such as water quality and wildlife habitat, while allowing for reasonable economic development and other uses, such as recreation.

The five JEPAs have adopted/approved the ORWMP and have recommended the designation of the ORWMP Policy Committee as the Interim Watershed Council. This recommendation has been approved. On May 10, 2006, the County Board of Supervisors adopted the ORWMP. On May 17, 2006, the Imperial Beach City Council approved the ORWMP, and on June 6, 2006, the San Diego Unified Port District Board of Commissioners adopted the ORWMP. Chula Vista's Resource Conservation Commission also unanimously recommended that the Chula Vista City Council adopt the ORWMP. City staff anticipates taking the ORWMP forward to the Chula Vista City Council by summer 2007. The City of San Diego adopted the ORWMP on September 2, 2008. The ORWMP is not regulatory, but rather an advisory document.

The ORWMP includes: (1) characterizing the Otay River watershed's various natural resources and land uses and threats to its resources; (2) identifying goals and objectives; (3) identifying implementation strategies for the protection, enhancement, restoration, and management of beneficial uses and natural resources; (4) developing adaptive management strategies and objectives to ensure implemented strategies are effective; (5) developing a water quality monitoring program to monitor, maintain, and enhance water quality; and (6) developing a plan that is consistent with the applicable local general plans, local resource plans and programs, the Otay River Watershed Special Area Management Plan, and Municipal Storm Water Permit (San Diego Region NPDES General Permit Order No. R9-2007-01). For further information regarding this topic, refer to this EIR, Section 3.2, Hydrology and Water Quality.

Otay Valley Regional Park Concept Plan

Within the Otay River watershed, the County and the cities of Chula Vista and San Diego have worked collaboratively on the OVRP, which is a 13-mile proposed park along the Otay River Valley from west of I-5 upstream to and around Upper and Lower Otay Lakes. Portions of the Resort Village are within the park plan area. Much of the planned regional park lies within the Otay Ranch Preserve. As such, it is anticipated that title to planned park land would be conveyed into public ownership as part of the Otay Ranch RMP conveyance program.

The park plan includes multi-use equestrian trails, hiking/biking trails, and several trailheads located throughout the corridor. Property acquisition, enhancement, and restoration planning are presently underway. On June 14, 2006, the San Diego County Board of Supervisors adopted the Western OVRP Trails Plan. The western portion of the OVRP Trails Plan was completed in 2008 and consists of an approximately 8.3-mile trail system between Saturn Boulevard west of I-5 to I-805 and includes hiking, biking, and horse trails, and fishing ponds. A connection to the Bayshore Bikeway at the south end of San Diego Bay has also been completed.

The OVRP Habitat Restoration Plan and Nonnative Plant Removal Guidelines were prepared in 2006 as guidelines for habitat restoration and/or enhancement activities within the OVRP boundaries. The goals of the OVRP Habitat Restoration Plan and Nonnative Plant Removal Guidelines are to remove populations of nonnative vegetation and manage and minimize the

expansion on nonnative species in the OVRP. To accomplish these goals, the plan proposes to map nonnative species and vegetation communities in the OVRP and produce a plan for removal of nonnative plants and restoration of habitat. These guidelines are not intended to supersede or replace any local regulations.

Water Quality Control Plan for the San Diego Basin and San Diego County NPDES Municipal Storm Water Permit

The San Diego RWQCB is responsible for implementing and enforcing the laws and regulations regarding water quality in the San Diego region. With regard to storm water runoff, RWQCB requires compliance with RWQCB regulations and the applicable provisions of the federal CWA, including NPDES criteria and permitting. The RWQCB San Diego Basin Plan is the Water Quality Control Plan for the San Diego Basin and establishes the beneficial uses and water quality objectives for surface and groundwater resources.

The NPDES Storm Water Program addresses non-agricultural sources of storm water runoff that adversely affect the quality of the Country's waters. Under the NPDES Program, regulated entities must obtain coverage under an NPDES storm water permit and implement a SWPPP or a SWMP, and must utilize BMPs to reduce or prevent the discharge of pollutants into receiving waters. NPDES storm water permit regulations generally cover the following classes of storm water dischargers: operators of municipal separate storm sewer systems (MS4), operators of certain industrial facilities, and operators of construction activities that disturb 1 or more acre of land. Implementation of the proposed Project requires conformance with the NPDES Storm Water Program's Construction General Permit and the Municipal Permit.

Construction General Permit

Dischargers whose projects disturb 1 or more acres of soil, or less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the SWRCB's Order 2012-0006-DWQ (amending Order 2009-0009-DWQ as amended by 2010-0014-DWQ), the Construction General Permit (SWRCB 2012). Construction and demolition activities subject to this permit include clearing, grading, grubbing, and excavation, or any other activity that results in a land disturbance equal to or greater than 1 acre.

Permit applicants are required to submit a Notice of Intent to the SWRCB and to prepare a SWPPP. The SWPPP must identify BMPs that are to be implemented to reduce construction impacts on receiving water quality based on potential pollutants. The SWPPP also must include descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases are completed at a site (post-construction BMPs).

The Construction General Permit includes several additional requirements (as compared to the previous Construction General Permit, 2009-0009-DWQ), including risk-level assessment for construction sites, a storm water effluent monitoring and reporting program, rain event action plans, and numeric action levels for pH and turbidity.

San Diego County Municipal Storm Water Permit (R9-2013-0001)

Under Phase I of its storm water program, USEPA published NPDES permit application requirements for municipal storm water discharges for municipalities that own and operate separate storm drain systems serving populations of 100,000 or more, or that contribute significant pollutants to waters of the U.S. The proposed project is subject to the San Diego Municipal Storm Water NPDES Permit (Municipal Permit) under Order R9-2013-0001. The proposed project design would have to comply with requirements and measures outlined in this municipal permit to minimize impacts to water quality and runoff hydrology for the construction and operational phases of the proposed project life.

The Municipal Permit requires that each copermitee covered under the permit (i.e., a variety from San Diego, Orange, and Riverside counties) prepare Water Quality Improvement Plans (WQIPs), establish action levels for non-storm water and storm water pollutants, monitor and assess program requirements, and update Jurisdictional Urban Runoff Management Plans (JURMPs). JURMPs address water pollution management for construction activities, development planning, and existing development management.

The local jurisdictions within the San Diego region regulate water quality through a variety of ordinances and guidelines, including but not limited to, jurisdictional urban runoff management programs and storm water standards. In accordance with the provisions of the Municipal Permit, the County of San Diego developed a Standard Urban Storm Water Mitigation Plan (SUSMP) (County of San Diego 2011a). The SUSMP identifies mitigation strategies required to protect storm water quality for new development and significant redevelopment within the San Diego region. Development within each respective County of San Diego municipality is subject to each respective SUSMP, accordingly.

SANDAG Regional Comprehensive Plan, Regional Transportation Plan, and Sustainable Communities Strategy

The SANDAG Regional Comprehensive Plan (RCP), adopted in 2004, provides the strategic planning vision for the San Diego region. In 2011, SANDAG adopted the 2050 Regional Transportation Plan and Sustainable Communities Strategy (2050 RTP/SCS). The 2050 RTP/SCS serves as guide for transportation development in the region through the year 2050, and promotes the planning and construction of sustainable communities to reduce GHG emissions in the region. The RCP states that of the 3.3 million acres of land in the region, 500,000 acres are currently developed and 1.5 million acres are constrained by topography or are held in a public use such as an open space preserve or military use. Only 700,000 acres of land are available for development purposes to meet the forecasted increase in population of 1,253,315 people, or 388,436 new homes, expected by 2050 (SANDAG 2011). Furthermore, of the 700,000 available acres, only 38,000 acres are planned for densities equal to or greater than 1.0 du/acre. The RCP is intended to maximize the remaining developable land to meet future housing demands while preserving open space resources (SANDAG 2004). SANDAG is currently in the process of updating and combining the RCP and the RTP/SCS in a document called San Diego Forward: The Regional Plan, which is scheduled for adoption in 2015.

Local Agency Formation Commission (LAFCO)

The San Diego LAFCO is a regulatory agency with County-wide jurisdiction. It provides assistance to local agencies in coordinating, directing, and overseeing logical changes to local government jurisdictional boundaries, including annexations, sphere of influence updates/adoption, Municipal Service Reviews (MSRs), and other actions.

An annexation is the inclusion of new territory in a city or special district. A sphere of influence is a plan for the probable physical boundaries and service area of a local government agency as determined by the San Diego LAFCO. Spheres of influence are characterized as planning tools used to provide guidance for individual proposals involving jurisdictional changes and are intended to encourage efficient provision of organized community services and prevent duplication of service delivery. Territory must be within a city or district's sphere of influence in order to be annexed.

MSRs are studies that must be conducted to determine the adequacy of governmental services being provided in the region or sub-region. The service review studies are to be conducted before or in conjunction with updating an agency's sphere of influence. Developing and updating spheres of influence and performing service reviews for each city and special district within the County is a priority for the San Diego LAFCO.

The policies of the San Diego LAFCO affect the development of the proposed Project. Specifically, the proposed Project may require sphere of influence updates and possible annexation to special districts and agencies, including the SDCWA, MWD, and OWD. The proposed Project may require that local agencies update their spheres of influence to include the Project site.

Of particular consequence are the following LAFCO reports expressly focused on issues critical to the efficient provision of fire and sewer service for the proposed Project:

- Funding Fire Protection, An Overview of Funding Issues Facing Fire Protection Districts, LAFCO, November 2003;
- Municipal Service Review & Sphere of Influence Update: County Sanitation Districts, LAFCO, January 30, 2007;
- Southern San Diego County and Sewer Service Municipal Service Review, LAFCO, February 2, 2004;
- Hybrid Plan, LAFCO, October 6, 2008.

3.3.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines for land use and planning are based on Appendix G of the CEQA Guidelines. A significant impact to land use and planning would occur if the Project would do the following:

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

3.3.2.1 *Potential to Physically Divide an Established Community*

Guideline for the Determination of Significance

A significant impact to land use and planning would occur if the Project would do the following:

- Physically divide an established community.

Rationale for Selection of Guidelines

The significance threshold for land use/planning is based on Appendix G of the CEQA Guidelines. This guideline requires evaluation of the Project site as it relates to existing surrounding uses.

Analysis

The Project site is currently undeveloped, but is included in the County General Plan as a developable residential/resort community. The area surrounding the Project site consists of existing development to the west and undeveloped land to the east, south, and north. Land in the immediate vicinity of the proposed Project is governed by the Otay SRP in the unincorporated area and the Otay Ranch GDP in the City of Chula Vista. As such, there is no existing, established community surrounding the Project area that would be divided or disrupted. In addition, the proposed Project does not propose a major roadway, physical barrier, infrastructure improvement, building, or structure that would divide or disrupt an already established community. Therefore, ***no impacts*** associated with physically dividing an established community are anticipated to occur.

3.3.2.2 *Conflicts with Applicable Land Use Plans, Policies, Guidelines, and Regulations*

Guideline for the Determination of Significance

A significant impact related to land use and planning would occur if the Project would do the following:

- 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.

Rationale for Selection of Guidelines

The significance threshold for land use/planning is based on Appendix G of the CEQA Guidelines. This guideline requires evaluation of the adopted land use plans governing the region and the Project site, and whether any conflicts arise between those plans and implementation of the proposed Project.

Analysis

Proposed County General Plan Amendments, Otay SRP Amendments and Rezone

This subsection analyzes the proposed Project's (a) GPAs, including Land Use and Circulation Element GPAs associated with the proposed Specific Plan; (b) Rezone/Reclassifications; and (c) proposed amendments to the Otay SRP. The General Plan, Zoning Map, and Otay SRP are evaluated together because (a) the analysis generally reflects the same plan change, modification of the development footprint; and (b) the Otay SRP is a component of the County General Plan.

The proposed GPAs serve two overall purposes: the proposed GPAs update the adopted Otay SRP to reflect prior amendments made by the City of Chula Vista to the Otay Ranch GDP; and the proposed GPAs implement the proposed Otay Ranch Resort Village Specific Plan in a manner consistent with the County General Plan and Otay SRP.

County General Plan Land Use Element Amendments

The proposed Project is consistent with both the current General Plan Regional Category designations as Semi-Rural and Rural lands; and the General Plan Land Use designations for Specific Plan Area and Open Space - Conservation; however, the boundaries in the General Plan depict the adopted Otay SRP land use boundaries on the Project site. Therefore, the Project proposes to adjust the County's boundaries between the Specific Plan Area and the Open Space - Conservation designations, and between the Semi-Rural and Rural designations to accommodate the proposed Project's land use plan, based on more precise planning and engineering at the project level. As shown in **Figure 3.3-5**, the proposed GPA would adjust the existing Semi-Rural designation of the County Regional Categories Map to match the areas proposed for development (Semi-Rural) and for open space (Rural). **Figure 3.3-6** shows the proposed amendment to the Specific Plan Area and Open Space (Conservation) land use designations of the County General Plan, Otay Community Plan Map.

As described in Sections 1.2.2.2 and 2.3 of this EIR, the proposed GPA would result in the preservation of higher quality habitat located within areas proposed to be changed from Specific Plan Area to Open Space (Conservation). The protected habitat areas consist of high-quality vernal pool resources, QCB habitat, and wildlife corridors that would facilitate movement between the upland areas in the north and wetlands associated with Lower Otay Lake. These proposed additional open spaces areas are not currently preserved in the adopted MSCP. As a

result, the proposed GPA would no longer require the Sensitive Resource Study Area designation of the land use map in Otay SRP, in recognition that the K8 vernal pool complex is being preserved and the K6 complex would be within the proposed development footprint.

Appendix B describes goals in the County General Plan that are applicable to the proposed Project and contains an assessment of the proposed Project's consistency with the listed General Plan goals. As described in **Appendix B**, the proposed Project would be consistent with all applicable goals of the General Plan, following adoption of the proposed General Plan Amendments. With adoption of the proposed General Plan Amendments, the proposed Project would be consistent with the General Plan land use boundaries for the Project site.

County General Plan Mobility Element Amendments

As described above, the Mobility Element of the County General Plan currently classifies Otay Lakes Road as a four-lane (4.1B) Major Road with Intermittent Turn Lanes beginning at the Chula Vista/County municipal boundary west of the proposed Project and continuing along the Project frontage up to the second Project entry (proposed Strada Piazza), transitioning to a two-lane (2.1D) Community Collector with Improvement Options east of the second Project entry.

The Project proposes a County General Plan Mobility Element Amendment to reclassify Otay Lakes Road from a 4.1B Major Road with Intermittent Turn Lanes to a four-lane 4.2A Boulevard with Raised Median beginning at the Chula Vista/County municipal boundary west of the proposed Project and continuing along the Project frontage up to Strada Piazza. The reclassified road segments would accommodate projected traffic volumes at Project build-out while reducing biological impacts within the City of San Diego MSCP Cornerstone lands and enabling Otay Lakes Road to maintain its existing character. Section 2.9, Transportation/Traffic, of this EIR provides further analysis of Otay Lakes Road's traffic volumes. The proposed reclassified road segments also would accommodate Project traffic without creating potential growth-inducing impacts caused by a road oversized for both the Project site and the region. **Figure 3.3-7** depicts the current County General Plan Mobility Map. **Figure 3.3-8** depicts the proposed County General Plan Mobility Map.

With adoption of the proposed General Plan Amendments, the proposed Project would be consistent with the General Plan Circulation Element.

Proposed County Zoning Ordinance Rezone/Reclassifications

The existing zoning on the Project site is a combination of S87, Limited Control, in areas currently designated as Open Space in the Otay SRP, and S88, Specific Plan, in areas currently designated for development in the Otay SRP. The proposed Rezone would adjust the boundary of the S88 zone to reflect the Specific Plan development footprint, and reclassify other designated areas to S80, Open Space. **Figure 3.3-3** depicts the existing zoning on the Project site. **Figure 3.3-9** depicts the Project site's proposed zoning.

With adoption of the proposed General Plan Amendments, the proposed Project would be consistent with the San Diego County Zoning Map.

Otay SRP Amendments

The Project proposes to amend the Otay SRP to reflect the Specific Plan development plan, land uses, densities, and circulation. The proposed amendments to the Otay SRP include both map amendments and text/policy amendments. These proposed amendments are described in detail in the Otay Ranch Resort Village General Plan Amendment Report (**Appendix B**). The proposed amendments are discussed below.

Otay SRP Circulation Plan Amendment

The Otay SRP is currently not consistent with the County Mobility Element as it relates to Otay Lakes Road. Therefore, the Project proposes to amend the Otay SRP to accomplish two goals: (a) make the Otay SRP and the Mobility Element consistent and (b) revise the alignment and classification shown in the existing Otay SRP for Otay Lakes Road to reflect its current physical and ultimate planned alignment in the General Plan Mobility Element adjacent to Lower Otay Lake.

The proposed Project would amend the Otay SRP classification of Otay Lakes Road from a six-lane Prime Arterial to a four-lane (4.2A) Boulevard with Raised Median beginning at the Chula Vista/County municipal boundary west of the proposed Project and continuing along the Project frontage up to the second Project entry (proposed Strada Piazza), transitioning to a two-lane (2.1D) Community Collector with Intermittent Turn Lanes east of the second Project entry. The Project also proposes to amend the alignment of Otay Lakes Road from its currently depicted location in the Otay SRP through the center of the Project site to the current physical alignment along Lower Otay Lake. This alignment is consistent with the County General Plan Mobility Element.

The reclassified road segments would accommodate projected traffic volumes at Project build-out, while enabling Otay Lakes Road to maintain its existing character and avoid impacts to sensitive habitat in the City of San Diego MSCP Cornerstone lands. Section 2.9, Transportation/Traffic, of this EIR provides further analysis of Otay Lakes Road's traffic volumes. The proposed reclassified road segments also would accommodate Project traffic without creating potential growth-inducing impacts caused by a road oversized for both the Project site and the region. With adoption of the proposed amendments to the Otay SRP, the project would be consistent with the Otay SRP Circulation Plan.

Figure 3.3-10 depicts the current Otay SRP Circulation Plan Map. **Figure 3.3-11** depicts the proposed Otay SRP Circulation Plan Map.

Proposed Otay SRP Amendments Associated with Prior Action by Chula Vista

Initial planning for the Otay Ranch was conducted jointly by Chula Vista and the County between 1989 and 1993. The resulting plan, the Otay Ranch GDP/Otay SRP, includes the Chula Vista GDP component and the County's Otay SRP, Volume 2. On June 4, 1996, the Chula Vista City Council adopted amendments to the GDP. To align the County's version of the Otay Ranch plan with the City's prior amendments, portions of the Otay SRP are proposed to be amended.

The prior Chula Vista amendments were previously analyzed as part of the certified Otay Ranch Program EIR (SCH No. 1989010154).

Specifically, the Project proposes Otay SRP Amendments to permit the Birch Family Estate parcel to be planned independently from the proposed Project, to provide performance criteria relative to residential and habitat noise mitigation, to add a policy regarding habitat protection, and to clarify requirements for the use of solar energy. For a description of the proposed text amendments, shown in strike-out/underline, refer to the Otay Ranch Resort Village General Plan Amendment Report (**Appendix B**).

Proposed Village 13 Otay SRP Map Amendment

The Project proposes Otay SRP map amendments to adjust the development footprint. **Figure 3.3-4** depicts the existing Otay SRP Village 13 Land Use Map. The proposed Otay SRP Village 13 Land Use Map is shown in **Figure 3.3-12**. The proposed Otay SRP map amendments would preserve, as open space, areas previously designated for development, and allow development in previously designated open space areas to preserve high-quality vernal pool resources and the Quino checkerspot butterfly, effectuate habitat conservation and enhancement/restoration, and enhance wildlife movement, as described in further detail in Section 3.3.2.3 – Compatibility of Development with Habitat Conservation or Natural Community Conservation Plans.

In addition to reduced impacts to biology, the Otay SRP Village 13 Map Amendments would result in a smaller footprint and different location for the Resort component of the proposed Project, and a change in the mix between single-family and multi-family homes. The Project proposes to reduce the size of Resort uses from 134.1 acres, located in the central portion of the Project site, to 17.4 acres on a rocky promontory on the Project site's eastern edge. Locating the Resort to this location would maximize unique South County open space and mountain and lake views, consistent with the Project Objectives identified in Chapter 1.0. Reducing the size to 17.4 acres would be compatible with the reduction from 800 to 200 rooms.

The Otay SRP permitted 658 single-family residential homes and 1,408 multi-family residential homes in Village 13. Part of the reason for this product mix was because Village 13 was considered a complimentary village to the exclusively single-family residential uses in Village 15. Village 15 was subsequently acquired by conservation entities for conservation purposes and is not expected to be developed. The Project proposes to modify the single-family to multi-family mix by permitting 1,881 single-family homes and 57 multi-family homes. The rationale in support of this change is based on several important considerations. First, with the elimination of Village 15, the Project site is now on the fringe of development where single-family residential is a more compatible use. Second, reduction of single-family homes in eastern Otay Ranch (Villages 14, 15, and Planning Area 16) increases the demand for single-family homes in Village 13. Third, the creation of three distinct development footprints, necessitated by biological concerns, does not accommodate multi-family pads. Fourth, single-family homes can be accommodated on terraced, contour grading.

Finally, the original Otay SRP Land Use Map included a call-out for a 500-foot buffer around Lower Otay Reservoir. It is unclear if this was eliminated through prior Plan Amendments;

therefore, it is proposed to be deleted and replaced with a requirement to buffer the reservoir via BMPs which the project Water Quality Technical Report have demonstrated are sufficient to protect the quality of the water within the reservoir.

Proposed Otay SRP Text/Policy Amendments

The proposed Project is inconsistent with certain text, tables, and maps contained in the adopted Otay SRP. Thus, the Project proposes to amend the Otay SRP to reflect the proposed Specific Plan development plan, land uses, densities, and circulation. The text and map amendments are discussed in detail in the Otay Ranch Resort Village General Plan Amendment Report (**Appendix B**). This EIR highlights those proposed amendments below.

First, the Project would amend the Otay SRP to remove the elementary school and fire station site from Village 15, which requires modification of the Village 15 Land Use Map, Village 15 Land Use Table, San Ysidro Mountain Parcel Land Use Table, and associated text amendments. **Figure 3.3-13** depicts the existing Village 15 Land Use Map. The proposed Village 15 Land Use Map is depicted in **Figure 3.3-14**.

Figure 3.3-15a depicts the existing Otay GDP/SRP Land Use Map (San Ysidro Mountain Parcel). The proposed Otay SRP Land Use Map (San Ysidro Mountain Parcel) is depicted on **Figure 3.3-15b**.

Second, the Project would amend the Otay SRP to reflect the revised Village 13 Land Use Map within the Proctor Valley Parcel. **Figures 3.3-16a** and **3.3-16b** reflect the existing and proposed Otay SRP Land Use Map (Proctor Valley Parcel).

Third, the Project would amend the Otay SRP Open Space System Exhibit to reflect the proposed Project and previous amendments to the Otay SRP within the City of Chula Vista. **Figures 3.3-17** and **3.3-18** depict the existing and proposed Otay SRP Open Space System maps in relation to the proposed Project.

Fourth, the Project would amend the Otay SRP Circulation Element Roads exhibit as described above.

Fifth, the Project would revise the Resort Village setting and description section to reflect the proposed Specific Plan Land Use Plan, including the number of single-family and multi-family homes permitted on the Project site, deleting the reference to a golf course, and clarifying that allowable commercial uses include mixed-uses.

Sixth, the Project would revise the Otay SRP text calling for 2.0 du/acre in sloping, high-elevation areas and 3.0 du/acre in gently sloping areas of the Project site to 3.2 du/acre and 4.4 du/acre, respectively. The Project also would revise the Otay SRP to adjust the maximum number of hotel rooms from 800 to 200 rooms. In addition, the Otay SRP would be revised to reflect the proposed Project's shift from higher density multi-family to predominately single-family. As a result, the footprint of multi-family residential development areas is significantly reduced and the density of the single-family residential development areas is increased. In addition, the proposed revision would result in the Project having an overall density of 3.5

du/acre, which is less than currently approved in the adopted Otay SRP (4.75 du/acre). For further information justifying the shift from multi-family to single-family, refer to the Otay Ranch Resort Village General Plan Amendment Report (**Appendix B**).

Seventh, the proposed Otay SRP text/policy amendments would clarify that application of the Otay SRP and the County Park Land Dedication Ordinance (PLDO) would result in 28.6 acres of local parks within the Project site.

Eighth, the proposed Otay SRP text/policy amendments would delete the policies calling for the abandonment and rehabilitation of Otay Lakes Road. The alignment of Otay Lakes Road in the adopted Otay SRP bisects the Project site and requires substantial grading through sensitive resource areas. The proposed road alignment of Otay Lakes Road would generally follow the existing built road, creating a more cohesive village, minimizing grading through sensitive biological and topographical resources, and creating greater preservation of sensitive resources than was provided under the Otay SRP.

Lastly, the proposed Otay SRP text/policy amendments would revise previously adopted mitigation measures in connection with the previously certified Otay Ranch PEIR. Such mitigation measures are also included in Part IV of the adopted Otay SRP. Specifically, minor revisions to specified mitigation measures are proposed to recognize changes necessitated by the 2001 amendment to the Otay SRP and the proposed Project. See Appendix B for the proposed revised mitigation measures. **Table 3.3-1** lists goals in the Otay SRP that are applicable to the proposed Project and contains an assessment of the proposed Project's consistency with the listed Otay SRP goals. As described in **Table 3.3-1**, the proposed Project would be consistent with all applicable SRP goals, following adoption of the proposed Otay SRP Map and Text/Policy Amendments. With adoption of the proposed GPA to amend the County Regional Categories Map and the Otay SRP map, text, and policy amendments, the proposed Project would be consistent with the Otay SRP. Therefore, land use and planning impacts related to conflicts with applicable land use plans, policies, guidelines, and regulations would be *less than significant* and no mitigation is required.

Conflicts with the Otay Ranch Village Phasing Plan

The Village Phasing Plan designates Village 13/Resort Village as part of the First Eastern Phase. The Village Phasing Plan contemplated the First Eastern Phase would begin developing midway through the First Western Phase. The First Western Phase is composed of Villages 1 and 5. Both of these Villages have been developed; therefore, development of the proposed Project would be consistent with the Village Phasing Plan. Impacts related to conformance with the Village Phasing Plan are considered *less than significant*.

Conflicts with the Otay Ranch Facility Implementation Plan

The Facility Implementation Plan addresses issues pertaining to development of public facilities and services within Otay Ranch, including service thresholds and processing requirements. The proposed Project includes a Public Facilities Financing Plan (PFFP), which discusses the phasing and funding of required improvements to public facilities. Compliance with the PFFP will ensure

such facilities are provided in a timely manner and that all the thresholds contained in the Facility Implementation Plan are met. Therefore, the proposed Project would be consistent with the Facility Implementation Plan, and impacts related to conformance with the Facility Implementation Plan are considered *less than significant*.

Conflicts with the Otay Ranch RMP

The Phase 1 RMP requires the preparation of a Preserve Edge Plan as a component of each Specific Plan adjacent to the Otay Ranch Preserve to address the transition area between development and the Preserve, including fuel modification, appropriate landscaping, and other issues. The proposed Otay Ranch Resort Village Specific Plan includes the required Preserve Edge Plan.

The Phase 2 RMP requires that 1.188 acres of Preserve land be dedicated to the Otay Ranch Preserve Owner Manager for each 1 acre of development area (excluding common use lands as defined in the Phase 2 RMP). The proposed Project includes approximately 747 acres of “development area” (as defined by the Phase 2 RMP, excluding Common Uses such as schools, major roads, and public parks). As such, implementation of the proposed Project would require conveyance of approximately 888 acres of Preserve land to the Preserve Owner Manager.

A ranch-wide steep slope standard requiring preservation of 83 percent of the natural steep slopes throughout the Otay Ranch to protect these resources was established in the RMP. Based on current data collection and updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25 percent or greater. Applying the Otay Ranch GDP/RMP requirement for 83 percent steep slope preservation equates to 1,670 acres of steep slopes ranch-wide that could be impacted.

Development of the proposed project will impact approximately 166.5 acres of natural steep slopes. **Table 3.3-2** provides a cumulative summary of the projected Ranch-wide impacts to steep slopes at build-out. An estimated 682.3 acres of additional steep slopes will be impacted by future build-out of remaining Specific Plans in the Proctor Valley and San Ysidro Parcels. Combined with approved and anticipated steep slope impacts in the City of Chula Vista (approximately 538.3 acres), Ranch-wide impacts are estimated at 1,387.1 acres. The 1,387.1 acres of impact equates to approximately 86 percent preservation, which is above the 83 percent preservation standard in the RMP. Therefore, the RMP ranch-wide preservation requirement would be maintained and actually exceeded, and impacts to steep slopes would not be less than significant.

As part of the proposed Project, the Project applicants are proposing to (a) update the Phase 2 RMP to reflect the adoption and implementation of CFD 97-02 by the City of Chula Vista as a Preserve funding mechanism, (b) update the Phase 2 RMP to reflect the actual conveyance of Preserve land by approved SPA plans, (c) update the Phase 2 RMP to reflect the adoption of the County of San Diego MSCP Subarea Plan and the City of Chula Vista MSCP Subarea Plan, (d) modify infrastructure plans to reflect the MSCP Plan, and (e) seek County approval of the entire Phase 2 RMP.

As stated, the proposed Project seeks the approval of the entire Otay Ranch Phase 2 RMP by the County. This requires much of the Otay Ranch Phase 2 RMP adopted in 1996 and subsequently amended in December 2007, to be updated. The update incorporates several changes that have occurred in the past, including approved policy decisions (conveyance amendment, coastal sage scrub restoration amendment, County cultural survey amendment, and City and County actions on the Financing Plan); the creation of CFD 97-02 and corresponding tax rates and revenues; actual performance related to conveyance, steep slopes preservation, and Maritime succulent scrub restoration; third-party acquisitions by conservation entities; changes in GDP/SRP authorized units; adoption of the MSCP Subarea plans; deletion of SPA-One related RMP tasks; and updated monitoring budgets. The proposed Project also seeks to amend the Phase 2 RMP Preserve maps to reflect previously approved Preserve boundary modifications and amendments to the Preserve boundary and the proposed Resort Village Specific Plan boundary.

With adoption of the above proposed amendments and boundary adjustment, the proposed Project would be consistent with the Otay Ranch RMP. As a result, any land use impacts would be reduced to *less than significant*.

The Otay Ranch RMP and the MSCP Subarea Plan are complementary and overlapping applicable plans. For an evaluation of the Otay Ranch RMP as it relates to the County MSCP Subarea Plan, see Section 3.3.2.3 – Compatibility of Development with Habitat Conservation or Natural Community Conservation Plans.

Conflicts with the Otay Ranch Service/Revenue Plan

The Service/Revenue Plan identifies the estimated costs and revenue characteristics associated with implementation of the Otay SRP. The proposed Project's Public Facilities Financing Plan includes a Fiscal Impact Analysis, which analyzes the revenues and costs to the County of San Diego as a result of developing the proposed Project. The Fiscal Impact Analysis estimates the proposed Project would result in an annual surplus in revenues for the County of San Diego. Preparation of the Fiscal Impact Analysis is consistent with the Service/Revenue Plan; therefore, impacts related to conformance with the Service/Revenue Plan are considered *less than significant*.

Conflicts with the Otay Ranch Overall Design Plan

The Community Design Context and Objectives for Specialty Villages are to provide predominately single-family residential uses with recreational uses and open space, neighborhood commercial and community services, a village core, and some medium and higher density residential. The proposed Project is consistent with these objectives because it provides a Village Core with sites reserved for an elementary school, a neighborhood park, and a public safety facility. The proposed Project also includes up to 20,000 square feet of neighborhood commercial in the multiple-use planning area. Additionally, single-family residential uses are the predominate uses in the proposed Project.

The Village Design Plan also calls for planning for areas around Otay Lakes to be coordinated to result in a cohesive design. The proposed Project includes the Resort Village Specific Plan and Resort Village Design Plan, which would result in a coordinated, cohesive design for the Project

site. Therefore, impacts related to conformance with the Village Design Plan are considered *less than significant*.

Conflicts with the Otay River Watershed Management Plan

The ORWMP is not regulatory but an advisory document intended to guide strategies for the protection, enhancement, restoration, and management of beneficial uses and natural resources within the watershed, and to develop a water quality monitoring program to monitor, maintain, and enhance water quality, while allowing for reasonable economic development and other uses, such as recreation. As discussed, the Otay Ranch Program EIR, certified in 1993, provided a program-level analysis of the existing conditions and potential impacts related to hydrology and water quality for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR concluded that the potential hydrology and water quality impacts could be reduced to less-than-significant levels with incorporation of site-specific mitigation measures into the design and construction of each project within Otay Ranch. Additionally, an SWMP has been prepared for the proposed Project that describes implementation of the BMPs required by the County of San Diego WPO (County Code of Regulatory Ordinances Section 67.801 et seq.). Because the proposed Project is consistent with the applicable local general plans; federal, state, and local regulations; and the Municipal Storm Water Permit (San Diego Region NPDES General Permit Order No. 2001-01), and because the ORWMP is advisory, impacts related to the consistency of the proposed Project with the ORWMP are considered *less than significant*.

Conflicts with the Otay Valley Regional Park Concept Plan

The OVRP Concept Plan identifies a trail corridor around Lower Otay Lake. The Specific Plan Parks, Recreation, Open Space, and Trails Plan includes a trail along Otay Lakes Road. Therefore, the proposed Project is consistent with the OVRP Concept Plan and impacts related to this issue are considered *less than significant*. For additional information regarding trails to be included within the Project site, refer to this EIR, Section 3.6.4, Parks and Recreation.

Conflicts with the Water Quality Control Plan for the San Diego Basin and San Diego County NPDES Municipal Storm Water Permit

The proposed Project would comply with the provisions of the Water Quality Control Plan for the San Diego Basin and San Diego County NPDES Municipal Storm Water Permit and, therefore, the Project impact would be *less than significant*. For further information, refer to this EIR, Section 3.2, Hydrology and Water Quality.

Conflicts with the SANDAG Regional Comprehensive Plan, Regional Transportation Plan, and Sustainable Communities Strategy

The Goals of the SANDAG RCP and 2050 RTP/SCS are closely aligned. Both focus on the protecting the remaining open space in the region and creating compact urban cores. The RCP promotes several strategies to maximize the use of remaining developable land, including using housing densities greater than 1.0 du/acre and locating future development near existing roads and infrastructure. The proposed Project meets the goals of the RCP by providing an average

density of 3.6 du/acre, which exceeds the majority of the existing planned housing densities of 1.0 du/acre. The Project site also is located near urban areas and sewer and roadway circulation. The proposed Project would be consistent with the RCP's and 2050 RTP/SCS's goal of preserving open space because it would conform to the MSCP and Otay Ranch RMP, as discussed above. The 2050 RTP/SCS aims to promote alternative forms of transportation such as walking, biking, and public transit, and increase the accessibility to jobs and other activities. The proposed Project would promote walking and create a cohesive community for its inhabitants, while providing them with opportunities to live and work in the area. Because the proposed Project would maximize the use of developable land, and because the Project site is located near existing infrastructure, impacts related to the consistency of the proposed Project with the SANDAG RCP and 2050 RTP/SCS are considered *less than significant*.

Conflicts with San Diego Local Agency Formation Commission Municipal Service Review

San Diego LAFCO performed an MSR for Southern San Diego County Sewer Service in 2004. Determination 4.2 of the MSR concluded, “[t]he City of Chula Vista, Otay W[ater] D[istrict], and Spring Valley S[anitation] D[istrict] should pursue strategies for cost avoidance when planning for extension of services to the Otay Ranch [Villages] 13 and 14.” In addition, LAFCO conducted the MSR and Sphere of Influence Update, County Sanitation District (2007), which concluded that the proposed Project is outside the sphere of influence of the Spring Valley Sanitation District, and could most efficiently be provided sewer service by Chula Vista via the Salt Creek Interceptor, subject to a cost and feasibility analysis and sphere review (see **Appendix C-16**, Overview of Sewer Service). The proposed Project is consistent with the LAFCO studies because it proposes the provision of sewer service through Chula Vista via the Salt Creek Interceptor through a flow transportation agreement.

Relative to the provision of fire and emergency services, the 2003 *LAFCO Funding Fire Protection* Report supported the use of cooperative fire service delivery arrangements that produce efficiencies and reduce costs. The analysis and conclusion is also reflective of the 2005 LAFCO Fire Protection and Emergency Medical Services Review determinations that “fire protection and emergency medical services in the unincorporated region are characterized by duplicate organizational structures and redundant layers of management that needlessly consume public resources,” and that “significant management efficiency could be gained by consolidating the functions of the region’s fire protection and emergency medical agencies.”

Additionally, the proposed Project recognizes LAFCO jurisdiction relative to potential annexations to OWD, CWA, MWD, and/or the City of Chula Vista. As such, there are no identified conflicts with LAFCO policy and procedures and the proposed amendments are considered *less than significant*.

Conflicts with the Global Warming Solutions Act of 2006 (AB 32)

The proposed Specific Plan includes an Energy Conservation Plan and Water Conservation Plan that incorporate energy/water conservation and sustainable project design features to achieve GHG emission reductions resulting from implementation of the proposed Project. Refer to EIR Section 3.8, Global Climate Change, for further information.

3.3.2.3 *Compatibility of Development with Habitat Conservation or Natural Community Conservation Plans*

Guideline for the Determination of Significance

A significant impact related to land use and planning would occur if the Project would do the following:

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

Rationale for Selection of Guidelines

The significance threshold for land use/planning is based on Appendix G of the CEQA Guidelines. This guideline requires evaluation of the adopted land use plans governing the region's biological resources, and whether any conflicts arise between those plans and implementation of the proposed Project.

Analysis

The County MSCP Subarea Plan identifies a “hard line” preserve/development boundary for the Otay Ranch Resort Village. As part of the proposed Project, the Project applicants are proposing to adjust the Otay Ranch RMP Preserve Boundary and MSCP South County Segment Preserve Boundary to reflect the proposed Specific Plan development footprint. **Figures 3.3-19A and 3.3-19B** show the existing and proposed Otay Ranch RMP preserve relative to the proposed Project. In addition, **Figure 2.3-15** depicts the proposed changes to the existing preserve boundary and **Figure 2.3-16** depicts preserved habitats relative to the final proposed preserve boundary. The proposed boundary adjustment also would reconcile the RMP Preserve boundaries and the MSCP boundaries as they relate to the proposed Project site. The proposed boundary adjustment would preserve, as open space, areas previously slated for development, and allow development in previously designated open space areas to preserve high-quality vernal pool resources and the Quino checkerspot butterfly, effectuate habitat conservation and enhancement/restoration, and enhance wildlife movement. Therefore, the Project impact to habitat conservation or natural community conservation plans would be *less than significant*. A detailed functional equivalency analysis of the Project's proposed preserve configuration is provided in Section 4.0 of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR, and Section 2.3.2.5 of this EIR provides a discussion of the proposed Project's compatibility with applicable regional plans. A summary of the functional analysis is relative to key resources is provided below.

Vernal Pool Conservation

Within the existing MSCP Preserve boundary, development is proposed to occur in areas containing vernal pool resources. While it is understood that the MSCP does not provide regulatory permitting for impacts to jurisdictional waters and vernal pools, the proposed project incorporates the K8 vernal pool series, including nine pools occupied by San Diego fairy shrimp, into

a large, intact preserve which conserves the entire watershed area and provides a 100-foot buffer. The reconfiguration preserves these resources within the K8 mesa and vernal pools as part of the Otay Ranch Preserve. Impacts to the K6 vernal pools remain the same under the existing and proposed MSCP preserve boundaries. With the proposed preserve there would be increased preservation of vernal pools occupied by San Diego fairy shrimp.

Quino Checkerspot Butterfly Conservation

The Project site is within USFWS-designated critical habitat for the Quino checkerspot butterfly; this designation occurred subsequent to adoption of the MSCP. In recent years, the Wildlife Agencies have suggested the preserve boundaries should be modified to provide conservation of resources that were not previously identified, such as Quino checkerspot butterfly. The proposed Project has developed a revised preserve/development boundary to reflect recent discussions with the Wildlife Agencies regarding Quino checkerspot butterfly.

The principal focus of the proposed boundary adjustment is the Quino checkerspot butterfly. The modified preserve boundary provides for significantly enhanced conservation of Quino checkerspot butterfly and dot-seed plantain, one of the host plants for the species. Approximately 83% of the expected Quino checkerspot butterfly population will be preserved in the proposed boundary adjusted Preserve. In general, the ridgelines and hilltops in the northern and eastern portion of the site where the Quino checkerspot butterfly has been observed most frequently will be preserved.

Habitat Conservation

The proposed project would result in greater impacts to certain sensitive vegetation types, including coastal sage scrub and chaparral, than the existing MSCP hard-line development footprint for the project area. However, the proposed preserve adjustment would increase preservation of other, rarer habitat types, including valley needlegrass grassland and vernal pool. In addition, a 10.2-acre parcel (APN 598-010-04) within Proctor Valley would be added to the preserve and restoration of approximately 19 acres would be incorporated into the long-term maintenance and management plans for the preserve. Overall, the preserve resulting from the proposed boundary line adjustment is expected to be functionally equivalent or superior to the existing MSCP preserve.

Effects to Covered Species

The proposed project will result in an overall increase in conservation of covered sensitive species compared with the approved MSCP preserve. Of particular note are increases in populations of variegated dudleya by over 3,000 individuals. In addition, the proposed boundary adjustment will preserve the location where a burrowing owl was observed. While the burrowing owl has not been observed recently, if there is a suitable burrow present, the species may use it in the future. Three covered species will have less preservation with the proposed boundary adjustment: San Diego barrel cactus, San Diego goldenstar, and coastal California gnatcatcher. Overall, the effects on covered species is functionally equivalent under

the proposed Boundary Adjustment compared to the existing MSCP boundary especially with increased preservation of a narrow endemic species, variegated dudleya.

Effects on Habitat Linkages

The proposed Project is part of a habitat block and not a linkage. However, once developed, the Project site would maintain and improve wildlife movement when compared to the existing MSCP Preserve configuration. Under the original MSCP preserve configuration, only one wildlife corridor was designated within the Project site. With the proposed MSCP boundary adjustment, the original corridor is preserved and a new corridor is proposed in the central portion of the site. In addition, wildlife crossings would be provided to allow safe passage under Otay Lakes Road to Cornerstone Lands and a third linkage along the eastern edge of the project site would be maintained to provide connection to off-Preserve areas, including Dulzura Creek. Thus the proposed MSCP boundary adjustment has an improvement effect on habitat linkages and wildlife movement.

The resulting Preserve design is shown in **Figure 2.3-16**. Although smaller than the original Preserve envision by the MSCP Subarea Plan, the proposed Preserve design was determined to be biologically equivalent to the approved MSCP Preserve. Therefore, the Project would have a *less than significant* impact on the County of San Diego MSCP Subarea Plan.

Otay Ranch RMP

The Otay Ranch RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch Preserve. The Project would permanently impact approximately 778.8 acres (excluding temporary impacts to slopes, which would be revegetated, and infrastructure uses permitted within the Preserve). Of this amount, common uses include 20.7 acres of public parks, the 10-acre elementary school, and the 2.1-acre public safety site. Thus, the overall number of developable acres subject to the Otay Ranch RMP preserve conveyance ratio of 1.188 is 747.2. Therefore, the 747.2 acres of developable land within the Resort Village is subject to a conveyance obligation of 887.7 acres ($747.2 \text{ acres} \times 1.188 = 887.7 \text{ acres}$). Conveyance of the required amount of RMP preserve land will be achieved through compliance with the RMP conveyance process. Upon conveyance of 887.7 acres to the Otay Ranch Preserve, the Project will be consistent with the Otay Ranch RMP conveyance requirement.

The Project is consistent with the requirements of the Otay Ranch RMP. Therefore, the Project would have a *less than significant* impact related to conformance with applicable habitat conservation plans.

3.3.3 Cumulative Impact Analysis

The certified Otay Ranch PEIR provided a comprehensive assessment of the cumulative impacts associated with buildout of the entire Otay Ranch in conjunction with other related past, current, and future projects. This cumulative impacts analysis, found in Section 6 of the Otay Ranch PEIR, is incorporated by reference in this EIR.

The Otay Ranch PEIR determined that cumulative development in the area surrounding Otay Ranch would result in a significant cumulative loss of open space and agricultural land. The PEIR also determined that there were no feasible measures that would mitigate this significant cumulative effect to a less-than-significant level; however, the cumulative impacts were considered acceptable because of specific overriding considerations.

On a Project level, an analysis was performed to determine whether the proposed Project would result in cumulative land-use impacts when viewed in conjunction with other past, current, and probable future projects. The geographic scope for cumulative land use impacts consists of the portions of the unincorporated area of San Diego County and the City of Chula Vista bounded by I-805 to the west, Main Street to the south, Campo Road to the east, and SR- 54 to the north. Past, present, and probable future projects identified in the region are discussed in Section 1.6 of this EIR. Many of the projects described in that section have, or will, convert undeveloped land to urban uses resulting in population increases and associated environmental impacts.

Cumulative development within these areas would be required to comply with all applicable County and City of Chula Vista policies. Specifically, development would be subject to the County General Plan or the City of Chula Vista General Plan, depending on which governing body has jurisdiction over such development. These planning documents have developed land use policies to ensure that conversion of undeveloped land is consistent with the goals of the applicable jurisdiction's General Plan. These developments also would be subject to regional planning policies associated with the MSCP, Otay Ranch RMP (or RPO, as applicable), and SANDAG RCP, and would be developed in accordance with the goals of these regional planning policies. Adherence to the applicable goals and policies of the County General Plan, the Chula Vista General Plan, MSCP, Otay Ranch RMP, and SANDAG RCP by both the proposed Project and cumulative development in the vicinity of the proposed Project site would minimize cumulative impacts related to existing applicable land use plans and policies. Similarly, adherence to the applicable policies and goals of the planning documents by both the proposed Project and cumulative development in the vicinity of the proposed Project site would minimize cumulative impacts related to consistency with surrounding land uses and any physical division of an already established community.

The proposed Project would contribute to the loss of open area within unincorporated San Diego County. As discussed above, the certified Otay Ranch PEIR identified this condition as a significant unavoidable impact; however, the condition was found to be acceptable due to the adoption of specific overriding considerations. Because this issue was previously analyzed at the program level, because overriding considerations were adopted, and because the Project site is part of the adopted Otay SRP, the previously identified significant cumulative impacts have been accounted for in the approved planning and environmental documents for Otay Ranch, and such impacts have been found to be acceptable. Therefore, there are no new significant cumulative land use impacts if the proposed Project is approved and implemented. ***The conversion of the Project site is no longer considered a cumulatively considerable impact.***

3.3.4 Significance of Impacts Prior to Mitigation

As discussed above, implementation of the proposed Project would not result in any new significant Project or cumulative land use impacts.

3.3.5 Mitigation

Because no significant impacts have been identified with respect to land use and planning, no mitigation is required.

3.3.6 Conclusion

As discussed above, implementation of the proposed Project would not physically divide an established community or conflict with any applicable land use plan, policy, guideline, or regulation. In addition, the proposed Project would result in the conversion of the existing Project site from undeveloped area to developed urban uses; however, the certified Otay Ranch PEIR identified this impact as significant and unavoidable and, as a result, a statement of overriding considerations was adopted, which found the impact acceptable in light of the Project's overriding benefits. Because this issue was previously analyzed at the program level, and because a statement of overriding considerations was adopted, the conversion of the existing Project site from undeveloped to developed urban uses has been accounted for and is no longer considered significant at the Project or cumulative impact level. Thus, impacts related to land use and planning are considered *less than significant*.

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
VILLAGE 13 – VILLAGE CHARACTER POLICIES	
<p>The village character should be guided by the following qualities:</p> <ul style="list-style-type: none"> • Location in proximity to the lake; • Variable topographic conditions; • Views, especially of the lake; • Location adjacent to a scenic corridor; • Location in proximity to large blocks of open space; and • Opportunity for recreational activities. 	<p>The Project incorporates land uses on hillside terraces created within the natural topography to optimize views of Lower Otay Lake, the mountains, and surrounding open spaces (including two natural north-south corridors) while preserving variable topographic conditions. Recreational opportunities include nine parks totaling 28.6 acres, a trail and pathway system traversing the development, and open space areas. Thus, the Specific Plan is consistent with the Village 13 – Village Character Policies.</p>
VILLAGE 13 – VILLAGE POLICIES	
Provide for public access along the lake.	Public access is provided through a pedestrian pathway adjacent to Otay Lakes Road and bike lanes along Otay Lakes Road.
Blend day-to-day services intended for permanent residents with visitor-oriented attractions such as art galleries and specialty stores.	Restaurants, recreation, and retail facilities within the Resort complex are planned permitted uses to serve both visitors and residents. Additional commercial uses are permitted in the multi-use planning area.
Provide a transit stop for local bus service.	The Specific Plan identifies a location for a local bus stop, and transit service may be provided by Chula Vista Transit (CVT) in coordination with the Metropolitan Transit System (MTS).
Provide well-defined linkages to the lakefront pedestrian and bicycle pathways.	The Specific Plan includes a pathway and bike lanes along Otay Lakes Road. Pathways within the Project connect to the pathway on Otay Lakes Road and to existing trails within open space areas. The bike lanes are accessible from any of the three Project entries.
Buffer the lake edge from development through a variable setback and landscaping.	This policy was adopted when the Otay SRP located Otay Lakes Road through the middle of the Project Site. The Specific Plan leaves Otay Lakes Road in its existing alignment, along Lower Otay Reservoir, such that the road and landscaped slopes associated with the development area provide a buffer with variable setbacks.
Public recreational uses established along the lakefront should be complementary to existing recreational uses on the lake.	The Specific Plan includes a pathway on the south side of Otay Lakes Road up to Strada Sicilia. The pathway transitions to the north side of Otay Lakes Road east of Strada Sicilia. Any additional recreational amenities will be coordinated with the City of San Diego and be complementary with existing recreational uses on the lake.

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
Establish Resort square footage and floor area ratios at the Major Use Permit of Plot Plan level. The GDP/SRP Land Use Map specifies the number of dwelling units. The number of hotel rooms should be 200 maximum. The final number of rooms will be determined at the SPA level, based upon traffic, resource, visual impacts, and conformance to these guidelines.	The maximum number of hotel rooms associated with the resort hotel would not exceed 200 rooms. The actual square footage and FAR of the resort site will be established through the Site Plan Permit process.
Establish a detailed set of design guidelines for architecture in conjunction with the Resort Village SPA Design Plan. These guidelines should address the following: bulk, scale, intensity, style, and colors, including roofs, which will complement the natural surroundings.	The Resort Village Design Plan addresses architecture with particular details given for bulk, scale, style, and colors. Unifying elements in a consistent theme will be carried throughout the Project site. Architectural design for the resort hotel facilities and Multiple Use area will be approved as part of a Site Plan Permit.
Buildings along the bluff and Otay Lakes Road should be clustered and arranged to ensure that the architecture does not become a wall, preventing longer views and creating a solid edge atop the bluff. Buildings should have varied orientations, punctuated by pockets of internal open space at key intervals along the bluff edges.	Development along Otay Lakes Road is separated into varied land uses, including SFD neighborhoods, the Multiple Use Planning Area (MU), the thornmint preserve, the open space preserve, and a canyon area. This plan, coupled with site design criteria in the Resort Village Design Plan, ensures variation and view opportunities.
High quality residential uses located in the northern portions of the village should have an average density of three dwelling units per acre in sloping high elevation areas. Geographic isolation and design standards for sloping areas will provide view oriented lots with a low intensity character.	Development intensity in the Village Core area has residential densities of 4.4 dwelling units per acre. Intensity decreases in the higher elevations farthest from the lake, where densities are 3.2 dwelling units per acre. The Specific Plan complies with these standards.
Buildings should step-down slopes and/or incorporate slopes into the structure where feasible, especially in areas of steeper slopes.	The grading plan for the Project site is integrated into the natural topography. Single-family lots are generally terraced. Landscaped slopes separate development sites.
Buildings shall be visibly compatible in terms of height, scale, and bulk and shall be set back from the edge of the mesa and composed of low-rise structures no more than three stories in height, with occasional four-story buildings or iconic architectural element within the Resort and Mixed-Use land use designations approved pursuant to a Major Use Permit.	Residential development will be one- and two-story structures. The resort hotel facilities generally will be low-rise with some three- and four-story buildings. The Resort Village Design Plan and Resort Village Development Regulations provide guidelines for building height, scale, and bulk.
Buildings shall maximize the use of non-reflective/non-glare surfaces.	The Resort Village Design Plan and Development Regulations limit the use of reflective surfaces and maximizes the use of non-glare surfaces.
Buildings and materials that may be hazardous to wildlife shall not be used in proximity to wildlife	The Resort Village Design Plan includes guidelines for buildings and materials utilized when developing adjacent to natural open space areas, which restricts the use of

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
corridors.	materials hazardous to wildlife. In addition, the Preserve Edge Plan provides guidelines to buffer uses from the Preserve.
Access to outparcels shall be considered at the SPA level.	The Project is designed to allow future access to the one outparcel within the Project site.
A visual analysis shall be performed at the SPA level to assess visual impacts along Otay Lakes Road and identify important view corridors from Otay Lakes Road and prominent natural features. This analysis should illustrate natural and proposed topography, together with methods for protecting key view corridors and shall be consistent with the requirements set forth in the Overall Ranch Design Plan.	A visual analysis was performed as part of the EIR to assess visual impacts and identify important view corridors. The Site Utilization and Grading Plans locate development areas so as to protect view corridors identified in the visual analysis. In addition, the Village Design Plan includes guidelines for site design to protect view sheds.
Buildings adjacent to the northern edge of Otay Lakes Road shall be terraced upward to promote views of the lake and surrounding hillsides.	Development adjacent to the northern edge of Otay Lakes is predominately single-family homes and natural open spaces. Homes are oriented to promote views of the lake and surrounding hillsides and are limited to two stories. The terraced nature of the development will promote views of the lake.
Ensure sufficient setback and building configuration to minimize conflicts with the wildlife corridors and scenic roadways.	The development areas have been defined based on the location of wildlife corridors and scenic roadways. The Village Design Plan and Development Regulations specify setbacks and building configurations to minimize conflicts. In addition, the Preserve Edge Plan provides guidelines to buffer uses from the Preserve. The Site Utilization and Grading Plans locate development areas so as to protect view corridors identified in the visual analysis.
The resort will be a "Destination Resort" with low-rise buildings, materials, and colors, which blend with the natural environment and special design features to complement the natural terrain.	The Village Resort Design Plan and Resort Village Development Regulations include requirements for low-rise buildings (three and four stories, with architecture elements up to 75 feet possible) and use of materials compatible with the natural environment. The design of the resort structures will be specifically approved through the Site Plan permit process.

VILLAGE 13 – PARKS AND OPEN SPACE POLICIES

Preserve the major north-south canyon near the eastern side of the village. Provide an undercrossing beneath Otay Lakes Road where it traverses this major canyon.	Otay Lakes Road will remain in its current alignment consistent with the Otay SRP and County Circulation Element. The plan includes a two-lane roadway crossing the canyon on the eastern side of the village. This roadway includes a wildlife crossing traversing the canyon.
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Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
Careful design consideration shall be given to areas adjacent to natural vegetation, to include the use of native plant materials, indigenous species, and restoration and/or revegetation of habitat areas.	This area is the subject of the Preserve Edge Plan. The Preserve Edge Plan provides guidelines to buffer uses from the Preserve. Use of invasive plant material will be prohibited.
Wildlife corridors should be designated and sized in accordance with the findings of the Wildlife Corridor Study.	<p>The Project site contains one regional corridor identified in the Wildlife Corridor Study: Jamul Mountains to Dulzura Creek I (identified as the R2 linkage). The corridor currently allows animal movement between Dulzura Creek and the Jamul Mountains through the topographically steep drainage in the eastern portion of the Project site.</p> <p>The Project site is surrounded by a variety of public lands, and provides multiple linkages throughout the Project site. In addition, the Project includes design features to facilitate and enhance north-south wildlife movement, including construction of a wildlife movement culvert under the existing Otay Lakes Road, and construction of a bridge over the easternmost canyon on the site. Therefore, the Project satisfies the intended function of the R2 linkage and is consistent with this policy.</p>
Ensure that the resort development areas comply with the Resource Management Plan.	The development area is in conformance with the Otay Ranch Phase 1 RMP and the updated Otay Ranch Phase 2 RMP.
The Otay SRP Land Use Map depicts the general location and approximate acreage of a golf course. Final environmental studies and site studies completed at the SPA level may suggest variation in routing, location, and precise acreage. These modifications are permissible, as long as the character of the adjacent development does not change significantly.	The Project does not propose a golf course. Although allowed by the Otay SRP, a golf course is not a required element within the Project site.
If provided, the resort golf course should be a “links” or “modified links” course to preserve sensitive habitat areas and wildlife corridors; incorporate native vegetation; and to visually blend with the surrounding hillsides and natural areas. This type of golf course disrupts less of the natural landscape and uses less water due to reduced or minimal greens and fairways, and by incorporating natural vegetation “roughs” into the course.	Please see above regarding golf course uses on the Project site.
VILLAGE 13 – GRADING AND LANDFORM POLICIES	
Develop landform grading guidelines as part of the Otay Ranch Overall Design Plan.	The Otay Ranch Overall Design Plan includes landform-grading guidelines, and was adopted by the Board of Supervisors in 1997.

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
Contour grading (i.e., recontouring, slope variation) should be utilized to transition graded slopes into the natural topography of the area. Guidelines for landform grading should be incorporated in the SPA plans for the area.	Grading techniques are included in the Specific Plan. Contouring, slope variation, and other techniques will be utilized and result in more natural appearance of graded slopes.
Residential and resort buildings should follow the topography. Hillside sites offer opportunities to create outdoor decks, terraces, bridged walkways between buildings, and viewing areas.	The Specific Plan accommodates the hillside topographic features of the Project site to take advantage of views throughout the Project site. The Resort Village Design Plan includes design elements to further incorporate views with decks, terraces, and pathways.
Roadways should follow the existing landforms, to the extent possible.	Roadways have been designed to follow landforms to the extent possible.
Natural features should be retained, including natural drainage courses, major canyons, and prominent ridgelines.	The land use plan contained in the Specific Plan retains and accentuates natural features of the site including drainage courses, major ridgelines, and canyons. Of particular note, the Specific Plan generally conserves the two major north-south canyon systems contained within the Project site.
VILLAGE 13 – WATER QUALITY POLICIES	
Protect the water quality of Otay Lakes as part of the environmental planning process. Develop protection measures at the SPA level that ensure that potential impacts on water quality are avoided or mitigated.	The Specific Plan includes a Drainage Study and a Storm Water Management Plan to protect the water quality of Lower Otay Lake.
VILLAGE 13 – OTHER POLICIES	
The Project plans shall be submitted to the Federal Aviation Administration (FAA) for review as soon as possible to determine whether or not land use incompatibilities exist between the Project and the existing San Diego Air Sports Center. If it is determined by the FAA that such incompatibilities exist, then the SPA plan shall be designed to avoid such interface impacts. The Project Applicant shall then revise the Project's phasing plan to allow for use of the Sports Center until its option expires.	Project plans have been submitted to the FAA for review and a compatibility determination with regard to the San Diego Air Sports Center in conjunction with public review of the Project and environmental documents.
OTAY SRP – LAND USE GOALS	
Develop comprehensive, well integrated and balanced land uses, which are compatible with the surroundings.	The land use pattern for the Specific Plan integrates the village land uses within the natural setting of the Project site. The land uses include a destination resort hotel site with associated facilities, a mix of single-family and Multiple Use residential neighborhoods, an elementary school, a public safety site to include a fire station, parks and recreation facilities, and open space. The streets and buildings will be integrated into the natural topography on the hillsides. Neighborhood-serving land uses are located

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>within walking distance of most residential neighborhoods and a resort hotel is located on a rock promontory as a community focal point. Landscaping within the Project site will reference the historic agricultural setting with groves of trees, and will sensitively transition between development areas and the natural open space Preserve areas.</p> <p>The Specific Plan contains two north-south open space corridors; the eastern-most corridor contains a large canyon system and the western corridor preserves Quino checkerspot habitat and the K8 series of vernal pools.</p>
<p>Environmentally sensitive development should preserve and protect significant resources and large open space areas.</p>	<p>The Specific Plan implements this goal through the designation of about 1,089 acres of Preserve land. As described in the Otay Ranch Phase 2 RMP, 1,188 acres of Preserve land for every acre of land that is mapped for development (except common areas) within the Specific Plan site will be conveyed to the Otay Ranch Preserve Owner Manager. Accordingly, the buildout of Otay Ranch will ensure the conveyance of the Preserve lands surrounding the site.</p> <p>An open space corridor containing high-quality natural habitats, including vernal pools, extends through the Project site to establish a valuable habitat connection between the Preserve and the City of San Diego's MSCP "Cornerstone properties" to the south.</p>
<p>Reduce reliance on the automobile and promote alternative modes of transportation.</p>	<p>The Project site accommodates the alternative mobility program described in the Otay SRP. The Specific Plan's land use plan centrally locates school, park, and a public safety site in proximity to residential uses to encourage pedestrian and bicycle travel as an alternative to the automobile. The plan provides for bicycle and pedestrian circulation. Pedestrian pathways and sidewalks are provided along all streets in the Project site. In addition, public bus service for the Project site could be provided by CVT and MTS.</p>
<p>Promote village land uses that offer a sense of place to residents and promotes social interaction.</p>	<p>The Village Core includes an elementary school, public park and recreation facility, and a public safety site that are linked with the residential areas through a system of pedestrian pathways and trails. These land uses provide opportunities for active and passive recreation and serve as gathering spots for residents and visitors.</p> <p>The Project also includes a Multiple Use residential/commercial area that includes 57 residential units and up to 20,000 square feet of commercial uses.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
Diversify the economic base within Otay Ranch.	The foundation for an diverse economic base within Otay Ranch lies within the Otay SRP, which identified Planning Area 12 and the East Urban Center (EUC) as the urban heart of Otay Ranch, Industrial Planning Areas as the Ranch's job generators, a University Area, Urban Villages (Villages 1 through 11), Rural Estate Areas (Planning Areas 16 and 17), and Specialty Villages. Village 13 is one of three specialty Villages (along with Village 14 and 15). The "specialty" focus of Village 13 is to provide Otay Ranch the opportunity to construct a destination resort and create neighborhoods within which to locate executive-level homes. Higher-end homes were deemed necessary to achieve South County's economic development strategies to attract value enhanced manufacturing and research opportunities. The acquisition of Village 15 by conservation entities for conservation purposes effectively eliminated 516 higher-end single-family detached homes, making Village 13 an even more important component of the region's economic strategy. The proposed plan is consistent with the policy by creating the resort planning area and a range of single-family neighborhoods.
Promote synergistic uses between the villages and town centers of Otay Ranch to provide a balance of activities, services, and facilities.	The Specific Plan implements this goal by providing a unique combination of land uses, including a resort hotel, a mix of single-family and Multiple Use residential neighborhoods, an elementary school, a public safety site to include a fire station and law enforcement storefront, and park and recreation facilities.

OTAY SRP – MOBILITY GOALS

Provide a safe and efficient transportation system within Otay Ranch with convenient linkages to regional transportation elements abutting Otay Ranch.	<p>The Specific Plan implements this goal through an internal, local and regional circulation network.</p> <p>The internal circulation concept provides adequate vehicular access, provides alternate routes to disperse traffic, and avoids "through routes" within the residential neighborhoods. Streets within the Project site are proposed for a maximum travel speed of 30 miles per hour. This reduced speed will contribute to traffic calming and allow bicycles to travel on streets without designated travel lanes.</p> <p>Primary local access to the Project site is provided from the west by Otay Lakes Road, which also serves as a continuous link to the west as Telegraph Canyon Road. In the City of Chula Vista, Telegraph Canyon Road is a Six-Lane Prime Arterial. Telegraph Canyon Road transitions to Otay Lakes Road, a Four-Lane Boulevard with Raised Median. Otay Lakes Road transitions to a Two-Lane Community Collector beyond the Strada Piazza.</p> <p>Regional access is currently provided by I-805, which is located approximately 3 miles west of the Project site.</p>
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Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>SR-125 provides additional north/south access for the traffic generated with buildout of the south San Diego County areas, including Otay Ranch and other portions of the Chula Vista Eastern Territories. Secondary north/south access is available on I-5, along the Bay front, approximately 9 miles west of the Project site. SR-54 provides regional east/west circulation north of the Project site, approximately 5 miles.</p> <p>Public bus service for the Specific Plan could be provided by CVT and MTS.</p>
<p>Achieve a balanced transportation system that emphasizes alternatives to automobile use and is responsive to the needs of residents.</p>	<p>The circulation plan incorporates vehicular and non-vehicular modes of transportation. These facilities are designed to create an integrated system of roads, bike lanes, trails, and pedestrian pathways. Roads are arranged into a hierarchy, organized by function, to facilitate access within and around the Project site. Road classifications are based on the pending County General Plan Update classifications and have been refined to reflect the specific opportunities and constraints within the Project site. An effort has been made, where feasible, to reduce street paving to slow the flow of traffic and create a pleasant walking environment.</p>

OTAY SRP – HOUSING GOALS

<p>Create a balanced community exemplified by the provision of a diverse range of housing styles, tenancy types, and prices.</p>	<p>The Specific Plan implements the goal of providing diverse housing types through development of single-family detached, small lot, and attached homes, such as town homes. Lot sizes range from a minimum of 4,250 square feet to roughly 43,000 square feet in the higher elevation areas.</p>
<p>The provision of sufficient housing opportunities for persons of all economic, ethnic, religious, and age groups, as well as those with special needs such as the handicapped, elderly, single-parent families, and the homeless.</p>	<p>An Affirmative Fair Marketing Plan that describes outreach efforts and lending practices will be undertaken to attract prospective homebuyers and/or tenants in the proposed housing marketing area, regardless of gender, age, race, religion, handicap, or economic status. This plan will be prepared prior to construction and sales of the housing within the Project site.</p> <p>The Housing Plan is consistent with the manner in which the County Housing Element addresses reservations by income level. Pursuant to the implementation measures set forth in the Otay SRP, “after 1996, the reservations by income level shall be consistent with the policies and programs contained in the Housing Elements of the appropriate land use jurisdiction.”</p> <p>See also the GPAR discussion of the types of residential uses (Section C.1) and EIR Section 1.0 – Project Description.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
OTAY SRP – PARKS, RECREATION, OPEN SPACE GOALS	
Provide diverse park and recreational opportunities within Otay Ranch that meet the recreational, conservation, preservation, cultural, and aesthetic needs of Project residents of all ages and physical abilities.	The Specific Plan implements this goal by providing nine parks comprising approximately 28.6 acres consistent with the Otay SRP and County PLDO requirement. The parks range from 1.1 to 10.3 acres. Most homes are within easy walking distance of a planned park. In addition, about 144 acres of internal open space is provided. Further, the Specific Plan includes conveyance of Preserve lands sufficient to satisfy the Otay Ranch Phase 2 RMP requirement that 1.188 acres of Preserve land be conveyed per 1 acre of developable land. A pathway and trail system is incorporated as mobility and recreation components of the Specific Plan.
OTAY SRP – CAPITAL FACILITY GOALS	
Overall Goal	
Assure the efficient and timely provision of public services and facilities of developable areas of Otay Ranch concurrent with need.	A Public Facilities Financing Plan (PFFP) has been prepared in conjunction with the Specific Plan in compliance with the Otay SRP goal to assure the efficient and timely provision of services and facilities concurrent with need. The PFFP provides descriptions of public infrastructure, thresholds, financing mechanisms, phasing, and responsibilities for each facility.
Drainage and Urban Runoff Facilities	
Provide protection to the Otay Ranch Project area and surrounding communities from fire, flooding, and geologic hazards.	The Specific Plan implements the drainage and runoff goals with the provision of a storm drain system that cleans urban runoff from the developed areas before mixing it with natural runoff from the undeveloped portion. Natural runoff from most areas north of the Project site will be separated from the developed site runoff via separate storm drain systems. Thus, runoff from natural (undeveloped) areas would continue to drain directly to the Lower Otay Reservoir, and not mix with runoff from the development until downstream of the proposed water quality basins (after low flows from the development areas have been treated). However, due to storm drain optimization and to avoid a double storm drain system in many streets of the proposed development, some runoff from natural areas will mix with runoff from developed areas. Drainage and urban runoff from the developed portion of the Project site will drain to discharge locations via an internal storm drain system. First flush and dry weather runoff from developed areas will be diverted to water quality basins prior to discharge into Lower Otay Lake.
Ensure that water quality within the Otay Ranch Project area is not compromised.	
Ensure that the City of San Diego's water rights within the Otay River Watershed are not diminished.	
	In addition, a Master Drainage Study and a Storm Water Management Plan have been prepared for the Specific Plan to protect the water quality in Lower Otay Lake. The phasing and financing of the drainage facilities are

Table 3.3-1
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APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	addressed in the Otay Ranch Resort Village PFFP.
<p>Sewerage Facilities</p> <p>Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water.</p>	<p>The Specific Plan submittal includes the separate Overview of Sewer Service. The phasing and financing of wastewater facilities are addressed in the Specific Plan's PFFP.</p> <p>This report analyzes two options for providing sewer service:</p> <ol style="list-style-type: none"> 1) Connect to the Salt Creek Sewer System; or 2) Connect to the Spring Valley Sanitation District. <p>The report proposes that sewer service to the Project be provided through the Salt Creek Sewer system. The Salt Creek Interceptor was designed and sized to accommodate flows from the Resort Village.</p> <p>The Project proposed utilizing recycled water for irrigation but it is understood that the City of San Diego is reluctant to approve such uses above their reservoir.</p>
<p>Integrated Solid Waste Management Facilities</p> <p>Provide solid waste facilities and services that emphasize recycling of reusable materials and disposal of remaining solid waste so that the potential adverse impacts to public health are minimized.</p>	<p>The Specific Plan implements this goal with a waste management system providing for curbside recycling and landfill capacity. Curbside pickup and recycling will be accomplished through contracting with a local service provider. The recyclables will be collected curb-side and disposed at the Otay Landfill. Due to water conservation measures and landscape requirements, it is anticipated that green waste collection will be offered every other week, but trash and recycling service will occur weekly. To promote recycling, it is anticipated that a waste service provider will offer different monthly trash service rates depending on the size of each trash container.</p>
<p>Water Facilities</p> <p>Ensure an adequate supply of water for buildout of the entire Otay Ranch Project area; design the Otay Ranch Project area to maximize water conservation.</p>	<p>The Specific Plan submitted includes the Overview of Water Service. The phasing and financing of water facilities are addressed in the Specific Plan's PFFP.</p> <p>The Project must be annexed to the Otay Water District, the San Diego County Water Authority, and the Metropolitan Water District prior to receiving service. Such annexations must be acted upon by the San Diego LAFCO.</p> <p>The Otay Water District approved an SB610/SB221 water supply assessment/water verification report on February 4, 2009, for the Specific Plan area. This report, prepared by the Otay Water District, ensures that the Specific Plan's</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>water demand, in conjunction with other existing and future development, can be met by available and reliable water supplies through Otay Water District, the San Diego County Water Authority, and Metropolitan Water District.</p> <p>The Project proposes to receive water service by expanding the existing 980 Zone within the Central Service Area of the Otay Water District. There are several major 980 Zone water system improvements within the Project site that are identified in the Otay Water District's Capital Improvement Program.</p> <p>The Specific Plan's Water Conservation Plan and the Energy Conservation Plan identify strategies to conserve water during and after construction. The Water Conservation Plan requires the use of drought-tolerant, low-water usage plants in both public and private landscaped areas. The plan identifies implementable measures, including a low-water-usage plant palette, to reduce outdoor water consumption on single-family lots by a minimum of 30 percent below business as usual. Outdoor water usage comprises more than 50 percent of the total single-family home water usage and offers the greatest opportunities for measureable reductions in water consumption. These plans implement conservation measures that significantly reduce overall water consumption and the reliance on imported water.</p> <p>The street parkways, parks, and open spaces implemented by the Specific Plan will utilize water conservation landscape practices. Additionally, all non-residential developments will provide water-efficient landscaping and water-efficient irrigation.</p> <p>The Specific Plan, therefore, conforms with the water goals and policies of the Public Facilities Element.</p>
<p>Water Reclamation Facilities</p> <p>Design a sewerage system that that produce reclaimed water. Ensure a water distribution system will be designed and constructed to use reclaimed water. Construction of a "dual system" of water supply will be required for all development where reclaimed water is used.</p>	<p>Historically, recycled water has not been permitted for use on property such as the Resort Village 13 Project due to its proximity to Lower Otay Lake. However, the Otay Ranch Resort Village proposes the use of recycled water to reduce potable water usage. The Otay Ranch Resort Village estimated recycled water opportunity is 0.37 mgd.</p> <p>Prior to implementing the use of recycled water within the Project, a number of regulatory approvals will be required, as summarized below:</p> <ul style="list-style-type: none"> • The Regional Water Quality Control Board approval regarding any necessary or required Basin Plan revisions and/or issues. • Confirmation will be required from the City of San

Table 3.3-1
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APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>Diego stating that the proposed use of recycled water is consistent with its January 2004 Source Water Protection Guidelines prepared by Brown and Caldwell.</p> <ul style="list-style-type: none"> Approval from the State of California Department of Health Services Drinking Water Division will be required.
<p>Arts and Cultural Facilities</p> <p>Plan sites for facilities dedicated to the enhancement of the arts at the community level that can contain indoor and outdoor facilities capable of supporting community theater, training and exhibit of art and sculpture, musical training and concerts, film and cultural festivals, public meetings, and other community events.</p>	<p>The Otay Ranch Facility Implementation Plan anticipated a multi-use cultural complex in the Eastern Urban Center of Otay Ranch. In addition, public art and artistic public improvements will be visible in the design of the Specific Plan such as landscaping, gateways, signage, street lights, paving materials, fencing, street and park furniture, and other key focal points. These design issues are addressed in the Village Design Plan.</p> <p>The neighborhood park (P-5) also includes an amphitheater that can be used for arts and cultural performances.</p>
<p>Childcare Facilities</p> <p>Provide adequate childcare facilities and services to serve the Otay Ranch Project area.</p>	<p>The Specific Plan Development Regulations provide opportunities to locate and phase childcare facilities to meet the needs of the community. Childcare facilities may be located within private homes, commercial centers, offices, and/or adjacent to public schools when appropriate.</p> <p>Home-based childcare includes small family day care homes that serve six children and large family day care homes that serve seven to 12 children. Consistent with County zoning and the Development Regulations, small family day care homes could potentially be located within all residential zones in the Project area.</p> <p>Facility-based childcare may be non-profit or commercial facilities located in non-residential land use areas of the Project site. The State of California has adopted regulations related to licensing, application procedures, administrative actions, enforcement provisions, continuing requirements, and the physical environment for child day care and day care centers. All childcare facilities within the Project site will comply with state and local regulations.</p>
<p>Health and Medical Facilities</p> <p>Ensure provision of and access to facilities that meet the health care needs of Otay Ranch residents.</p>	<p>Based on existing and projected services provided in southern San Diego County, no additional acute hospital facility is needed to serve the Project site. Both Scripps Memorial Hospital and Sharp Chula Vista Medical Center have the capacity to meet the medical needs of the Project's residents. The Project site may also be served by Paradise Valley Hospital and private facilities. In the area</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>of mental health, recent service trends indicate an increase in day treatment and out-patient services as an alternative to traditional therapy in a hospital setting. This change in service delivery compensates for increased service demand resulting from the Specific Plan population.</p> <p>Buildout of the Project site generates an incremental demand for additional nursing home beds. This demand could be met in existing nursing facilities within southern San Diego County. Buildout of the Project site also generates the need for medical practitioners (doctors, dentists, chiropractors, and allied health professionals). Space for purchase or lease, which is accessible to the public and suitable for siting medical practitioner services, will be available within the commercial (for-profit) and Community Purpose Facility (CPF, non-profit) areas of the Eastern Urban Center and other areas of the Otay Valley Parcel in the City of Chula Vista.</p>
<p>Community and Regional Purpose Facilities</p> <p>Designate areas within the Otay Ranch Project area for religious, ancillary private, educational, day care, benevolent, fraternal, health, social and senior services, charitable, youth recreation facilities, and other county regional services.</p>	<p>The Otay SRP identified the Eastern Urban Center as the location for regional services. The Resort Village Specific Plan reserves about 12.1 acres of civic uses, including a public safety site and an elementary school site. In addition the Specific Plan includes nine parks located on about 28.6 acres, including a 10.3-acre neighborhood park. Finally, the plan contains an approximately 17.4-acre resort site, and up to 20,000 sq. ft. of commercial/retail space. All of the land uses identified above provide opportunities for community and social service facilities.</p>
<p>Social and Senior Facilities</p> <p>Ensure that Otay Ranch Project area residents have adequate access to sources of governmental and private social and senior services programs.</p>	<p>Social service programs are mandated by state and federal statutes and regulations and are largely funded from state and federal sources. The public sector provides many basic support services to needy segments of the population. At the regional level, the County of San Diego has the primary responsibility to provide social services to County residents. The Department of Social Services serves one out of every 11 County residents, or more than 100,000 persons each month.</p> <p>There are numerous non-profit health and social service organizations located in the southern San Diego County area. The City of Chula Vista provides an adult literacy program, a Youth Action Program, and the Police Activities League program. The County Area Agency on Aging provides social and nutrition programs, legal services, ombudsman programs, and services to prevent or postpone institutionalization. The City of Chula Vista provides senior services and the Park and Recreation</p>

Table 3.3-1
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APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	Department coordinates activities and programs at the Norman Park Senior Center.
<p>Animal Control Facilities</p> <p>Ensure that the community of Otay Ranch is served by an effective animal control program that provides for the care and protection of the domestic animal population, safety of people from domestic animals, and the education of the public regarding responsible animal ownership.</p>	<p>Animal control services and facilities for the Specific Plan are provided by the County animal health and regulatory services. The population-based demand generated by the Project is estimated to be approximately 313 square feet of additional facilities. No specific facilities are required for the development of the Specific Plan. The payment of property taxes, which contribute to the County General Fund that are allocated to the County Capital Improvement Program, assure the provision of required future facilities.</p> <p>The Fiscal Impact Analysis portion of the PFFP forecasts that development of the Specific Plan will generate surplus tax revenues to the County of San Diego; therefore, more tax revenues than is necessary to serve demand will be generated by the Project. Should the County elect, these revenues could be budgeted to fund addition facilities to meet the incremental increase in demand generated by this Project. Additionally, the SRP obligates the Specific Plan to contribute its proportionate fair share to any regional impact fee program, if one were to be established.</p>
<p>Civic Facilities</p> <p>Assure the efficient and timely provision of public services and facilities to developable areas of the Otay Ranch Project area concurrent with need, while preserving environmental resources of the site and ensuring compatibility with the existing character of surrounding communities, integrate different types of public facilities where such facilities are compatible and complementary.</p>	<p>The Otay Ranch Facility Implementation Plan states that 420 square feet of civic administrative facility per 1,000 residents should be used to determine the Project's demand for civic facilities. Based on an estimated population of about 6,957 residents, approximately 2,922 gross square feet floor area of civic facilities is required. The Otay SRP locates a civic facility in the Eastern Urban Center, which serves as the civic presence in Otay Ranch. Additionally, the Fiscal Impact Analysis demonstrates the Project will result in a net fiscal annual surplus at buildout. These revenues could be budgeted to fund additional facilities to meet the incremental increase in demand generated by this Project. The Otay SRP also obligates the Project to contribute is proportionate fire share to any regional impact fee program, if one were to be established.</p>
<p>Correctional and Justice Facilities</p> <p>Prevent injury, loss of life, and damage to property resulting from crime occurrence through the provision of justice facilities.</p>	<p>The South Bay Regional Center provides Municipal and Superior Court services for the South Bay Judicial District. Office space for the District Attorney, Public Defender, Law Library, Revenue and Recovery, Probation, and the Marshal also are provided at or near the South Bay Regional Center. The increased population of the Project site may contribute to the need for additional correctional facilities.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	<p>The Fiscal Impact Analysis portion of the PFFP forecasts that development of the Specific Plan will generate surplus tax revenues to the County of San Diego, that is, more tax revenues than is necessary to serve demand generated by the Project. Should the County elect, these revenues could be budgeted to fund addition facilities to meet the incremental increase in demand generated by this Project. Additionally, the SRP obligates the Specific Plan to contribute its proportionate fair share to any regional impact fee program, if one were to be established.</p>
<p>Fire Protection and Emergency Services Facilities</p> <p>Provide protection to the Otay Ranch Project area and surrounding communities from the loss of life and property due to fires and medical emergencies.</p>	<p>The Specific Plan reserves a 2.1-acre public safety site to ensure that adequate fire and emergency medical services are available to serve the Specific Plan site. The PFFP and the Fire Protection Plan (FPP) identify the equipment needs, financing, and implementation necessary for site development, including the proposed fire station. In order to prevent loss of life and property due to fires, the Fire Protection Plan and Preserve Edge Plan address fuel modification and brush management on and surrounding the Project site. The PFFP and FPP also include alternative service options in order to comply with County response time thresholds. The County Fire Mitigation Fee Ordinance, as implemented by the Rural Fire Protection District, is also addressed in the PFFP and FPP.</p>
<p>Law Enforcement Facilities</p> <p>Protection of life and property and prevention of crime occurrence.</p>	<p>The Otay SRP requires the preparation of a Law Enforcement Master Plan at the Specific Plan level. This requirement is fulfilled through the Specific Plan and the PFFP. The County currently provides law enforcement services to the Project site. The resort and residential areas will increase the demand for law enforcement services in the Project site. If the Project is served by the City of Chula Vista Police Department (CVPD), the additional demand for services can be met with three additional CVPD police officers. If the Project is served by the Sheriff's department, it will require six patrol officers. Law enforcement services are funded through tax revenues.</p> <p>The Chula Vista Police Department will not require any additional facilities to serve the Project site. The Sheriff's Department has stated that space for a 300-sq.-ft. Sheriff storefront in the 2.1-acre Public Safety site where the fire station will be located could satisfy their needs. CPTED Development guidelines also have been included in the Village Design Plan to ensure that homes, recreational, and business facilities are designed in such a way to deter crime.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
<p>Library Facilities</p> <p>Sufficient libraries to meet the information and education needs of Otay Ranch residents.</p>	<p>The PFFP analyzes the demand for library facilities generated by the Project population and estimates that 2,435 square feet are needed to serve the Project. The project site is in the service area of the Rancho San Diego County library which has the capacity to serve the proposed project. In addition, the Otay SRP plans for the location of a 36,758-sq.-ft. main library in the Eastern Urban Center (EUC). The demand for library facilities generated by the buildout of the Project site will ultimately be satisfied by this main Otay Ranch library, along with the Rancho San Diego County library.</p> <p>The Fiscal Impact Analysis portion of the PFFP forecasts that development of the Specific Plan will generate surplus tax revenues to the County of San Diego; therefore, more tax revenues than is necessary to serve demand will be generated by the Project. Should the County elect, these revenues could be budgeted to fund addition facilities to meet the incremental increase in demand generated by this Project. The Otay SRP obligates the Project to contribute its proportionate fair share to any regional impact fee program, if one were to be established. Additionally, the Project will participate in a County library fee program if established.</p>
<p>School Facilities</p> <p>Provide high-quality, K-12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district.</p>	<p>The Project site is within the boundaries of the Chula Vista Elementary School District.</p> <p>The 1,938 planned homes generate the need to accommodate approximately 794 elementary (K-6) students. The Specific Plan reserves an approximately 10-acre elementary school site sized to serve about 800 students, adjacent to a neighborhood park to accommodate joint use of facilities. In addition, the Resort Village generates the need to accommodate approximately 232 middle school (7-8) students and approximately 437 high school students. The Project site is within the boundaries of the Sweetwater Union High School District.</p> <p>The Specific Plan will satisfy the statutory requirement to mitigate this impact through the payment of school fees pursuant to state statutes or in the alternative enter into a school mitigation agreement.</p>
<p>Coordinate the planning of adult educational facilities with the appropriate district.</p>	<p>The demand for adult school facilities will be satisfied within existing facilities in the Sweetwater Union High School District, until a new facility could be constructed in the Otay Ranch Eastern Urban Center in the City of Chula Vista, on a site reserved pursuant to the Otay SRP.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
OTAY SRP – AIR QUALITY GOALS	
Minimize the adverse impacts of development on air quality.	The Specific Plan implements this goal through the application of the Otay Ranch Resort Village Air Quality Technical Report and EIR, which provide mitigation measures to reduce impacts to air quality. In addition, the Specific Plan includes an Energy Conservation Plan that addresses greenhouse gas emissions in conformance with AB32 and seeks to reduce emissions and energy use through design methods to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled.
Create a safe and efficient multi-modal transportation network that minimizes the number and length of single passenger vehicle trips.	<p>The Resort Village is a “specialty village” with only limited multi-modal opportunities. However, the proposed development facilitates pedestrian and bicycle travel. The Project circulation system is designed with pedestrian-friendly sidewalks and includes pedestrian enhancements, such as shaded pathways, lighting, benches, and other amenities.</p> <p>Bicycles are accommodated on pathways and streets. Bicycle racks will be provided at strategic locations, such as commercial areas and parks.</p> <p>Public transportation could be accommodated through the reservation of a transit stop near the Multiple Use retail center. The resort hotel may provide shuttle service to regional transportation centers.</p>
Land development patterns that minimize the adverse impacts of development on air quality.	The Specific Plan implements this goal by creating a land pattern that encourages walkability. This is accomplished through the creation of the village core that encompasses major community activity centers including an elementary school, a neighborhood park (P-5), and a public safety site planned to house a fire station and law enforcement store front. Additionally, the land pattern includes somewhat narrower streets and sidewalks separate from adjacent streets by landscaped parkways. These components contribute to a goal of an active, pedestrian community.
OTAY SRP – NOISE GOALS	
Promote a quiet community where residents live without noise that is detrimental to health and enjoyment of property.	A noise impacts analysis was prepared as part of the EIR. Consistent with the noise analysis, the EIR includes feasible mitigation measures incorporated into the Project design to minimize the noise impacts associated with the Specific Plan. The Project design is consistent with the exterior and interior CNEL noise levels regulated by the County. For further responsive information, please refer to EIR, Section 2.7, Noise.

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
Ensure residents are not adversely affected by noise.	A noise impacts analysis was prepared as part of the EIR and feasible mitigation measures will be incorporated into the Project design to ensure that residents are not adversely affected by noise.
OTAY SRP – PUBLIC SAFETY GOALS	
<p>Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena, and human-made hazards in order to:</p> <ul style="list-style-type: none"> • Preserve life, health, and property; • Continue government functions and public order; • Maintain municipal services; and • Rapidly resolve emergencies and return the community normalcy and public tranquility. 	The Specific Plan reserves a 2.1-acre public safety site that is planned to have a fire station and law enforcement store front. The Specific Plan further implements this goal by participating in emergency disaster plans and programs, establishing safe and effective evacuation routes, and facilitating post-disaster relief and recovery programs.
OTAY SRP – GROWTH MANAGEMENT GOALS	
Develop Otay Ranch villages to balance regional and local public needs, respond to market forces, and assure the efficient and timely provision of public services and facilities concurrent with need.	A PFFP has been prepared in conjunction with the Specific Plan. The PFFP assures the efficient and timely provision of services and facilities concurrent with need, and provides descriptions of public infrastructure, thresholds, financing mechanisms, scheduling, and responsibilities for each facility.
OTAY SRP – RESOURCE PROTECTION, CONSERVATION, AND MANAGEMENT GOALS	
<p>Resource Preserve</p> <p>Establishment of an open space system that will become a permanent preserve dedicated to the protection and enhancement of the biological, paleontological, cultural resources (archaeological and historical resources), flood plain, and scenic resources of Otay Ranch, the maintenance of long-term biological diversity, and the assurance of the survival and recovery of native species and habitats within the Preserve and to serve as the functional equivalent of the County of San Diego Resources Protection Ordinance (RPO).</p>	<p>As described in the Otay Ranch Phase 2 RMP, 1,188 acres of Preserve land for every acre of land that is mapped for development within the Specific Plan site will be conveyed to the Otay Ranch Preserve Owner Manager. Development within Otay Ranch will ensure the conveyance of Preserve lands that surround the site. An open space corridor containing high-quality natural habitats, including vernal pools (K8), extends through the Project site to establish a valuable habitat connection between the MSCP Preserve/wildlife refuge to the north and the City of San Diego “Cornerstone properties” to the south.</p> <p>See EIR Section 2.3 – Biological Resources for further discussion.</p>
<p>Mineral Resources</p> <p>Encourage the completion of the extraction of mineral resources before conflicts with planned development could occur.</p>	There are no known mineral resources located within the Project site. In addition, based on site visits, there are no past or present mining extraction activities within the Project site. As a result, there are no conflicts on the Project site between mineral extraction activities and planned development. There may be the opportunity to

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
	reuse some material excavated during grading activities as road base or as surface materials on the multi-use pathways. For further responsive information, please refer to EIR, Section 3.4, Mineral Resources.
Soils Minimize soil loss due to development.	Based on the geotechnical reports of the Project site, the on-site soils consist of alluvium, colluvium, soil, and artificial fill. During grading and construction of the Project site, soil erosion may occur on the Project site; however, best management practices will be implemented to ensure that erosion and the loss of topsoil are minimized. For further responsive information, please refer to EIR, Section 2.5, Geology and Soils.
Steep Slopes Reduce impacts to environmentally sensitive and potential geologically hazardous areas associated with steep slopes.	The Specific Plan conforms with this goal by minimizing impacts to steep slopes in conformance with the Otay Ranch-wide requirement to preserve 83% of existing steep slopes with gradients of 25% or greater. As shown in Table 3.3-2, fewer than 17% of steep slopes within Otay Ranch, including Village 13, will be impacted per the Otay Ranch Phase 2 RMP. For further information, please see the RMP 2 and EIR Sections 2.1, Aesthetics, and 3.3, Land Use and Planning.
Floodways Preserve floodways and undisturbed flood plain fringe areas.	There are no mapped floodplains or floodways within the Project site. In addition, the Specific Plan requires construction of adequate drainage facilities to minimize the exposure of people and property to flooding.
Visual Resources Prevent degradation of the visual resources.	The Specific Plan is consistent with this goal by implementing a terraced development plan, which preserves the expansive views over Lower Otay Lake and the Otay River Valley to the south. The mountains to the north and east provide a dramatic backdrop for the resort component of the Specific Plan. A canyon within the open space Preserve extends from the lake north through the Project site, defining development areas and creating a dramatic scenic corridor. Preserve open spaces to the north and east of the development areas also contribute to the preservation of the existing visual resources.

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
<p>Energy Conservation</p> <p>Establish Otay Ranch as a “showcase” for the efficient utilization of energy resources and the use of renewable energy resources.</p>	<p>An Energy Conservation Plan has been prepared with the Specific Plan. The Energy Conservation Plan includes requirements related to building siting and design, construction, energy efficiency, water conservation, lighting, and solar access. Of particular interest, the Project will provide for the installation of solar photovoltaic panels to generate 30% of the energy for single family homes.</p> <p>The Specific Plan implements this goal, in part, through the proposed land use plan, which is aimed at minimizing transportation requirements by locating school and park land uses in proximity to residential areas to encourage pedestrian and bicycle travel in order to reduce energy consumption.</p>
<p>Water Conservation</p> <p>Conserve water during and after construction of Otay Ranch.</p>	<p>Water conservation is maximized through the preparation of a Water Conservation Plan and the Energy Conservation Plan, which respond to the long-term need to conserve water in new and future developments. The plans will be implemented over the life of the Project and establish standards that will be acceptable to future residents regardless of water availability. The Water Conservation Plan requires the use of drought-tolerant, low-water usage plants in both public and private landscaped areas. The plan identifies implementable measures, including a low water usage plant palette, to reduce outdoor water consumption on single-family lots by a minimum of 30 percent below business as usual. Outdoor water usage comprises more than 50 percent of the total single-family home water usage and offers the greatest opportunities for measureable reductions in water consumption. These plans implement conservation measures that significantly reduce overall water consumption and the reliance on imported water.</p> <p>With regard to implementing this goal, the Project site is located above Lower Otay Lake, a drinking water source for the City of San Diego. Use of recycled water is currently not permitted above a potable water source. Should recycled water be permitted on-site at a later date, it will be used for park and open space irrigation. The Project implements a storm water diversion and/or treatment system to protect the drinking water source.</p>

Table 3.3-1
Consistency of the Proposed Project with the SRP Goals/Policies

APPLICABLE GOAL, OBJECTIVE, OR POLICY	CONSISTENCY ANALYSIS
<p>Astronomical Dark Skies</p> <p>Preserve dark-night skies to allow for continued astronomical research and exploration to be carried out at the County's two observatories, Palomar Mountain and Mount Laguna.</p>	<p>Lighting for the Specific Plan will be designed to adhere to the regulations of the County Light Pollution Code (the "Dark Sky Ordinance"). Lighting fixtures will be carefully placed and provided with glare shields and louvers to mitigate light spilling into the sky or onto adjacent properties. Trees and landscape features to be illuminated will be equipped with automatic shut-off controls that will turn-off lights no later than 11:00 p.m. Thus, the Specific Plan conforms to this goal.</p>
<p>Agriculture</p> <p>Recognize the presence of important agricultural soils both in areas subject to development and within the preserve.</p>	<p>The Project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program. According to the Soils Conservation Service Data (1973), the Specific Plan site contains Local Farmland of Importance; however, the impact associated with such agricultural resources is considered less than significant. In addition, the Project site and surrounding areas are neither zoned for agricultural use, nor is the land under a Williamson Act contract. Therefore, the Specific Plan does not conflict with existing zoning for agriculture use or a Williamson Act contract.</p>

Table 3.3-2 Otay Ranch Steep Slopes

	Existing Steep Slopes (Slope Gradient \geq 25%)	Steep Slope Impacts (City of Chula Vista)	Projected Steep Slope Impacts (County of San Diego)
<i>Otay Valley Parcel</i>			
<i>SPA Plans</i>			
Villages One and One West, Two, Four (Park Portion), Five, Six, Seven, Eight West, 9, 11, and Planning Area 12 (Eastern Urban Center and Freeway Commercial), Village Three, Four (Remainder), Eight East, Ten, University, and Planning Area 18	726.4	538.3	–
<i>Proctor Valley</i>			
<u>Remaining Specific Plans:</u> Villages 13, 14, 16, and 19	486.3	–	360.8 ^(2a,3)
<i>San Ysidro Mountains</i>			
<u>Remaining Specific Plans:</u> Villages 15 and 17	560.1	–	488.0 ^(2b,3)
Outside Development Areas	8,048.5	0	0
<i>Ranch-wide Subtotals</i>	<i>9,821.3</i>	<i>538.3</i>	<i>848.8</i>
Ranch-wide Totals	9,821.3	1,387.10	

Notes:

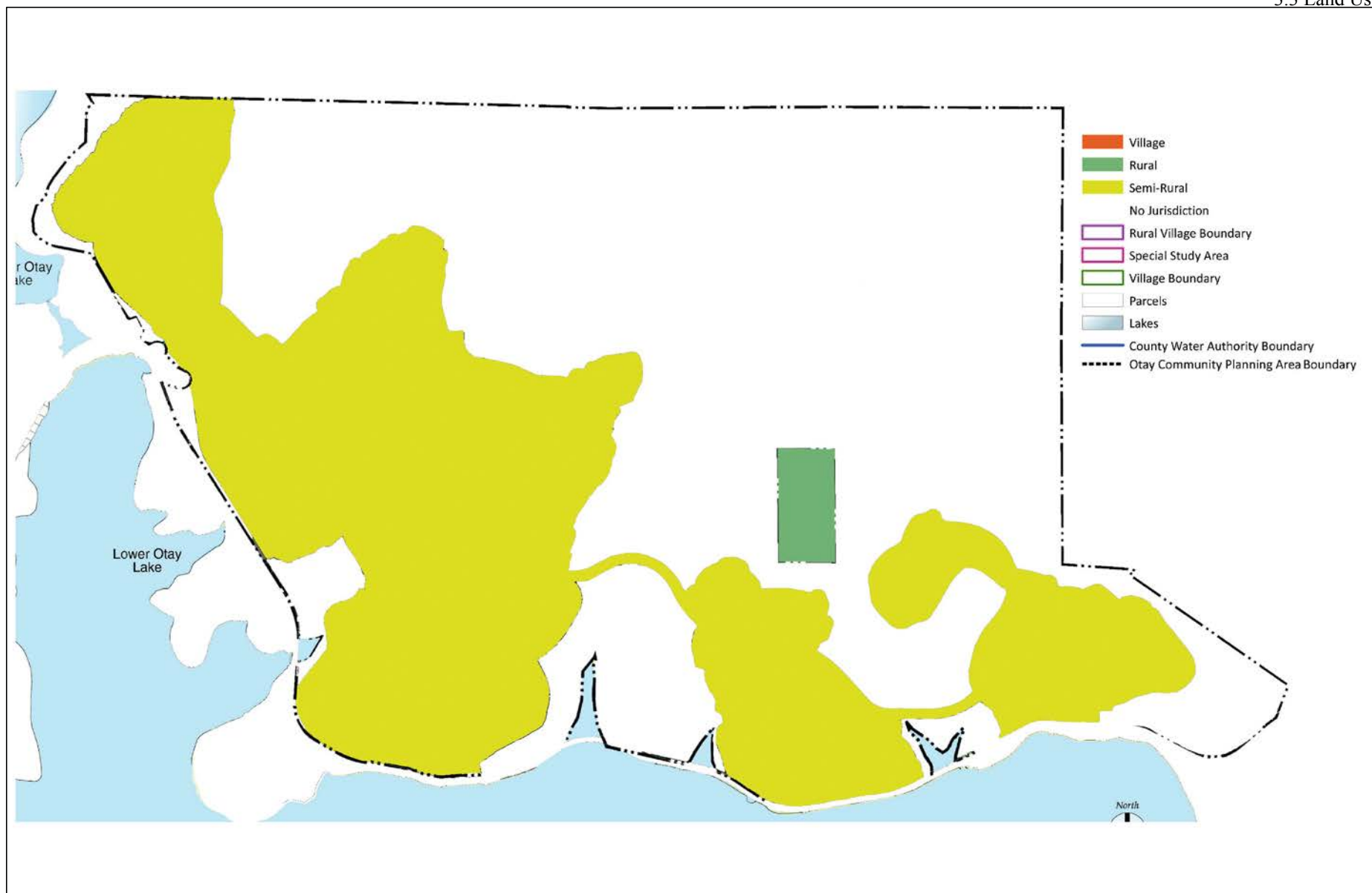
¹ Slope impacts are based on best available data including currently proposed projects (SPA Plans/Tentative Maps) and current Otay Ranch GDP/SRP development areas.

² Excludes acreages associated with Wildlife Agency conservation acquisitions that would no longer be developable:

^a 108 acres within Proctor Valley

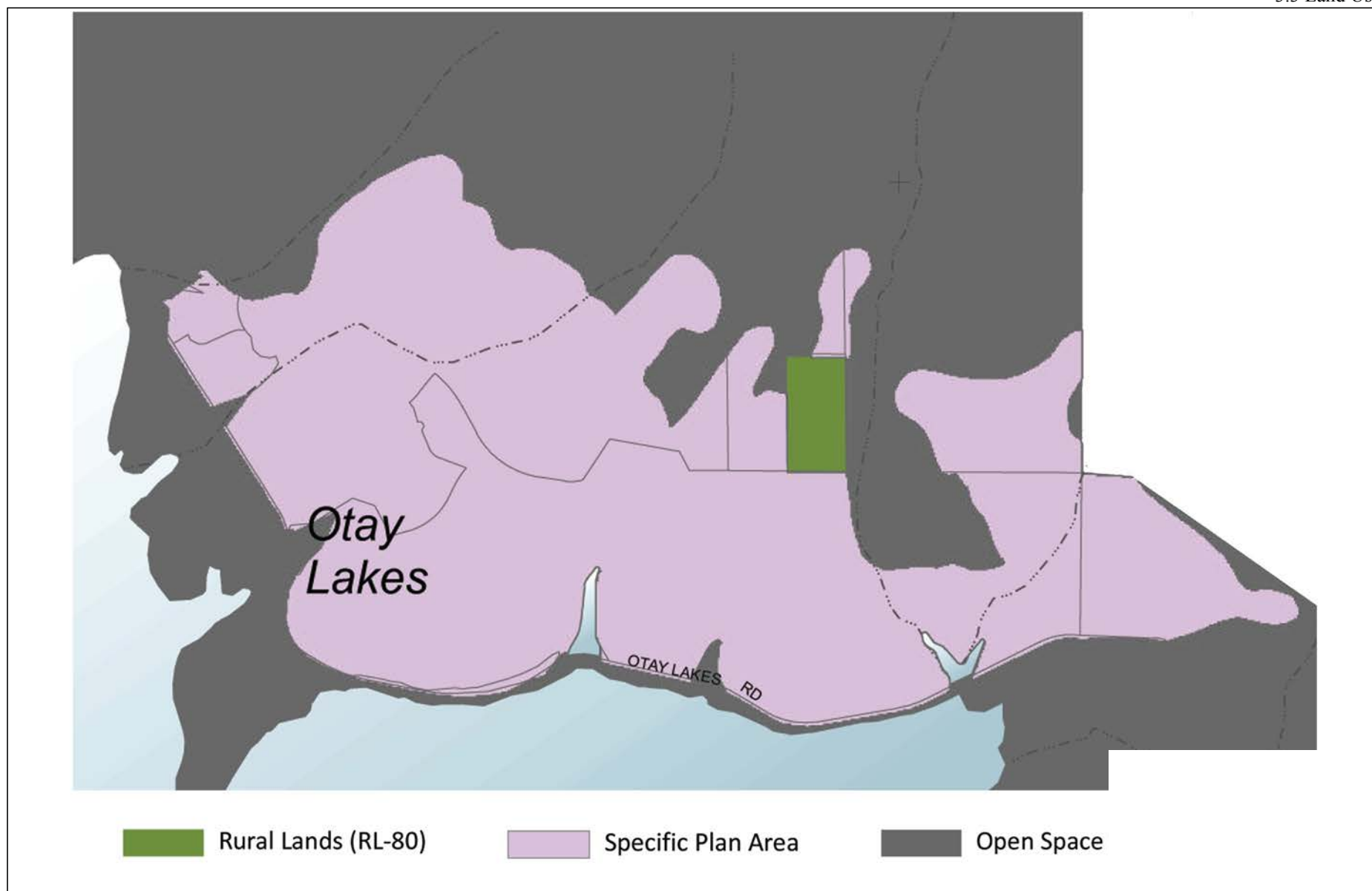
^b 72.1 acres within San Ysidro Mountains

³ Assumes development will impact 100% of steep slopes (slope gradient \geq 25%) within current Otay Ranch GDP/SRP development areas.



SOURCE: Hunsaker & Assoc. 2014

Figure 3.3-1
Existing County Regional Category Designations

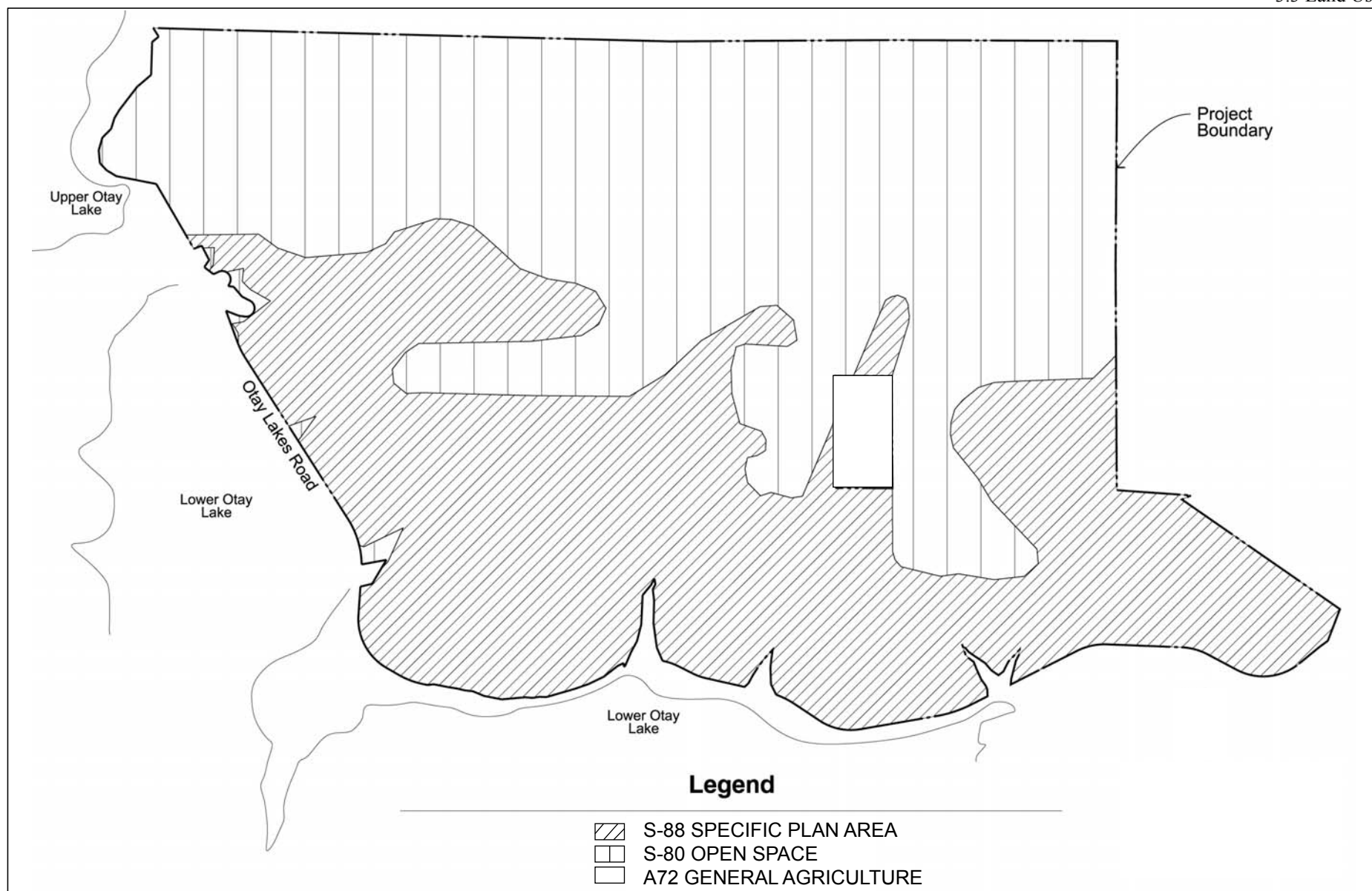


SOURCE: Hunsaker & Assoc. 2014



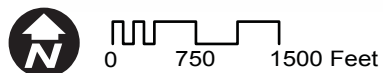
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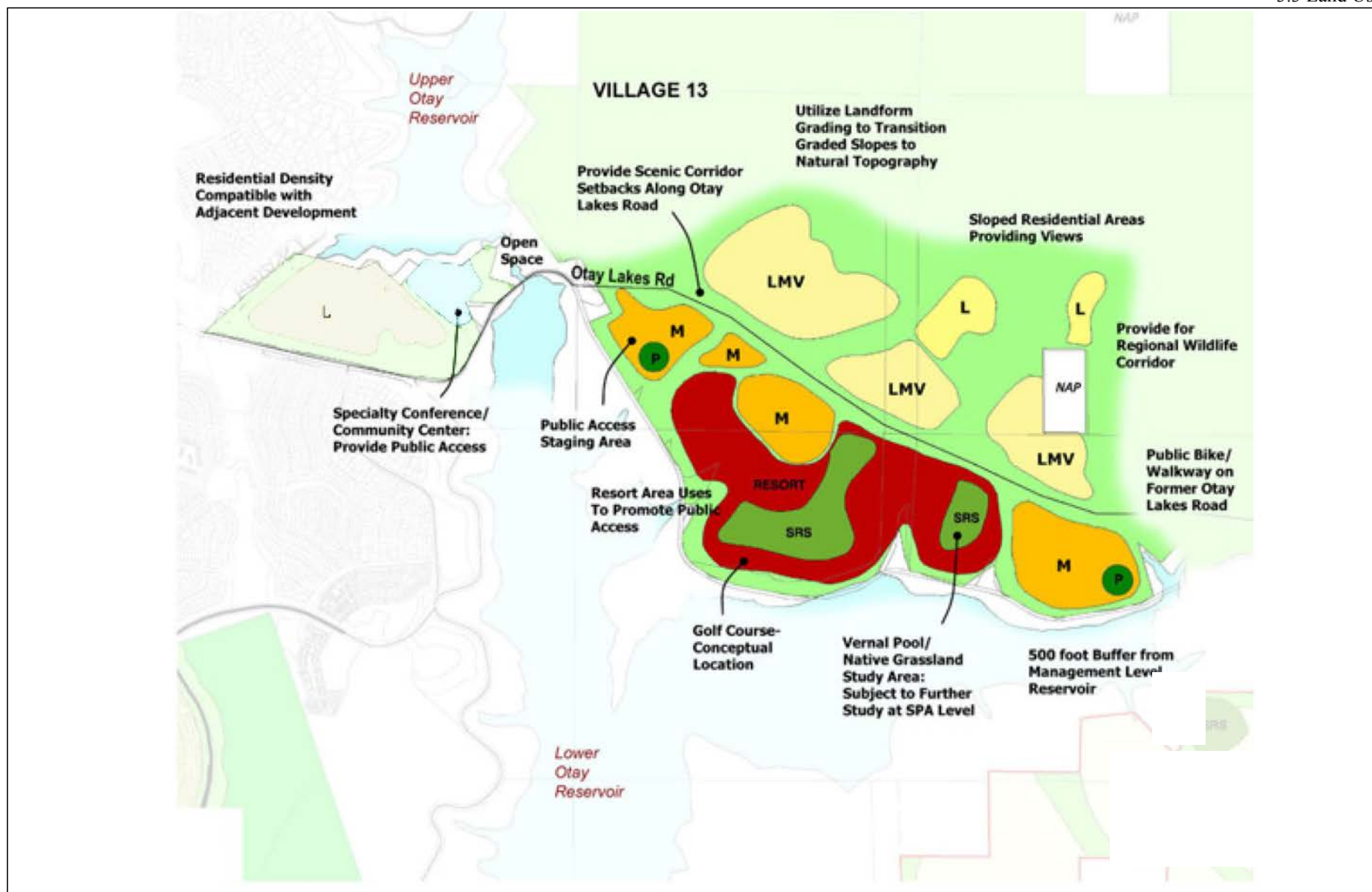
Figure 3.3-2
Existing General Plan Land Use Designations



SOURCE: Hunsaker & Assoc. 2010

Figure 3.3-3
Existing Zoning

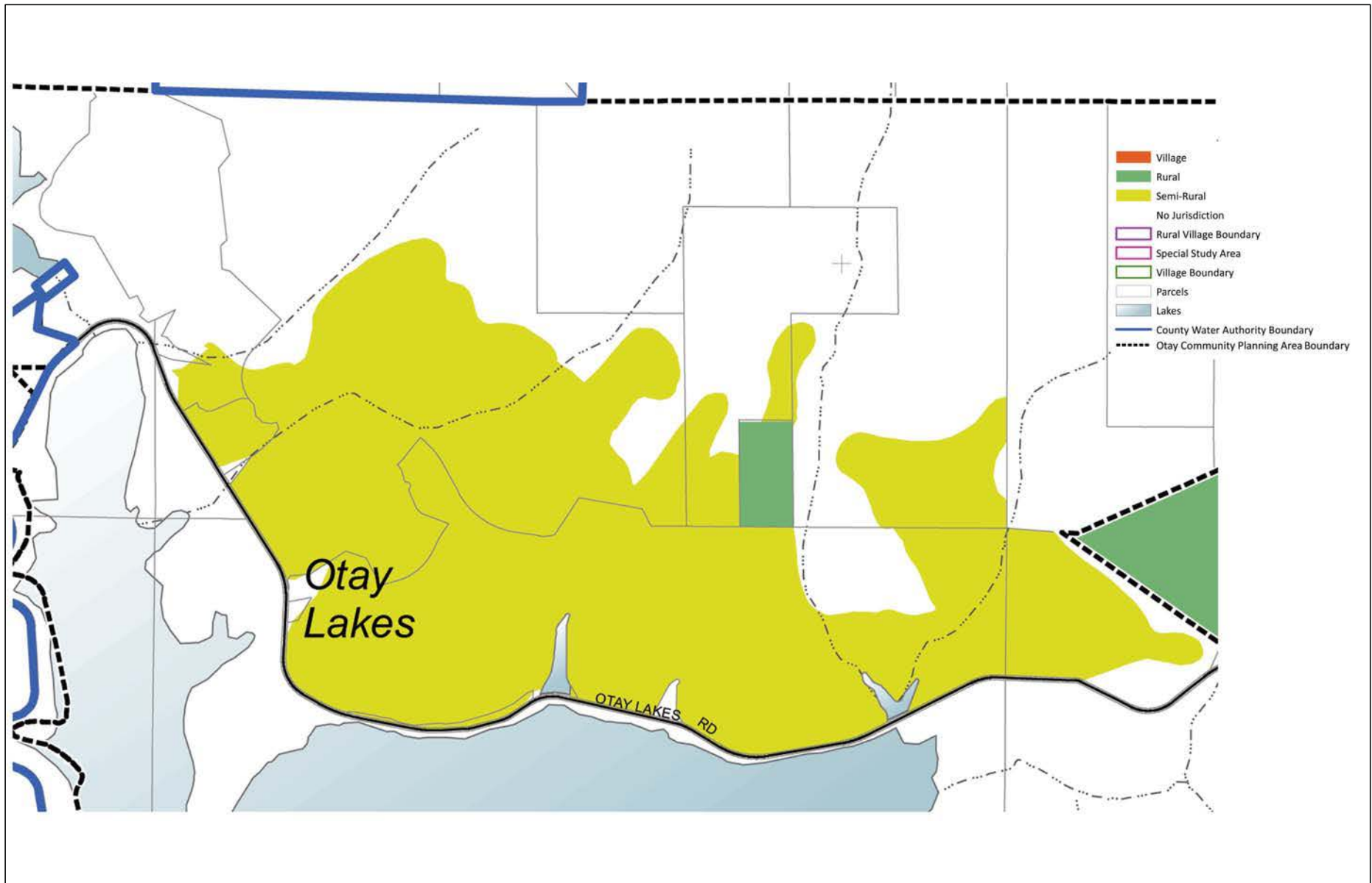




SOURCE: Hunsaker & Assoc. 2014



Figure 3.3-4
Adopted Otay SRP Land Use Designations



SOURCE: Hunsaker & Assoc. 2014

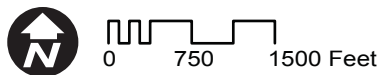
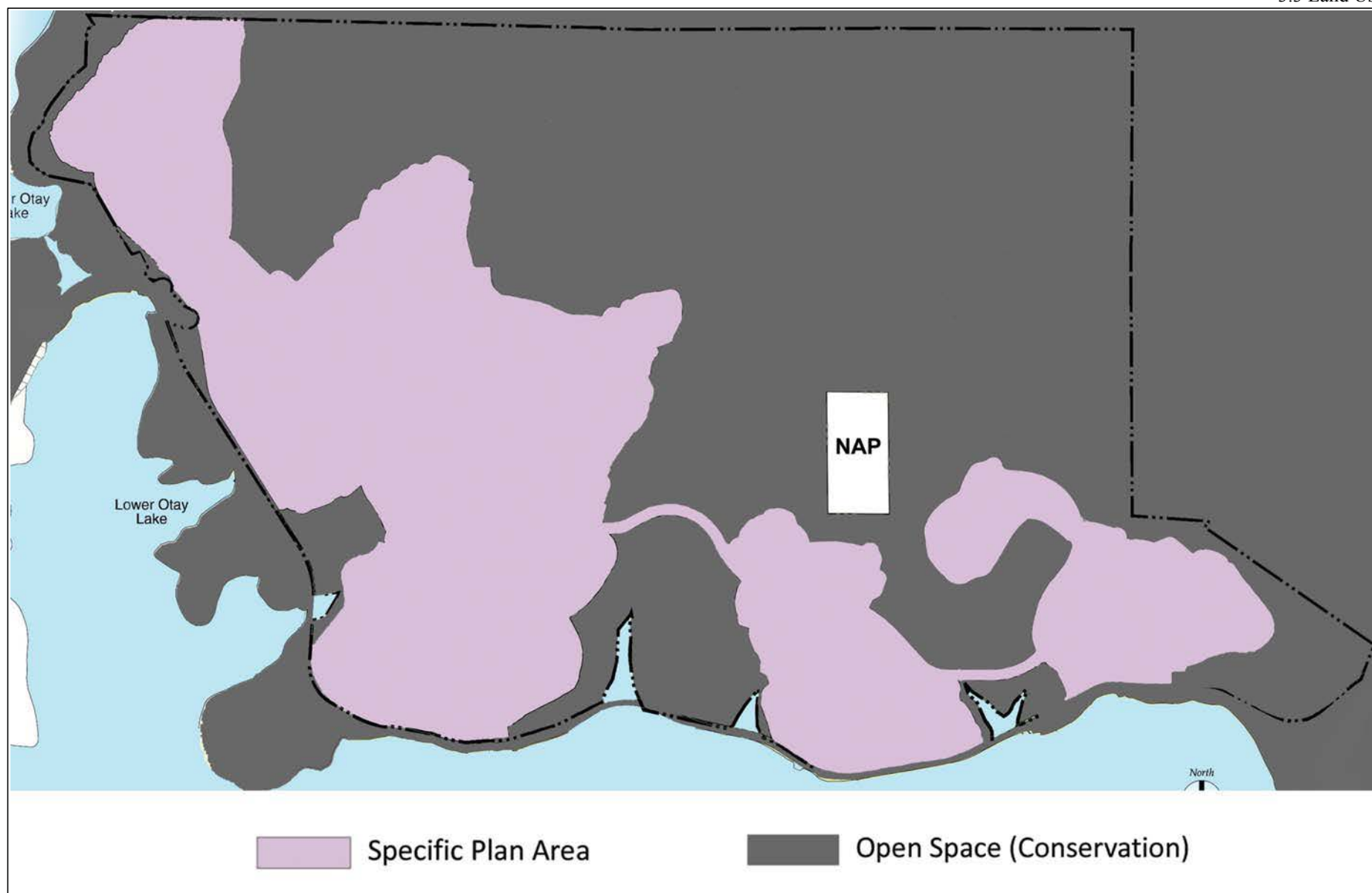


Figure 3.3-5
Proposed Amended General Plan
Regional Category Designation Map



SOURCE: Hunsaker & Assoc. 2010

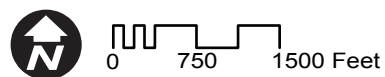
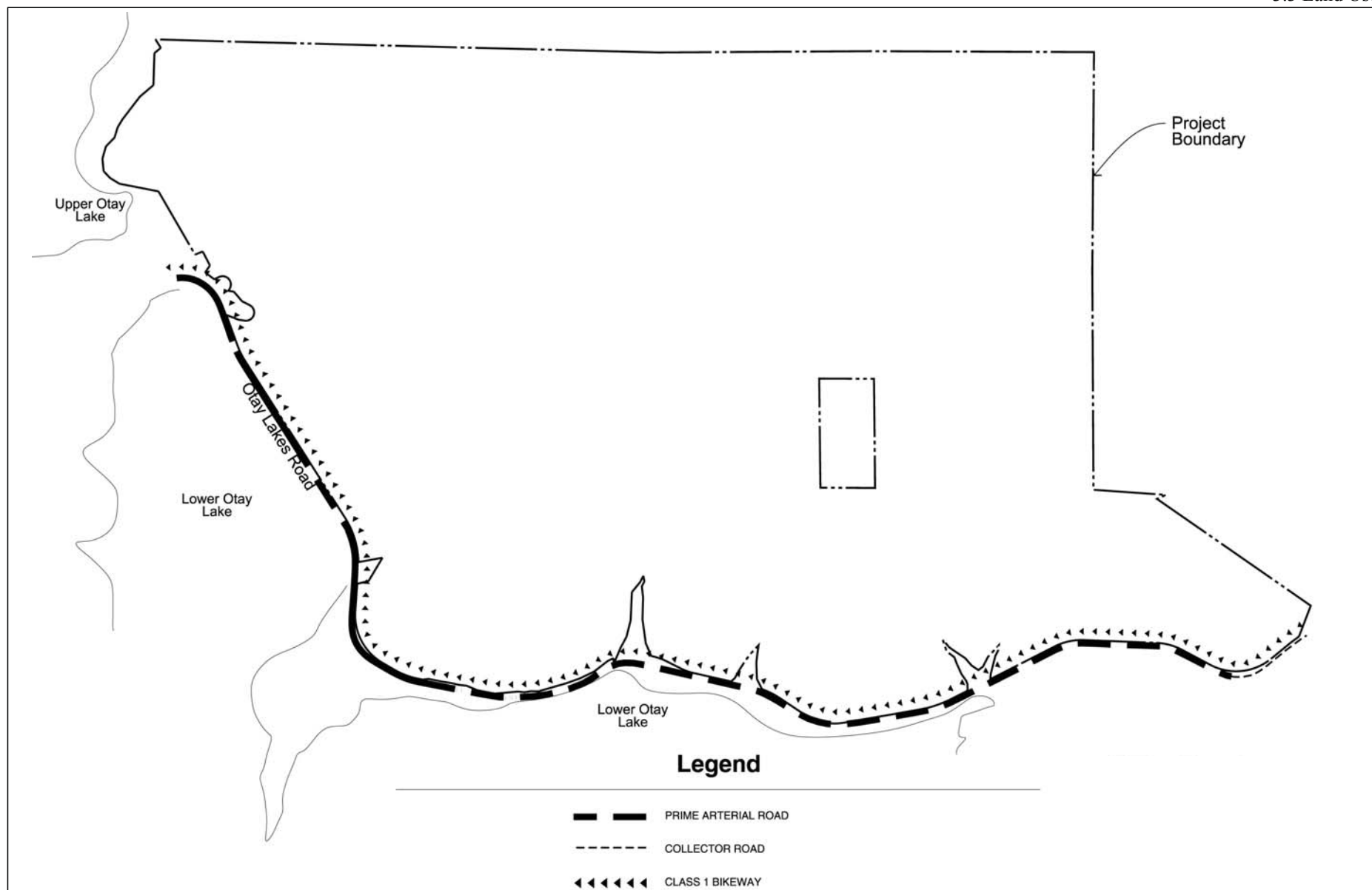


Figure 3.3-6
Proposed Land Use Designations



SOURCE: Hunsaker & Associates 2010

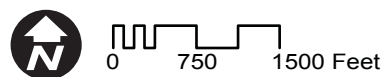
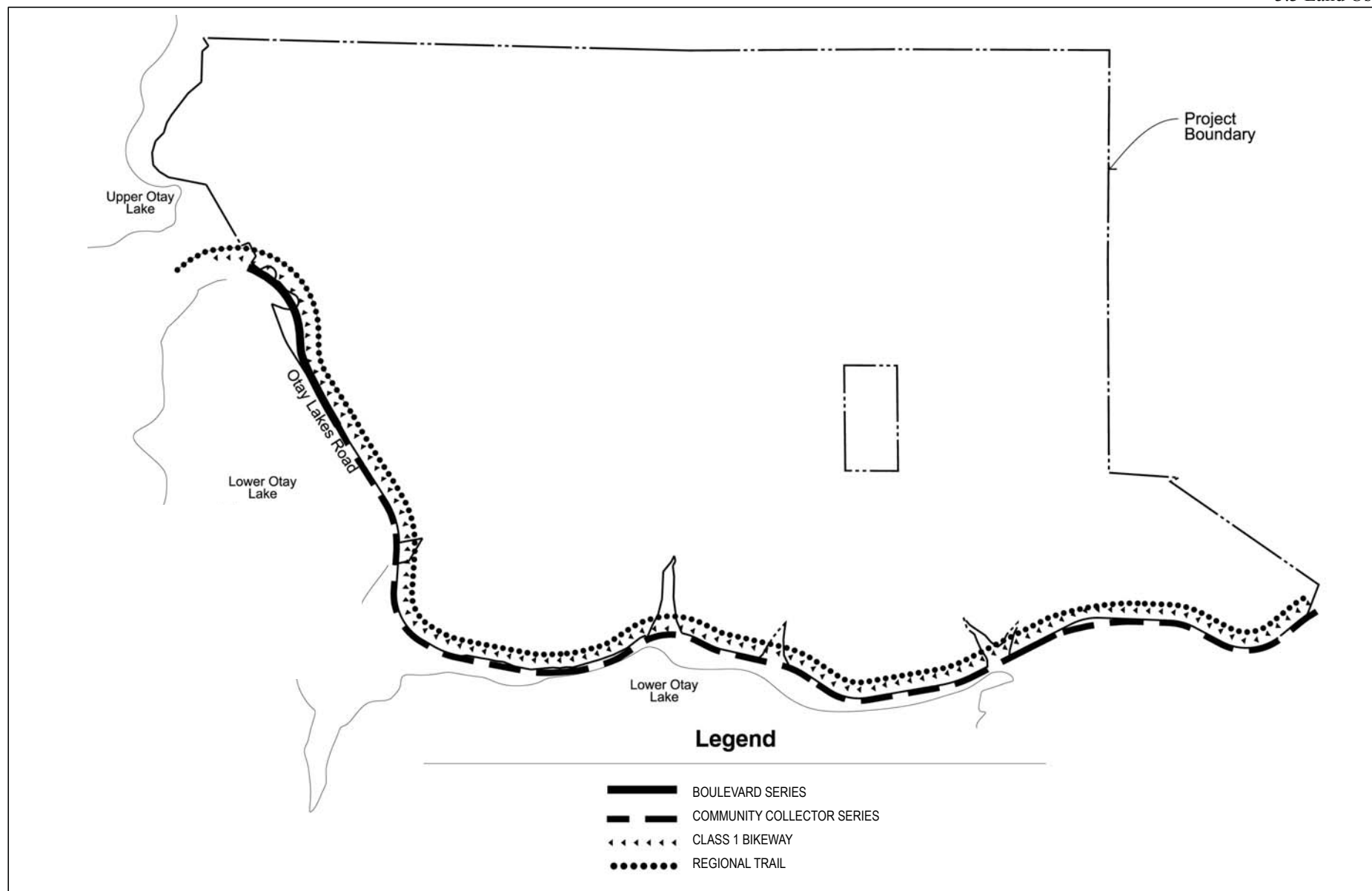


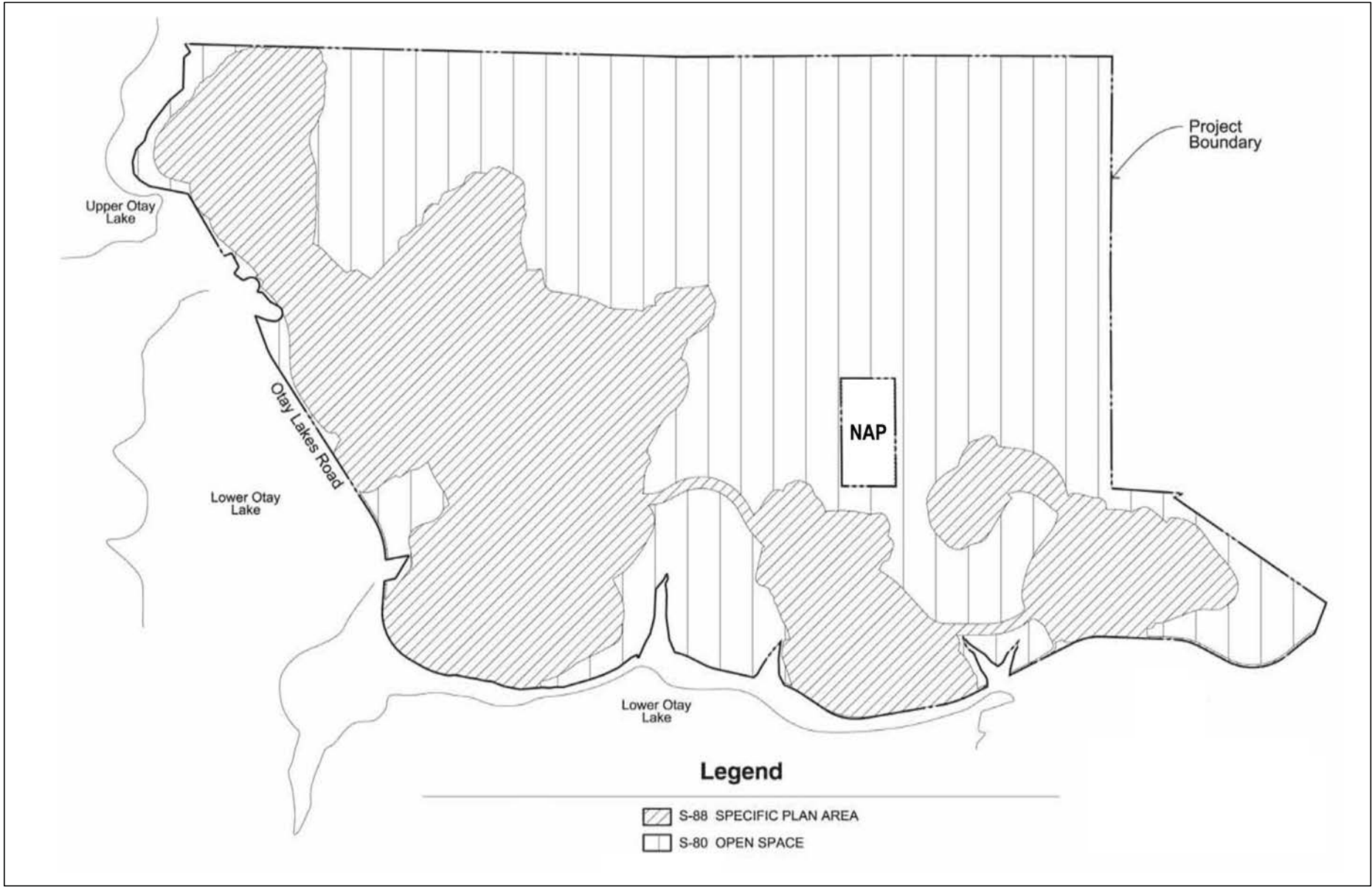
Figure 3.3-7
Current GP Mobility Element



SOURCE: Hunsaker & Associates 2010

Figure 3.3-8
Proposed County General Plan Mobility Map





SOURCE: Hunsaker & Associates 2010

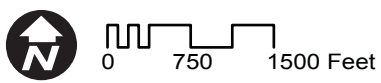
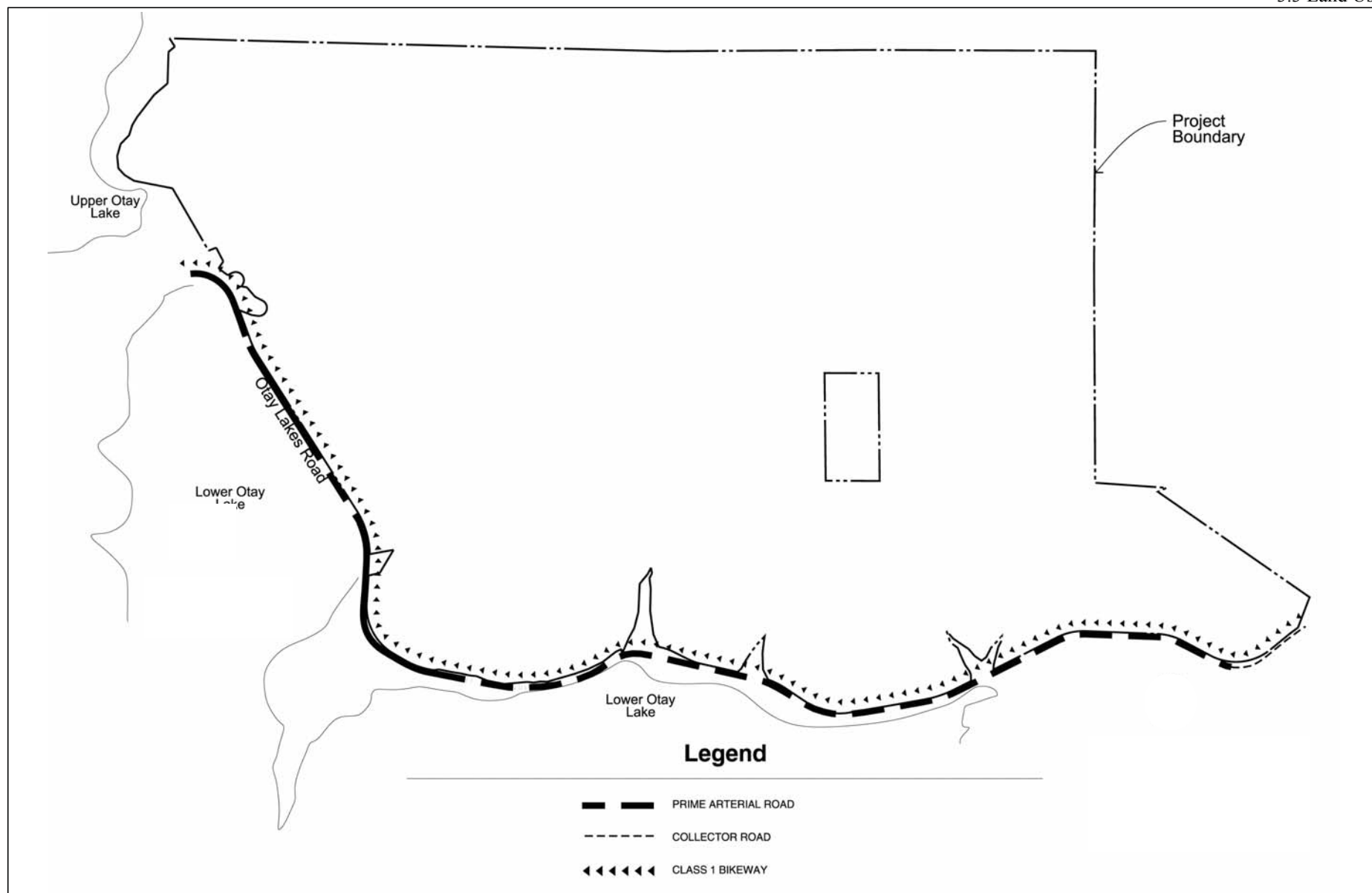
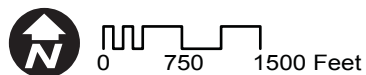


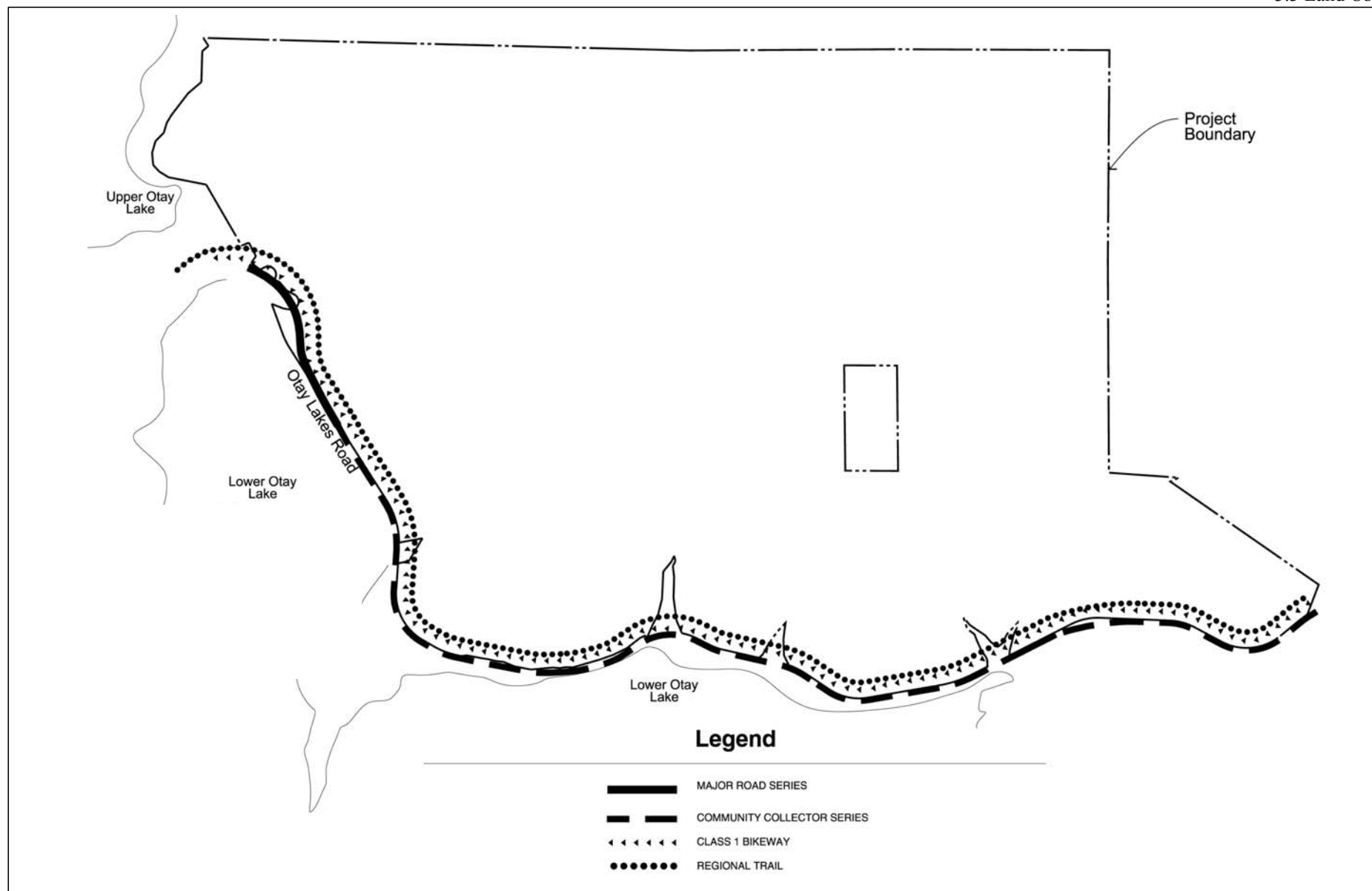
Figure 3.3-9
Proposed Zoning



SOURCE: Hunsaker & Associates 2010

Figure 3.3-10
Existing Otay SRP Circulation Element Roads

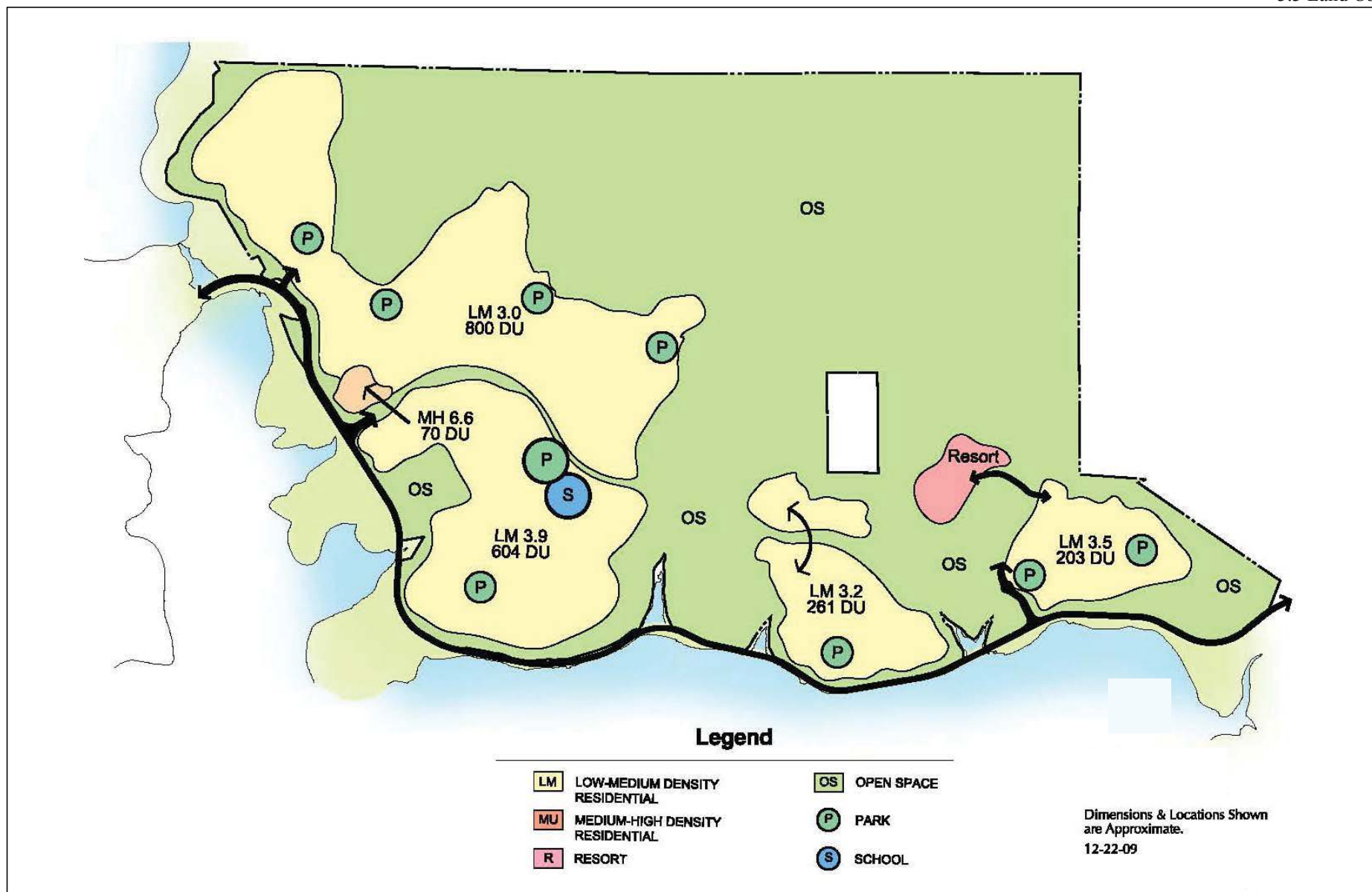




SOURCE: Hunsaker & Associates 2010

Figure 3.3-11
Proposed Otay SRP Circulation Element Roads





SOURCE: Hunsaker & Associates 2010

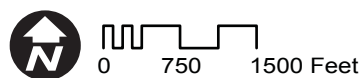
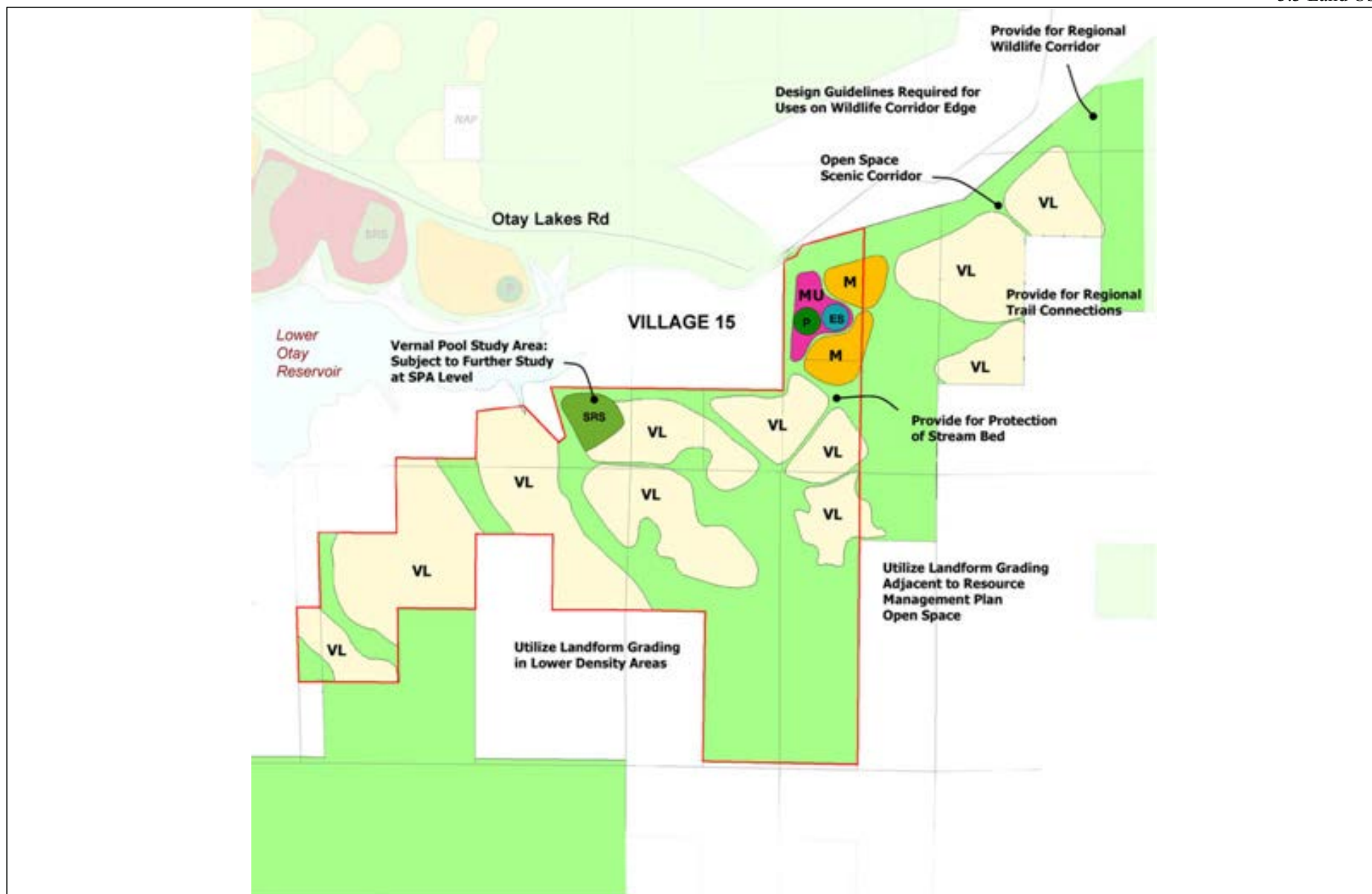


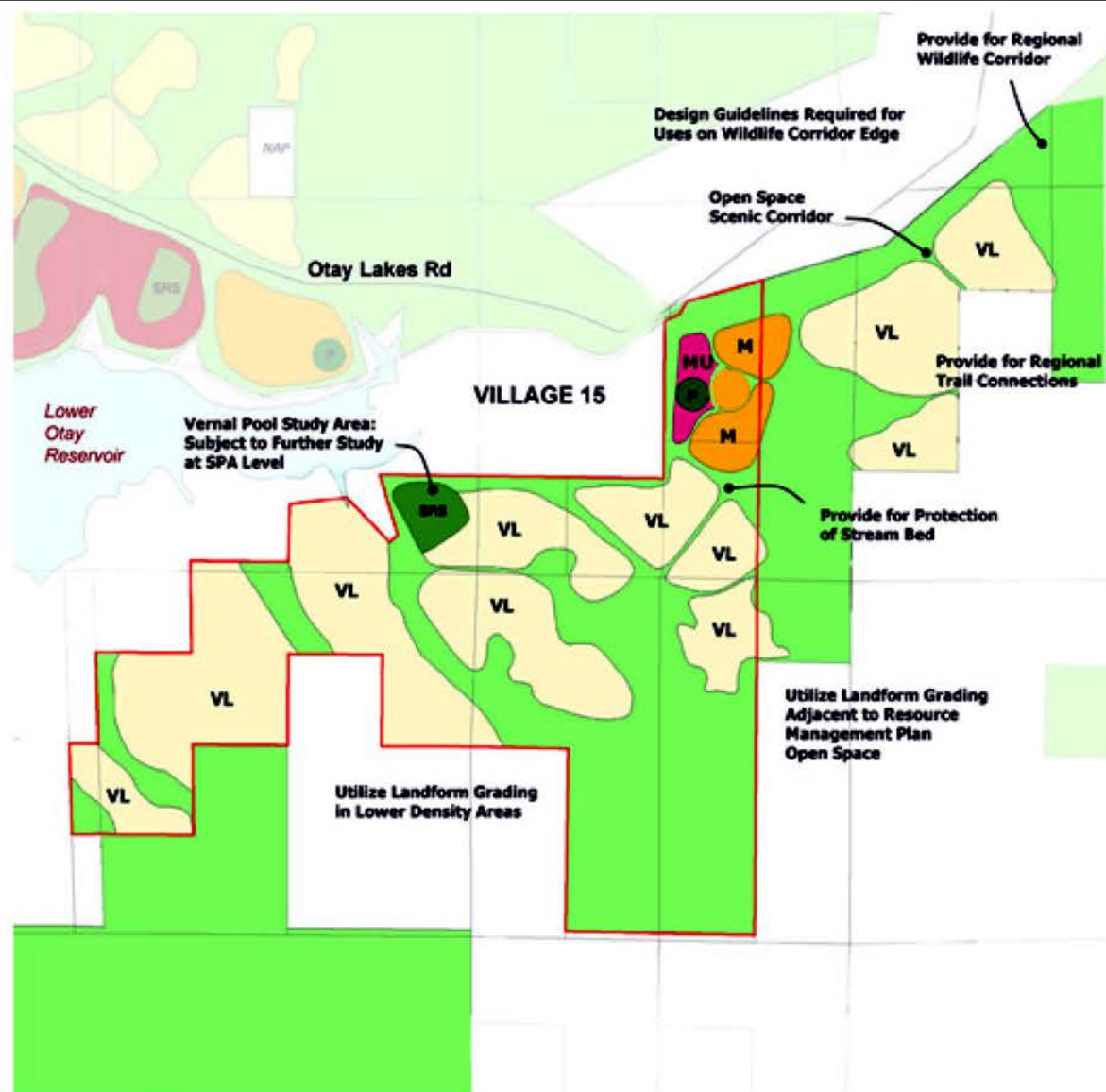
Figure 3.3-12
Proposed Otay SRP Village 13 Land Use Map



SOURCE: Hunsaker & Associates 2010

Figure 3.3-13
Existing Otay SRP Village 15 Land Use Map



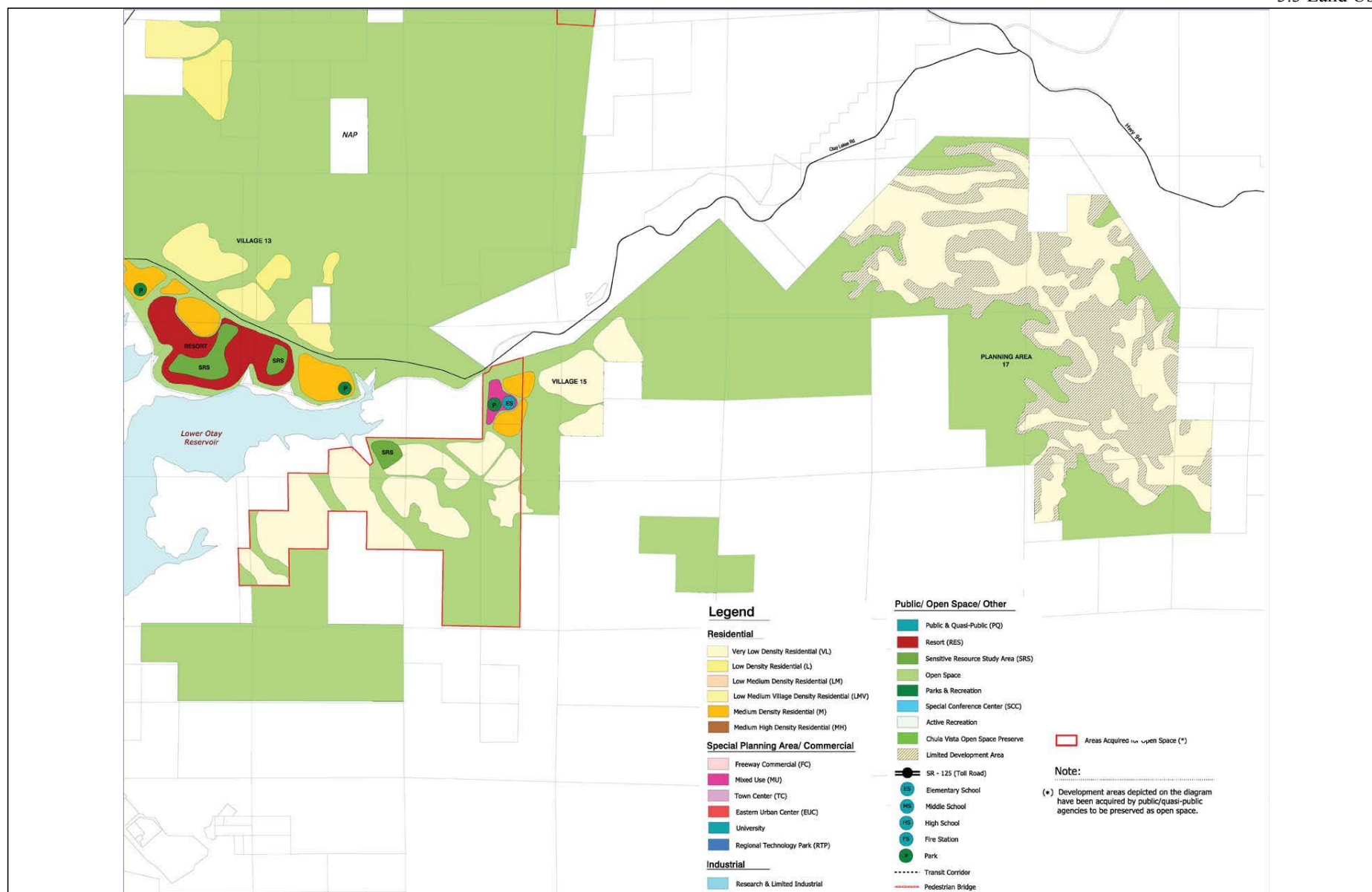


SOURCE: Hunsaker & Associates 2010



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Figure 3.3-14
Proposed Village 15 Land Use Map

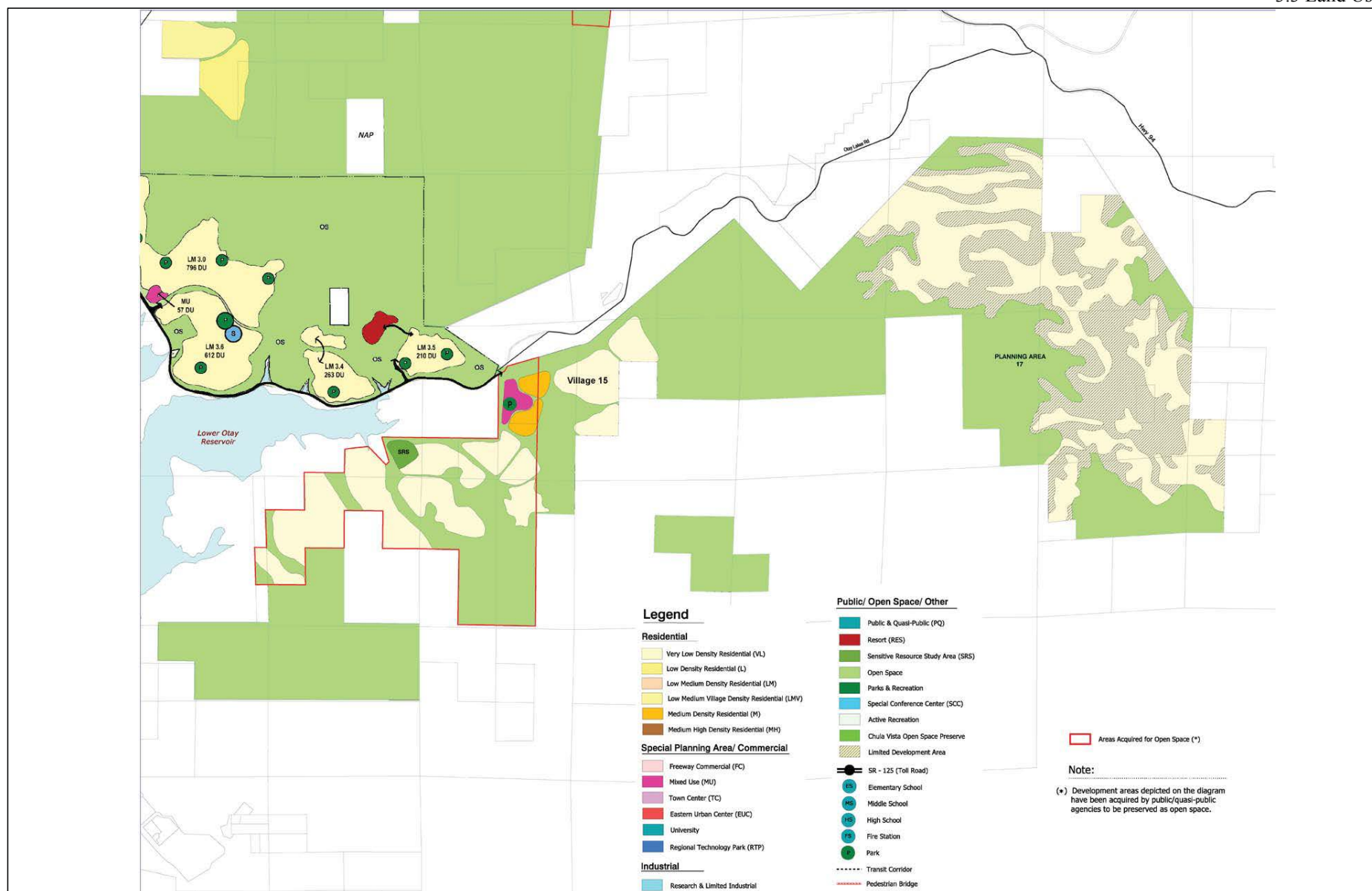


SOURCE: Hunsaker & Associates 2010



No Scale

Figure 3.3-15A
Existing Otay GDP/SRP Land Use Map
(San Ysidro Mountain Parcel)

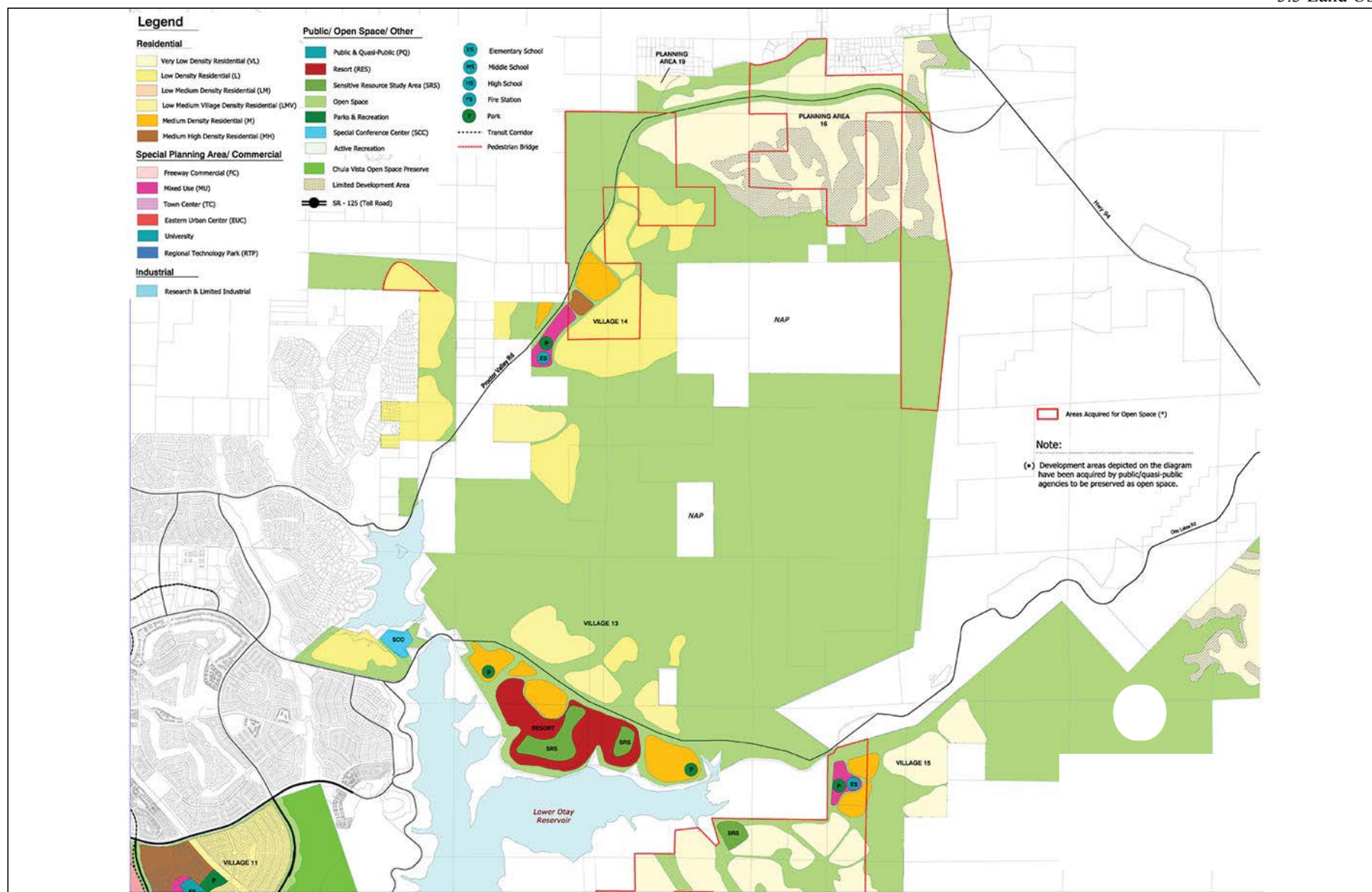


SOURCE: Hunsaker & Associates 2010



No Scale

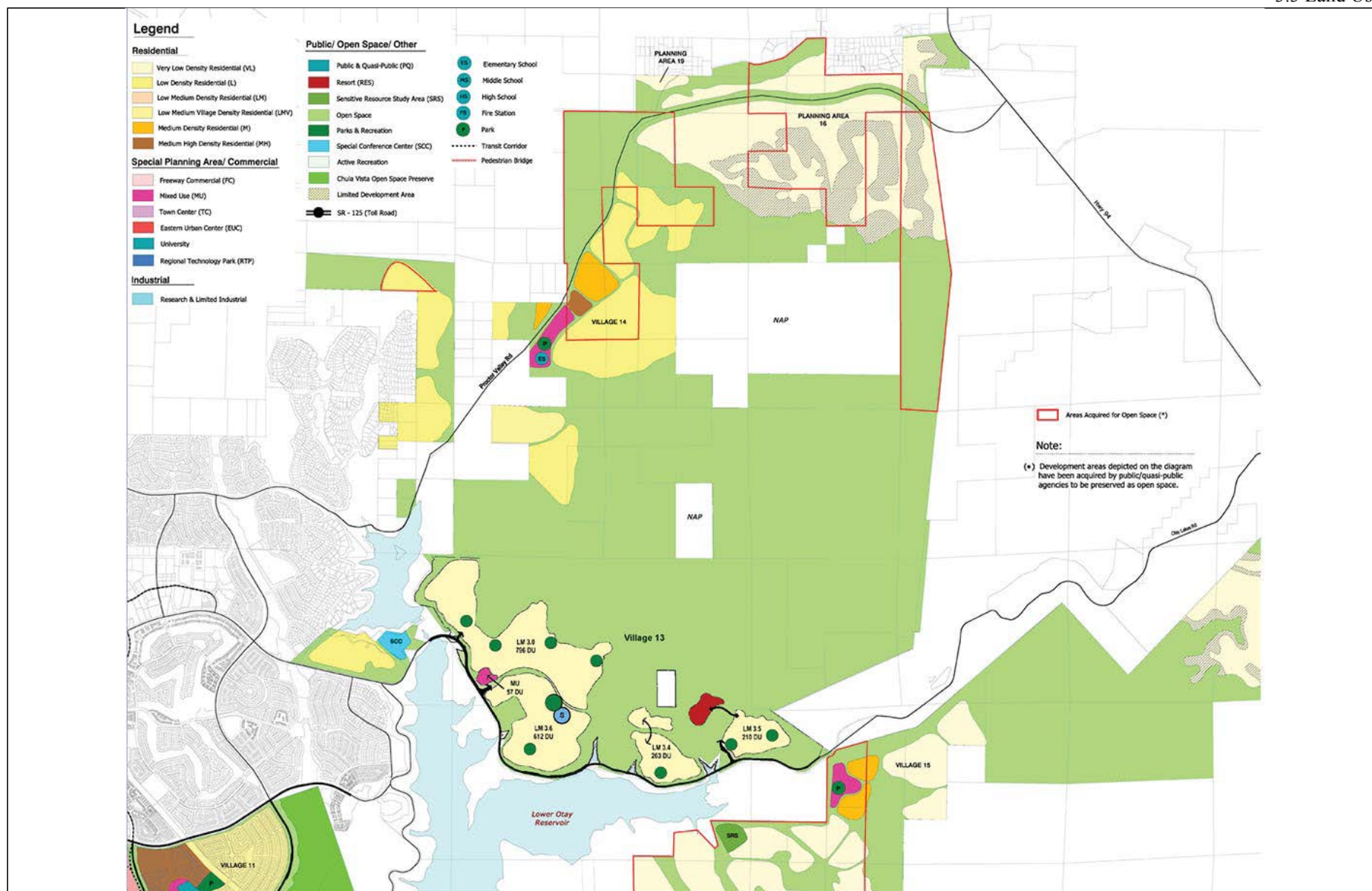
Figure 3.3-15B
Proposed Otay SRP Land Use Map
(San Ysidro Mountain Parcel)



SOURCE: Hunsaker & Associates 2010



Figure 3.3-16A
Existing Otay GDP/SRP Land Use Map
(Proctor Valley Parcel)

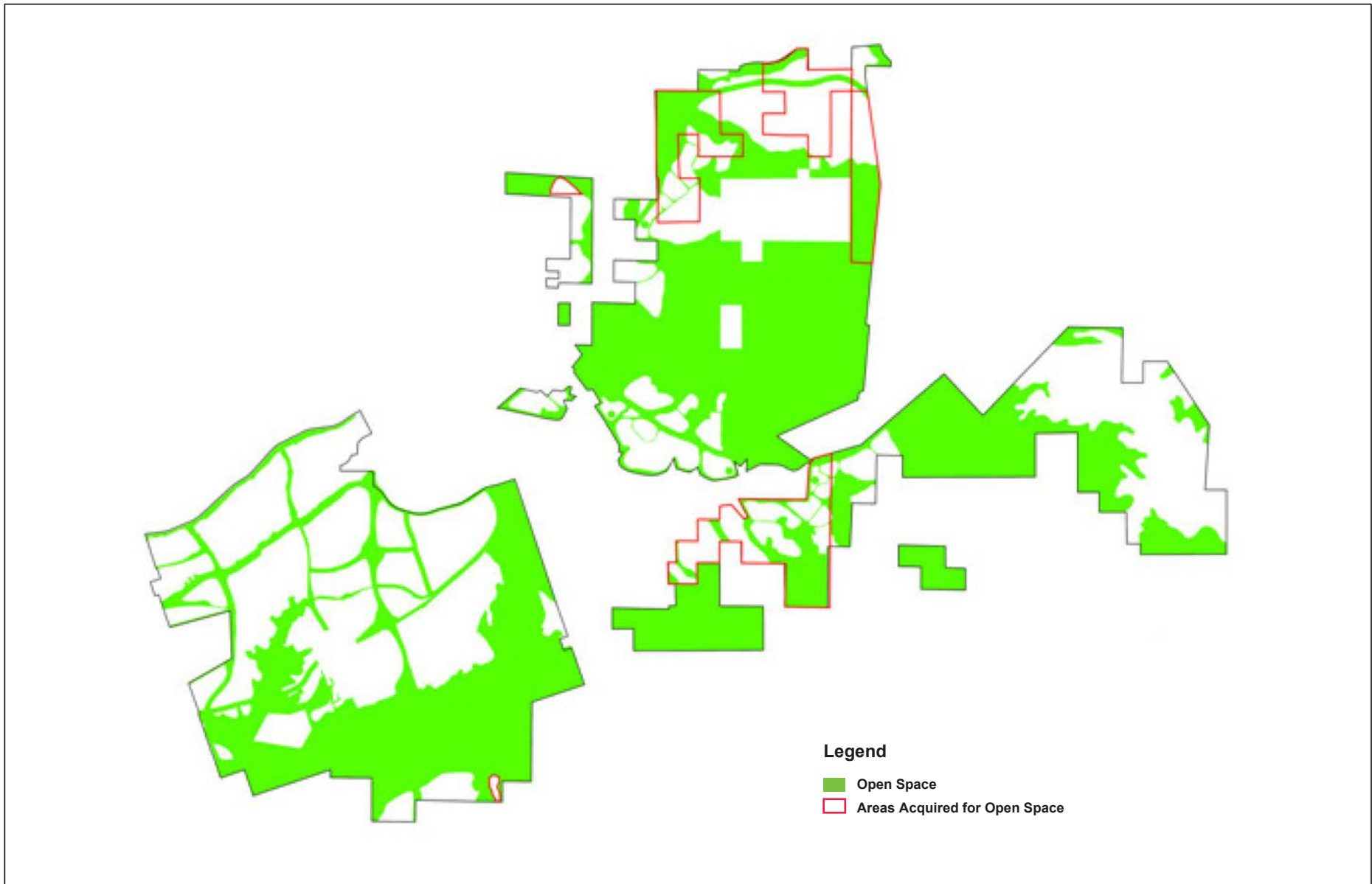


SOURCE: Hunsaker & Associates 2010



No Scale

Figure 3.3-16B
Proposed Otay SRP Land Use Map
(Proctor Valley Parcel)



SOURCE: Hunsaker & Associates 2014

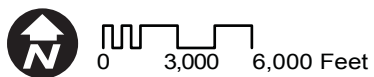


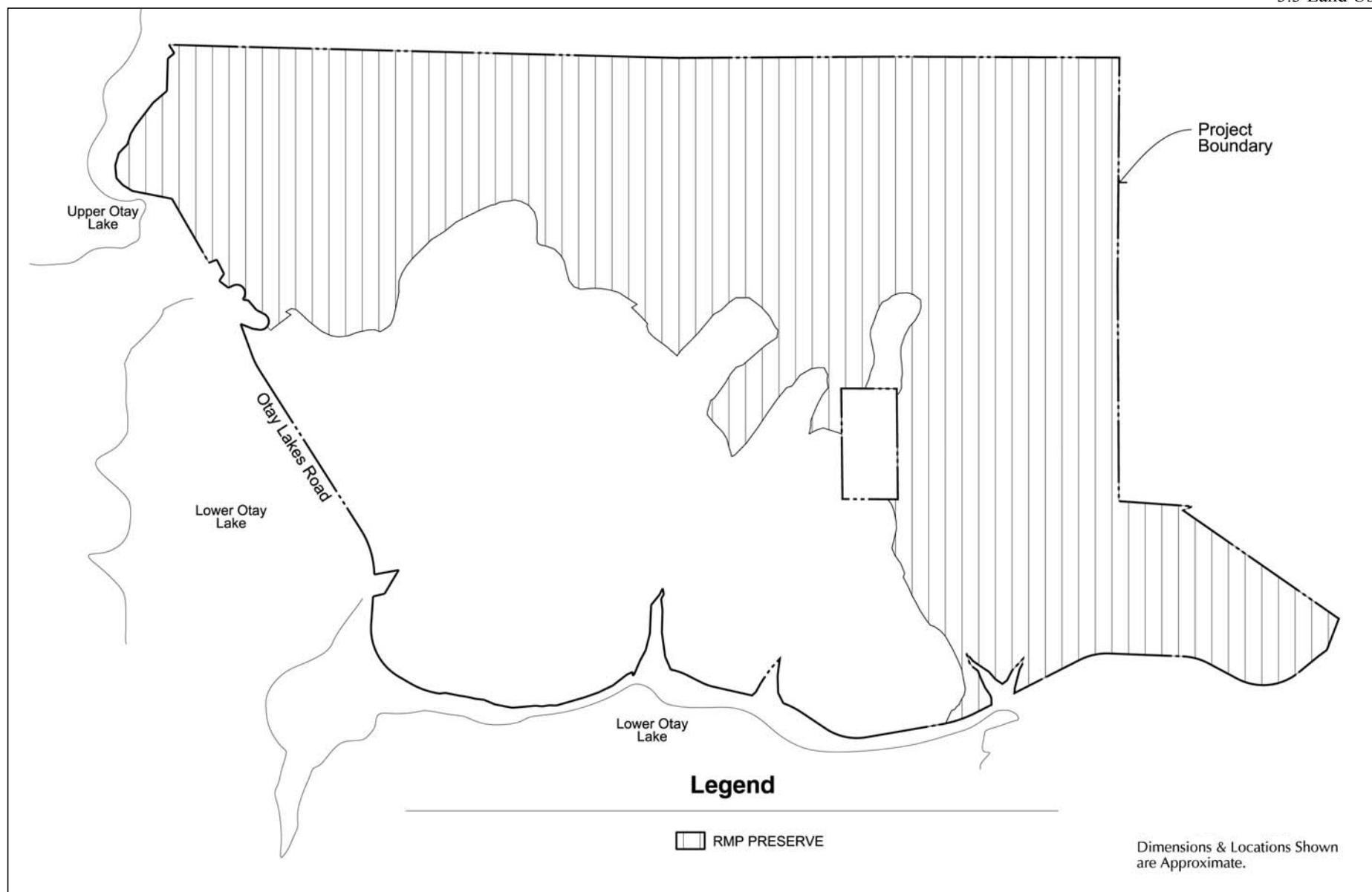
Figure 3.3-17
Existing Otay SRP Open Space System



SOURCE: Dudek & Associates 2009

Figure 3.3-18
Proposed Otay SRP Open Space System



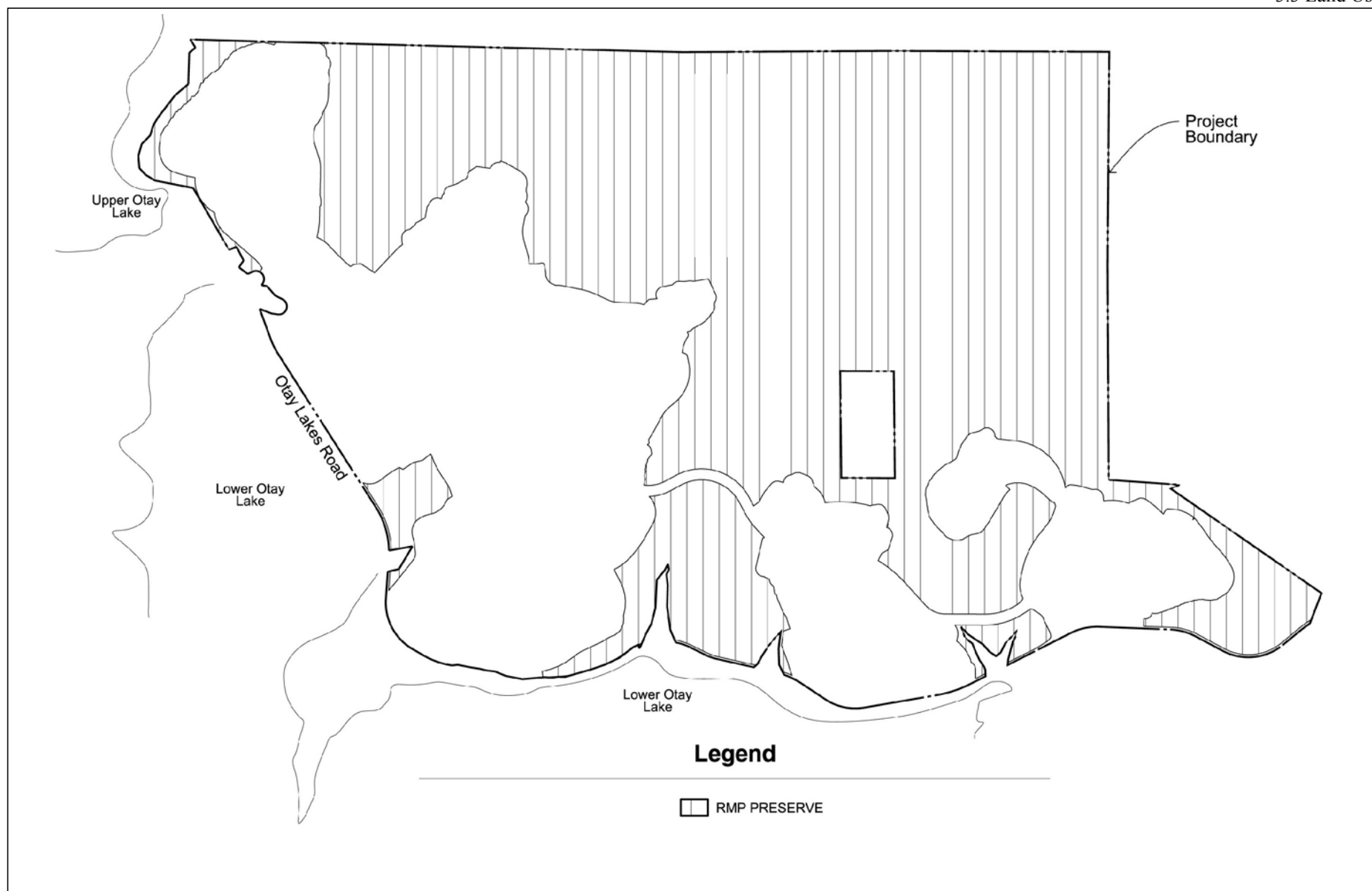


SOURCE: Hunsaker & Associates 2010



0 750 1500 Feet

Figure 3.3-19A
Existing RMP Preserve Boundary
(Village 13)



SOURCE: Hunsaker & Associates 2010

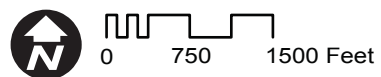


Figure 3.3-19B
Proposed RMP Preserve Boundary
(Village 13)

3.4 Mineral Resources

This section provides a summary of the potential mineral resources impacts caused by implementation of the proposed Project. The analysis presented in this section is based on the Mineral Resource Evaluation Study and provided as **Appendix C-15** to this EIR.

The Otay Ranch PEIR, adopted in 1993, provided a program-level analysis of the existing conditions and potential impacts related to mineral resources for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR identified potential significant direct and cumulative impacts on commercially viable aggregate resources known to be present in the Otay River Valley and the adjacent Rock Mountain located within Rancho Otay approximately four miles southwest of the Project site. The Otay Ranch PEIR did not identify any locations within the Project site suitable for mineral extraction.

3.4.1 Existing Conditions

3.4.1.1 General Geologic Setting

Geologic mapping and subsurface exploration of the Project site were performed and documented in reports titled Area A TM-Level Geotechnical Investigation and Area B TM-Level Geotechnical Investigation (Geocon, Inc. 2010a), which are included as Appendices **C-6** and **C-7**. The findings of the field investigation are summarized below.

The Project site is located within a transition area between the coastal plain of San Diego County and the foothills of the Peninsular Ranges, in the western region of the Peninsular Ranges geomorphic province. The coastal plain of San Diego County is underlain by a thick sequence of relatively undisturbed sedimentary rocks that range in age from the upper Cretaceous period through the late Tertiary period. The western region of the Peninsular Ranges is underlain by metavolcanic rock.

The geotechnical investigations identified the following surficial units and geologic formations on the Project site:

- **Undocumented Fill (Qudf).** Undocumented fill is present at several locations across the site within canyon drainages. In general, the fill consists of loose, slightly moist to moist, silt and sand with rock fragments and cobbles.
- **Topsoil (unmapped).** Topsoil with an average thickness of approximately 3 feet overlies the site. It is characterized as sandy to clayey with gravel and cobble. This surficial deposit does not qualify as a significant mineral deposit.
- **Lacustrine Deposits (Ql).** The areas of the Upper and Lower Otay Lakes and the canyon drainage between the two lakes are underlain by lacustrine deposits. These sediments, derived from the surrounding landforms, were deposited at the bottom or adjacent to the existing lakes. This soil is typically saturated and difficult to excavate for reuse as fill soil. Lacustrine deposits are not expected to be encountered during grading since they are

generally located south of Otay lakes Road or within the connecting drainage with Upper Otay Lake, outside of the proposed grading areas.

- **Alluvium (Qal).** The Project site contains limited deposits of alluvium within the drainage courses that traverse the site. On average, the thickness of alluvium deposits range between approximately 2 and 10 feet; however, deposits may be thicker in larger canyon drainages. The alluvium deposits consist of fine- to coarse-grained clayey and silty sand with abundant gravel, cobbles and boulders. Preliminary laboratory testing performed by the Project geotechnical consultant indicates that on-site alluvium deposits do not meet minimum aggregate quality levels, as these deposits tend to have deleterious quantities of silts and clays.
- **Colluvium (unmapped).** Colluvium is locally present on lower slope areas throughout the Project site. The colluvium consists of sandy clay with varying amounts of gravel and cobble. The thickness of colluvium generally ranges from approximately 2 to 7 feet, but can be thicker along the lower portions of canyons and toes of natural slopes.
- **Fanglomerate Deposits.** Fanglomerate deposits are located throughout the site and form gentle slopes in the south and southwestern portions of the Project site. This unit has an estimated maximum thickness of between 20 and 25 feet and typically consists of dense to very dense clayey to silty sandstone and occasional sandy claystone. Preliminary excavations indicate that up to 40 percent of the on-site fanglomerate deposits may be comprised of cobbles and boulders, with diameters up to 2 feet. Laboratory testing performed by the Project geotechnical consultant indicates that on-site fanglomerate deposits may be suitable for use as aggregate base and crushed rock.
- **Otay Formation.** Otay formation is located along most of the southern portion of the site. This unit consists of clayey sandstone and sandy claystone with interbeds of gravel, cobble, and boulders. Preliminary excavations indicate that up to 30 percent of the on-site Otay formation deposits may be comprised of cobbles and boulders, with diameters up to 2.5 feet.
- **Metavolcanic Rock.** Metavolcanic rock is present on the northern, northwestern, and northeastern portions of the site and is characterized as moderately strong to strong, highly to slightly weathered, and jointed. Highly weathered portions of the metavolcanic rock consist of highly expansive clay and soft rock. Preliminary laboratory testing performed by the Project geotechnical consultant indicates that on-site metavolcanic deposits may be suitable for use as aggregate base and crushed rock.

For a more detailed description and analysis of the on-site geology, refer to EIR Section 2.5, Geology and Soils.

3.4.1.2 *Regional and Local Mineral Resources*

Rapid growth in the San Diego area has increased the need for construction aggregate, particularly Portland cement concrete (PCC) aggregate and other mineable materials. The principal uses of these materials are for concrete, road base, utility trench backfill, and construction purposes.

Mining activity in the general vicinity of the Project site has typically produced dolomitic limestone; however, a few mines in the area have produced metals, including gold and lead. In the more immediate vicinity of the Project site, commodity mineral development is generally limited to aggregate production from alluvial sources or from quarries in the canyon sidewalls of channels; however, historically, limestone mining has also occurred.

The following are the mining operations located in the vicinity of the Project site that are considered regionally significant according to the California Division of Mines and Geology (CDMG) classification criteria:

- Hester's Granite Quarry is mined for boulders of weathered hornblende gabbro, which is either sold as decomposed granite or crushed and sold as rip-rap or crushed aggregate. The site is approximately 100 acres and is located approximately 7 miles north of the Project site.
- Otay Valley Rock Quarry produces aggregate crushed from the Santiago Peak Volcanics. The facility is approximately 580 acres and is located approximately 3 miles southwest of the Project site.

CDMG provides statewide Mineral Resource Zone (MRZ) maps. The above-listed mining operations and associated alluvial areas are generally designated as MRZ-2 by CDMG. A detailed explanation of the MRZ classifications is provided below under Surface Mining and Reclamation Act of 1975.

3.4.1.3 On-Site Mineral Resources

Based on site reconnaissance and research performed by T&B Planning Consultants in connection with the preparation of the Mineral Resource Evaluation Study, there is no information or reason to believe that any commercially viable mining resources exist on the Project site and no evidence was found that mining has ever occurred on the Project site. The Project site lacks well-developed alluvial sand and gravel deposits, and the bedrock is either a rocky fanglomerate or variable Santiago peak volcanics. There may be minor opportunities to obtain rock and aggregate materials during grading of the site; however, the quantities of these materials are expected to be limited to what could be used by the Project internally to supplement the material needs for construction of the proposed Project. Furthermore, any potential mining opportunities on the Project site would likely be well below the limiting threshold criteria for regionally significant mineral deposits, as described below.

3.4.1.4 Regulatory Setting

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) mandated the initiation of a mineral land classification and designation process to help identify and protect mineral resources in the state that are subject to urban expansion and other irreversible land uses that would preclude mineral extraction. Classification is the process of identifying lands containing significant mineral deposits. Designation is the formal recognition by the State Mining and

Geology Board of areas containing mineral deposits of regional or statewide importance. CDMG established Guidelines for Classification and Designation of Mineral Lands to guide the classification and designation of mineral resources. Based on the Guidelines, to be considered significant for purposes of classification of mineral resources, a mineral deposit must meet the following criteria:

1. Marketability – the mineral deposit must be minable, processable, and marketable under the technologic and economic conditions that exist at present or are expected to exist in the next 50 years.
2. Threshold Value – for deposits that meet the marketability criteria, the deposit must meet a minimum threshold value. The threshold amount depends on the type of mineral material, as follows:
 - (i) construction materials – minimum threshold value of \$12,500,000
 - (ii) industrial and chemical mineral material – minimum threshold value of \$2,500,000
 - (iii) metallic and rare minerals – minimum threshold value of \$1,250,000

Mineral deposits that are considered significant based on the above criteria are further classified based on a determination of the MRZ in which the deposits are located. The state has established criteria with respect to MRZ classification that are based on a geologic appraisal of the mineral resource potential of the land. This appraisal includes research of geologic and mining-related literature, compilation of geologic maps, site investigations, sampling, surveys, and mapping, as appropriate. The following MRZ categories are used by the State Geologist in classifying the state's lands:

- MRZ-1 are areas where available geologic information indicates that no significant mineral deposits are present or where little likelihood exists for their presence.
- MRZ-2 are areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. A typical MRZ-2 area would include an operating mine or an area where extensive sampling has indicated the presence of a significant mineral deposit.
- MRZ-3 are areas that contain known mineral deposits that may qualify as significant mineral resources, pending further exploration and evaluation. Further exploration within these areas could result in the reclassification of specific areas into the MRZ-2 category.
- MRZ-4 are areas where geologic information does not rule out either the presence or absence of mineral resources and further exploration and evaluation is required. Further exploration could result in the reclassification of MRZ-4 lands into the MRZ-1 or MRZ-2 categories.

3.4.2 Analysis of Project Effects and Determination as to Significance

3.4.2.1 *Loss of a Known Mineral Resource*

Guideline for the Determination of Significance

A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on mineral resources, absent specific evidence of such an effect.

The proposed Project is the following:

- On or within the vicinity (generally up to 1,300 feet from the site) of an area classified as MRZ-2; or
- On land classified as MRZ-3; or
- Underlain by Quaternary alluvium; or
- On a known sand and gravel mine, quarry, or gemstone deposit; and

The proposed Project will result in the permanent loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and

The deposit is minable, processable, and marketable under the technologic and economic conditions that exist at present or which can be estimated to exist in the next 50 years and meets or exceeds one or more of the following minimum values (in 1998 equivalent dollars):

Construction materials (sand and gravel, crushed rock)	\$12,500,000
Industrial and chemical mineral materials (limestone, dolomite, and marble [except where used as construction aggregate]; specialty sands, clays, phosphate, borates and gypsum, feldspar, talc, building stone, and dimension stone)	\$2,500,000
Metallic and rare minerals (precious metals [gold, silver, platinum], iron and other ferroalloy metals, copper, lead, zinc, uranium, rare earths, gemstones and semi-precious materials, and optical-grade calcite)	\$1,250,000

Rationale for Selection of Guideline

The Significance Guideline for loss of a known mineral resource is from the County of San Diego Guidelines for Determining Significance – Minerals (County of San Diego, July 30, 2008), which addresses question (a) of Section X in Appendix G of the CEQA Guidelines. A significant impact would occur if the Project contains areas designated as MRZ-2 or MRZ-3 and the mineral resources present have been determined to be minable, process-able, and marketable

under the technologic and economic conditions that exist at present or that can be estimated to exist in the next 50 years and meets or exceeds the State Geologist minimum dollar values for mineral resources.

Analysis

As described above and depicted in **Figure 3.4-1**, the Project site is not located within the area designated by CDMG as the Production-Consumption Region boundary for San Diego County. Therefore, no MRZ classification has been designated on the Project site and there is no information or reason to believe the Project site contains commercially valuable minerals. The nearest MRZ-designated site is the former Jamul Quarry, which is designated MRZ-2 and located approximately 0.5 mile (2,600 feet) east of the southeast corner of the Project site. That facility has ceased operations and would require County approval to resume mining.

The analysis in this section is based on the findings of a Project-specific geotechnical report prepared by Geocon, Inc., and a mineral resources technical review (**Appendix C-15**).

Off-Site Impacts from Proposed On-Site Land Uses

Mining operations generally require a setback of approximately 1,300 feet from incompatible land uses (residential, industrial, commercial) to minimize and/or avoid adverse effects associated with mining, which include, but are not limited to, noise, traffic, air quality, and visual quality. Accordingly, a significant impact would occur if the Project would introduce incompatible land uses within 1,300 feet of known, existing, or potential off-site mining operations, thereby indirectly making off-site mineral resources inaccessible.

The Project site is located in the vicinity of the Jamul Quarry, which is designated as an MRZ-2 zone. As depicted in **Figure 3.4-1**, approximately 16 acres in the extreme southeastern corner of the site, is within 1,300 feet from property designated MRZ-2. The on-site areas within 1,300 feet would be preserved as natural habitat; therefore, no incompatible land uses would be developed within 1,300 feet of a designated mineral resource area. Furthermore, the Jamul Quarry is no longer in operation; therefore, the Project would have no potential to introduce incompatible land uses in the immediate vicinity of a known, active quarry. Accordingly, implementation of the Project would not result in the permanent loss of availability of a known mineral resource that would be of value to the region or the residents of the state.

On-Site Impacts from Off-Site Land Uses

There are no incompatible land uses within 1,300 feet that would make mineral resources on-site inaccessible for extraction. Areas north of the site are characterized by undeveloped, natural hillsides and bluffs. An airfield, John Nichol's Field, used for gliders and ultralight aircraft, is located south of the Project site. Lower Otay Lake is also located south of the Project site. Territory to the immediate east of the Project site is primarily composed of undeveloped, natural hillsides; however, a quarry that is no longer in operation is located near the southeast corner of the site. Upper Otay Lake is located immediately west of the site. Existing residential development west of the Project site is located more than 1,300 feet from the Project site and would not be incompatible with mineral resource extraction on the property.

Marketability

The geologic mapping and subsurface exploration performed by the Project geotechnical consultant indicates that the site is underlain with several deposits that have the potential to be classified as important mineral resources, including quaternary alluvium, fanglomerate deposits, and metavolcanic rock. The extraction of these resources has the potential to provide an economic benefit to San Diego County. The analysis below provides an evaluation of whether on-site geologic deposits are minable, processable, and marketable under the technologic and economic conditions that exist at present or that are estimated to reasonably exist in the future.

Alluvium

Alluvium is one of the most important mineral resources in San Diego County, as sand and gravel can be easily extracted from this geologic environment and processed for use in construction materials. Alluvial channel soils underlie the drainage courses that traverse the Project site; however, the Project site lacks well developed alluvium deposits, as these soils are limited in occurrence and extent on-site and typically range between 2 and 10 feet thick. Furthermore, preliminary laboratory testing indicates that these soils tend to have deleterious quantities of silts and clays, which would preclude the use of these deposits for fine aggregates. Accordingly, the Project site does not contain significant minable, processable, and marketable deposits of alluvium.

Fanglomerate Deposits

Fanglomerate deposits are a sedimentary rock type that can be quarried for use as construction materials (sand, gravel, crushed rock). Based on the subsurface exploration of the site, the fanglomerate deposits are primarily composed of undersized clastic sedimentary rocks that would not be suitable for commercial use due to composition and weathering. Segregation and processing of these deposits would be arduous and uneconomical, and would produce significant waste. Therefore, on-site fanglomerate deposits are evaluated as a less than significant mineral resource with little potential to be minable, processable, and marketable under existing conditions or reasonably foreseeable future conditions.

Metavolcanic Rock

Metavolcanic rocks can be quarried for use as coarse aggregates, which are typically used during construction as concrete, rip-rap, and decorative and/or dimension stone. Based on the mineral resources technical review, it is likely that on-site metavolcanic rock deposits would not be suitable for economic development as PCC-grade aggregate or Class 1 base and would require deep excavation with excessive overburden and would, therefore, be uneconomical to mine. Accordingly, it is determined that the Project site would produce very limited quantities of rock and related aggregate materials and does not contain significant deposits of minable, processable, and marketable metavolcanic rock.

Minimum Dollar Value

The Project site contains mineral deposits that are highly unlikely to exceed a value of \$12,500,000 because of the relatively low-quality alluvium, fanglomerate, and metavolcanic rock deposits on-site. Furthermore, on-site geologic deposits would be arduous and uneconomical to mine and process. As such, the property would not be a commercially valuable source of construction materials (sand, gravel, crushed rock), and implementation of the Project would result in a *less than significant impact* to mineral resources.

3.4.2.2 Delineated Mineral Resource Recovery Sites

Guidelines for the Determination of Significance

A significant impact to mineral resources would occur due to the following:

- The Project would 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.

Rationale for Selection of Guideline

The Significance Guideline for impacts to delineated mineral resource recovery sites is from the County of San Diego Guidelines for Determining Significance – Minerals. It addresses question (b) of Section X in Appendix G of the CEQA Guidelines, and requires identification of projects that would result in the loss of availability of mineral resources on lands zoned as S82 Extractive Use Zone.

Analysis

The Otay SRP designates the Project site as a “specialty village” composed of a resort hotel and related amenities, residential neighborhoods, neighborhood-serving uses, parks, mixed-use, and recreation areas. The Otay SRP does not propose or plan for operation of mineral resource extraction on the Project site. Therefore, any mining operation or mining activity would be inconsistent with the land uses planned for the proposed Project site.

Per the San Diego County Zoning Ordinance, mining and extractive uses are allowed within the S82 (Extractive Use) zone. The southern portion of the Project site is zoned S88 (Specific Plan) and the northern portion of the Project site is zoned S87 (Limited Control). The Project site does not include any territory zoned S82 (Extractive Use). Therefore, implementation of the Project would not result in the permanent loss of availability of a locally important mineral resource recovery site. Therefore, mining activities on the Project site would be inconsistent with the planned land uses and the impact related to a delineated mineral resource recovery site is considered *less than significant*.

3.4.3 Cumulative Impact Analysis

As growth in the region continues, mining and extraction activities are likely to be directly and indirectly impacted by new development. Mineral resources, particularly sand, gravel, and rock are a regional resource and are generally defined by the MRZ map of the County's Production-Consumption Region Boundary as designated by CDMG. As described above in Section 3.4.1.4 of the EIR, MRZ-2 zones are areas where geologic evidence shows the presence of a significant mineral deposit. Implementation of the proposed Project would not result in significant direct impacts to known mineral resources because no mining has occurred on the site. It does, however, contain rock suitable for crushing and used as aggregate in concrete or for road or utility bedding material.

In addition, although the former Jamul Quarry is located nearby to the east, the nearest proposed Project development area is over 1/4-mile from the former quarry site. Planned home sites in the southeast portion of the Project site are located below a proposed cut bank into a ridgeline that forms the southeastern Project boundary (see **Figure 1.0-3**) and are oriented with views toward the southwest. Thus, no residences have a direct line-of-sight relationship to the former Jamul Quarry site should it become operational in the future.

As discussed above, implementation of the proposed Project would not impact mineral resources designated by the CDMG, though it would provide material for export during the site grading process. Therefore, *the proposed Project would not contribute to any significant cumulative mineral resource impacts* that may accrue from other projects in the region.

3.4.4 Significance of Impacts Prior to Mitigation

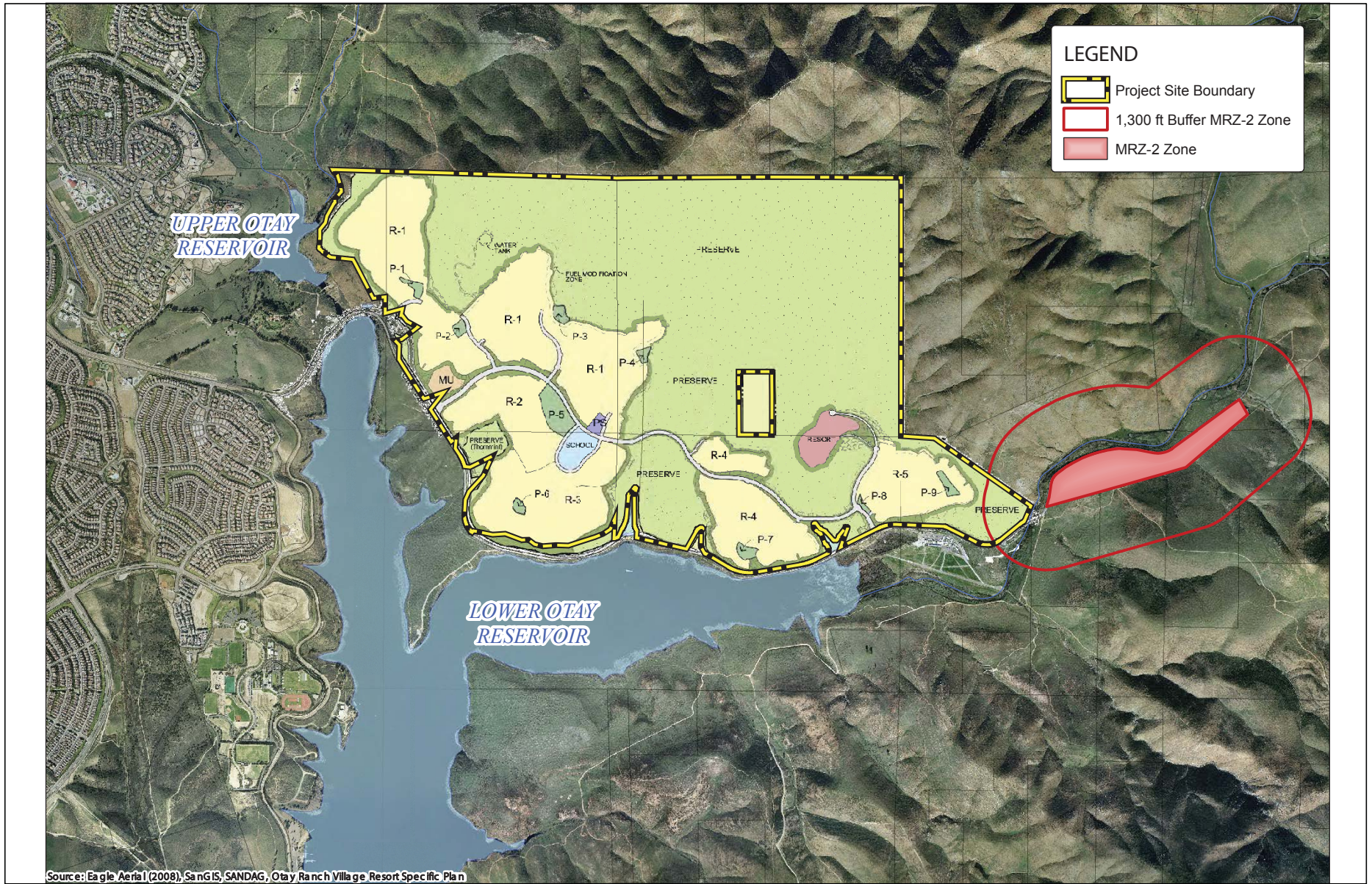
Based on the above analyses, implementation of the proposed Project would not result in any significant direct, indirect, or cumulative impacts to mineral resources.

3.4.5 Mitigation

As discussed above, implementation of the proposed Project would not result in any significant impacts to the availability of mineral resources. Therefore, no mitigation is required.

3.4.6 Conclusion

As discussed above, the Project site has no specific evidence of historic mining activity, lacks sufficient geologic materials for significant mining opportunities, and has no known commercially valuable mineral resources. In addition, the planned land uses and zoning for the Project site preclude mining activity. Therefore, implementation of the proposed Project would not result in loss of availability of a known mineral resource that would be of value to the region; and would not result in the loss of a mineral resource recovery site delineated on an adopted land use plan. Therefore, impacts related to mineral resources resulting from implementation of the proposed Project are considered *less than significant*.



SOURCE: XXX XXXX



Figure 3.4-1
Mineral Resource Zones

3.5 **Population and Housing**

The following section provides an evaluation of the potential population and housing impacts resulting from implementation of the proposed Project. This analysis focuses on how implementation of the proposed Project would impact existing population and housing within the vicinity of the Project site, and whether the proposed Project would induce additional population and housing growth. Section 1.0, Project Description, Location, and Environmental Setting, of this EIR also analyzes the proposed Project's potential to induce growth and concludes that such impacts are considered to be *less than significant*.

In 1993, the Otay Ranch PEIR was certified and provided a program-level analysis related to the Otay Ranch development's growth-inducing effect as it related to "the ways in which the proposed project could foster economic or population growth" in accordance with Section 15126(g) of the CEQA Guidelines. It did not address population and housing as a direct or cumulative impact.

This population and housing analysis is different than the PEIR, as it specifically considers the proposed Project site. This section references and uses information provided in the PEIR; however, the analysis and conclusions are based specifically on the proposed Project's impacts with existing plans and policies. The Otay Ranch PEIR, adopted in 1993, addressed the Otay Ranch development's growth-inducing effect as it related to "the ways in which the proposed project could foster economic or population growth" in accordance with Section 15126(g) of the CEQA Guidelines. It did not address Population and Housing as a direct or cumulative impact. The Otay Ranch PEIR included the provision of adequate facilities to accommodate the Project's forecasted growth. The analysis and discussion of growth-inducing impacts from the Otay Ranch PEIR are incorporated by reference in this EIR. In addition, growth inducing impacts are addressed in Section 1.8 of this EIR.

3.5.1 **Existing Conditions**

3.5.1.1 **Otay SRP**

As discussed in Section 1.0 of this EIR, the approved Otay SRP governs the land uses, circulation, and development intensities permitted for the proposed Project site. The Otay SRP also establishes the land use pattern for the overall Otay Ranch planning area through specific goals and objectives for each village, based on their physical attributes and location.

As originally adopted, the approved Otay SRP designated the Project site as a "specialty village," allowing the following land uses: (1) resort uses, with up to a maximum of 800 hotel rooms, shops, restaurants, a conference facility, and other amenities; (2) residential uses, consisting of 2,438 homes (1,030 single-family and 1,408 multi-family); (3) neighborhood parks; and (4) a commercial area. The Otay SRP also permits, but does not require, a 27-hole golf course.

As amended in 2001, the Otay SRP permitted 2,066 homes (658 single-family and 1,408 multi-family), and contemplated that development of the site would include the Birch Family Estate Parcel, located to the west of the Project site. This 135-acre parcel is identified as a specialty

conference center/community center, with low-density residential uses and open space. A total of 128 single-family homes were planned for this parcel, pursuant to the Otay SRP. However, because the Birch Family Estate Parcel is geographically separated from the Project site, lies within the City of Chula Vista, is owned by a different entity, and is not currently proposed for development, it is not included as a part of the proposed Project and, thus, is not analyzed in this EIR. Therefore, with the Birch Family Estate Parcel excluded, the Otay SRP permits the development of 1,938 homes (530 single-family and 1,408 multi-family) on the Project site.

The Project proposes 1,881 single-family homes and 57 multi-family homes, for a total of 1,938 homes, which is the total number of residences planned for the Project site under the Otay SRP, as amended. The proposed change in the residential mix is the result of a series of changed circumstances that occurred throughout Otay Ranch since the Otay SRP was adopted in 1993. For example, as originally adopted, the Otay SRP established Village 13 and Village 15 (located to the southeast of Village 13) as complementary villages, sharing public utilities and facilities, with Village 13 providing much of the retail uses to serve Village 15, as well as providing the multi-family homes to complement Village 15's exclusive single-family residential character. However, Village 15 was acquired for conservation purposes, eliminating 516 single-family homes from development. The proposed Project would convert multi-family homes to single-family homes to adjust for the reduction in single-family homes resulting from the change in planned uses for Village 15.

Similarly, large portions of Village 14 and Planning Areas 16 and 19 (located to the north of Village 13) were acquired by conservation agencies. The Otay SRP permitted 1,563 single-family homes and 150 multi-family homes in Village 14; 390 single-family homes in Planning Area 16 and 20 homes in Planning Area 19. Although the exact number of single-family homes eliminated from these planning areas has not been determined, it is reasonable to forecast that a greater proportion of single-family homes would be lost compared to multi-family homes because more than 90 percent (92.9 percent) of the homes authorized were single-family homes. Village 13 would ameliorate the impact of the reduction of single-family homes by providing a greater proportion of single-family homes.

In addition, the number and proportion of multi-family homes has increased in other Otay Ranch areas. The ratio of single-family to multi-family homes in the Otay Valley Parcel of the Otay Ranch originally authorized by the Otay SRP was 54:46; the current ratio pursuant to Otay SRP amendments authorized by the City of Chula Vista is 35:65.

Further, single-family homes are more appropriate for Village 13, which, with the elimination of Village 15 and the reduction of the development footprint of Village 14 and Planning Areas 16 and 19, is now considered the proposed edge of urban development surrounded by open space. Finally, Village 13's three separate development footprints, which are separated by large open space/wildlife corridors, are considered more suited for terraced, single-family homes to better integrate with the existing landform as compared to large, flat pads required for higher density multi-family development.

As originally adopted, the Otay SRP estimated that the total population for the Resort Village (including the Birch Family Estate Parcel) would be 6,886 residents. When the Otay SRP was

amended in 2001, a population factor of 2.55 residents per household was applied, and it was estimated that the Resort Village would accommodate 5,269 residents with the Birch Family Estate Parcel included, or 4,942 residents with the Birch Family Estate Parcel excluded. Based on the current population factor of 3.59 persons per household, provided by SANDAG for the 91914 zip code area, the proposed Project would accommodate 6,957 residents.

3.5.1.2 SANDAG Regional Growth Forecast

The SANDAG Regional Growth Forecast concluded that San Diego County will have a population of 4,384,867 in 2050. This is an increase of 1,253,315 residents compared to the year 2008 population of 3,131,552 (SANDAG 2011). SANDAG also estimates that, in 2008, the region had 1,140,654 homes. To accommodate 1,253,315 new residents by 2050, the region needs approximately 388,436 new homes. The SANDAG forecast incorporates the Otay SRP planned land uses, including 1,938 homes permitted by the Otay SRP for the Project site. As stated in the SANDAG Regional Comprehensive Plan (RCP), the region has an inadequate supply of residentially zoned land to meet the projected demands, and development of new homes has not kept pace with the region's population and job growth (SANDAG 2011).

The proposed Project is located within the SANDAG Jamul SRA. The SANDAG Regional Growth Forecast estimated that, in 2008, within the Jamul SRA, the population was 14,610 residents (household population, excludes persons in prisons), 4,968 housing units and 4,425 people employed. As provided in **Tables 3.5-1** through **3.5-3**, SANDAG projects that in 2050, within the Jamul SRA, there will be 29,191 residents (100 percent change), 9,500 housing units (91 percent change), and 6,354 people employed (44 percent change) (SANDAG 2011).

3.5.1.3 County of San Diego Housing Element

The County of San Diego Housing Element, a component of the County General Plan, assesses the housing needs of all economic segments of the unincorporated area. The element provides an analysis of existing and projected housing needs and includes goals and policies designed to implement the Housing Element.

3.5.2 Analysis of Project Effects and Determination as to Significance

Population and Housing was not an environmental issue addressed in the Otay Ranch Final PEIR (County of San Diego/City of Chula Vista 1992).

Guideline for the Determination of Significance

A significant impact related to population and housing would occur if implementation of the proposed Project would do the following:

- Induces 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).

Rationale for Selection of Guideline

The significance guideline is from Appendix G of the State CEQA Guidelines for Population and Housing.

Analysis

The Project site is currently undeveloped. If implemented, the proposed Project would convert vacant land to homes, resort uses, infrastructure, and associated amenities. This change in existing conditions would cause both direct and indirect population and housing growth through the creation of new homes and employment opportunities, which would lead to population growth (direct growth); the extension of roads, sewer and water lines, and electrical lines; and the provision of public services, such as fire and school services, to serve new development within the Project site (indirect growth).

However, implementation of the proposed Project is consistent with growth planned for the area and analyzed in the previously certified Otay Ranch PEIR. In addition, because areas to the north, east, and south of the Project site have been acquired for conservation purposes, facilities and services would be sized to only serve the Project site. In sum, the increase in population and housing, and associated expansion of facilities and services, would not facilitate growth beyond that analyzed in the previously certified Otay Ranch PEIR or planned for the area in the applicable regional planning documents and projections. Additionally, Growth-Inducing Impacts are analyzed in Section 1.8 of this EIR and concluded to be less than the impacts contemplated in the PEIR. Therefore, impacts related to population growth are considered *less than significant*.

Otay SRP

The land uses and general intensity of development proposed by the Project are generally consistent with the County of San Diego General Plan, as provided for in the Otay SRP. The County has planned for the increase in housing and population on the Project site. As discussed above, the Otay SRP, as originally adopted (including the Birch Family Estate Parcel), permitted 2,438 homes (1,030 single-family and 1,408 multi-family homes). The Otay SRP, as amended in 2001 (including the Birch Family Estate Parcel), permitted 2,066 homes (658 single-family and 1,408 multi-family). The proposed Project calls for 1,938 homes (1,881 single-family and 57 multi-family) which is consistent with the total number of homes identified by the Otay SRP (excluding the 128 single-family homes permitted on the Birch Family Estate Parcel). Thus, the proposed Project would adjust the distribution between single-family and multi-family homes from the distribution contemplated by the amended Otay SRP, as discussed above, but not the overall number of homes. Adoption of the proposed Otay SRP amendments would adjust the ratio to be closer to that which was originally approved. However, the proposed Project would not exceed the 1,938 homes permitted on the Project site under the Otay SRP, as amended (excluding the Birch Family Estate Parcel), and would result in fewer homes than originally planned by the Otay SRP.

Because the proposed Project reduces the number of homes originally planned by the Otay SRP, the proposed Project would not induce substantial population growth over what was previously

planned by the County for the Project site and analyzed in the previously certified Otay Ranch PEIR. In addition, the physical impacts of the population generated by the proposed Project have been analyzed in the environmental analysis sections in chapters 2.0 and 3.0 of this EIR. Thus, impacts related to the Otay SRP are considered *less than significant*.

As noted above, implementation of the proposed Project also would require extension of utilities, including water and sewer, and new road improvements to serve the Project site. However, after certification of the Otay Ranch PEIR, in addition to the reduced number of homes permitted on the Project site as a result of the 2001 amendment to the Otay SRP, other changes within Otay Ranch have occurred, which affected the extent to which facilities needed to serve the Project site also needed to serve development in more remote locations. Specifically, development of Otay Ranch Village 15 and portions of the development areas in Village 14 and Planning Areas 16 and 19 were acquired by conservation agencies for habitat preservation purposes. Of these planning areas, Village 15 was anticipated to receive circulation, sewer, water, drainage, and other utilities from improvements to Otay Lakes Road, which also serve the proposed Project. With the purchase of Village 15 for conservation purposes, these facilities are no longer required for this village. Thus, the Otay SRP assumes that circulation, sewer, water, drainage facilities, and other utilities would be needed to serve certain areas east of the Project site is no longer applicable.

Therefore, the proposed Project has been designed such that the extension of infrastructure (water and sewer lines, roadways, drainage facilities, etc.) is sufficient to meet the demands of the proposed Project only, and no additional planned development would connect to this infrastructure in the future. Additionally, the proposed Project includes an amendment to the Otay SRP to reclassify Otay Lakes Road from a six-lane Prime Arterial to a four-lane Boulevard, transitioning to a two-lane Community Collector. The reduction of the carrying capacity of this roadway would lessen potential growth-inducing impacts that may otherwise be indirectly caused by the proposed Project widening Otay Lakes Road to six lanes. These changes reduce the potential for the proposed Project to induce population growth due to the extension of infrastructure and services. Thus, the growth-inducing impacts of the proposed Project are considered *less than significant*.

SANDAG Estimates

As stated above, the proposed Project falls within the Jamul SRA. Other land use planning areas that may be affected by the proposed Project are the City of Chula Vista and the South Suburban Major Statistical Area (MSA). Statistics for population, housing, and employment for these three planning areas are provided in **Tables 3.5-1** through **3.5-3**.

As shown for these areas, housing, population, and employment are all expected to increase, with the greatest increase in population, housing, and employment occurring within the City of Chula Vista. The Project's population, housing, and employment projections used by the SANDAG Regional Growth Forecasts were based on the Otay Ranch GDP/Otay SRP, which includes the Project site. Thus, implementation and processing of the proposed Project would not induce substantial population growth, but rather, would be generally consistent with (i.e., would accommodate) future growth projected by the SANDAG Regional Growth Forecasts.

Implementation of the proposed Project would not directly induce substantial population growth beyond what is already planned and projected for the Project site; therefore, impacts related to SANDAG's population, housing, and employment projections are considered *less than significant*.

County of San Diego Housing Element

The County Housing Element is designed to ensure that housing needs of the unincorporated area of the County are addressed for all income levels. The Otay SRP requires preparation of a Housing Plan. The Housing Plan has been completed for the proposed Project and is included in **Appendix B**, Section II.G. The Housing Plan proposes to meet the housing goals identified in the Otay SRP: (1) creation of a balanced community exemplified by the provision of a diverse range of housing styles, tenancy types, and prices; and (2) provision of sufficient housing for persons of all economic, ethnic, religious, and age groups, as well as those with special needs, such as people with disabilities, older adults, single-parent families, and others.

The Otay SRP established a series of villages, planning areas, specialty villages, and rural estate areas. Each of these serves a different portion of the market and, as such, has varying associated demands for affordable housing. Higher density villages and planning areas were located in the Otay Valley Parcel and were intended to provide a wide variety of housing options, including affordable housing. The specialty villages, of which Village 13 is designated, and the estate planning areas were envisioned to provide a different range of housing options not typically associated with traditional affordable housing. Rather, these areas were anticipated to provide "Executive Housing" options to satisfy a segment of the market that is not provided within the more densely planned Otay Valley Parcel. Lastly, these lower density areas were farther away from transit and services and, as such, are not considered ideal locations for affordable housing.

As described in the Housing Plan, the proposed Project includes a range of housing styles and densities to adhere to the goals found in the Otay SRP. Multi-family units are concentrated in the Multiple Use activity area on the western edge of the project site. In addition to being configured in a mixed-use orientation with retail uses, these units are located nearest a potential future transit stop, should such services be extended by MTS, SANDAG, or CTV in the future. Smaller single-family lots (4,250 square feet) are centrally located in the village core, adjacent to the school and neighborhood parks. Larger lots, averaging over 10,000 square feet and reaching over 25,000 square feet, are more typical in the more northern portions of the project site, where they take advantage of higher elevations to provide panoramic views of open space, Lower Otay Lake, and the Otay Mountains.

The proposed Project also includes an Affirmative Fair Marketing Plan that outlines outreach efforts and lending practices designed to attract perspective homebuyers and/or tenants regardless of gender, race, age, religion, disability, or economic status. As such, the proposed Project will not result in any conflicts with the County Housing Element. Therefore, *no significant impacts* related to consistency with the County Housing Element would result.

3.5.3 Cumulative Impact Analysis

The previously certified Otay Ranch PEIR provided a program-level analysis of the existing conditions and potential impacts related to population and housing for the entire Otay Ranch area, including the Project site. The PEIR concluded that development of Otay Ranch would contribute cumulatively to regional growth by adding population, housing, and employment to the area. The following discussion provides an analysis of cumulative population and housing impacts with respect to the proposed Project, in light of the previous analysis and current cumulative conditions.

The geographic scope for cumulative population and housing impacts consists of the nearby areas east of SR-125 where the potential would exist for the Project to induce additional population growth, including from extension of roads or other infrastructure. Although the proposed Project would still result in the placement of housing, infrastructure, and employment opportunities at a site where none currently exist, it would not exceed the levels planned for and previously analyzed in the Otay Ranch PEIR. While the Otay Lakes Road and related public utility extensions may facilitate some additional development to the west of the Project site, this area has been planned for urban development by both the County and Chula Vista as part of Otay Ranch.

Areas to the north, south, and east are almost entirely public lands and include lands acquired for conservation. Private land exists to the east of the Project along approximately 2.5 miles of Otay Lakes Road, which is designated as Rural Lands (RL-80) and allows one dwelling unit per 80 acres. The Project's infrastructure improvements would not remove an obstacle to growth at the very low density allowed on this property to the east. Additionally, Growth-Inducing Impacts are analyzed in Section 1.8 of this EIR and concluded to be less than the impacts contemplated in the PEIR. Thus, the proposed Project is expected to result in *less than cumulatively significant impacts* to population and housing.

3.5.4 Significance of Impacts Prior to Mitigation

The proposed Project is not anticipated to result in any significant direct, indirect, or cumulative impacts related to population and housing.

3.5.5 Mitigation

As discussed above, the proposed Project would not exceed the level of growth planned for and analyzed in the PEIR and by the County and Chula Vista general plans. Thus, the proposed Project is not anticipated to result in Project-level direct or indirect significant impacts through the creation of housing, employment opportunities, and infrastructure. Further, the Project's population and housing growth, in combination with population and housing growth induced by other projects in the vicinity, would not result in significant direct or indirect cumulative population and housing impacts. Therefore, no mitigation is required.

3.5.6 Conclusion

The analysis of impacts related to population and housing that would result from implementation of the proposed Project evaluated the existing conditions of the Project site, as well as the proposed Project's consistency with the County General Plan, Otay SRP, Chula Vista General Plan, SANDAG population and housing estimates, and the County Housing Element. The proposed Project is consistent with existing local and regional plans and accommodates the type of development planned for the Project site; thus, development of the proposed Project ***would not result in significant Project-level or cumulative direct or indirect impacts*** related to population and housing.

**Table 3.5-1
SANDAG Long Range Forecasts
for Population 2008–2050**

SRA	2008	2020	2030	2050	# Change	% Change
Chula Vista	228,958	265,713	286,822	327,035	98,077	43%
Jamul	14,610	17,822	25,394	29,191	14,581	100%
South Suburban MSA	366,940	433,988	473,453	549,684	182,744	50%

*Household population; excludes persons in prison facilities

**Table 3.5-2
SANDAG Long Range Forecasts
for Housing 2008–2050**

SRA	2008	2020	2030	2050	# Change	% Change
Chula Vista	77,484	88,185	94,858	107,011	29,527	38%
Jamul	4,968	5,997	8,578	9,500	4,532	91%
South Suburban MSA	118,445	136,932	148,164	170,825	52,775	45%

**Table 3.5-3
SANDAG Long Range Forecasts
for Employment 2008–2050**

SRA	2008	2020	2030	2050	# Change	% Change
Chula Vista	70,230	82,146	101,001	121,555	51,325	73%
Jamul	4,425	4,497	4,769	6,354	1,929	44%
South Suburban MSA	116,445	142,043	174,973	226,802	110,357	95%

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3.6 Public Services

The following section provides a summary of the potential public services impacts caused by implementation of the proposed Project. The public services evaluated in this section are fire protection and emergency services, law enforcement, schools, and parks and recreation.

In 1993, the Otay Ranch PEIR was adopted and provided a program-level analysis of the existing conditions, potential impacts, and mitigation measures related to public services for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR identified potential significant impacts related to police protection, fire protection, emergency medical service, schools, library service; and parks, recreation and open space. The PEIR concluded that the potential public-services-related impacts, other than water supply, could be mitigated to below a level of significance by conducting additional studies during implementation of subsequent Otay Ranch village-specific planning.

3.6.1 Existing Conditions

The provision of public services is primarily driven by population growth and employment opportunities in local communities and cities. For the Project area, the City of Chula Vista and the Jamul-Dulzura Community Plan Area would be the primary geographic areas affected by increased demand for public services resulting from the proposed Project.

3.6.1.1 *Fire Protection and Emergency Services*

The Otay Ranch PEIR concluded that implementation of the Otay SRP would result in potentially significant impacts related to fire protection and emergency facilities because of the increase in demand for these services caused by the increase in the Otay Ranch population. As a result, the Otay Ranch PEIR identified mitigation measures, which reduced the potential impact to a less-than-significant level. The analysis and discussion in the Otay Ranch PEIR relating to the provision of fire protection and emergency services are incorporated by reference in this EIR.

Information on fire protection and emergency services is provided in the Otay Ranch Resort Village FPP, which is included as **Appendix C-21** of the Resort Village Specific Plan (Dudek 2014). Analysis of potential impacts and mitigation measures associated with wildland fires is provided in Section 2.6, Hazards and Hazardous Materials.

The Project site is within the San Diego RFPD, which operates fire stations in the south and east county. Initial emergency fire response to the Project site is currently provided from Fire Station 36 at 14145 Highway 94 in Jamul. The driving distance to the Project site from Fire Station 36 is approximately 10 miles, and the approximate response time to the Project site is 12 to 13 minutes. Fire Station 36 currently responds to approximately two calls per day, staffs three full-time firefighters, and has the following apparatus:

- Two structural fire engines
- One brush fire engine
- One rescue squad truck

- One light and air unit

In addition, CVFD Station #8 is located at the intersection of Otay Lakes Road and Woods Drive, approximately 6,500 feet west of the Project's nearest entrance. Station #8 houses a staffed engine company and a reserve engine. The approximate travel time to the Project site is 3 to 4 minutes to the western edge of development. The closest ladder truck is housed at CVFD Station #7 on La Media Drive and Santa Venetia, approximately 3.0 miles west of the Project site, within a 10-minute driving time. The closest Wildland/Urban Interface Pumper fire engine is located at CVFD Fire Station #2 at 80 East J Street, approximately 10 road miles from the Project site.

San Diego County General Plan Safety Element

The Safety Element of the County General Plan includes Goals and Policies for fire hazards that focus on establishment of "defensible space" between highly combustible wildlands and developed properties in order to improve survivability of structures in the event of a wildland fire. Goals and Policies that are particularly relevant to the Project are shown in **Table 3.6-1**. With a gross residential density of just over 1 du/acre, the Project would be classified as an SR-1 Semi-Rural Residential Area, for which Safety Element specifies an emergency fire response travel time²¹ standard of five minutes from the fire station to the farthest dwelling unit of the development (San Diego County General Plan 2011c).

3.6.1.2 Law Enforcement

The Otay Ranch PEIR concluded that implementation of the Otay SRP would result in potentially significant impacts related to law enforcement facilities because of the additional demand for law enforcement that would be generated by the increased Otay Ranch population. As a result, the Otay Ranch PEIR identified mitigation measures, which reduced the potential impact to a less-than-significant level. The analysis and discussion in the Otay Ranch PEIR relating to the provision of law enforcement are incorporated by reference in this EIR.

The Project site is currently served by the San Diego County Sheriff's Department from the Imperial Beach station located at 845 Imperial Beach Boulevard. This station serves the Project area, City of Imperial Beach, and unincorporated portions of San Diego County including Bonita, Sunnyside, Lincoln Acres, Otay Mesa, and Proctor Valley. The Imperial Beach Station consists of 26 contracted (in whole or part) sworn personnel. The Traffic Division consists of one traffic sergeant, one motorcycle traffic deputy, two traffic investigators, and four community service officers. The Imperial Beach Station's Detective Unit consists of three detectives, four patrol sergeants and 11 patrol deputies. A school resource officer and four civilian personnel are also assigned to the Imperial Beach Station. A satellite office located at 900 Seacoast Drive is staffed by two deputies (County Sheriff's Department 2011).

²¹ Per the Safety Element, "travel time" does not represent total response time, which would include call processing time and turnout time and would typically add two to three minutes to the travel time.

Law Enforcement Response Standards

County Sheriff's Department

The San Diego County Sheriff's Department classifies calls for services into the following four categories:

- Priority 1: Life-threatening situations, serious injury vehicle accidents, plane crashes, etc.
- Priority 2: Felony crimes-in-progress, domestic violence, rape, missing persons-at-risk.
- Priority 3: Incomplete 911 calls, persons under the influence, found juveniles, etc.
- Priority 4: Assaults, cold crime reports, disturbances, vandalism, trespass, etc.

The Sheriff's Department uses two measures to determine if its responses to calls are meeting response time standards. "Received to Arrival" measures the time between when the communications center receives the call and when the deputy arrives on the scene. "Dispatched to Arrival" measures the time between when the call is dispatched from the communication center and when the deputy arrives on the scene. For analysis purposes, the "Received to Arrival" measure is used in this EIR because it most closely represents overall response times for law enforcement services.

According to the Otay SRP, the proposed Project is required to provide law enforcement services such that (1) 84 percent of Priority 1 emergency calls are responded to within 7 minutes; (2) an average response time of 4.5 minutes or less is maintained for all Priority 1 calls; (3) 62 percent of Priority 2 urgent calls are responded to within 7 minutes; and (4) an average response time of 7 minutes or less is maintained for all Priority 2 calls. Response times for service calls were collected from the San Diego County Sheriff's Department. These are presented as response times for 100 percent of calls received. Using the Otay SRP threshold listed above, the Imperial Beach Station did not meet response time thresholds for Priority 1 and Priority 2 calls in 2008 for the portions of unincorporated San Diego County served by the Imperial Beach Station.

3.6.1.3 Schools

The Otay Ranch PEIR concluded that implementation of the Otay SRP would result in potentially significant impacts related to schools because of the additional demand for schools that would be generated by the Otay Ranch student population. As a result, the Otay Ranch PEIR identified mitigation measures, which reduced the potential impact to a less-than-significant level. The analysis and discussion in the Otay Ranch PEIR relating to the provision of schools are incorporated by reference in this EIR.

The proposed Project site would be served by two school districts. The Chula Vista Elementary School District (CVESD) would provide elementary education (grades K–6) for the Project site, and the Sweetwater Union High School District (SUHSD) would provide middle school and high school education (grades 7–12) for the Project site.

The Otay SRP located an elementary school site within Village 15 to serve students from both Villages 15 and 13; however, Village 15 was acquired by conservation agencies for open space purposes, and development of a school would no longer occur within that area. The nearest existing elementary schools are Arroyo Vista Elementary and Salt Creek Elementary, which are approximately 1.6 and 1.2 miles west of the Project site, respectively. To ensure school services are available, the Project proposes to replace the Village 15 elementary school site by reserving a 10-acre elementary school site within the Project site.

The SUHSD completed High School #13 (Olympian High School), which opened in September 2006, and Middle School #12 (Montgomery Middle School) which opened in 2013.. In addition to these recently constructed schools, Eastlake Middle School, Eastlake High School, and High Tech High School are located to the west approximately 1.2 miles, 2.3 miles, and 2.6 miles, respectively, from the Project site. Further, the Village 8 West SPA Plan and Tentative Map, in the City of Chula Vista, were approved in 2013 and included a middle school site.

3.6.1.4 Parks

The Otay Ranch PEIR concluded that implementation of the Otay SRP would result in potentially significant impacts on park and recreation services because of the additional demand for regional and local parkland, open space, and recreational facilities. As a result, the Otay Ranch PEIR identified mitigation measures, which reduced the potential impact to a less-than-significant level. The analysis and discussion in the Otay Ranch PEIR relating to the provision of park and recreation services are incorporated by reference into this EIR.

Existing Local Park Facilities

Within Otay Ranch, the nearest existing park facilities to the Project site are located west of Hunte Parkway. They are as follows, in order of proximity:

- Salt Creek Community Park (24 acres), which features a gymnasium, basketball and tennis courts, sports field, skate park, open green space, and picnic areas (2.0 miles);
- Mountain Hawk Neighborhood Park (12 acres), which features an amphitheater, basketball court, open green space, and picnic areas (2.2 miles); and
- Monteville Community Park (29 acres), which features a gymnasium, basketball and tennis courts, sports fields, skate park, open green space, and picnic areas (3.1 miles).

Otay Valley Regional Park - OVRP is a joint venture between the County and the cities of Chula Vista and San Diego. Its first phase of development provides recreational areas, trails, and habitat preserves along approximately 4 miles of the Otay River from the South Bay Wildlife Refuge at the south end of San Diego Bay to just west of I-805. Future phases will continue parkland acquisitions and improvements east to the Otay Lakes. While much of it is still in private ownership, it is envisioned to eventually encompass approximately 9,000 acres of active and passive recreational opportunities. Areas bordering Upper and Lower Otay Lakes in the Project area are proposed to be designated as “open space/preserve” by the OVRP Concept Plan,

with trails that would eventually link to the San Diego Bay through the Otay River Valley and also go north from the Project area to Proctor Valley (County of San Diego 1997a).

County Park Land Dedication Ordinance (PLDO)

The County PLDO requires dedication of land or payment of an in-lieu fee for the provision of neighborhood or community parks that provide active recreational uses. The Recreation Element of the County General Plan specifies that neighborhood parks should be 5 to 20 acres and community parks should be 20 to 100 acres. For land within the Otay Community Planning Area, the dedication requirement is 373.74 square feet per dwelling unit or payment of an in-lieu fee of \$5,870 per dwelling unit (County of San Diego 2010b). For the proposed 1,938 dwelling units, the dedication requirement would be 16.63 acres or the in-lieu fee would be \$11,376,060.

The Otay SRP requires 3 acres per 1,000 residents of dedicated land and improvements. SANDAG estimates the average persons per household in the 91914 zip code to be 3.59. This would yield a total Project population of 6,957 residents and a requirement to dedicate and improve 20.9 acres of neighborhood and/or community parks.

Open Space and Recreation Uses

In addition to the above local park standards, the Otay SRP also requires 12 acres per 1,000 residents of “other passive or active recreation and open space areas” and 15 acres per 1,000 residents of “regional park and open space.” Based on an estimated Project population of 6,957 residents, the 12-acre standard requires 83.5 acres of recreational open space and the 15-acre standard requires 104.4 acres of regional park and open space, for a total of 187.9 acres.

3.6.1.4 Libraries

The Otay Ranch PEIR concluded that implementation of the Otay SRP would result in potentially significant impacts to library facilities because of the additional demand created by implementation of the project. As a result, the Otay Ranch PEIR identified mitigation measures, which reduced the potential impact to a less-than-significant level. The analysis and discussion in the Otay Ranch PEIR relating to the provision of library facilities are incorporated by reference into this EIR.

Existing Library Facilities

The County of San Diego has five library facilities serving the South County area. The facilities are located in Bonita, Imperial Beach, Lincoln Acres, Spring Valley, and Rancho San Diego. Bookmobile service provides circulation and distribution in rural areas. The Project site lies within the service area of the Rancho San Diego County library.

3.6.2 Analysis of Project Effects and Determination as to Significance

The following significance thresholds for public services are based on Appendix G of the State CEQA Guidelines for Public Services. A significant impact to public services would occur if the Project would do the following:

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 and emergency services;
- Law enforcement facilities;
- Schools;
- Parks.

3.6.2.1 Fire Protection and Emergency Services

The Otay Ranch PEIR identified the need for additional fire and emergency services and identified two new fire station locations: one in Rancho del Rey and one in the eastern territories of Otay Ranch. Mitigation measures in the PEIR required the following:

- The preparation of a fire master plan to demonstrate that facilities would achieve emergency response times of 7.0 to 10 minutes to 85 percent of the residences.
- Preparation of a Public Facilities Financing Plan (PFFP).
- Fire protection service facilities to be provided concurrent with need.

The fire and emergency response times of 7.0 to 10 minutes would not be consistent with current County emergency travel time requirements. The requirements for preparation of a PFFP and to provide fire protection facilities concurrent with need would still be applicable to proposed Project.

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Requires or results in the construction or expansion of fire and emergency services facilities in order to maintain acceptable service ratios, response times, or other performance standards, the construction of which could cause significant environmental effects.

Rationale for Selection of the Guideline

The significance threshold for Fire Protection and Emergency Services is based on Appendix G of the State CEQA Guidelines for Public Services.

Analysis

Implementation of the proposed Project would increase the demand for fire and emergency services resulting from the conversion of vacant land to urban uses, including single-family and multi-family homes, resort and commercial uses, a school, and parks. The Otay SRP planned for a fire station to be located within Village 15. Because Village 15 was acquired by conservation agencies for habitat preservation, development of a fire station would no longer occur within that area. Thus, to ensure that fire protection services are available, the Project reserves a 2.1-acre Public Safety Site, which could house a fire station and a law enforcement storefront. As depicted in **Figure 1.0-1**, the public safety site would be located in the Village Core, across from the elementary school site.

Using the RFPD's estimate of 82 annual calls per 1,000 population, the Project's estimated 6,957 residents, 400 resort guests, 300 resort employees, 100 retail employees, and 50 employees at the school site would generate approximately 640 calls per year (about 1.8 calls per day), 85 percent of which (1.5 calls per day) are expected to be medical emergency calls (in fact, CVFD call volumes suggest as many as 97.5 percent of all calls are not fire related). Without additional fire and emergency response facilities, the RFPD would be unable to accommodate this additional call volume and meet the County's travel response time standard.

The Fire Protection Plan proposes the Project site be served on an interim basis by a temporary, on-site RFPD fire station to be located within the western portion of the Project. Prior to the issuance of the first building permit in the Resort or Eastern development areas, a permanent on-site RFPD fire station would be available on the Public Safety Site.

The RFPD has stated that the 2.1-acre Public Safety Site reserved within the Project would provide adequate space for a station sufficient to serve the Project site within the required five-minute travel time. A Response Time Analysis has been prepared and is included in the Fire Protection Plan (Appendix 21). The entire project site can be served within the five minutes response standard from the proposed Public Safety Site.

RFPD's facility requirements for the fire station would include housing for four on-duty firefighters and reserve personnel, office space, training room and meeting rooms, and adequate space for any necessary equipment. Construction of a fire station on-site has been assumed as part of this proposed Project and has been analyzed throughout this EIR. In addition, noise emanating from sirens and/or emergency generators would be temporary in nature and are expected to meet all County Noise Ordinance requirements. Therefore, the future construction and operation of the proposed fire station would not have any additional impacts beyond those identified in this EIR.

Therefore, with implementation of the temporary and permanent fire stations described herein, the proposed Project would have a *less than significant impact* to the provision of fire protection and emergency services.

3.6.2.2 Law Enforcement

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Requires or results in the construction or expansion of law enforcement facilities in order to maintain acceptable service ratios, response times, or other performance standards, the construction of which could cause significant environmental effects.

Rationale for Selection of the Guideline

The significance threshold for Law Enforcement is based on Appendix G the State CEQA Guidelines for Public Services.

Analysis

County Sheriff's Department

The proposed Project would result in an increased demand for law enforcement services and would increase the difficulty of meeting existing response time thresholds because deputies would be required to travel additional distances to respond to calls for service at the Project site. The County Sheriff has estimated, based on Chula Vista's experience of 1.38 annual calls for service per housing unit, that the Project's proposed 1,938 dwelling units would result in 2,674 annual calls for service and, therefore, would require six additional patrol deputies (San Diego County Sheriff's Department 2008).

The County Sheriff indicated that its current Imperial Beach station facilities are inadequate to house existing staffing levels and would be unable to accommodate additional personnel. However, as discussed above, the proposed Project reserves a 2.1-acre Public Safety Site that could house a sheriff's storefront. Based on communication received from the San Diego County Sheriff's Department, the proposed 2.1-acre Public Safety Site would provide approximately 300 square feet of space, which is adequate space for a sheriff's storefront sufficient to serve the Project site. Alternatively, the project could include a storefront facility within the Multiple Use site. Construction of a County Sheriff's storefront on-site has been assumed as part of this proposed Project and has been analyzed throughout this EIR. Therefore, the future construction of the proposed storefront would not have any additional impacts beyond those identified in this EIR.

Potential impacts associated with the construction of the sheriff's storefront at the Public Safety Site or Multiple Use site have been analyzed as a part of the proposed Project and are included

within the analyses presented throughout this EIR. Therefore, construction of the proposed sheriff's storefront would not result in any additional significant impacts beyond those identified throughout this EIR. Therefore, the proposed Project would have a *less than significant impact* resulting from the provision of law enforcement services by the County Sheriff's Department.

3.6.2.3 Schools

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Requires or results in the construction or expansion of school facilities in order to maintain acceptable service ratios or other performance standards, the construction of which could cause significant environmental effects.

Rationale for Selection of Guidelines

The significance threshold for Schools is based on Appendix G of the State CEQA Guidelines for Public Services.

Analysis

California Government Code Section 65995 and Education Code Section 17620 authorize school districts to levy a fee, charge, dedication or other requirement against any construction of school facilities for the purpose of funding the construction or reconstruction of school facilities. Pursuant to Government Code Section 65996, payment of developer's fees would fully mitigate school impacts.

Alternatively, the applicants may fully mitigate impacts on K–12 schools through the execution of a school mitigation agreement with both school districts. The terms of any agreement the Project applicants may enter into with CVESD in the future to fund the construction of an on-site school would be an alternative to the payment of school fees. The state Education Code Section 17620(b) limits the County's authority to "not issue a building permit ... absent certification by the appropriate school district that any fee, charge, dedication, or other requirement levied by the governing board of that school district has been complied with..." Any mitigation agreement would be subject to future negotiation by the applicants with the school district.

Elementary School

CVESD uses a student generation rate of 0.4114 elementary students per single-family dwelling unit and 0.3481 elementary students per multi-family dwelling unit. It is estimated that the 1,938-unit (1,881 single-family and 57 multi-family units) Project would generate approximately 794 elementary school students. CVESD indicated that it prefers to construct elementary schools to serve 800 students.

As stated above, the proposed Project reserves a 10.0-acre site adequate for an elementary school. For new development projects, CVESD's standard practice is to either construct a school on the reserved site to accommodate 800 students, or the district will install additional relocatable classrooms at existing elementary schools based on net baseline eligibility and available funding. As stated in the CVESD 2011 School Facilities Needs Analysis²², "The primary financing mechanism authorized in the mitigation agreements is the formation of a CFD. The District can then issue bonds to construct school facilities with repayment of the bonds being accomplished through the levy of a special tax on properties within the CFDs. These developments, which are subject to the special tax, are considered Mitigated Developments as they have provided adequate funding and support to the CVESD facilities program since 1986, the first year that a CVESD CFD was taxed." Therefore, CVESD will be able to accommodate the students generated by the proposed Project either on-site or at existing school locations and the Project impact to CVESD would be *less than significant*.

Construction of a new elementary school on-site by CVESD has been analyzed as a part of the proposed Project and is included in the analyses presented throughout this EIR. For instance, Section 2.9 – Traffic, included estimated average daily trips from the proposed school site. These trips were further analyzed as part of Section 2.2 – Air Quality, 2.7 – Noise, and 3.8 – Climate Change. If CVESD decides to install relocatable classrooms at existing elementary schools, an analysis of any environmental impacts of such a project would be conducted by CVESD.

The proposed Project would either pay school fees as stated above or the Project applicants would enter into an agreement with CVESD to mitigate the Project impact in lieu of the statutory school fees.

Because potential impacts associated with the construction of a new elementary school on-site have been analyzed as part of the proposed Project and are included in the analyses presented throughout this EIR, construction of the proposed elementary school would not have any additional impacts beyond those identified in this EIR and impacts to CVESD elementary schools would be *less than significant*.

Middle and High Schools

Using a student generation rate of 0.1216 middle school and 0.2291 high school students per single-family dwelling unit, and 0.0516 middle school and 0.1057 high school students per multi-family dwelling units, it is estimated that the proposed Project would generate approximately 232 middle school students and 437 high school students.

SUHSD's Olympian High School opened in September 2006, High Tech High School in 2009, and Montgomery Middle School in 2013. SUHSD is currently in the design phase for a new high school within Otay Ranch Village 11, although no planned construction or completion date has been scheduled. SUHSD anticipates that these new schools will be able to accommodate the

²² [http://www.cvesd.org/DISTRICT/Documents/Business%20Services%20and%20Support%20\(Angie\)/SFNA%20\(Final,%20June%202011\).pdf](http://www.cvesd.org/DISTRICT/Documents/Business%20Services%20and%20Support%20(Angie)/SFNA%20(Final,%20June%202011).pdf).

students generated by the proposed Project. The analysis of any impacts of the construction of these off-site schools would be conducted by SUHSD.

The proposed Project would either pay school fees as stated above or the Project applicants would enter into an agreement with SUHSD to mitigate the Project impact in lieu of the statutory school fees. As discussed above, payment of statutory school impact fees would mitigate the proposed Project's impact to SUHSD's middle schools and high schools to *less than significant*.

3.6.2.4 Parks

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Requires or results in the construction or expansion of parks and recreation facilities to maintain acceptable service ratios or other performance standards, the construction of which could cause significant environmental effects.
- Increases 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.

Rationale for Selection of Guidelines

The significance thresholds for Parks are based on Appendix G the State CEQA Guidelines for Public Services.

Analysis

Parks and Recreation Facility Construction or Expansion

Local Parks

As discussed above, the proposed Project would be required to dedicate 16.63 acres of neighborhood or community parks pursuant to the County PLDO or pay an in-lieu park fee. The County ordinance allows the development of private parks, but reduces the parkland dedication credit for private parkland to 50 percent of the park acreage. The proposed Project achieves the local park standard by the improvement of nine parks with gross developable acreages ranging from 1.3 acre to 10.3 acres, for a total of 28.6 gross acres of private and public parkland. Each park contains active play areas such as soccer fields, open lawn areas, and basketball courts. The County PLDO requirement would be satisfied in full by the dedication of 16.6 (net) acres of public parks and an additional credit of 2.95 acres of private parkland (based on a 50 percent credit for 5.9 (net) acres of private parkland), for a total of 19.55 acres. **Table 3.6-2** shows the Project's proposed parks and improvements planned for each. Parks P-1, 2, 3, 4, 5, and 8 are proposed to be public and P-6, 7, and 9 are proposed as private parks.

The County PLDO requirement would be 16.63 acres and would be required to be improved by the developer. The current land plan for the proposed Project includes improvement of 21.9 net acres of public neighborhood parks, which would fully comply with the County PLDO requirement, as well as the Otay SRP requirement of 20.9 acres based on providing 3 acres/1,000 residents.

Impacts from construction of local park areas have been addressed as part of the proposed Project and have been analyzed throughout this EIR. Mitigation measures have been included, where applicable, to avoid or reduce impacts from construction and operation of the proposed Project to less-than-significant levels. Therefore, construction and operation of the proposed park and recreation areas would not have any additional impacts beyond those identified in this EIR, and impacts from construction of local parks would be *less than significant*.

Open Space and Recreation Uses

In addition to improved neighborhood parks, the proposed Project contains approximately 144 acres of internal open space, and 1,089.0 acres of Preserve land.

Approximately 1,233 acres (66 percent) of the 1,869-acre Project site are designated open space or Preserve. Open space is generally internal to the Project site, usually consisting of manufactured slopes and the fuel modification zone, which would be maintained by a homeowners' association or maintenance district. Preserve land is either undisturbed lands or restored habitats set aside for dedication to the public in satisfaction of the Otay Ranch RMP conveyance requirement.

As stated in Section 3.6.1.4, the Otay SRP requires 12 acres per 1,000 residents of “other passive or active recreation and open space areas” and 15 acres per 1,000 residents of “regional park and open space” that would be in addition to the local park acreage. Based on the estimated Project population of 6,957 residents as stated in Section 3.5.1.1 of this EIR, the 12-acre standard requires 83.5 acres of recreational and open space areas, and the 15-acre standard requires 104.4 acres of regional park and open space, for a total of 187.9 acres. Both open space and Preserve lands are used to satisfy the park and open space dedication requirements in the Otay SRP. The combination of 1,233 acres of open space and Preserve lands included as part of the proposed Project would result in approximately 190.2 acres of open space and Preserve lands per 1,000 Project residents. This ratio of open space and Preserve lands to the anticipated population would exceed the requirements identified above. As such, impacts to open space and Preserve lands would be *less than significant*.

The proposed Project also would include a pathway and trail system accessible to bicycles and pedestrians. The locations of these trails are depicted in **Figure 1.0-09**. A typical pathway would be 10 feet in width, consist of a soft paved path, and have a split-rail fence as required. Trails dedicated to the County of San Diego would be non-motorized, multi-use, and conform to County of San Diego trail design guidelines.

In the open space Preserve areas north of the development area, the Project does not propose to construct new trails; rather, the Project would connect to existing dirt roads. Trails internal to the

proposed Project and along Otay Lakes Road would be constructed with roadway improvements for the Project. As discussed above, construction of park and recreation facilities, including trails, has been analyzed as part of the proposed Project throughout this EIR and mitigation measures have been identified that would avoid or reduce impacts to less-than-significant levels. Therefore, construction of these park facilities would not have any additional impacts beyond those identified in this EIR.

Parks and Recreation Facility Deterioration

As stated above in Section 3.6.2.4 of this EIR, the proposed Project would provide 28.6 acres (gross) of public and private neighborhood parks and 1,233 acres open space and Preserve lands, which would provide adequate park land and recreational facilities within the Project site boundaries to meet the anticipated recreational needs of Project residents. Therefore, existing neighborhood and regional parks or other recreational facilities would not be subject to substantial physical deterioration due to increased use resulting from development of the proposed Project. Impacts related to existing neighborhood parks and regional parks or other recreational facilities would be *less than significant*.

3.6.2.4 Libraries

Guidelines for the Determination of Significance

A significant public services impact would occur if implementation of the Project would do the following:

- Requires or results in the construction or expansion of library facilities to maintain acceptable service ratios or other performance standards, the construction of which could cause significant environmental effects.

Rationale for Selection of Guidelines

The significance threshold for libraries is based on Appendix G the State CEQA Guidelines for Public Services.

Analysis

At buildout the proposed project would result in an incremental increase in the local demand for library facilities. The Otay SRP and Facility Implementation Plan identify a threshold standard of 350 square feet of adequately equipped and staffed library facilities per 1,000 residents for projects in the County. The proposed project would generate demand for approximately 2,435 square feet of additional library facilities. While the Resort Village Specific Plan would allow for civic facilities, such as a library, the proposed project does not specifically include the development of a library. If a branch library were to be constructed in the Multiple Use district of the site, the construction impacts would be consistent with other project site construction which is evaluated in the various topical sections in Chapters 2 and 3 of this EIR, along with mitigation measures to address significant impacts.

However, the Project site lies within the service area of the Rancho San Diego library which has capacity to serve the proposed project [personal communication from Charles Jarman, Facilities & Collection, Principle Librarian, San Diego County Library, 02/26/2015].

In addition, as discussed in the EUC SPA Plan, a site for a future 36,758-square-foot library has been approved within the Civic Core of the EUC SPA Plan Area. The planned library in the Civic Core of the EUC would provide sufficient library space for Otay Ranch residents. Further, the planned University site in Otay Ranch is likely to include a library that would provide additional library facilities to Otay Ranch residents. These planned library facilities in addition to the Rancho San Diego County library would be able to provide acceptable service to existing patrons and meet future demand associated with the project. Thus, impacts to library facilities as a result of the proposed project would be *less than significant*.

3.6.3 Cumulative Impact Analysis

3.6.3.1 Fire Protection and Emergency Services

The geographic scope for analysis of cumulative fire protection impacts includes the areas served by the Jamul Station of the RFPD. **Table 3.5-1** shows the SANDAG Series 12 2050 Regional Growth Forecast for these service areas. As shown, the population in the Jamul Subregional Area is expected to increase from 14,610 in 2008 to 29,191 in 2050, an increase of 14,581 residents. Total housing units are projected to increase by 4,090, and civilian jobs are projected to increase by 1,929 (SANDAG 2010). This projected growth within the Jamul SRA may require construction or expansion of fire protection facilities at the Jamul RFPD station or other RFPD stations.

Impacts to fire service facilities would not be cumulatively considerable, because the project includes the construction of a new fire station. Therefore, while the population in the surrounding area is projected to grow and place a strain on existing fire services, this project would not produce a significant contribution to this impact. The potential impacts associated with the construction of the fire station within the Project, which would be staffed by RFPD personnel, have been included in the analyses presented throughout this EIR, and mitigation measures have been included, where applicable, to avoid or reduce Project impacts to less than significant levels. Therefore, construction of the fire station would not have any additional impacts beyond those identified throughout this EIR and would not contribute to the need to construct or expand fire and emergency services facilities within the service area of the RFPD Jamul Station. Impacts related to the construction or expansion of fire protection facilities at the Jamul RFPD station or other RFPD stations not associated with the proposed Project would be analyzed under separate environmental analyses pursuant to CEQA.

Further, the Village 13 fire station would be deemed “must fill” station, meaning that, while this facility would be available to respond to calls for service within the project boundaries, it would only be used to respond to off-site calls in the event of a major incident. As such, the need to “back fill” the Public Safety Site by another RFPD truck is avoided and the remainder of the RFPD system would still be in service and available to respond to emergency calls for service.

3.6.3.2 Law Enforcement

The geographic scope for analysis of cumulative law enforcement impacts include the areas currently served by the Imperial Beach Station. These areas are the City of Imperial Beach and unincorporated portions of San Diego County, including Bonita, Sunnyside, Lincoln Acres, Otay Mesa, and Proctor Valley. Future growth and development within these areas could require construction of additional law enforcement facilities within the service area for the Imperial Beach Station. Potential impacts associated with the construction of a sheriff's storefront on the site of the proposed Project have been included as a part of the proposed Project and have been analyzed throughout this EIR; and mitigation measures have been included, where applicable, to avoid or reduce impacts. The Project would not require construction of any additional law enforcement facilities beyond those identified throughout this EIR and **would not contribute to cumulative law enforcement facility construction impacts.**

3.6.3.3 Schools

The geographic scope for the cumulative school impacts analysis includes the service areas of CVESD and SUHSD. CVESD serves the City of Chula Vista, Bonita, and portions of South San Diego. SUHSD serves the City of Chula Vista, Otay Mesa, Bonita, Imperial Beach, San Ysidro, National City, and portions of South San Diego.

The impact analysis above describes the potential for the proposed Project to impact the existing capacity of CVESD and SUHSD. As described in the analysis above, CVESD and SUHSD are responsible for constructing new facilities and expanding existing facilities to adequately provide services for the jurisdictions they serve. This type of analysis is cumulative in nature since it examines existing and projected school enrollments for each district, as well as potential students generated by the proposed Project and other new housing developments.

Potential impacts associated with the construction of a new elementary school located on the Project site have been analyzed as part of the proposed Project and are included in the analyses presented throughout this EIR. The Project would not require construction of any additional school facilities and would pay required school fees, which, pursuant to Government Code Section 65996, would fully mitigate the Projects contribution to potential cumulative school impacts. Therefore, cumulative impacts to schools would be **less than significant.**

3.6.3.4 Parks

The geographic scope for cumulative park and recreation impacts includes the unincorporated portions of San Diego County. As stated above in Section 3.6.3.1 and shown in **Table 3.5-1**, SANDAG population forecasts estimate that the population of Jamul subregional is projected to increase from 14,610 residents in 2010 to 29,191 residents by 2050. This growth will necessitate the development of additional park and recreation facilities distributed according to the locations of new development. The proposed Project is providing park land that would be adequate to meet the needs of its residents. Therefore, residents of the proposed Project would not overburden existing park and recreation resources or planned park and recreation resources needed to serve future growth.

Impacts related to the construction of additional park and recreation facilities within the Jamul SRA not associated with the proposed Project would be analyzed under separate environmental analyses pursuant to CEQA as those facilities are proposed for construction. It would be speculative for this document to attempt to identify potential environmental impacts of future projects that are unknown, unplanned, and for which detailed environmental analyses have not yet been conducted.

Construction and operational impacts of the Project's proposed park and recreation facilities have been included as a part of the proposed Project and have been analyzed throughout this EIR. Mitigation measures have been included, as needed, to avoid or reduce impacts to less-than-significant levels. The Project would not require construction of any additional park facilities beyond those identified in this EIR and ***would not contribute to any significant cumulative park and recreation facility impacts.***

3.6.4 Significance of Impacts Prior to Mitigation

As discussed throughout sections 3.6.2 and 3.6.3, the proposed Project would not result in direct or cumulatively significant impacts to public services.

3.6.5 Mitigation

As discussed above, implementation of the proposed Project would not result in any significant impacts to public services. Therefore, no mitigation is required.

3.6.6 Conclusion

As described above, the Project was determined to avoid significant impacts to fire protection and emergency services, law enforcement, schools, and parks by a combination of payment of impact fees, dedication of land, and/or construction of facilities. Therefore, implementation of the proposed Project ***would not result in any significant impacts*** to public services.

Table 3.6-1
San Diego County General Plan Safety Element
Fire Hazards Goals and Policies

GOAL S-3		Minimized Fire Hazards. Minimize injury, loss of life, and damage to property resulting from structural or wildland fire hazards.
POLICIES		
S-3.1	Defensible Development	Require development to be located, designed, and constructed to provide adequate defensibility and minimize the risk of structural loss and life safety resulting from wildland fires.
S-3.2	Development in Hillsides and Canyons	Require development located near ridgelines, top of slopes, saddles, or other areas where the terrain or topography affect its susceptibility to wildfires to be located and designed to account for topography and reduce the increased risk from fires.
S-3.3	Minimize Flammable Vegetation	Site and design development to minimize the likelihood of a wildfire spreading to structures by minimizing pockets or peninsulas, or islands of flammable vegetation within a development.
S-3.4	Service Availability	Plan for development where fire and emergency services are available or planned.
S-3.5	Access Roads	Require development to provide additional access roads when necessary to provide for safe access of emergency equipment and civilian evacuation concurrently.
S-3.6	Fire Protection Measures	Ensure that development located within fire threat areas implement measures that reduce the risk of structural and human loss due to wildfire. <i>Mitigation measures include, but are not limited to, the use of ignition resistant materials, multiple ingress and egress routes, and fire protection systems.</i>
S-3.7	Fire Resistant Construction	Require all new, remodeled, or rebuilt structures to meet current ignition resistance construction codes and establish and enforce reasonable and prudent standards that support retrofitting of existing structures in high fire threat areas.
GOAL S-6		Adequate Fire and Medical Services. Adequate levels of fire and emergency medical services (EMS) in the unincorporated County.
POLICIES		
S-6.1	Water Supply	Ensure that water supply systems for development are adequate to combat structural and wildland fires.
S-6.2	Fire Protection for Multi-Story Development	Coordinate with fire services providers to improve fire protection services for multi-story construction.
S-6.3	Funding Fire Protection Services	Require development to contribute its fair share towards funding the provision of appropriate fire and emergency medical services as determined necessary to adequately serve the project.

**Table 3.6-2
Otay Ranch Resort Village Parks**

Park	Conceptual Features	Acres (Gross)	Acres (net)	PLDO Credit	Total Credit	Maint. Entity
P-1 (Exhibit 36)	Two U-8 soccer fields, half basketball court, a big kids play structure, toddler climbing rocks, toddler play area, covered picnic pavilions/seating areas/benches	2.9	2.1	100%	2.1	CFD or County
P-2 (Exhibit 37)	A U-8 soccer field, a big kid play structure, a toddler play structure, toddler climbing rocks, covered picnic pavilions/ seating area/benches, and two drinking fountain	1.7	1.6	100%	1.6	CFD or County
P-3 (Exhibit 38)	Trail head, four U-6 soccer fields, two drop shot basketball courts, a big kid play structures, a play structure, covered picnic pavilions, open picnic area, seating areas/benches, and two drinking fountains	2.3	1.5	100%	1.5	CFD or County
P-4 (Exhibit 39)	Three U-6 soccer fields, full basketball court, skateboard park, a toddler play structure, toddler climbing rocks, covered picnic pavilions, open picnic area, seating areas/benches, and two drinking fountains	2.2	1.5	100%	1.5	CFD or County
P-5 (Exhibit 40)	One Softball field, two U-12 soccer field, two full basketball courts, gaga court, skateboard park, a big kid play structure, a toddler play structure, toddler climbing rocks, swing set, outdoor amphitheater, restrooms/comfort station, parking lot, two covered picnic pavilions, two open picnic areas, two seating areas/benches, and three drinking fountains	10.3	9.4	100%	9.4	CFD or County
P-6 (Exhibit 41)	Four U-6 soccer fields, two drop-shot basketball courts, a big kid play structure, swing set, , three covered picnic pavilions, seven seating areas/benches, and two drinking fountains	2.4	1.4	50%	0.7	HOA
P-7 (Exhibit 42)	U-10 soccer field, two half basketball courts, skate park, a big kid play structure, a toddler play structure, swing set, covered picnic pavilion, two open picnic areas, five seating areas/benches, and two drinking fountains	2.9	2.0	50%	1	HOA
P-8 (Exhibit 43)	Two U-6 soccer fields, a toddler play structure, toddler climbing rocks, one covered picnic pavilion, two open picnic areas, five seating areas/benches, and two drinking fountains	1.3	1.0	50%	0.5	CFD or County
P-9 (Exhibit 44)	A U-8 soccer field, a full basketball court, two drop-shot basketball courts, a big kid play structure, playground game area, two covered picnic pavilions, open picnic area, four seating areas/benches, and two drinking fountains	2.6	1.4	50%	0.7	HOA
TOTAL		28.6	21.9		19.00	
Demand based on PLDO					16.63	
DIFFERENCE (acres over requirement)					2.37	

3.7 Utilities and Service Systems

This section provides a project-level analysis of the potential impacts on utilities and public services that would result from implementation of the proposed Project. The utilities and services evaluated in this section are water supply, wastewater/sewer service, storm drainage, and gas and electric.

The Overview of Water Service is provided as **Appendix C-17** and the Water Supply Assessment and Verification (WSA&V) Report is provided as **Appendix C-18** to this EIR. The Residential Water Conservation Plan for the proposed Project is provided as **Appendix VI** to the Resort Village Specific Plan.

The Otay Ranch Resort Village Overview of Sewer Service (Overview of Sewer Service) addresses wastewater/sewer service for the proposed Project. A copy of the Overview of Sewer Service is provided as **Appendix C-16** to this EIR.

The Otay Ranch Resort Village Drainage Study (Drainage Study) is provided as **Appendix C-13** to this EIR; and the Otay Ranch Resort Village Storm Water Management Plan (Storm Water Management Plan), which addresses the proposed Project's storm drainage system, is provided as **Appendix C-14** to this EIR.

The Otay Ranch PEIR, certified in 1993, provided a program-level analysis of the existing conditions and potential impacts related to public services, facilities, and utilities (i.e., water supply, wastewater/sewer services, and electricity and gas) for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR concluded that the potential impacts to such services and facilities could be reduced to a less-than-significant level with the identified mitigation measures. This EIR tiers from the previously certified Otay Ranch PEIR, and concentrates on the issues specific to the proposed Project. The certified PEIR prepared for the Otay SRP evaluated development of the entire Otay Ranch community, including the Project site. As such, this EIR, in some instances, relies on the analysis contained in the PEIR. However, where the proposed Project differs substantively from what was analyzed in the previously certified PEIR, or where the existing conditions have significantly changed, additional analysis is provided in this EIR to ensure all potential significant impacts are adequately analyzed and applicable mitigation measures are included.

3.7.1 Existing Conditions

3.7.1.1 Water Supply

Water service is not currently provided to the Project site and the site is not yet within the service area of the Otay Water District (OWD). OWD is a member agency of the San Diego County Water Authority (SDCWA). SDCWA, in turn, is a member agency of the Metropolitan Water District (MWD), which provides access to imported water supplies from the Colorado River Aqueduct (CRA) and from northern California via the State Water Project (SWP). If approved by the County, the proposed Project would apply through LAFCO to annex into OWD, SDCWA, and MWD to obtain water service.

At this time, OWD has included the proposed Project's water demands in its 2010 Urban Water Management Plan (UWMP), has existing facilities in the vicinity of the Project site, and has current jurisdictional boundaries that abut the Project site. The existing OWD facilities in the Project vicinity include the 980 Pressure Zone (980 Zone), which is within OWD's Central Area System.

Both MWD and SDCWA provide water supplies to their member agencies to meet projected water demand based on regional population forecasts. SANDAG is responsible for providing and updating land use planning and demographic forecasts for San Diego County. MWD and SDCWA update their water demand and supply estimates based on the most recent SANDAG forecasts approximately every 5 years to coincide with preparation of their respective UWMPs.

In accordance with Senate Bills 610 and 221 (discussed below), OWD prepared the WSA&V Report for the proposed Project. The report was approved by OWD on May 7, 2014. According to OWD, the "WSA&V Report demonstrates and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single and multiple dry years to meet the projected demand of the proposed Resort project and the existing and other planned development projects to be served by the Otay WD [Water District]" (**Appendix C-18**).

Planning for Future Water Supply

The California Urban Water Management Planning Act (UWMP Act; California Water Code sections 10610-10656) requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers or more than 3,000 acre-feet of water annually, must prepare, adopt, and update an UWMP at least once every 5 years on or before December 31, in years ending in 5 and 0. This applies to MWD, SDCWA, and its 24 member agencies, including OWD. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. A UWMP also serves as a valuable resource for planners and policy makers over a 25-year time frame.

The UWMP process ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term. Water agencies and districts update their demand and supply estimates based on the most recent SANDAG forecast approximately every 5 years to coincide with preparation of their UWMPs. The most current supply and demand projections are contained in the 2010 UWMPs of MWD, SDCWA, and OWD. SDCWA member districts rely on the UWMPs and SDCWA's Integrated Regional Water Management (IRWM) program to coordinate water resource management efforts throughout the County.

Normal-year, single-dry-year, and multiple-dry-year UWMP supply and demand assessments are intended to describe the water supply reliability and vulnerability to seasonal or climatic conditions. Normal water years are considered to be years that experience average rainfall for the respective district. Single-dry water years are considered 1-year drought events. Multiple-dry water years refer to a series of below average rainfall for particular areas. Projections for

multiple-dry years are made in 5-year increments. In their 2010 UWMPs, MWD, SDCWA, and all 24 SDCWA member agencies, including OWD, determined that adequate water supplies would be available to serve existing and projected water uses within their respective service areas under normal-year, single-dry-year, and multiple-dry-year conditions through year 2035.

Metropolitan Water District

MWD supplies water to approximately 18.7 million people in a 5,200-square-mile service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. SDCWA is one of MWD's 26 member agencies. Supply and demand projection information for MWD is included in its 2010 Regional UWMP (MWD 2010a). MWD's long-term strategy for a sustainable water supply is outlined in its Integrated Water Resources Plan (MWD 2010b), which identifies a mix of resources (imported and local) that will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking, and water transfers through the year 2030.

MWD gets its water from two sources. The first source is the Colorado River, which is connected to MWD's six-county service area through a 242-mile aqueduct. The aqueduct system is known as the Central Valley Project (CVP). The CVP is operated by U.S. Bureau of Reclamation. The second source is water from northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the State Water Project (SWP). The SWP is operated by the California Department of Water Resources (DWR). From the CRA, MWD is apportioned 550,000 acre-feet of water per year (AFY). Despite this low apportionment, MWD was able to transport up to 1.2 million acre-feet (MAF) through the CRA in past years by relying on unused apportionments from Arizona, Nevada, and California agricultural agencies. However, MWD's firm water supply from the CRA is only 550,000 acre-feet, which is the number planning agencies must rely on for development. To supplement this supply, MWD also has several existing programs and programs being developed in cooperation with other agencies.

From the SWP, MWD is contractually entitled to receive 1,911,000 acre-feet of water; however, the level of SWP supply development, state and federal environmental regulations, and other factors have restricted and, in some cases, reduced the actual amount of available SWP water. As a result of these and other limitations, MWD estimates that actual SWP supplies will be 0.6 MAF in a dry year and 411,000 acre-feet during critically dry years.

As mentioned above, MWD adopted its 2010 Regional UWMP in November 2010, which is an update to its prior 2005 Regional UWMP. In its 2010 UWMP, MWD evaluated water supply reliability, over a 20-year period, for average, single-dry, and multiple-dry years. To complete its most recent water supply reliability assessment, MWD developed estimates of total retail demands for the region, factoring in the impacts of conservation. The water reliability analysis identified current supplies and supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands through the year 2035. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs.

San Diego County Water Authority

The SDCWA service area covers approximately 951,000 acres and encompasses the western one-third of San Diego County. SDCWA has 24 member agencies, 15 of which provide water to unincorporated areas of San Diego County. Historically, SDCWA has relied on imported water supplies purchased from MWD to meet the needs of its member agencies; however, in response to recent droughts, SDCWA has begun investing in projects to diversify its water supply sources such that it is not as dependent on MWD for future water purchases.

SDCWA is responsible for ensuring a safe and reliable water supply to support the region's \$190 billion economy and the quality of life for 3.1 million residents. Because of the County's semi-arid climate and limited local water supplies, SDCWA imports about 46 percent of the water used in the San Diego region from MWD. Most of this water is obtained from the Colorado River and the SWP through a system of pipes, aqueducts, and associated facilities. SDCWA has determined that the best way to ensure a reliable water supply for the future is to diversify its water supply portfolio. Diversification includes water that originates locally, such as recycled water and desalinated water. The SDCWA Regional Water Facilities Master Plan (SDCWA 2002) serves as the roadmap for identifying a diverse mix of water supply sources and implementing the associated facilities and projects needed through 2030 to ensure a safe and reliable supply. The Water Authority adopted an update of the Regional Water Facilities Master Plan on March 27, 2014.

In June 2011, SDCWA adopted its 2010 UWMP, updating the previously adopted 2005 UWMP. Sections 4, 5, and 6 of SDCWA's 2010 UWMP contain documentation of SDCWA's existing and planned water supplies, including MWD supplies (imported Colorado River water and SWP water), SDCWA supplies, and local member agency supplies (surface water reservoirs, water recycling, groundwater, and groundwater recovery). Section 9 of SDCWA's 2010 UWMP evaluates water supply reliability in average, single-dry, and multiple-dry years. Based on SDCWA's water supply reliability assessment, SDCWA concluded that water supplies would be sufficient through 2035.

SDCWA also has a Water Shortage and Drought Response Plan (SDCWA 2006). This plan provides its member agencies with a series of potential actions when faced with a shortage of imported water supplies due to prolonged drought conditions. Such actions help to avoid or minimize impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego region. The Drought Management Plan was put into effect in 2007 and was deactivated in April 2011. However, due to drought conditions, the SDCWA region initially announced a Level 1 Drought Watch condition that called for voluntary water conservation efforts. In July 2014, the SDCWA's Board of Directors declared a Drought Alert condition calling for mandatory water conservation measures. Retail water agencies throughout the county, including OWD, also have adopted mandatory water-use restrictions and they are preparing for the potential for a fourth consecutive dry year (<http://www.sdcwa.org/countywide-water-use-decreases-29-percent-december>, last accessed Feb. 5, 2015). To increase public awareness and promote conservation, the County Water Authority and many of its member agencies, including Otay Water District, have implemented water conservation rebate programs and sustained public education campaigns with homeowners, businesses, and retailers like Home Depot and Lowes, to further increase

conservation levels. In response to the need to conserve water, water usage in the San Diego region decreased by 29 percent in December 2014 compared to the same month a year earlier. The effort highlights the region's long-term commitment to water conservation, particularly during drought conditions.

SDCWA's most recent planning documents, the 2010 UWMP (SDCWA 2011) and 2009-2010 Annual Report (SDCWA 2010a), ended the period of mandatory water supply reductions by securing a 45- to 75-year water conservation and transfer agreement with Imperial Irrigation District and separate 110-year agreements to receive water conserved by constructing and lining parts of the All-American and Coachella canals in Imperial Valley. In 2010, these agreements brought approximately 145,000 acre-feet of water to San Diego County. By 2021, these agreements will provide the region with 280,000 acre-feet of water annually.

Otay Water District

OWD provides water services to southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, and Otay Mesa. OWD covers 80,320 acres, and has approximately 47,000 water service connections, 709 miles of pipelines, 24 pump stations, and 40 reservoirs with a total storage capacity of 226 million gallons. OWD provides 90 percent of its water service to residential land uses, and 10 percent to commercial and industrial uses. Average annual consumption for OWD is approximately 36,970 acre-feet. SDCWA is OWD's primary potable water source and delivered about 30,363 acre-feet to OWD in 2011 (SDCWA 2012a). OWD operates the Ralph W. Chapman Water Recycling Facility, which produces over 1 million gallons per day; and purchases 6 million gallons per day of recycled water from the City of San Diego South Bay Water Reclamation Plant. The OWD's recycled water is used to irrigate golf courses, parks, and open space in eastern Chula Vista (OWD 2012).

On June 1, 2011, OWD's Board of Directors adopted its updated 2010 UWMP. Sections 2, 3, and 4 of the 2010 UWMP provide an overview of OWD's service area, its current water supply sources, supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs. Section 5 of the 2010 UWMP contains OWD's water service reliability assessment. This section states that the level of reliability is based on the documentation in the UWMPs prepared by MWD and SDCWA and that these agencies have determined they will be able to meet potable water demands through 2035, during normal and dry year conditions. According to the 2010 UWMP, OWD currently relies on MWD and SDCWA for its potable supply, and OWD has worked with these agencies to prepare consistent demand projections for OWD's service area.

To obtain water service from OWD, the requirements outlined in Section 27 of OWD's Codes of Ordinances must be met. These include the requirement that all water fixtures and appliances installed, including the ones in the following list, must be high efficiency:

- Toilets and Urinals
- Faucets
- Showerheads
- Clothes Washers
- Dishwashers

Landscape Requirements:

- Only smart irrigation controllers may be installed; and
- Only low-water use plants may be used in non-recreational landscapes.

Additional Requirements:

- Installed smart irrigation controllers shall be programmed/scheduled according to the manufacturer's instructions and/or site specific conditions based on soil type, plant type, weather and/or reference evapotranspiration data; and
- Two irrigation schedules shall be prepared, one for the initial establishment period, one for the established landscape.

Existing OWD 980 Zone Facilities

The proposed Project would be served by the 980 Zone within OWD's Central Service Area. The 980 Zone accesses water from the SDCWA aqueduct by Otay Flow Control Facilities Numbers 10 and 12, which fill 624 Pressure Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 and 980 Zone storage and distribution systems. There are two pump stations in the 980 Zone: the 980-1 and 908-2 pump stations.

There are currently two pump stations in the 980 Zone. There also are two existing reservoirs in the 980 Zone, both located at the same site north of Rolling Hills Ranch, which provide a total storage capacity of 10 million gallons. Major 980 Zone pipelines in the vicinity of the Project site are all located west of the Project and include transmission lines in Hunte Parkway and Otay Lakes Road. The 24-inch transmission line in Otay Lakes Road extends to just east of Hunte Parkway.

Water Supply Challenges

As discussed in the various 2010 UWMPs, multiple events have occurred that have the potential to affect and reduce southern California's water supply. The Colorado River has experienced drought conditions. Additionally, the SWP in northern California experienced consecutive year drought conditions, which substantially depleted storage in reservoirs throughout the SWP system, including San Diego County. In 2014, Governor Jerry Brown declared a Drought State of Emergency. In response, DWR provided a summary of current drought conditions, snowpack levels, and storage provided in key reservoirs throughout the state in January 2014. The DWR document also established that the SWP allocation of water will be severely reduced if dry conditions persist, and the latest SWP allocation, as of January 15, 2015, is set at 15 percent of most SWP contractors' requests for SWP Table A water.

In addition to extreme drought conditions, in August 2007, a U.S. District Court decision was issued to protect the endangered Delta smelt (fish). This federal court ruling set operational limits on pumping in the Sacramento-San Joaquin Bay Delta from December 2007 to June 2008 to protect the Delta smelt. Since the SDCWA and its member agencies import water from MWD, their water supply was impacted by this federal court ruling. On June 4, 2009, the

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) issued a biological opinion intended to protect spring- and winter-run Chinook salmon, Central Valley steelhead, green sturgeon, and Southern Resident killer whales. This action placed additional restrictions on SWP operations. Despite ongoing litigation over these water restrictions, DWR's 2013 Final SWP Delivery Reliability Report incorporates the regulatory water restrictions for the SWP and CVP operations in accordance with the USFWS and NMFS biological opinions.

In November 2009, the state Legislature passed a package of bills that established in state policy the co-equal goals of water supply reliability and environmental restoration in the Delta. The bills also provided a governance structure for the Delta and required preparation of a Delta Plan to guide the process of achieving the co-equal goals and outline a plan to restore listed species. As a result, the Final Delta Plan was unanimously adopted by the Delta Stewardship Council on May 16, 2013, and its 14 regulatory policies were approved by the Office of Administrative Law. The Delta Plan became effective with enforceable regulations on September 1, 2013. In addition, the legislation authorized the preparation of the Bay Delta Conservation Plan process, which is intended to further facilitate the co-equal goals of enhanced water reliability and restoration of the Delta.

Global climate change also creates uncertainties that may significantly affect California's water resources over the long-term. Since 2008, the SDCWA's plan has included its Climate Change and Sustainability Program, which advocates for improved modeling to provide precipitation data on a local and regional scale, encourages focused scientific research on climate change to identify the impacts on the region's water supply, and partners with other water utilities to incorporate the impacts of climate change on water supply planning and the development of decision support tools.

In summary, water agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water supply conditions, such as court rulings regarding listed fish species and the recent drought impacting the western states. Circumstances such as these will likely always present challenges to water supply planning for the state. However, the regional water supply agencies, MWD and SDCWA, along with OWD have adapted effectively to the changing circumstances with careful planning and the implementation of reliable long-term solutions that ensure sufficient, reliable supplies to meet the demands of both existing users and planned future growth.

Existing Regulatory Setting

Urban Water Management Planning Act

In 1983, the Legislature enacted the UWMP Act (California Water Code sections 10610 through 10656), which requires every urban water supplier that provides water to 3,000 or more customers, or more than 3,000 acre-feet of water annually, to make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its customers during normal, dry, and multiple-dry years. The UWMP is required for a water supplier to be eligible for the State Department of Water Resources' (DWR) grants, loans, and drought assistance. The

UWMP provides information on water use, water resources, recycled water, water quality, reliability planning, demand management measures, best management practices, and water shortage contingency planning for a specified service area or territory.

Senate Bills 610 and 221

Senate Bill 610, codified in the California Water Code beginning with Section 10910, requires the preparation of a water supply assessment (WSA) for projects that propose to construct 500 or more residential units or the water-use equivalent. Senate Bill 610 stipulates that when environmental review of certain large development projects is required, the water agency that is to serve the development must complete a WSA to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years over a 20-year projection to meet existing and planned future demands, including the demand associated with a proposed project.

Senate Bill 221, codified in the California Water Code beginning with Section 10910, requires that the legislative body of a city or county, which is empowered to approve, disapprove, or conditionally approve a subdivision map, must condition such approval upon proof of a sufficient water supply. The term “sufficient water supply” is defined in Senate Bill 221 as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the projected demand associated with the proposed subdivision. The definition also includes the requirement that sufficient water supplies encompass not only the proposed subdivision, but also existing and planned future uses, including agricultural and industrial uses.

3.7.1.2 Wastewater

This subsection describes the existing conditions associated with the Chula Vista sewer system and the County DPW-administered sewer system (San Diego County Sanitation District). Sewer service is not currently provided to the Project site; however, Chula Vista provides sewer service in the vicinity of the proposed Project.

This subsection is based on the Otay Ranch Resort Village Overview of Sewer Service (Overview of Sewer Service) provided as **Appendix C-16** to this EIR. The phasing and financing of wastewater facilities is also addressed in the Otay Ranch Resort Village Public Facility Financing Plan (see **Appendix III** of the Resort Village Specific Plan).

Regional Sewer Facilities

The City of San Diego Metropolitan Wastewater Department (Metro) provides regional wastewater treatment and disposal services for the City of San Diego and 15 other cities and sanitation districts. Metro has a service area of 450 square miles, stretching from the City of Del Mar to the north, the communities of Alpine and Lakeside to the east, and the U.S./Mexico international border to the south. This includes wastewater generated from Chula Vista. Metro owns and operates the Point Loma Wastewater Treatment Plant, which has a current RWQCB-approved treatment capacity of 240 mgd. During 2010, the treatment plant operated at a daily average effluent flow rate of 153 mgd (City of San Diego 2010). Improvements are planned to

increase the wastewater treatment capacity of Metro to nearly 340 mgd to serve an estimated population of 2.9 million in year 2050.

Existing County DPW Sewer Treatment Capacity

The former Spring Valley Sanitation District was consolidated, along with other County sanitation districts, into the San Diego County Sanitation District (SDCSD). The SDCSD provides sewer service to approximately 35,000 customers within unincorporated San Diego County. It owns and operates approximately 432 miles of pipeline, 8,300 manholes, 10 lift stations/pressurized mains, and 3 wastewater treatment plants. The SDCSD has a joint powers agreement with the City of San Diego for treatment and disposal of sewage. The capacity rights of the Spring Valley Sanitation District and other County sanitation districts have been consolidated and placed under the control of the SDCSD.

Existing Chula Vista Sewer Facilities

As shown in **Figure 3.7-2**, the major Chula Vista sewer facility located in the vicinity of the Project site is the Salt Creek Interceptor. The Salt Creek Interceptor has been sized to accommodate the ultimate development in the facility's designated service area, which includes the proposed Project. The Salt Creek Interceptor ranges from a 15-inch line to a 48-inch line and conveys flow to the City of San Diego's Metro sewer system. The upstream end of the Salt Creek Interceptor is located along Salt Creek, approximately one mile west of the Project site.

3.7.1.3 Storm Drainage

All runoff from the Project site currently drains under Otay Lakes Road via 23 existing culverts, and discharges to Lower Otay Lake. Thirteen existing culverts are undersized for existing drainage conditions and require upgrades to prevent roadway overtopping during a 100-year storm event.

3.7.1.4 Gas and Electric

Electric and natural gas service is necessary for residential and commercial developments. Electricity is used to provide power for lighting and many appliances in homes and business, and natural gas is typically used for heating, fireplaces, and other appliances. San Diego Gas and Electric (SDG&E) would be the natural gas and electric service provider for the Project. The Project site is currently undeveloped and there is no on-site natural gas or electrical infrastructure currently serving or extending into the Project area. Urban development to the west of the Project site, west of Otay Reservoir, has existing electric and natural gas infrastructure and service. Much of the surrounding areas to the north, east, and south of the Project site are undeveloped and do not have electric or gas infrastructure or service.

3.7.2 Analysis of Project Effects and Significance Determination

3.7.2.1 Water Supply

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant water supply impact will occur if the Project:

- Requires or results in the construction or expansion of water supply, storage, or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Has insufficient water supplies available to serve the project from existing entitlements and resources so that new or expanded entitlements are needed.

Rationale for Selection of Guidelines

The significance guidelines for water supply are based on Appendix G of the CEQA Guidelines.

Analysis

The proposed Project would receive water service by expanding OWD's existing 980 Zone water system. **Figure 3.7-1** illustrates the existing and proposed water facilities on-site or in the vicinity of the Project site. The sizing and timing of all on-site and off-site water facilities for the Project site would be identified in a Subarea Master Plan (SAMP) to be reviewed and approved by OWD. The Subarea Master Plan would be prepared for the proposed Project and submitted to OWD for approval prior to approval of final engineering plans.

Pursuant to OWD's Capital Improvement Program, improvements to the existing 980 Zone water system are necessary before the Project site can receive water service. Such improvements would include construction of a new reservoir and extension of transmission lines. OWD would first construct a reservoir, known as the 980-4 Reservoir, within the Project site that would have a maximum capacity of 5 million gallons. The existing 24-inch transmission line in Otay Lakes Road is proposed to be extended as a 20-inch transmission line from just east of Hunte Parkway to the main project entry (Strada Piazza), ultimately connecting to the proposed 980-4 Reservoir. Additional improvements associated with the proposed Project would include construction of on-site pipelines for homes and other structures to connect to 980 Zone facilities. All other facilities would be sized for the proposed Project to meet OWD looping criteria and pressure requirements.

As noted above, construction of these water facilities is planned pursuant to the OWD Capital Improvement Program, and the potential environmental impacts of the construction and operation of such facilities were analyzed in the certified Final Program EIR (SCH No. 2008101127) for OWD's Water Resources Master Plan, dated July 20, 2009 (OWD 2009). The certified EIR is incorporated by reference in this EIR and available for review upon request to OWD, 2554 Sweetwater Springs Boulevard, Spring Valley, CA 91978-2004.

The analyses performed for the OWD PEIR was conducted at a program level of detail and identified the potential impacts and mitigation measures associated with the proposed 980-4 Reservoir to biological resources, cultural resources, and paleontological resources. The proposed on-site water reservoir and water lines would be constructed within areas proposed for grading as part of the proposed Project's tentative maps, or in existing or proposed road rights-of-way. Impacts associated with grading (such as cultural, biological, paleontology, geology and soils, etc.) and project implementation (such as noise and air quality) have been identified throughout this EIR; therefore, construction of such facilities would not have any additional impacts beyond those identified in this EIR. Based on the above, impacts related to the construction of the water supply lines and storage facilities are considered *less than significant*.

Regarding the supply of water, OWD and SDCWA have included the anticipated supply and demand requirements for the proposed Project in their water supply and demand projections detailed in their 2010 UWMPs. However, the Project site is not currently within the OWD service area. Therefore, prior to the provision of water service to the Project site, approval by LAFCO of annexation of the Project site to OWD would be required. LAFCO also would need to approve an update of the OWD sphere of influence and include the Project site within the OWD sphere before annexation. In addition, a Municipal Service Review would be required as part of the sphere update/annexation request.

The proposed Project's total estimated average potable water demand is 1,418,918 gallons per day, or approximately 1,590 acre-feet per year as shown in **Table 3.7-2**. The proposed Project also includes a Residential Water Conservation Plan included as **Appendix VI** of the Resort Village Specific Plan, which identifies strategies to reduce outdoor water use by 30 percent on single-family lots. When implemented, this has the effect of reducing the amount of potable water used by single-family residential units by 78 gallons per day per unit, which would reduce the project's overall consumption by 146,718 gallons per day, or approximately 164 acre-feet per year.

Implementation of the Residential Water Conservation Plan would reduce total average water consumption to 1,272,200 gallons per day, or about 1,425 acre-feet per year. . The design criteria used to determine the projected water demands are described in the Overview of Water Service in **Appendix C-17** to this EIR. To determine whether an adequate water supply is available to meet these projected demands, OWD prepared a WSA&V report, which concluded that there would be an adequate water supply in normal, single dry and multiple dry years (Appendix C-18).

As stated above, OWD relies on SDCWA for its potable water supply. SDCWA, in turn, relies primarily on MWD for its supply; however, it has increased its water supply diversification and reduced its reliance on MWD from 95% of SDCWA's water supply in 1991, to 46% in 2013, and projects a further reduction to 30% by 2020 (SDCWA 2012b). The OWD 2010 UWMP assessed the water supply sources, water supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs within the OWD service area (OWD 2011). Because OWD receives all of its supply from SDCWA, the OWD 2010 UWMP is based on documentation contained in the 2010 UWMP prepared by SDCWA, as well as the documentation in the 2010 Regional UWMP prepared by MWD.

The water supply and demand forecasts for the San Diego region included in both the MWD and SDCWA UWMPs were based on demographic data from the SANDAG 2030 Regional growth forecasts. **Table 3.7-3** shows SDCWA's estimates of water supply and demand through year 2035 under average/normal water supply conditions. **Table 3.7-4** shows SDCWA's estimates of water supply and demand through year 2035 under single dry water year supply conditions; and **Table 3.7-5** estimates water supply and demand through year 2035 under multiple dry water year supply conditions. To fully quantify SDCWA water service supply and demands, lands with current or expected future applications for annexation were included in the SDCWA demand forecast, which included the proposed Project in those water demand forecasts.

In its 2010 UWMP, MWD evaluated water supply reliability over a 25-year period for average, single-dry, and multiple-dry years (see **Tables 3.7-6** and **3.7-7**). To complete its most recent water supply reliability assessment, MWD developed estimates of total retail demands for the region, factoring in the effects of conservation. After estimating demands, the water reliability analysis identified current supplies and new supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands through year 2035. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs.

SDCWA's 2010 UWMP evaluation of water supply reliability in average, single-dry, and multiple-dry years concluded that, if water supplies are developed as planned, no water shortages are anticipated within the SDCWA service area under average, single-dry, or multiple-dry years through year 2035. The SDCWA 2010 UWMP also disclosed that SDCWA is at risk for water shortages should supplies identified by MWD not be developed as planned. To address this risk, the SDCWA 2008 Strategic Plan and 2008 Business Plan provides clear direction to continue to increase the reliability of the water supply to meet the San Diego region's demands and to ensure cost effective, environmentally sensitive, and safe delivery of those supplies. Since adoption of its previous (year 2005) UWMP, SDCWA has adopted policies and programs in the areas of supply reliability, system infrastructure, finance, and outreach to help accomplish its mission to provide a safe and reliable water supply to its member agencies. SDCWA's long-term commitment also involves diversifying the region's water supply portfolio, reducing the region's reliance on imported water, and optimizing facilities to provide the flexibility needed to respond to the region's ever-changing water needs.

SDCWA's supplies include the Quantification Settlement Agreement (QSA) for the Colorado River, which was completed in October 2003. This agreement provides California the means to implement water transfers and supply programs for the state's 4.4 million-acre-foot basic annual apportionment of Colorado River water. SDCWA is a party to the QSA. For further information regarding the QSA, see SDCWA's website page, Quantification Settlement Agreement for the Colorado River (SDCWA 2010b). On January 14, 2010, the Sacramento Superior Court ruled that a portion of the agreements related to the QSA violated the state Constitution. SDCWA disagreed with the ruling and appealed the decision. The filing of the appeal resulted in a stay of the Superior Court ruling, allowing water from the QSA transfers to continue to flow into San Diego County. In December 2011, the Third District Court of Appeal reversed the trial court

ruling, finding that the QSA did not violate the state Constitution and others laws, but the Court of Appeal sent the matter back to the trial court on whether the environmental impacts under CEQA were properly assessed. In July 2013, the Sacramento Superior Court affirmed the CEQA compliance and rejected all remaining challenges to the QSA. Several parties have appealed the Superior Court decision, and the remaining issue is now pending appeal in the Third District Court of Appeal.

The QSA was challenged in additional federal court litigation by the Imperial Irrigation District. The federal District Court (Judge Anthony Battaglia) ruled that the Secretary of the Interior did not violate either the National Environmental Policy Act or the Clean Air Act in approving the QSA. An appeal followed. In May 2014, the U.S. Court of Appeals for the Ninth Circuit rejected the appeal, upholding the ruling of the district court. According to SDCWA, the Ninth Circuit's ruling strengthens a key component of water supply for SDCWA. According to SDCWA, by 2021, the QSA water transfers will supply 280,000 acre-feet per year to San Diego County, enough to meet about one-third of the region's water demands.

In addition, DWR's Final 2009 Delivery Reliability Report and the Final 2013 Delivery Reliability Report and Technical Addendum update estimates of the current (2013) and future (2033) SWP delivery reliability and incorporates regulatory requirements restricting SWP and CVP operations in accordance with USFWS and NMFS biological opinions. In addition, DWR's Final 2009 and 2013 Delivery Reliability Reports reflect potential impacts of climate change and sea level rise.

The water restrictions reflected in the 2009 Final Delivery Reliability Report are addressed in the 2010 UWMPs prepared by MWD, SDCWA, and OWD. In addition, the proposed Project's water demands are included in the SDCWA and OWD 2010 UWMPs, just as those demands were part of SDCWA's and OWD's 2005 UWMPs. Based on the above, it was determined that an adequate water supply is available to meet the demands of the proposed Project in addition to other projected water uses from OWD's existing entitlements and water resources. An offset program has been established that would likely be required as part of the Project annexation process to ensure that no new or expanded entitlements from SDCWA or MWD are needed to supply water to meet the demands of the water district. Thus, impacts related to the sufficiency of the Project's water supply are considered *less than significant*.

3.7.2.2 Wastewater

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant wastewater impact will occur if the proposed project does the following:

- Requires or results in the construction or expansion of wastewater collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceeds wastewater treatment requirements of the applicable RWQCB; or

- Results in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Rationale for Selection of Guidelines

The significance guidelines for wastewater services are based on Appendix G of the CEQA Guidelines.

Analysis

- Would the proposed project require or result in the construction or expansion of wastewater collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

SDCSD and Salt Creek Interceptor

The Project is proposing to obtain sewer service from the SDCSD through a transportation agreement with the City of Chula Vista whereby the flow would be transported via the Salt Creek Interceptor and ultimately treated and disposed by Metro. The County would be the owner/operator of the Project's sanitation system. This section analyzes the proposed Project's use of the Salt Creek Interceptor in providing sewer service to the Project site.

Based on the sewage generation factors presented in the Overview of Sewer Service, and the proposed development plans for the Project site, the total projected average sewage flow for the proposed Project is 0.51 mgd, as shown in **Table 3.7-8**. Using the generation rate of 1.93 mgd from the San Diego County Standards for Sewer Construction and the peaking chart in the Overview of Sewer Service, the proposed Project's peak dry-weather flow is estimated at 0.98 mgd.

To convey flows from the Project site to the Salt Creek Interceptor, three on-site permanent sewage lift stations would be constructed, dual force mains would be installed, and off-site improvements would be required. These facilities would convey flows to the Salt Creek Interceptor where Otay Lakes Road intersects with Salt Creek. These on-site facilities are Lift Stations 1, 2, and 3. The recommended location of these stations is shown in **Figure 3.7-2**. The three on-site lift stations would be operated and maintained by the SDCSD.

Lift Station 1 would be sized with capacity for the entire Project site. The northwestern portion of the proposed Project would flow to Lift Station 1 by gravity, the central and southwestern portions of the proposed Project would flow to Lift Station 2 by gravity, and the central and eastern portions of the proposed Project would flow to Lift Station 3 by gravity. Lift Stations 2 and 3 would convey flows, primarily by dual force mains, to Lift Station 1. The required capacity of Lift Station 1 is 1,000 gallons per minute (gpm) to accommodate peak gravity flows plus flows from Lift Stations 2 and 3 (capacities of 825 gpm and 300 gpm, respectively). From Lift Station 1, sewage flows would be conveyed through a 10-inch dual force main to a 15-inch gravity line along Otay Lakes Road, which would connect to the Salt Creek Interceptor.

The County of San Diego does not have established detailed design standards for lift stations. On recent projects, the County has used City of San Diego Guidelines for lift stations as a reference. Some of the pertinent criteria from the City of San Diego 2004 Sewer Design Guide are as follows:

- Dual force mains are required.
- Redundant pumping units are required.
- Pumping units shall be sized for peak wet weather gravity flow plus pumped flow of upstream lift stations, if any.
- Redundant power source such as diesel generator is required.
- Stations to include SCADA system to remotely notify County staff of station status and alarms.
- Overflow storage equivalent to 6 hours of peak influent gravity flow is required. Two hours is standard, but the City of San Diego requires 6 hours where maximum protection from spillage is required.
- Odor control system, Bioxide or equal, is required.
- Pump stations are to include adequate access and turn-around space for large vehicles.

Operation of pump stations and pipelines would be conducted in accordance with the County of San Diego Sewer System Management Plan (County of San Diego 2010d). This would include compliance with the Sewer System Management Plan's requirements for routine cleaning of the wastewater system to avoid retention of solids that could result in release of hydrogen sulfide gas. The pump stations would be sited, constructed, and operated to the satisfaction of the County Department of Public Works to avoid odor and noise impacts.

As noted above, each lift station would be required to have sufficient 6-hour peak flow storage. For lift station 1, this would require an overflow volume of approximately 50,000 gallons. Lift station 2 would be required to have overflow storage for approximately 150,000 gallons, and lift station 3 would be required to have storage for 85,000 gallons. It should be noted that, while lift station 1 would ultimately pump all flows and as such have the largest capacity, in terms of overflow storage, only the amount of gravity flows is considered. As such, lift station 2 has the largest overflow storage because it has the greatest amount of gravity flows. The project lift stations have been sized accordingly to accommodate the required overflow storage.

Off-site facilities include the 10-inch force and 15-inch gravity lines in Otay Lakes Road. These lines would be constructed within the existing or planned ROW for Otay Lakes Road. The impacts of constructing the road have been analyzed throughout this EIR. No further off-site improvements are required, including any upsizing of pipes in the Salt Creek Interceptor, as further described in Section 3.7.5.2.

Based on the above analysis, the provision of sewer service to the Project site through the Salt Creek Interceptor would be ***less than significant*** because all impacts would occur in existing

disturbed areas within or immediately adjacent to existing rights-of-way; and such impacts are considered temporary, as the impacted areas would be restored to match pre-existing conditions following installation of the sewer pipelines. Specific construction and operational impacts related to biological resources, air quality, noise, and cultural resources are addressed in those EIR chapters, respectively.

- Would the proposed Project exceed wastewater treatment requirements of the applicable RWQCB?

As stated above, the design criteria used to determine the Project's proposed wastewater flow are in accordance with the San Diego County Code of Regulatory Ordinances, Section 94.1.001, et seq., which adopts the California Plumbing Code, to meet and comply with all federal and state policies regarding the regulation of wastewater discharges and treatment, including all applicable federal and state laws required by the Clean Water Act of 1977 and subsequent amendments and general pretreatment regulations. The sewer facilities in each of the options described above also would be designed in accordance with County standards to include redundant pumping units, standby power, odor control, overflow storage, and telemetry. In addition, as discussed in Section 3.2, Hydrology and Water Quality, the proposed Project would be in compliance with all NPDES discharge criteria and permitting requirements. Therefore, impacts related to this issue are considered to be *less than significant*.

- Would the proposed Project result in a determination by the wastewater treatment provider that serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

San Diego County Sanitation District

The SDCSD combined the wastewater treatment capacity from several smaller wastewater agencies serving the unincorporated area. The SDCSD currently has sufficient treatment capacity for the proposed .51 mgd of wastewater generated by the proposed Project. In addition, a Service Availability Letter for the Project has been provided by SDCSD. Therefore, the proposed Project's impact on committed or future wastewater treatment capacity would be *less than significant*.

Salt Creek Interceptor

Sewer service via the Salt Creek Interceptor has been selected for the proposed Project. In all previous planning studies prepared for the Salt Creek Interceptor, flows from the proposed Project have been included in the sizing of the Salt Creek Interceptor. The November 1994 Salt Creek Basin Study estimated that 2,253 equivalent dwelling units (EDUs) from Village 13 (i.e., the proposed Project) would convey flows to the Salt Creek Interceptor. Currently, the proposed Project involves a total of 2,196 EDUs (based on City of Chula Vista criteria). Flows from the Project site are not expected to impact the capacity of the Salt Creek Interceptor because the capacity of the downstream portions of the Salt Creek Interceptor was increased during final design and the development projections from upstream areas have decreased. In particular, the Salt Creek Interceptor was sized with capacity for Otay Ranch Villages 13, 14,

and 15, and Planning Area 16. Since preparation of the Salt Creek Basin Study, all or portions of Villages 14, 15, and Planning Area 16 are set aside for conservation purposes.

Sewer flows conveyed to the Salt Creek Interceptor would require an agreement between the County of San Diego and City of Chula Vista. LAFCO performed a Municipal Service Review for Southern San Diego County Sewer Service in 2004. Determination 4.2 of that report concluded, “[t]he City of Chula Vista, Otay WD, and Spring Valley SD should pursue strategies for cost avoidance when planning for extension of services to the Otay Ranch [Villages] 13 and 14.” In addition, LAFCO conducted the Municipal Service Review and Sphere of Influence Update: County Sanitation District (2007), which concluded that the proposed Project was outside the sphere of influence of SVSD, and could most efficiently be provided sewer service by Chula Vista via the Salt Creek Interceptor, subject to a cost and feasibility analysis and a sphere review. As proposed, the project would remain in the County and be served by the SDCSD through a flow transfer agreement that would allow flows from the project to be conveyed to the Salt Creek Interceptor.

During 2010, the Metro treatment plants operated at a daily average effluent flow rate of 180 mgd. Improvements are planned to increase the wastewater treatment capacity of Metro to nearly 340 mgd to serve an estimated population of 2.9 million in year 2050 (County of San Diego 2011b).

3.7.2.3 Storm Drainage

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant storm drainage impact will occur if the proposed project does the following:

- Requires or results in the construction or expansion of storm drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Rationale for Selection of Guideline

The significance guideline for storm drainage is based on Appendix G of the CEQA Guidelines.

Analysis

Development of the proposed Project would require improvements to the current drainage system. These improvements are shown in **Figures 3.2-3A - 3C** and discussed in Section 3.2, Hydrology and Water Quality, and are summarized below.

All runoff from the Project site currently drains under Otay Lakes Road via 24 existing culverts, and discharges to Lower Otay Lake. No development exists in off-site areas that drain through the Project site. The existing culverts require upgrades to prevent roadway overtopping during a 100-year storm event.

The proposed Project would upgrade the existing culverts, resulting in 14 improved culverts under Otay Lakes Road, which would accommodate 100-year storm event peak flows so that overtopping of the roadway is eliminated.

Prior to reaching the culverts, storm water runoff would be conveyed through the Project site via separate storm drain systems for large contributing areas. In the large contributing areas, dual storm drain systems would be implemented to separate the natural runoff from the undeveloped areas of the Project site from runoff from the developed areas of the Project site. Thus, most of the natural runoff from the undeveloped areas would continue to drain directly to Lower Otay Lake and would not mix with runoff from the developed areas until after the runoff from the developed areas has been treated.

All runoff from the developed areas of the Project site would also drain to Lower Otay Lake via an internal storm drain system; however, the runoff from the developed areas would drain through water quality inserts at each of the Project's drain inlets and water quality basins (see **Figures 3.2-3A - 3C**) to ensure flows receive treatment before discharging from the Project site into Lower Otay Lake via the Otay Lakes Road culverts. To avoid duplication of storm drain piping in small contributing areas, the natural runoff from the undeveloped areas would combine with the treated flows after the inlet inserts and would be directed to one of the seven water quality basins.

As presented in **Table 3.2-1**, development of the Project site would internally divert the drainage areas discharging into the culverts located under Otay Lakes Road. In addition, minor alterations to the drainage pattern may result from development of the Project site through the conversion of natural surfaces to impervious surfaces and through activities such as grading, excavation, and construction activities. However, the proposed Project would not result in a change in the overall drainage area draining into Lower Otay Lake. In addition, no detention basins would be required for the development because the capacity of Lower Otay Lake is sufficient to store and convey the estimated 606.0 cfs 100-year peak flow post-development increase.

Construction of these storm drain improvements would have the potential to create environmental impacts. However, construction of such facilities has been analyzed as part of the development footprint of the proposed Project and the environmental impacts of such construction have been analyzed throughout this EIR, including Section 3.2 – Hydrology and Water Quality, Section 2.3 – Biological Resources, Section 2.7 – Noise, and Section 2.4 – Cultural Resources. Therefore, impacts related to construction of the storm drain facilities would not have any additional impacts beyond those identified in other chapters of this EIR. Impacts and mitigation related to this construction are therefore not re-identified in this chapter.

3.7.2.4 Gas and Electric

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant impact to gas and electric services will occur if the proposed project does the following:

- Would require or result in the construction of new gas and electric facilities or the expansion of existing facilities, the construction of which would cause significant environmental effects.

Rationale for Selection of Guideline

This guideline was selected to focus the analysis on potential physical impacts from expanded gas and electric infrastructure necessary to serve the Project and is based on Appendix G of the CEQA Guidelines.

Analysis

To provide gas and electrical service to the Project development, it would be necessary to extend new facilities into the Project site. The infrastructure required to provide electrical service would consist of four 5-inch and two 4-inch underground electrical conduits that would be located within planned sidewalks or within other utility rights-of-way. Also required for electrical service would be electric vaults, switches, fuse cabinets, and transformers. Some of these necessary components would be aboveground features and located behind sidewalks, as is typical in residential developments. Similarly, natural gas pipelines would also be located within planned roadways, sidewalks, or utility rights-of-way. Provision of natural gas would require a 4-inch pipeline throughout the Project development area. Gas and electrical services for the Project would connect into existing service infrastructure at the intersection of Otay Lakes Road and Lake Crest Drive approximately 4,500 feet west of the westernmost project entrance. No new substation is anticipated to be needed for the Project and no other service infrastructure outside of areas designated on Project development plans for grading and construction would be impacted by extension of gas and electrical infrastructure.

The placement of the infrastructure in areas already planned for disturbance, either for Project street rights-of-way or for installation of other utilities such as water and sewer pipelines or telecommunication lines, would avoid environmental impacts specific to the provision of electric and gas service. The planned Project rights-of-way and roadway alignments have been analyzed for potential environmental effects in this EIR and any impacts, such as biological resources, cultural resources, etc., are discussed in the appropriate topic section. The placement of electric and natural gas infrastructure within these areas analyzed and planned for disturbance would not result in any additional environmental effects than what has been described in other chapters of this EIR.

3.7.3 Cumulative Impact Analysis

3.7.3.1 Water Supply

The geographic scope for cumulative water supply impacts is the service area of the SDCWA. As described above, the 2010 UWMPs prepared by SDCWA and MWD were based on SANDAG forecasts that incorporated population projections for the projects in the area, including the proposed Project, in their water planning estimates. The SDCWA 2010 UWMP provided water demand forecasts based on the projected population growth in the area and, based

on its water supply reliability assessment, concluded that if water supplies are developed as planned, no water shortages are anticipated within the SDCWA service area under average, single-dry, and multiple-dry years through 2035. The SDCWA 2010 UWMP also addressed additional storage and desalination programs being pursued by SDCWA to further supplement supplies, and to address the potential risk of water shortages. The OWD 2010 UWMP conducted a similar water demand and supply assessment within its service area. OWD's assessment also included the proposed Project's water demand.

As discussed above and shown in **Tables 3.7-3, 3.7-4, and 3.7-5**, an adequate water supply from SDCWA has been identified for its member agencies, including OWD, and the proposed Project would not require expansion of existing facilities other than the extension of water service and installation of the on-site water reservoir. Therefore, the Project is not anticipated to contribute to a cumulatively considerable impact on water supply. However, as stated in the second to last paragraph of Chapter 3.7.2.1 above, the proposed Project would be required to participate in the acquisition and development of alternative water supply project(s) to offset the proposed Project's potable water demand, as a condition of annexation to the Otay Water District.

Any potential cumulative impact related to construction of new water lines and facilities has been addressed in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.3.2 Wastewater

The geographic scope of cumulative wastewater transportation impacts is the Salt Creek Interceptor basin. This includes the Project site, the southern third of the Otay Valley Parcel of Otay Ranch in the City of Chula Vista, and Villages 14 and 15 and Planning Area 16 in the Proctor Valley and San Ysidro Mountains parcels of Otay Ranch.

In October 2010, the City of Chula Vista hired PBS&J to evaluate the capacity of the Salt Creek Interceptor in the cumulative buildout development scenario, including Villages 13, 14, and 15, and Planning Area 16. In this ultimate buildout scenario, the PBS&J study predicts that two sections of the interceptor will be over capacity in the cumulative condition. One section is approximately 3,200 feet of 18-inch line in Creekside Drive, just south of Otay Lakes Road. The other section is approximately 1,500 feet of 24-inch line along Salt Creek adjacent to Village 10. These pipe lengths include piping that has adequate capacity, but surcharges as a result of downstream system deficiencies.

As described in the Overview of Sewer Services, the Salt Creek Interceptor was sized for development of Villages 13, 14, and 15, as well as Planning Area 16. Village 15 was acquired for conservation purposes and no future development is expected to occur on that site that would contribute flows to the Salt Creek Interceptor. In addition, the Salt Creek Basin Study anticipated much higher flows from the Project site due to the larger Resort component (800 hotel rooms) and the golf course, compared to the proposed project. The identified deficiencies in the PBS&J study are the result of overly conservative development assumptions. As such, **Table 3.7-9** shows the reduction in anticipated sewage flows in the Salt Creek Basin compared to what was assumed by the PBS&J study. As shown, the Otay Ranch Resort Village project EDUs are

approximately 0.6 mgd less than what was projected in the PBS&J study, and the total anticipated reduction for all of these villages is 0.864 mgd.

Table 3.7-9 summarizes the impact that these reduced flows will have on the deficient pipe sections identified in the October 2010 PBS&J study. As shown, the Salt Creek Interceptor is anticipated to have adequate capacity to serve the Otay Ranch Resort Village property and other cumulative projects. The one section of pipeline shown to be over capacity is based on a conservative assumption where 5,786 EDUs from the future University and Village 10 site will connect to the system. This section of improvement is eliminated based on where the flows from the University and Village 10 are currently proposed to be connected. Therefore, the proposed Project would not add to any cumulatively significant regional wastewater transportation system impact.

The geographic scope for cumulative wastewater treatment impacts is the SDCSD, which combined the wastewater treatment capacity from several smaller wastewater agencies serving the unincorporated area. County DPW would be the approval authority for any development in the SDCSD area. SDCSD has capacity in Metro for the project. All flows would go through the existing Metro Interceptor Pipeline at the Pt. Loma Metro plant, which currently uses only 153 mgd of its 240 mgd capacity. Therefore, *the proposed Project would not add to any cumulatively significant regional wastewater system treatment impact.*

3.7.3.3 Storm Drainage

Improvements to the drainage system for the proposed Project would occur within the Project's drainage basin and would not affect drainage at a cumulative level. The cumulative effect of construction that would impact environmental resources has been analyzed throughout this EIR. Other projects in the area would also be required to construct drainage improvements in compliance with the environmental reviews that were conducted for the individual impacts of each project.

Similar to the direct analysis conducted above in Chapter 3.7.3.2, any potential cumulative impact related to construction of new storm drainage improvements has been addressed in other Chapters of this EIR (2.2, 2.3, 2.4, 2.7 and 3.2) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.3.4 Gas and Electric

As shown in **Table 1.0-7**, there are more than 45 cumulative projects occurring in the Project area. Many of these projects are residential, commercial, or industrial and would require gas and electric services. Though the environmental impacts specific to the provision of gas or electrical service to each of the projects is not known, it is typical that, similar to the proposed Project, the required infrastructure is placed within public or utility rights-of-way, which would be disturbed by other project construction activities. As described above, the provision of gas and electric service to the Project would not create new or additional environmental impacts beyond those that are identified in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7). Similarly, any potential cumulative impacts related to construction of new gas and electrical facilities has been addressed

in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.4 Significance of Impacts Prior to Mitigation

As discussed in sections 3.7.1.3 and 3.7.3, above, the proposed Project would not result in any direct or cumulatively significant impacts to utilities and service systems.

3.7.5 Mitigation

As discussed above, implementation of the proposed Project would not result in any significant impacts to utilities and service systems. Therefore, no mitigation is required.

3.7.6 Conclusion

As discussed above, the proposed Project would have no significant direct, indirect, or cumulative impacts to water supply, wastewater, storm drainage, and gas and electricity usage. Therefore, implementation of the proposed Project *would not result in any significant impacts* to utilities and service systems.

Table 3.7-1
SDG&E Power Content

Energy Source	SDG&E 2012 Power Mix
Renewables	19.2%
- Biomass and Waste	3.9%
- Geothermal	2.4%
- Small Hydroelectric	0.1%
- Solar	3.4%
- Wind	9.4%
Coal	2.3%
Large Hydroelectric	-0.1%
Natural Gas	63.1%
Nuclear	0.9%
Unspecified 1	4.6%
TOTAL	100%

SOURCE: SDG&E 2013a.

**Table 3.7-2
Otay Ranch Resort Village Projected Potable Water Demands**

Neighborhood	Land Use Designation	Gross Acres	Quantity, Units	Water Duty Factor	Total Average Water Demand (gpd)
R-1	SF Residential	250.3	796	500 gpd/unit	398,000
R-2	SF Residential	55.9	211	500 gpd/unit	105,500
R-3	SF Residential	90.2	401	500 gpd/unit	200,500
R-4	SF Residential	75.1	263	500 gpd/unit	131,500
R-5	SF Residential	55.7	210	500 gpd/unit	105,000
Mixed-Use	MU Residential	14.1	57	500 gpd/unit	28,500
Mixed-Use	MU Commercial		2 ac/ 20,000 SF	1,785 gpd/ac	2,800
P-1	Park	2.9	---	2,155 gpd/ac ¹	6,250
P-2	Park	1.7	---	2,155 gpd/ac ¹	3,663
P-3	Park	2.3	---	2,155 gpd/ac ¹	4,957
P-4	Park	2.2	---	2,155 gpd/ac	4,741
P-5	Park	10.3	---	2,155 gpd/ac	22,197
P-6	Park	2.4	---	2,155 gpd/ac	5,172
P-7	Park	293	---	2,155 gpd/ac	6,249
P-8	Park	1.3	---	2,155 gpd/ac	2,802
P-9	Park	2.6	---	2,155 gpd/ac	5,603
S-1	School	10.0	---	1,785 gpd/ac	17,850
---	Public Safety	2.1	---	1,785 gpd/ac	3,750
Resort		17.4	---		
	Resort Units		200 units ³	300 gpd/unit	60,000
	Commercial		2 ac / 20,000 SF	1,785 gpd/ac	3,570
Manufactured OS	Open Space	131.4 ²	---	2,155 gpd/ac	283,167
Preserve	Open Space	1,089.0	---	0	0
Circulation	Open Space	36.0	---	0	0
Total		1,869.0	1,938¹		1,418,918 (1,590 afy)

Source: Overview of Water Service, Dexter Wilson Engineering, Inc., Sept. 2014

¹ Total residential units

² Estimate for permanently irrigated slopes

SF = single-family; MU = mixed-used

gpd = gallons per day; ac = acre; afy = acre-feet/year

Table 3.7-3
Average/Normal Water Year Supply and Demand Assessment (afy)

Supplies	2015	2020	2025	2030	2035
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,452	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Seawater Desalination	0	56,000	56,000	56,000	56,000
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Subtotal	108,396	174,288	178,101	180,180	181,647
SDCWA Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Supply from MWD	358,189	230,601	259,694	293,239	323,838
Subtotal	538,389	500,801	539,894	537,439	604,038
Total Projected Supplies	647,285	675,089	717,619	753,619	785,685
Total Estimated Demand*	647,285	675,089	717,619	753,619	785,685
Difference	0	0	0	0	0

Source: San Diego County Water Authority, 2010 Urban Water Management Plan.

* Note: with SBX7-7 conservation

IID = Imperial Irrigation District

Table 3.7-4
Single Dry Water Year Supply and Demand Assessment Five Year Increments (afy)

	2015	2020	2025	2030	2035
SDCWA Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Seawater Desalination	0	56,000	56,000	56,000	56,000
Subtotal	180,000	326,200	336,200	336,200	336,200
Member Agency Supplies					
Surface Water	17,932	17,932	17,932	17,932	17,932
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	9,977	9,977	9,977	9,977	9,977
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Subtotal	76,889	87,157	90,032	91,707	93,427
MWD Supplies	430,431	305,101	338,501	376,023	409,389
Total Project Supplies	687,520	718,458	764,733	803,930	839,016
Total Demands with SBX7-7 conservation	687,520	718,458	764,733	803,930	839,016

Source: SDCWA, 2010 Urban Water Management Plan.

Table 3.7-5
Multiple Dry Water Year Supply and Demand Assessment (afy)

	2014	2018	2023	2028	2033
Member Agency Supplies	103,907	112,499	188,331	120,486	122,188
Water Authority Supplies	180,200	266,200	336,200	336,200	336,200
SDCWA Allocation (Preferential Rights)	320,456	324,100	328,695	334,532	341,486
Total Estimated Core Supplies w/o Storage Takes	604,563	702,799	783,226	791,218	799,874
Total Demands w/SBX7-7 Conservation	711,241	740,326	790,177	844,137	882,795
Potential Supply (Shortage) or Surplus (Difference between Supplies and Demand)	(106,678)	(37,527)	(6,951)	(52,919)	(82,951)
Utilization Carryover Supplies	30,000	30,000	6,951	40,000	30,000
Total Projected Core Supplies w/Utilization of Carryover Storage	634,536	732,799	790,177	831,218	829,874
Remaining Potential Surplus Supply or (Shortage) that will be handled through Management Actions	(76,678)	(7,527)	0	(12,919)	(52,921)

Source: SDCWA, 2010 Urban Water Management Plan.

**Table 3.7-6
Local Supplies (afy)**

	2015		2025		2035	
	Average Year	Dry Year	Average Year	Dry Year	Average Year	Dry Year
Local Groundwater						
From Natural Recharge	1,251,000	1,214,000	1,242,000	1,202,000	1,240,000	1,206,000
Replenishment	178,000	172,000	187,000	187,000	191,000	190,000
Local Projects						
Groundwater Recovery	101,000	100,000	114,000	113,000	126,000	125,000
Recycling	264,000	258,000	303,000	299,000	333,000	330,000
Seawater Desalination	0	0	0	0	0	0
Local Runoff Stored	103,000	91,000	102,000	91,000	102,000	91,000
Los Angeles Aqueduct	224,000	63,000	226,000	71,000	230,000	78,000
IID/SDCWA Water Transfer	100,000	100,000	200,000	200,000	200,000	200,000
Coachella & All-American Canal Lining	80,000	80,000	80,000	80,000	80,000	80,000
Total	2,301,000	2,078,000	2,454,000	2,243,000	2,502,000	2,300,000

Source: MWD Regional Urban Water Management Plan (2010)

**Table 3.7-7
Multiple Dry Water Year Supply Capability¹ (afy)**

	2011	2012	2013
Current Programs			
In-Region Storage	351,000	50,000	17,000
California Aqueduct ²	582,000	625,000	611,000
Colorado River Aqueduct ³	998,000	932,000	937,000
Subtotal of Current Programs	1,931,000	1,607,000	1,565,000
Programs In Development			
In-Region Storage	12,000	12,000	12,000
California Aqueduct	23,000	30,000	374,000
Colorado River Aqueduct	176,000	176,000	176,000
Subtotal of Proposed Programs	211,000	218,000	562,000
Maximum MWD Supply Capability	2,142,000	1,825,000	2,127,000

Source: MWD Regional Urban Water Management Plan (2010)

¹ Represents Supply Capacity for resource programs under listed year type.

² California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

³ Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings.

**Table 3.7-8
Projected Wastewater Flows**

Neighborhood	Land Use Designation	Quantity	Wastewater Generation Factor	Total Average Wastewater Flow GPD	Equivalent Dwelling Units (EDUs)
R-1	SF Residential	796 units	240 gpd/unit	191,040	796
R-2	SF Residential	211 units	240 gpd/unit	50,640	211
R-3	SF Residential	401 units	240 gpd/unit	96,240	401
R-4	SF Residential	263 units	240 gpd/unit	63,120	263
R-5	SF Residential	210 units	240 gpd/unit	50,400	210
Mixed-Use	MU Residential	57 units	240 gpd/unit	13,675	57
Mixed-Use	MU Commercial	1.5 ac	1,500 gpd/ac	2,250	9.4
P-1	Park	2.9 ac	0 gpd/ac ¹	0	0
P-2	Park	1.7 ac	0 gpd/ac ¹	0	0
P-3	Park	2.3 ac	0 gpd/ac ¹	0	0
P-4	Park	2.2 ac	0 gpd/ac ¹	0	0
P-5	Park	10.3 ac	500 gpd/acre	5,150	21.5
P-6	Park	2.4ac	0 gpd/ac ¹	0	0
P-7	Park	2.9 ac	0 gpd/ac ¹	0	0
P-8	Park	1.3ac	0 gpd/ac ¹	0	0
P-9	Park	2.6 ac	0 gpd/ac ¹	0	0
S-1	School	800 students	4.8 gpd/each	3,840	16
PS	Public Safety	2.1 ac	240 gpd/acre	500	2.1
Resort	Resort Units	200 units	144 gpd/unit	28,800	120
Resort	Commercial	1.5 ac	1,500 gpd/acre	2,250	9.4
Total				507,906	2,116

Source: Overview of Sewer Service, Dexter Wilson (Sept., 2014)

**Table 3.7-9
Sewerage Flows Comparison**

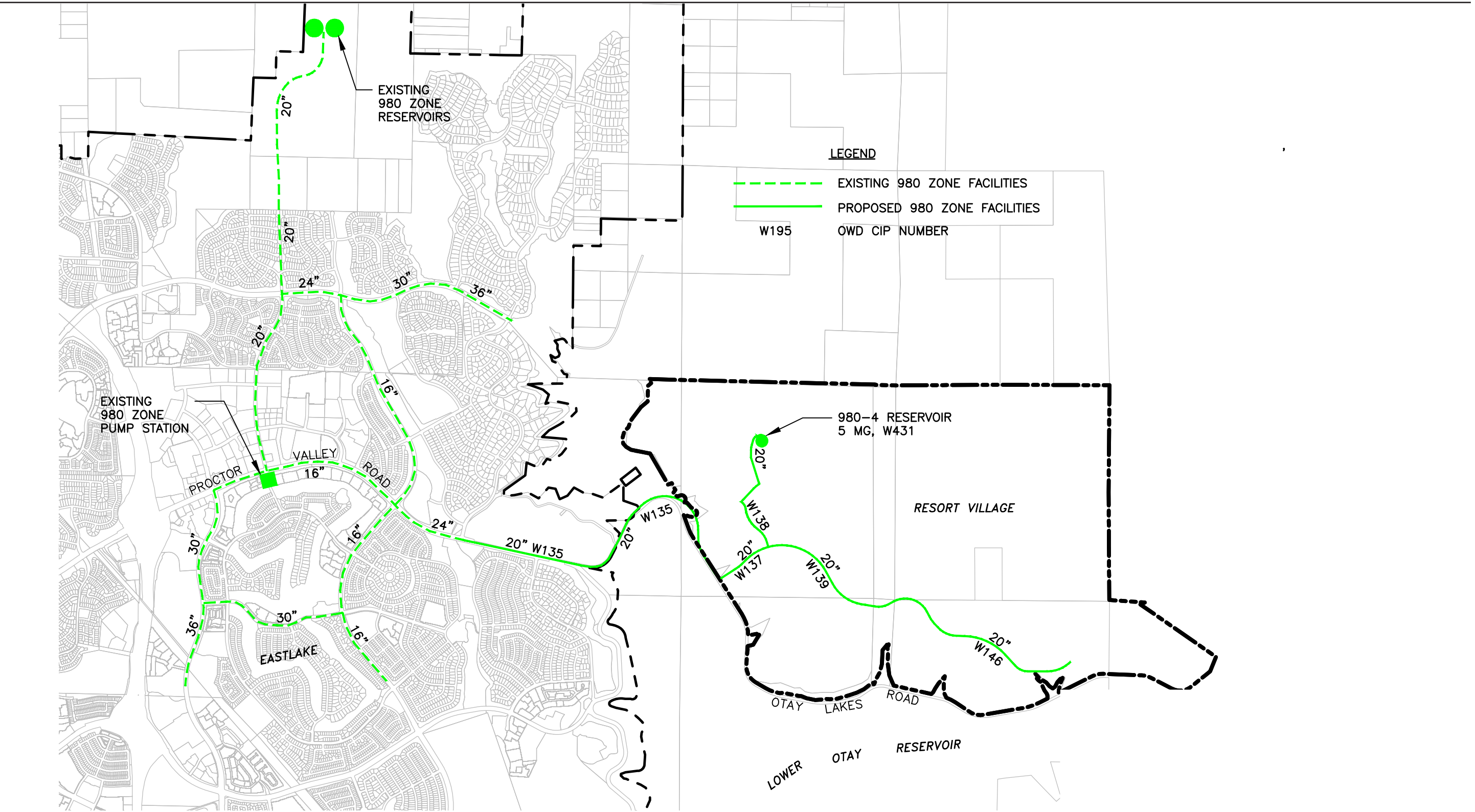
Village	PBS&J October 2010		Current Proposed		Reduction
	EDUs	Average Flow, mgd	EDUs	Average Flow, mgd	Average Flow, mgd
13 (Resort)	4,166.8	1.104	2,196 ¹	0.505	0.599
14 ₂	1,884	0.499	1,815.5 ₂	0.418	0.081
15	634.6	0.168	0	0	0.168
16 ₂	410.8	0.109	404.2 ₂	0.093	0.016
TOTAL	7,096.2	1.880	4,415.7	1.016	0.864

Source: Overview of Sewer Service, Dexter Wilson (Sept., 2014)

¹ From Appendix D.

² See Appendix E.

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SOURCE: Hunsaker & Assoc.

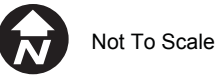
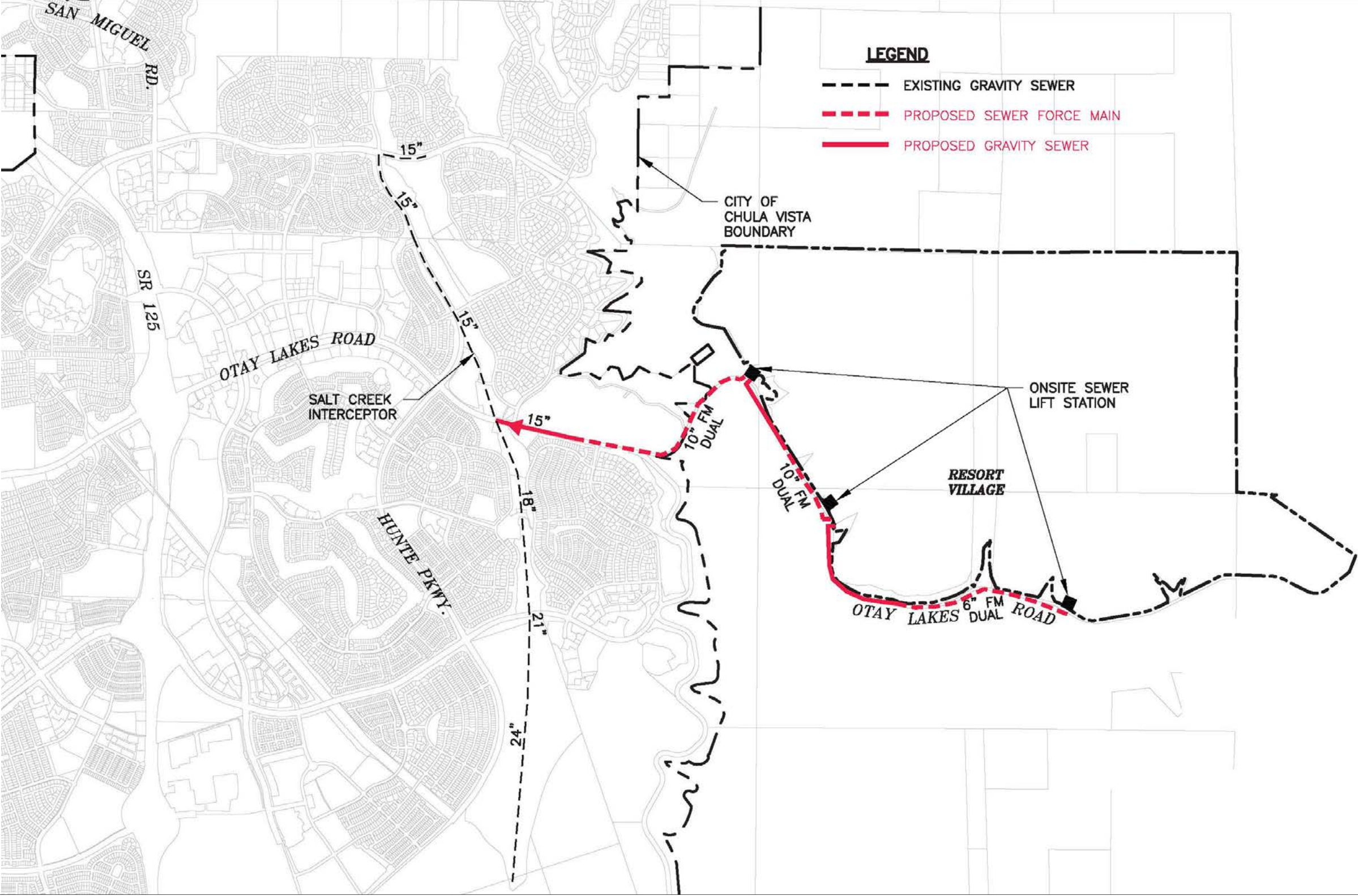


Figure 3.7-1
Existing and Proposed Water Facilities

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SOURCE: Hunsaker & Assoc.



Figure 3.7-2
Existing and Proposed Sewerage Facilities

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3.8 Global Climate Change

This section analyzes the potential global climate change impacts resulting from the proposed Project's greenhouse gas (GHG) emissions. This analysis discusses the scientific and regulatory developments surrounding global climate change, and provides a quantitative inventory of the GHG emissions that would result from Project implementation. The analysis presented in this section is based on the "Global Climate Change Evaluation for the Otay Ranch Resort Village Specific Plan" (GCC Report, SRA, February 2015), as included in **Appendix C-2** to this EIR.

The Otay Ranch PEIR, certified in 1993, provided a program-level analysis of the existing conditions and potential impacts related to air quality for the entire Otay Ranch area, including the Project site. Although the PEIR did not expressly address impacts on global climate change or increases in GHG emissions, in response to identified significant impacts in other environmental resource areas, the County adopted numerous mitigation measures that not only reduce the identified significant impacts in those resource areas, but also result in co-benefits in the area of global climate change by reducing the amount of GHG emissions that would be generated by the proposed Project (see **Appendix C-2** to this EIR).

3.8.1 Existing Conditions

3.8.1.1 *Global Climate Change*

Global climate change refers to changes in average climatic conditions on the Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global climate change may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land. Human-caused emissions of GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect²³ and have led to a trend of unnatural warming of Earth's climate, known as global climate change or global warming.

California law defines GHGs as any of the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆) (Health & Safety Code, §38505(g)). CO₂, followed by CH₄ and N₂O, are the most common GHGs that result from human activity.

Climate change is a global problem. And 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 1 day), GHGs have much longer atmospheric lifetimes of 1 year to several thousand years that allow them 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 by scientists who study atmospheric chemistry that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration.

²³ GHGs allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere.

Global Warming Potentials and Sources of GHGs

The California Air Resources Board (ARB) annually prepares a GHG inventory that identifies and quantifies statewide anthropogenic GHG emissions and sinks. The current inventory covers the years 1990 to 2012, and is summarized in **Table 3.8-1**, State of California GHG Emissions by Sector. The inventory is divided into seven broad sectors and categories: Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation.

GHGs have varying global warming potentials (GWP) (i.e., the potential of a gas or aerosol to trap heat in the atmosphere). The reference gas for GWP is CO₂; therefore, CO₂ has a GWP of 1. The other main GHGs that have been attributed to human activity include CH₄, which has a GWP of 21, and N₂O, which has a GWP of 310. When accounting for GHGs, emissions are expressed in terms of CO₂ equivalents (CO₂e), are typically quantified in metric tons (MT) or millions of metric tons (MMT), and are shown as MMTCO₂e.

Human-caused sources of CO₂ include combustion of fossil fuels (coal, oil, natural gas, gasoline, and wood). CH₄ is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N₂O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

3.8.1.2 Regulatory Setting

Federal Action

Clean Air Act

In *Massachusetts v. Environmental Protection Agency* (2007) 549 U.S. 497, the U.S. Supreme Court held that the U.S. Environmental Protection Agency (USEPA) has authority under the Clean Air Act to regulate CO₂ emissions if those emissions pose an endangerment to the public health or welfare.

In 2009, the USEPA issued an “endangerment finding” under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG emissions. These findings provide the basis for adopting national regulations to mandate GHG emission reductions under the Clean Air Act.

To date, the USEPA has exercised its authority to regulate mobile sources that reduce GHG emissions via the control of vehicle manufacturers, as discussed immediately below.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order 13432 in 2007 directing the USEPA, the Department of Transportation

(DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the DOT, DOE, USEPA and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams/mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 9 to 23 percent over the 2010 baselines.²⁴

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;

²⁴ See USEPA, *EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy Duty Vehicles*, EPA-420-F-11-031 (August 2011). Note that the emission reductions attributable to the regulations for medium- and heavy-duty trucks were not included in the Project's emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative (i.e., higher) estimate of emissions for the Project.

- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and to create a separate fuel economy standard for trucks.

Additional provisions of this Act address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

State Action

Executive Order S-3-05

In 2005, former Governor Schwarzenegger signed Executive Order S-3-05, which established the following GHG emission reduction goals for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels. However, in adopting the 2006 Global Warming Solutions Act (AB 32), discussed below, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05; and, in the last legislative session, the Legislature rejected legislation to enact the Executive Order’s 2050 goal.²⁵

Assembly Bill 32

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020 (Health & Safety Code, §38550). In order to achieve this reduction mandate, AB 32 requires the ARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In response to the adoption of AB 32, in 2007, the ARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. The ARB’s adoption of this limit is in accordance with Health & Safety Code section 38550.

Further, in 2008, the ARB adopted the *Climate Change Scoping Plan: A Framework for Change (Scoping Plan)* in accordance with Health & Safety Code section 38561. The *Scoping Plan* establishes an overall framework for the measures that will be adopted to reduce California’s GHG emissions for various emission sources/sectors to 1990 levels by 2020.

²⁵ See *Cleveland National Forest Foundation v. San Diego Association of Governments* (2014) 231 Cal.App.4th 1056, 1096; *Professional Engineers in California Government v. Schwarzenegger* (2010) 50 Cal.4th 989, 1015; and see Office of Planning and Research, *Guide to the California State Executive Branch* (Oct. 2004), p. 8.

In the *Scoping Plan*, the ARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as “Business-As-Usual” [BAU] or “No Action Taken” [NAT]).²⁶ For example, in further explaining the ARB’s BAU methodology, the ARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and California’s building energy efficiency codes (Title 24) would be held at the 2005 Title 24 standards.

In the 2011 Final Supplement to the *Scoping Plan*’s Functional Equivalent Document, the ARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, the ARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. The 2020 emissions level projection was also updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewable Portfolio Standard (12 percent to 20 percent), resulting in the ARB’s determination that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

Most recently, in 2014, the ARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework (First Update)*.²⁷ The stated purpose of the *First Update* is to “highlight California’s success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.”²⁸ The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32. The *First Update* also noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals.²⁹

In conjunction with the *First Update*, the ARB identified “six key focus areas comprising major components of the State’s economy to evaluate and describe the larger transformative actions that will be needed to meet the State’s more expansive emission reduction needs by 2050.”³⁰ Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

²⁶ ARB, Climate Change Scoping Plan: A Framework for Change, p. 12, December 2008.

²⁷ Health & Safety Code section 38561(h) requires the ARB to update the Scoping Plan every five years.

²⁸ ARB, First Update, p. 4, May 2014.

²⁹ ARB, First Update, p. 34, May 2014.

³⁰ ARB, First Update, p. 6, May 2014.

Based on the ARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050."³¹ Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, the ARB recalculated the State's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, the ARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

The *First Update* included a strong recommendation from the ARB for setting a mid-term statewide GHG emissions reduction target. The ARB specifically recommended that the mid-term target be consistent with: (i) the United States' pledge to reduce emissions 42 percent below 2005 levels (which translates to a 35 percent reduction from 1990 levels in California); and (ii) the long-term policy goal of reducing emissions to 80 percent below 1990 levels by 2050. However, to date, there is no legislative authorization for a post-2020 GHG reduction target, and the ARB has not established such a target.

The *First Update* discusses new residential and commercial building energy efficiency improvements, specifically identifying progress towards zero net energy buildings by 2020 for residential buildings and 2030 for commercial buildings, as an element of meeting mid-term and long-term GHG reduction goals. The *First Update* expresses the ARB's commitment to working with the California Public Utilities Commission and California Energy Commission to facilitate further achievements in building energy efficiency.

The original 2008 *Scoping Plan* and the 2014 *First Update* represent important milestones in California's efforts to reduce GHG emissions statewide. The law also requires the *Scoping Plan* to be updated every five years. The *Scoping Plan* process, as stated, is also thorough and encourages public input and participation.

For example, the original *Scoping Plan* (2008) was introduced through four workshops held between November 30, 2007 and April 17, 2008. A draft *Scoping Plan* was released for public review and comment on June 2008, followed by more workshops in July and August 2008. The proposed *Scoping Plan* was released on October 2008 and considered at the Board hearing on December 12, 2008. In August 2011, after litigation, the initial *Scoping Plan* was re-approved by the Board, and was supported by the Final Supplement to the Scoping Plan Functional Equivalent Document.

In June 2013, the ARB held a kick-off public workshop in Sacramento to discuss the development of the *First Update* to the 2008 Scoping Plan, public process, and overall schedule. In July 2013, subsequent regional workshops were held, which provided forums to discuss

³¹ ARB, First Update, p. 32, May 2014.

region-specific issues, concerns, and priorities. In addition, the ARB accepted and considered informal stakeholder comments and reconvened the Environmental Justice Advisory Committee to advise and provide recommendations on the development of the *First Update*. On October 1, 2013, the ARB released a discussion draft of the update for public review and comment. On October 15, 2013, the ARB held a public workshop on the *First Update* and provided an update to the Board at the October 24, 2013 Board hearing. In addition, over 115 comment letters were submitted on the discussion draft. On February 10, 2014, the ARB released the draft proposed *First Update*. On February 20, 2014, the ARB held a Board meeting discussion that included opportunities for stakeholder feedback and public comment. On March 14, 2014, the ARB released the Appendix F Environmental Analysis, including the 45-day public comment notice, the Appendix B Status of Scoping Plan Measures, and the Appendix C Focus Group Working Papers. On May 15, 2014, the ARB released the *First Update*, staff's written responses to comments received on the draft and final environmental assessments. On May 22, 2014, the Board approved the *First Update*, along with the finalized environmental documents.

Energy-Related Sources

Renewable Portfolio Standard

California's Renewable Portfolio Standard requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020.³² The 33 percent standard is consistent with the Renewable Portfolio Standard goal established in the *Scoping Plan*. As interim measures, this standard requires 20 percent of retail sales to be sourced from renewable energy by 2013, and 25 percent by 2016.³³

Building Energy Efficiency Standards (Title 24)

Title 24 of the California Code of Regulations regulates the design of building shells and building components. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The California Energy Commission's (CEC) 2013 Building Energy Efficiency Standards (effective July 1, 2014) are 25 and 30 percent more efficient than the 2008 Title 24 standards for residential and nonresidential construction, respectively. The 2013 standards require higher efficiency windows, insulation, lighting, ventilation systems and other features that further reduce energy consumption in homes and businesses as compared to the prior 2008 standards.³⁴

³² Initially, the Renewable Portfolio Standard provisions applied only to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to the standard.

³³ On January 28, 2015, Assembly Member Eduardo Garcia introduced AB 197, which – if enacted – would require an electrical corporation or local publicly-owned electric utility to adopt a long-term procurement strategy to achieve a target of procuring 50 (not 33) percent of its electricity products from eligible renewable energy resources by December 31, 2030.

³⁴ The CEC recently opened the public process and rulemaking proceedings for adoption of the 2016 Building Energy Efficiency Standards, which the CEC anticipates will be proposed for adoption in 2015 and have an effective date of January 1, 2017. In addition, as discussed later in this section, the CEC, in conjunction with the California Public Utilities Commission, has adopted a goal that all new residential and commercial construction

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality.³⁵

Appliance Energy Efficiency Standards

The CEC also has adopted the 2012 Appliance Efficiency Regulations (2012 Appliance Standards), which are contained in Title 20 of the California Code of Regulations and include standards for both federally-regulated appliances and non-federally regulated appliances.

Mobile Sources

Pavley Standards

AB1493 required the ARB to adopt regulations to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks for model years 2009–2016, which are often times referred to as the “Pavley I” standards. The ARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal preemption concerns.

Low Carbon Fuel Standard

Executive Order S-1-07 requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by the ARB by 2020.³⁶ In 2009, the ARB approved the Low Carbon Fuel Standard (LCFS) regulations, which became fully effective in April 2010. In 2013, an ethanol company obtained a court order compelling the ARB to remedy substantive and procedural defects under CEQA of the LCFS adoption process.³⁷ However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. Consequently, this analysis assumes that the LCFS will remain in effect during construction and operation of the Project.

achieve zero net energy by 2020 and 2030, respectively. See, e.g., CPUC, California's Zero Net Energy Policies and Initiatives, Sept. 18, 2013, accessed at <http://www.cpuc.ca.gov/NR/rdonlyres/C27FC108-A1FD-4D67-AA59-7EA82011B257/0/3.pdf>. It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

³⁵ Comparisons of the requirements of Tiers 1 and 2 of CALGreen with LEED v4 indicate where CALGreen and LEED points overlap and where additional effort is required to achieve LEED points. See https://www.bayren.org/sites/default/files/CG%202013_LEEDv4_Comparison_Detailed.pdf.

³⁶ Carbon intensity is a measure of the GHG emissions associated with the various production, distribution and use steps in the “lifecycle” of a transportation fuel.

³⁷ POET, LLC v. CARB (2013) 217 Cal.App.4th 1214.

Advanced Clean Cars Program

In 2012, the ARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for model years 2017–2025. (This program is sometimes referred to as “Pavley II.”) The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer greenhouse gases.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options.³⁸ SB 375 specifically requires the Metropolitan Planning Organization (MPO) relevant to the Project area (here, the San Diego Association of Governments [SANDAG]) to include a Sustainable Communities Strategy in its Regional Transportation Plan that will achieve GHG emission reduction targets set by the ARB by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

For the area under SANDAG’s jurisdiction, including the Project Site, the ARB adopted regional targets for reduction of mobile source-related GHG emissions by 7 percent for 2020 and by 13 percent for 2035. (These targets are expressed by the ARB as a percent change in per capita GHG emissions relative to 2005 levels.) In October 2011, SANDAG’s Board adopted its 2050 Regional Transportation Plan and Sustainable Communities Strategy.³⁹ Subsequently, in November 2011, the ARB - by resolution – accepted SANDAG’s GHG emissions quantification analysis and determination that, if implemented, the Sustainable Communities Strategy would achieve the ARB’s 2020 and 2035 GHG emission reduction targets for the region.

Pursuant to Government Code Section 65080(b)(2)(K), SANDAG’s Sustainable Communities Strategy does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city’s or county’s land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing Sustainable Communities Strategy as part of the

³⁸ ARB, First Update, pp. 49-50, May 2014.

³⁹ Subsequent to SANDAG’s adoption of its 2050 Regional Transportation Plan and Sustainable Communities Strategy, a lawsuit was filed by the Cleveland National Forest Foundation and others challenging SANDAG’s compliance with CEQA. SANDAG received adverse judicial determinations from the San Diego County Superior Court (Case No. 37-2011-00101593-CU-TT-CTL) and Fourth District Court of Appeal (Case No. D063288); however, in March 2015, the California Supreme Court granted SANDAG’s petition for review of the Fourth District’s decision (Case No. S223603). At no time was SANDAG ordered to set aside its 2050 Regional Transportation Plan and Sustainable Communities Strategy by the Superior Court or Fourth District; as such, the plan remains valid and intact.

federally required metropolitan transportation planning process and the state-mandated housing element process.⁴⁰

Solid Waste Sources

The California Integrated Waste Management Act of 1989, as modified by AB 341, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) diversion of 75 percent of all solid waste on or after 2020, and annually thereafter. The California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled *California's New Goal: 75 Percent Recycling*, which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in October 2013, CalRecycle released a revised concept list, entitled *Update on AB 341 Legislative Report: Statewide Strategies to Achieve the 75 Percent Goal by 2020*.

Local Action

The County's General Plan Update (County of San Diego 2011b) includes smart growth and land use planning principles designed to reduce VMT and result in a reduction in GHG emissions. As discussed in the General Plan Update, climate change and GHG reduction policies are addressed in plans and programs in multiple elements of the General Plan. The strategies for reduction of GHG emissions in the General Plan Update are as follows:

- Strategy A-1: Reduce vehicle trips generated, gasoline/energy consumption, and greenhouse gas emissions.
- Strategy A-2: Reduce non-renewable electrical and natural gas energy consumption and generation (energy efficiency).
- Strategy A-3: Increase generation and use of renewable energy sources.
- Strategy A-4: Reduce water consumption.
- Strategy A-5: Reduce and maximize reuse of solid wastes.
- Strategy A-6: Promote carbon dioxide consuming landscapes.
- Strategy A-7: Maximize preservation of open spaces, natural areas, and agricultural lands.

The General Plan Update also includes climate adaptation strategies to deal with potential adverse effects of climate change. The climate adaptation strategies include the following:

⁴⁰ ARB, First Update, p. ES-4, May 2014. See also Gov. Code, § 65080(b).

- Strategy B-1: Reduce risk from wildfire, flooding, and other hazards resulting from climate change.
- Strategy B-2: Conserve and improve water supply due to shortages from climate change.
- Strategy B-3: Promote agricultural lands for local food production.
- Strategy B-4: Provide education and leadership.

The County has also implemented a number of outreach programs such as the Green Building Program, lawn mower trade-in program, and reduction of solid waste by recycling to reduce air quality impacts as well as GHG emissions.

In addition to the County's General Plan Update and other programs described above, the County's Department of Planning and Development Services issued "2015 GHG Guidance: Recommended Approach to Addressing Global Climate Change in CEQA Documents" (2015 GHG Guidance; dated January 2015) in an effort to bring a degree of consistency and objectivity to the CEQA analyses prepared for pending projects. The analysis provided below considers the 2015 GHG Guidance, in conjunction with other identified methodologies.

3.8.1.3 *Current and Projected Impacts of Global Warming*

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns.

There is a general scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. Global temperature increases, therefore, may have significant negative impacts on ecosystems, natural resources, and human health. Ecosystem structure and biodiversity would be compromised by temperature increases and associated climatic and hydrological disturbances. The availability and quality of potable water resources may be compromised by increased salinization of groundwater due to sea-level rises, decreased supply in semi-arid and arid locations, and poorer water quality arising from increased water temperatures and more frequent floods and droughts. These impacts on freshwater systems, in addition to the effects of increased drought and flood frequencies, can reduce crop productivity and the food supply.

In addition to compromising food and water resources, there are other means through which climatic changes associated with global warming can affect human health and welfare. Warmer temperatures can cause more ground-level ozone, a pollutant that causes eye irritation and respiratory problems. Ranges of infectious diseases will likely increase and some areas are expected to face greater incidences of illness and mortality associated with increased flooding and drought events.

According to the ARB, some of the potential California-specific impacts of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. To protect the State's public health and

safety, resources, and economy, the California Natural Resources Agency—in coordination with other state agencies—has updated the *2009 California Climate Adaptation Strategy* that is titled, *Safeguarding California: Reducing Climate Risk*. The final *Safeguarding California* plan is dated July 2014, and provides policy guidance for state decision makers relative to climate risks in nine sectors: agriculture; biodiversity and habitat; emergency management; energy; forestry; ocean and coastal ecosystems and resources; public health; transportation; and water. It also identifies policies for reducing GHG emissions and accelerating the transition to a clean-energy economy through reductions in emissions, readiness, and continued research.

3.8.1.4 Project Site and Surrounding Area

Based on the Project site's current conditions and the absence of development, existing GHG emissions are negligible and assumed to be zero. (As discussed in Section 1.4 (Environmental Setting) of this EIR, the Project site is currently vacant, with vegetation consisting of native coastal sage scrub and grassland habitats.)

In addition to considering the existing conditions on the Project site, because the effects of GHG emissions on global climate change extend well beyond the Project vicinity, the following discussion also provides context regarding national and statewide GHG emission levels.

In 2012, the United States emitted about 6.5 billion metric tons (emissions not including sinks) of CO₂e or about 20.5 metric tons per person per year.⁴¹ (This represents a 10 percent reduction below 2005 total emission levels.) Of the four major sectors nationwide—residential, commercial, industrial, and transportation—transportation accounts for the highest fraction of GHG emissions (approximately 34 percent); these emissions are entirely generated from direct fossil fuel combustion. Over 60 percent of the United States' transportation emissions resulted from passenger car and light-duty truck use. According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks,⁴² from 2005 to 2012, transportation emissions dropped by 9 percent due, in part, to increased fuel efficiency across the U.S. vehicle fleet; higher fuel prices; and an associated decrease in the demand for passenger transportation. However, from 1990 to 2012 as a whole, transportation emissions rose by 16 percent, principally because of increased demand for travel with limited gains in fuel efficiency.

In 2012, California emitted approximately 459 million tons of CO₂e, or about 7 percent of the nation's emissions.⁴³ California's relative contribution to the nationwide emissions level is due primarily to the sheer size of California, as compared to other states. For example, in 2011 (the most recent year with compiled data), California had the fourth lowest per capita GHG emission rates in the country, due to the success of its energy-efficiency and renewable energy programs and to commitments that have lowered the State's rate of emissions growth.⁴⁴ Another factor that

⁴¹ See <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>.

⁴² U.S. EPA. 2014. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2012*. EPA 430-R-14-003. April 15.

⁴³ ARB. 2014. *California Greenhouse Gas Inventory for 2000-2012*. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf.

⁴⁴ U.S. Energy Information Administration. 2014. *State-Level Energy-Related Carbon Dioxide Emissions, 2000-2011*. <http://www.eia.gov/environment/emissions/state/analysis/>.

has reduced California's fuel use and GHG emissions is its mild climate, as compared to that of many other states. In 2012, the ARB found that transportation is the source of approximately 37 percent of the State's GHG emissions, followed by industrial sources at 22 percent and electricity generation (both in-state and out-of-state) at 21 percent. Agriculture and forestry is the source of approximately 8 percent of the State's GHG emissions. Residential and commercial emissions account for 7 percent and 5 percent of the inventory, respectively.⁴⁵

3.8.2 Analysis of Project Effects and Determination as to Significance

3.8.2.1 Appendix G Guidelines for the Determination of Significance

A significant global climate change impact would occur if implementation of the proposed Project would do the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.⁴⁶

Rationale for Selection of Guidelines

The significance criteria for global climate change are based on Appendix G of the CEQA Guidelines. The first criterion requires evaluation of whether the Project's GHG emissions would significantly impact the environment either directly or indirectly, while the second criterion requires evaluation of the Project's potential to conflict with any applicable plans, policies or regulations adopted to reduce GHG emissions.

Fundamental to the analysis of a project's contribution to GHG emissions, in the context of CEQA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."⁴⁷

⁴⁵ ARB. 2014. *California Greenhouse Gas Emission Inventory*. http://www.arb.ca.gov/cc/inventory/inventory_current.htm.

⁴⁶ An assessment of the Project's potential to conflict with applicable goals and policies of the County's General Plan Update, including those relating to global climate change and GHG emissions, is provided in **Section 3.3**, Land Use, of this EIR.

⁴⁷ CAPCOA, CEQA & Climate Change, p. 35, January 2008. See also SMAQMD, CEQA Guide, p. 6-1, November 2014 [the Sacramento Metropolitan Air Quality Management District (SMAQMD) has concluded that "from the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative"]; SJVAPCD, Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, p. 4, December 17, 2009 [the San Joaquin Valley Air Pollution Control District (SJVAPCD) has concluded that the "effects of project specific GHG emissions are cumulative"].

3.8.2.2 *Emission Sources, Modeling, and Methodologies*

Emission Sources

GHG emissions associated with the proposed Project were estimated for six categories of emissions: (1) construction; (2) area sources (including fireplace use and landscaping); (3) energy use, including electricity and natural gas usage; (4) water consumption; (5) transportation; and, (6) solid waste.

Modeling Program and Parameters

The proposed Project's construction and operational GHG emissions were calculated using the CalEEMod model, with adjustments to account for site- and project- specific conditions, as further described in **Appendix C-2** to this EIR.

Methodologies

In order to evaluate the Project's significance relative to the two significance criteria identified in Subsection 3.8.2.1 above, seven different methodologies are used. Each of the seven methodologies is a separate and independent ground for the significance determination herein.

In accordance with CEQA Guidelines sections 15064.4(b)(1) and 15125(a), this section:

- (1) Identifies the numeric incremental increase in GHG emissions attributable to the Project, compared to GHG emissions resulting from on-site existing conditions.

In accordance with CEQA Guidelines section 15064.4(b)(2)-(3), this section analyzes the Project's consistency with AB 32. Utilization of AB 32 (and specifically Health & Safety Code section 38550) as a benchmark for determining the significance of the Project's GHG emissions for purposes of CEQA has been affirmed by California courts (e.g., *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832; *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327). In order to assess consistency with AB 32, the analysis considers:

- (2) The County's 2015 GHG Guidance, which requires at least a 16 percent reduction in GHG emissions for impacts to be less than significant based on the ARB's 2011 Final Supplement to the *Scoping Plan*;
- (3) The Sacramento Metropolitan Air Quality Management District's (SMAQMD) CEQA Guide, which requires at least a 21.7 percent reduction from the BAU condition for impacts to be less than significant based on the ARB's 2011 Final Supplement to the *Scoping Plan*;⁴⁸ and,

⁴⁸ SMAQMD, CEQA Guide, p. 6-12, November 2014 [SMAQMD's guidance "provides that a 21.7 percent reduction of GHG emissions is adequate mitigation and shows consistency with AB 32 and [CARB] Scoping Plan GHG reduction goals"]; see also SJVAPCD, Guidance for Valley Land-use Agencies in Addressing GHG

- (4) The Bay Area Air Quality Management District's (BAAQMD)'s threshold of significance for GHGs, which allows no more than 4.6 metric tons per year of CO₂e per service population for impacts to be less than significant.⁴⁹

In accordance with CEQA Guidelines section 15064.4(b)(3), this section:

- (5) Considers the Project's consistency with the San Diego County General Plan;
- (6) Analyzes the Project's consistency with SANDAG's 2050 Regional Transportation Plan and Sustainable Communities Strategy; and,
- (7) Evaluates whether the Project's post-buildout GHG emissions trajectory would impede the attainment of the 2050 GHG reduction goal identified in Executive Order S-3-05, including the trajectory's relation to a mid-term goal.

Rationale for Selection of Methodologies

Methodology 1 discloses the extent to which the Project may increase GHG emissions as compared to the existing environmental setting, which is identified as a factor that the lead agency should consider pursuant to CEQA Guidelines section 15064.4(b)(1).

Methodologies 2 and 3 compare the proposed Project's reduction in CO₂e emissions in relation to percentage reductions targets identified by the County of San Diego and Sacramento Metropolitan Air Quality Management District via reference to the ARB's August 2011 Final Supplement to the *Scoping Plan*. Utilization of these percentage reduction targets allows the analysis to consider whether the Project would impede attainment of AB 32's emissions reduction mandate that the State return to its 1990 emissions level by 2020, which remains the only legislatively-adopted statewide mandate. In addition to the County's own 2015 GHG Guidance, the SMAQMD's methodology is utilized because the air district has technical expertise in the subject area, recently adopted its GHG guidance in October 2014 after considering the latest scientific information (including the ARB's *First Update*), and conducted an open and public process leading up to the guidance's adoption.

Emission Impacts for New Projects under CEQA, p. 4, December 17, 2009 [SJVAPCD's guidance provides that, "in order to be determined to have a less than significant individual and cumulative impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in [CARB's] AB 32 Scoping Plan"].

⁴⁹ Subsequent to their adoption, the BAAQMD's thresholds were set aside by the Alameda County Superior Court, which concluded that the BAAQMD did not comply with CEQA when adopting its thresholds. The Superior Court did not find the thresholds were inadequate on their merits. (See <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx>.) Thereafter, the First District Court of Appeal reversed the Superior Court's decision in this respect, thereby reinstating the thresholds (*Cal. Building Industry Assn. v. BAAQMD*; Case No. A136212). Most recently, in November 2013, the California Supreme Court granted review of the decision, thereby vacating the First District's decision, but exclusively as to whether CEQA requires an analysis of how existing environmental conditions will impact future sensitive receptors of a proposed project (Case No. S213478). The Supreme Court is not considering the adequacy of the BAAQMD's GHG thresholds or the process by which those thresholds were adopted. The case is fully briefed and awaiting a judicial determination.

The 16 percentage reduction target identified in County’s 2015 GHG Guidance is based on the 2011 Final Supplement’s integration of both economic data and implemented regulatory standards. The 2015 GHG Guidance requires estimation of both “unmitigated” and “mitigated” emissions. The former estimate is calculated assuming that the Pavley I vehicle standards and 2008 Title 24 standards are in place, whereas the latter estimate is based on the existing regulatory framework and other project design considerations. For more information regarding the assumptions utilized under Methodology 2, please see Section 4.3 of **Appendix C-2**. The 21.7 percentage reduction target identified in the SMAQMD’s methodology is based on the 2011 Final Supplement’s integration of economic data. Unlike the County’s 2015 GHG Guidance, the SMAQMD methodology’s “no action taken” condition assumes that the Pavley I vehicle standards have not been adopted, and the 2005 Title 24 standards are in place. For more information regarding the assumptions utilized under Methodology 3, please see Section 4.3 of **Appendix C-2**.

Methodology 4 utilizes a service population metric developed by the Bay Area Air Quality Management District, also established by reference to AB 32, in order to evaluate the comparative efficiencies of the proposed Project at build out. This methodology has been selected because, like the SMAQMD, the BAAQMD has technical expertise in the subject area. Further, its service population metric is the most restrictive of those presently available.⁵⁰

Methodology 5 considers the Project’s potential to conflict with an applicable plan – the County of San Diego’s General Plan, as that planning document contains various goals, policies and objectives related to the reduction of GHG emissions and global climate change.

Methodology 6 considers the Project’s potential to conflict with an applicable plan – SANDAG’s 2050 Regional Transportation Plan and Sustainable Communities Strategy – adopted for the purpose of reducing GHG emissions at the regional level from passenger vehicles, which is identified as a factor that the lead agency should consider pursuant to CEQA Guidelines section 15064.4(b)(3).

Methodology 7 considers the Project’s potential to conflict with a horizon-year (2050) policy goal set forth in a state executive order, as well as the Project’s emissions trajectory relative to a mid-point between AB 32’s 2020 emissions reduction mandate and Executive Order S-3-05’s 2050 goal.

3.8.2.3 Regulatory Compliance Measures and Project Design Features

The following is a summary of the regulatory compliance measures that would apply to and be implemented by the proposed Project, all of which would reduce GHG emissions. The emission reduction benefits of these regulatory compliance measures were incorporated into the Project’s emissions inventory.

- Pavley I Standards
- Low Carbon Fuel Standard

⁵⁰ See, *infra*, footnote 34.

- Advanced Clean Cars Program (aka, “Pavley II”)
- 33 Percent Renewable Portfolio Standard
- 2013 Title 24 Building Energy Efficiency Standards
- CALGreen Building Code
- California Integrated Waste Management Act

The emission reduction benefits of other regulatory compliance measures were not incorporated into the Project’s emissions inventory due to uncertainties regarding the precise quantity of emission reductions that would result (e.g., dedicated circuits for electric vehicle plug-in facilities/stations in residential garages per the 2015 CALGreen Interim Code Update; energy efficient LED lighting per the County’s illumination and energy conservation requirements).

Additionally, Table 3.8-2 provides a summary of the specific project design features (PDFs) that would be implemented by the proposed Project as conditions of approval of the Specific Plan and Tentative Maps, all of which are designed to reduce GHG emissions.

3.8.2.4 Impact Analysis

The following discussion analyzes the significance of the Project’s GHG emissions relative to the two significance criteria identified in Subsection 3.8.2.1 by utilizing the seven methodologies identified in Subsection 3.8.2.2.

Methodology 1: Comparison of Project Emissions to the Existing Condition

Given the site’s vacant condition, existing uses within the Project Site emit approximately zero (0) metric tons of CO₂e per year. As shown in **Table 3.8-5**, Summary of Project GHG Emissions at Full Buildout in 2025, the proposed Project would emit about 31,755 metric tons of CO₂e per year, after accounting for the effects of regulatory reductions and project design features. As such, the proposed Project would increase the existing emissions level by approximately 31,755 metric tons of CO₂e per year.

While the Project would result in an obvious change to the existing GHG emissions from the Project Site, because climate change is occurring on a global scale, it is not meaningfully possible to quantify the scientific effect of new GHG emissions caused by a single project or whether a project’s net increase in GHG emissions, when coupled with other activities in the region, is cumulatively considerable.⁵¹ Indeed, there is no scientific or regulatory consensus regarding what particular quantity of GHG emissions is considered significant, and there remains no applicable, adopted numeric threshold for assessing the significance of a project’s individual emissions as a direct impact. Furthermore, the global scale of climate change makes it difficult to

⁵¹ SMAQMD, CEQA Guide, pp. 6-9 to 6-10, November 2014 [the SMAQMD has “recognize[d] ... that there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere”]; SJVAPCD, Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, p. 3, December 17, 2009 [the SJVAPCD has concluded that “existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change”].

assess the significance of a single project, particularly one designed to accommodate anticipated population growth.⁵² Indeed, unlike criteria pollutants, GHG emissions and climate change are not localized effects, and their magnitude cannot be quantified locally.⁵³

Also, it should be noted that “AB 32 demonstrates California’s commitment to reducing GHG emissions and the state’s associated contribution to climate change, without intent to limit population or economic growth within the state.”⁵⁴ As a result, there are negative policy implications arising from the utilization of a uniform numeric threshold because of its potential to conflict with projected population and economic growth. CEQA is not a policy tool to control population or economic growth, and, the future residents and occupants of development enabled by this Project would exist and live somewhere else even if this Project were not approved.⁵⁵

In summary then, the proposed Project’s numeric increase of approximately 31,755 metric tons of CO₂e per year, alone, is not a sufficiently informative or reliable indicator of the significance of the Project’s GHG emissions. Therefore, as discussed below, this section also considers other methodologies for analyzing the significance of the Project’s GHG emissions in the context of a cumulative contribution to global climate change.

Methodology 2: County’s 2015 GHG Guidance -16 Percent Reduction Target

In accordance with the County’s 2015 GHG Guidance, this methodology considers whether the Project, inclusive of its PDFs, would achieve a 16 percent reduction from a condition whereby the Project is not proposed and designed utilizing the same PDFs and is instead built consistent with the assumptions set forth in the ARB’s 2011 Final Supplement to the *Scoping Plan*.

In order to estimate the Project’s “unmitigated” emissions, it was assumed that the Pavley I standards would be implemented to reduce emissions from vehicles; the 20% Renewable Portfolio Standard would be implemented to reduce indirect emissions from electricity use; and the 2008 Title 24 standards would be implemented to reduce emissions from buildings.

⁵² See, e.g., Council on Environmental Quality, Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, p. 2, December 2014 [“Climate change is a particularly complex challenge given its global nature and inherent interrelationships among its sources, causation, mechanisms of action, and impacts ...”].

⁵³ See, e.g., CAPCOA, CEQA & Climate Change, p. 22, January 22 [“[U]nlike criteria pollutants where individual districts are characterized by varying levels of pollutant concentrations and source types, [GHG emissions] and their attendant climate change ramifications are a global problem and, therefore, may suggest a uniform approach to solutions that ensure both progress and equity.”].

⁵⁴ SMAQMD, CEQA Guide, p. 6-19, November 2014.

⁵⁵ CAPCOA, CEQA & Climate Change p. 73, January 2008 [“[A] land development project, such as a specific plan, does not necessarily create ‘new’ emitters of GHG, but would theoretically accommodate a greater number of residents in the state. Some of the residents that would move to the project could already be California residents, while some may be from out of state (or would ‘take the place’ of in-state residents who ‘vacate’ their current residences to move to the new project). Some also may be associated with new births over deaths (net population growth) in the state. The out-of-state residents would be contributing new emissions in a statewide context, but would not necessarily be generating new emissions in a global context.”].

In order to estimate the Project’s “mitigated” emissions, it was assumed that, in addition to the measures listed for the “unmitigated” estimate, the following regulatory standards and project design features would be implemented:

- Low Carbon Fuel Standard – 10% reduction in emissions from vehicles
- Advanced Clean Cars – 3% reduction by 2020
- Renewable Portfolio Standard – 33% renewable
- 2013 Title 24 Standards –
 - Single-family residential: 36.4% reduction in electricity use, 6.5% reduction in natural gas use
 - Multi-family residential: 23.3% reduction in electricity use, 3.8% reduction in natural gas use
- Nonresidential: 21.8% reduction in electricity use, 16.8% reduction in natural gas use
- Solar Panels – 30% offset to Project’s overall electricity usage

Conservatively, no credit was taken in this analysis for the mix of uses proposed by the Project. Instead, CalEEMod default trip lengths and diverted/pass by trips were used for both the “unmitigated” and “mitigated” cases in the calculations. This assumption results in conservative emission estimates for the “mitigated” case because it assumes that trip lengths are not reduced by the on-site retail, school, and park uses.

As shown in **Table 3.8-3**, Summary of Project GHG Emissions in 2020 With and Without PDFs, the Project without its PDFs would emit approximately 41,977 metric tons of CO₂e per year, whereas the Project with its PDFs would emit approximately 34,692 metric tons of CO₂e per year in the year 2020. This amounts to a 17.40 percent reduction, 1.40 percent beyond the County’s 16 percent reduction target.

In summary, the Project’s GHG emissions would be consistent with AB 32 pursuant to the County’s 2015 GHG Guidance and impacts would be less than significant.

Methodology 3: SMAQMD’s CEQA Guide - 21.7 Percent Reduction Target

SMAQMD’s CEQA Guide provides that a 21.7 percent reduction in GHG emissions from the ARB’s “no action taken” condition (hereinafter referred to as the BAU condition) is substantial evidence of consistency with AB 32.

In accordance with the SMAQMD methodology, under the BAU condition, it was assumed that the 20% Renewable Portfolio Standard would be implemented to reduce indirect emissions from electricity use; no vehicle GHG emission standards would be in place; and, building energy efficiency would be in accordance with the 2005 Title 24 standards.

In order to estimate the proposed Project’s emissions, it was assumed that, in addition to the measures listed for the BAU condition, the following regulatory standards and project design features would be implemented:

- Pavley I Standards – 14.15% reduction for light-duty vehicles

- Low Carbon Fuel Standard – 10% reduction in emissions from vehicles
- Advanced Clean Cars – 3% reduction by 2020
- Renewable Portfolio Standard – 33% renewable
- 2013 Title 24 Standards –
 - Single-family residential: 36.4% reduction in electricity use, 6.5% reduction in natural gas use
 - Multi-family residential: 23.3% reduction in electricity use, 3.8% reduction in natural gas use
 - Nonresidential: 21.8% reduction in electricity use, 16.8% reduction in natural gas use
- Solar Panels – 30% offset to Project’s overall electricity usage

As discussed above, conservatively, no credit was taken in this analysis for the mix of uses proposed by the Project. Instead, CalEEMod default trip lengths and diverted/pass by trips were used for both the BAU and Project emission estimates. This assumption results in conservative emission estimates because it assumes that trip lengths are not reduced by the on-site retail, school, and park uses.

As shown in **Table 3.8-4**, Summary of BAU Versus Project GHG Emissions per SMAQMD’s CEQA Guide, the Project would emit approximately 34,692 metric tons of CO₂e per year, whereas the BAU condition would emit approximately 46,364 metric tons of CO₂e per year. This amounts to a 25.17 percent reduction, 3.47 percent higher than SMAQMD’s 21.7 percent reduction target.

In summary, the Project’s GHG emissions would be consistent with AB 32 pursuant to the SMAQMD methodology and impacts would be less than significant.

Methodology 4: BAAQMD Service Population Target

According to the Project’s Fiscal Impact Analysis (DPFG 2014), the Project’s residences would be occupied by 3.59 people per household, for a total residential population of 6,957. Additionally, the Project would generate 382 jobs and the occupancy rate for the Project’s resort would be 70%, resulting in an average occupancy of 140 persons. The Project’s service population, therefore, would be about 7,479 persons.

In 2020, the Project’s GHG emissions would be approximately 34,692 metric tons of CO₂e per year (see **Table 3.8-4**). Therefore, in 2020, the proposed Project’s emissions would equate to 4.6 metric tons of CO₂e per service population, which would meet the BAAQMD’s threshold of 4.6 metric tons of CO₂e per service population.⁵⁶

⁵⁶ The Project’s service population estimate also is below the draft threshold developed by the South Coast Air Quality Management District (4.8 metric tons of CO₂e per service population), and the San Luis Obispo Air Pollution Control District’s adopted threshold (4.9 metric tons of CO₂e per service population).

For informational purposes, by 2025 at full buildout, and solely taking credit for additional implementation of the Advanced Clean Cars program, the proposed Project's emissions would equate to 4.2 metric tons of CO₂e per service population.

Methodology 5: County of San Diego General Plan

As discussed further in Section 3.3, Land Use, and **Appendix B** of this EIR, the proposed Project is consistent with the County's General Plan Conservation and Open Space Policies that are designed to reduce the emissions of criteria air quality pollutants, emissions of greenhouse gases, and energy use in buildings and infrastructure, while promoting the use of renewable energy sources, conservation, and other methods of efficiency. The following discussion highlights the Project's consistency with applicable General Plan Goals:

- The Project's preservation of open space is consistent with General Plan Goals COS-1 and COS-2, designed to promote an interconnected preserve system and sustainability of the natural environment.
- The proposed Project is also consistent with General Plan Goal COS-14, Sustainable Land Development, through its mix of uses, provision of on-site parks, open space, retail, and school; and use of 30% solar power to conserve energy.
- The project is consistent with General Plan Goal COS-15, Sustainable Architecture and Buildings, in that it will meet green building standards and comply with Title 24 as of 2013, and future Title 24 requirements as implemented.
- The proposed Project is consistent with General Plan Goal COS-16, Sustainable Mobility, by providing a mix of uses on site, which will encourage alternative transportation modes.
- The proposed Project is consistent with General Plan Goal COS-17, Sustainable Solid Waste Management, in that it will encourage recycling and reduction of solid waste.
- The proposed Project is consistent with General Plan Goal COS-18, Sustainable Energy, by committing to provide 30% of electricity through solar power.
- The proposed Project is consistent with General Plan Goal COS-19, Sustainable Water Supply, by utilizing low-flow fixtures in all building designs, and implementing a water conservation plan designed to reduce water use by 30%.

Methodology 6: SANDAG's 2050 Regional Transportation Plan and Sustainable Communities Strategy

At the regional level, SANDAG's Sustainable Communities Strategy (a component of SANDAG's 2050 Regional Transportation Plan) is an applicable plan adopted for the purpose of reducing GHGs in accordance with the 2020 and 2035 emission reduction targets adopted by the ARB for the San Diego region pursuant to SB 375. In order to assess the Project's potential to conflict with SANDAG's Sustainable Communities Strategy, the Project's residential land uses and associated average daily trips (ADTs) were compared to those assumed within the traffic analysis zones (TAZs) for the Project in the SANDAG Series 12 Year 2050 Regional Model (developed in conjunction with the 2050 Regional Transportation Plan). Based on that review, SANDAG's Model anticipates 18,922 residential ADTs on the Project site. The traffic impact study prepared in support of this EIR estimates that the Project will generate 19,266 residential

ADT (see Table 4.1 of the Traffic Impact Study contained in **Appendix C-12** to this EIR). Given the small difference between the two estimates (344 residential ADTs), the Project's proposed residential allowance is similar to that assumed in SANDAG's 2050 Regional Transportation Plan and Sustainable Communities Strategy. Therefore, the Project can be considered to be consistent with the development forecast outlined by SANDAG to achieve the ARB's GHG reduction targets for 2020 and 2035.

SANDAG's inclusion of the proposed land use development on the Project site in the Sustainable Communities Strategy's forecasted development pattern for the region (see Gov. Code, §65080(b)(2)(B)(vii)) is consistent with the fact that SANDAG was required to utilize the "most recent planning assumptions considering local general plans and other factors" when preparing the Sustainable Communities Strategy (Gov. Code, §65080(b)(2)(B)). Here, the Resort Village (i.e., the proposed Project) is part of Otay Ranch's Subregional Plan, as approved in 1993. The County and other regional planning agencies (i.e., SANDAG) have been anticipating development on the Project site since that time.

Additionally, for purposes of SB 375's underlying policy goals, it is important to recognize that the proposed Project is part of the planned and approved Otay Ranch master-planned community, which contains a balanced mix of residential, commercial, civic, recreational and public facilities, all of which – when viewed from an integrated perspective – reduce the amount of vehicle miles traveled and corresponding GHG emissions. In addition to being part of a larger master-planned community, the proposed Project itself also contains a balanced mix of uses, including resident-serving commercial, retail and office uses, a 10.3-acre community park and 18.3 acres of neighborhood parks, an elementary school site, a fire station site, and a resort with up to 200 rooms and related amenities. The Project's mix of uses allows for the Project to internally capture approximately 19.4 percent of all vehicle trips (i.e., these trips remain within the boundaries of the Project site), with an approximate trip length of one mile in each direction. (See **Section 2.9** [Transportation and Traffic] and **Appendix C-2** to the EIR for additional information on the Project's internal trip capture rate.) Further, the Project's mix of land uses, including residential in conjunction with the retail, parks, and school, is coupled with an integrated pathway and trail plan and traffic calming features along internal streets and roads that promote a pedestrian experience for the Project's residents and visitors and facilitate non-vehicular travel, consistent with SB 375.

Methodology 7: Executive Order S-3-05

At the state level, Executive Order S-3-05 is an order from the State's Executive Branch for the purpose of reducing GHG emissions. The Executive Order's goal to reduce GHG emissions to 1990 levels by 2020 was codified by the Legislature as AB 32. And, as analyzed above, the Project is consistent with AB 32. Therefore, the Project does not conflict with this component of the Executive Order.

The Executive Order also establishes a goal to reduce GHG emissions to 80 percent below 1990 levels by 2050. This goal, however, was not codified through legislative or regulatory action. That being said, studies have shown that, in order to meet the 2050 target, aggressive technologies in the transportation and energy sectors, including electrification and the

decarbonization of fuel, will be required. In its *Scoping Plan*, the ARB acknowledged that the “measures needed to meet the 2050 target are too far in the future to define in detail.”⁵⁷ In the *First Update*, however, the ARB generally described the type of activities required to achieve the 2050 target: “energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately.”⁵⁸

Due to the technological shifts required and the unknown parameters of the regulatory framework changes that will likely occur between now and 2050, both of which serve to undermine the reasonable accuracy of the available GHG models to estimate emissions that far out in the future, quantitatively analyzing the Project’s impacts relative to the 2050 goal presents challenges and is inherently speculative for purposes of CEQA. That being said, for purposes of disclosure, the proposed Project’s emissions in 2030 and 2050 have been quantified, as shown in **Table 3.8-6**, Summary of Project GHG Emissions in 2030, and **Table 3.8-6**, Summary of Project GHG Emissions in 2050. As mentioned, the GHG emission estimates derived from CalEEMod and EMFAC2014 for 2030 and 2050 are constrained because of their inability to incorporate likely, but presently unknown, technological advancements and regulatory changes, some of which are described below.⁵⁹ As a result, the emission estimates – on their own – are not considered to be a reliable indicator of the Project’s consistency with Executive Order S-3-05’s horizon-year (2050) goal. That being said, the emission estimates do evidence a long-term decline in the Project’s emissions inventory total.

- 2020 Project Emissions: 34,692 metric tons of CO₂e per year (see **Table 3.8-3**)
- 2025 Project Emissions: 31,755 metric tons of CO₂e per year (see **Table 3.8-5**)
- 2030 Project Emissions: 30,341 metric tons of CO₂e per year (see **Table 3.8-6**)
- 2050 Project Emissions: 27,521 metric tons of CO₂e per year (see **Table 3.8-7**)

The emissions calculation for each horizon year is based on consistent assumptions regarding applicable regulatory standards and project design features. The differences in the emission calculations reflect the implementation status of regulatory standards impacting emissions from vehicle fleets at a given horizon year.

Although the Project’s emissions level in 2050 cannot be reliably quantified with absolute certainty, statewide (e.g., ARB regulatory standards), regional (e.g., SB 375 sustainable community strategies) and local (e.g., climate action plans) efforts are underway to facilitate the State’s achievement of that goal and it is reasonable to expect the Project’s emissions level (31,755 metric tons of CO₂e per year at full buildout in 2025) to decline as the regulatory initiatives identified by the ARB in the *First Update* are implemented, and other technological innovations occur. Stated differently, the Project’s emissions total at the end of its build-out year

⁵⁷ ARB, *Scoping Plan*, p. 117, December 2008.

⁵⁸ ARB, *First Update*, p. 32, May 2014.

⁵⁹ While EMFAC2014 allows for the Project’s GHG emissions from mobile sources to be quantified in 2050, subject to the accuracy limitations described here, CalEEMod’s modeling capabilities expire in 2035.

of 2025 represents the maximum emissions inventory for the complete Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives.

For example, the ARB's *First Update* "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050,"⁶⁰ and many of the emission reduction strategies recommended by the ARB would serve to reduce the Project's post-2020 emissions level to the extent applicable by law.⁶¹

- **Energy Sector:** Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the Project's emissions level.⁶² Additionally, further additions to California's renewable resource portfolio would favorably influence the Project's emissions level.⁶³
- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all would serve to reduce the Project's emissions level.⁶⁴
- **Water Sector:** The Project's emissions level would be reduced as a result of further desired enhancements to water conservation technologies.⁶⁵
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste would beneficially reduce the Project's emissions level.⁶⁶

The ARB also is implementing a market-based cap-and-trade program to reduce GHG emissions from major GHG-emitting sources, such as electricity generation, large stationary sources (e.g., refineries; cement production facilities; oil and gas production facilities; glass manufacturing facilities; and food processing plants), and fuel distributors (natural gas and propane fuel providers and transportation fuel providers). Although the Project is not a market participant for purposes of the cap-and-trade program, it will indirectly benefit from the emission reductions secured by the program from sources that are utilized by the Project (e.g., electricity generation and fuel providers).

⁶⁰ ARB, *First Update*, p. 4, May 2014. See also *id.* at pp. 32–33 [recent studies show that achieving the 2050 goal will require that the "electricity sector will have to be essentially zero carbon; and that electricity or hydrogen will have to power much of the transportation sector, including almost all passenger vehicles"].

⁶¹ ARB, *First Update*, Table 6: Summary of Recommended Actions by Sector, pp. 94-99, May 2014.

⁶² ARB, *First Update*, pp. 37-39, 85, May 2014. Here, the GHG modeling conservatively assumes that the Project's residences will be subject to the 2013 Title 24 standards. However, given the phasing projections for the Project, which anticipate building construction starting in 2015 and concluding in 2025, it is likely that a subsequent, more rigorous iteration of the Title 24 standards will apply to the Project at the time of building permit issuance.

⁶³ ARB, *First Update*, pp. 40-41, May 2014.

⁶⁴ ARB, *First Update*, pp. 55-56, May 2014.

⁶⁵ ARB, *First Update*, p. 65, May 2014.

⁶⁶ ARB, *First Update*, p. 69, May 2014.

In addition to the ARB's *First Update*, in January 2015, during his inaugural address, Governor Jerry Brown expressed a commitment to achieve “three ambitious goals” that he would like to see accomplished by 2030 to reduce the State’s GHG emissions: (1) increasing the State’s Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;⁶⁷ (2) cutting the petroleum use in cars and trucks in half; and, (3) doubling the efficiency of existing buildings and making heating fuels cleaner.⁶⁸ These expressions of Executive Branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State’s environmental policy objectives, particularly those relating to global climate change.

Further, a recent study shows that the State’s existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 60 percent below 1990 levels by 2050. Even though this study did not provide an exact regulatory and technological roadmap to achieve the 2050 goal, it demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the State to meet the 2050 target.⁶⁹

Given the proportional contribution of mobile source-related GHG emissions to the State’s inventory, recent studies also show that relatively new trends, such as the increasing importance of web-based shopping, the emergence of different driving patterns by the “millennial” generation and the increasing effect of Web-based applications on transportation choices, are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years, and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. Also, as enacted in 2013, SB 743 creates an opportunity to encourage urban infill projects by revisiting the use of the level-of-service criterion in CEQA when assessing traffic impacts. Once amendments to the CEQA Guidelines are adopted that provide for alternative criteria, projects that provide alternatives to driving, such as public transit, bicycle lanes and other pedestrian features, may not be constrained by congestion-based traffic criteria. Further, for projects within transit priority areas, the criteria are required to “promote the reduction of [GHG] emissions, the development of multimodal transportation networks, and a diversity of land uses” (Pub. Resources Code, §210991(b)(1)).

In its *First Update*, the ARB stated the importance of establishing a mid-term statewide GHG reduction target – i.e., set between 2020 and 2050 – to facilitate achievement of the State’s long-term GHG reduction goals. To date, however, the ARB has not adopted such a target and the Legislature has not authorized one. Nonetheless, for the reasons described above, the Project’s post-2020 emissions trajectory is expected to follow a declining trend, consistent with any establishment of a mid-term target. Additionally, as described above, the Project has been found

⁶⁷ See also, *supra*, footnote 11.

⁶⁸ Transcript: Governor Jerry Brown’s January 5, 2015 Inaugural Address, <http://www.latimes.com/local/political/la-me-pc-brown-speech-text-20150105-story.html#page=1>, accessed January 14, 2015.

⁶⁹ Greenblatt, Jeffrey, *Energy Policy*, “Modeling California Impacts on Greenhouse Gas Emissions” (Vol. 78, pp. 158-172).

to be consistent with the 2035 reduction target established by the ARB, pursuant to SB 375, for the SANDAG region for purposes of securing GHG emission reductions resulting from vehicle miles traveled by passenger vehicles. As shown in **Table 3.8-5**, for example, the Project's traffic-related GHG emissions constitute a substantial percentage of the Project's total emissions inventory, such that the Project's consistency with the ARB's 2035 SB 375 target for the SANDAG region affirms the Project's compatibility with any mid-term GHG reduction goals for mobile sources established by the ARB or the Legislature.

In summary, based on the estimated declining trend in Project emissions, as well as existing and planned standards and policies designed to reduce GHG emissions discussed above, the Project is in line with the GHG reductions needed to facilitate the State's attainment of the horizon-year, 2050 reduction goal set forth in Executive Order S-3-05.

3.8.3 Cumulative Impact Analysis

Although the Project would emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may combine and result in global climate change.⁷⁰

Here, the Project's GHG emissions also are very small in comparison to state, national and global GHG emissions. Specifically, at buildout in 2025, the Project's percentage contribution to existing international (totaling 34.5 billion metric tons),⁷¹ national,⁷² and California-specific⁷³ GHG emission inventories is 0.0000920 percent, 0.000489 percent, and 0.00692 percent, respectively. This comparative data is not intended to suggest that the Project's emissions are de minimis; rather, the data is provided for overall context as, generally, it is the *combined* emissions of projects globally that appear to be the primary cause of global climate change, and not any one project.

The State has established a mandate, via AB 32, to reduce cumulative statewide emissions to 1990 levels by 2020, even though statewide population and commerce is predicted to continue to expand. To achieve this goal, the ARB is working with other state agencies to establish and implement the necessary regulatory framework to reduce GHG emissions levels to 1990 levels. And, the PDFs, other Project attributes and regulatory initiatives discussed in this section would represent a break from "business-as-usual" and support efforts to return the State to its 1990 emissions level in accordance with AB 32.

⁷⁰ The Governor's Office of Planning and Research has concurred with the general scientific consensus that "climate change is ultimately a cumulative impact." Governor's Office of Planning and Research, Technical Advisory—CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, p. 6, June 19, 2008. See also ARB, First Update, p. 33, May 2014 ["Ultimately, climate change is affected by cumulative emissions."].

⁷¹ http://edgar.jrc.ec.europa.eu/news_docs/pbl-2013-trends-in-global-co2-emissions-2013-report-1148.pdf

⁷² U.S. EPA. 2014. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2012*. EPA 430-R-14-003. April 15.

⁷³ CARB. 2014. *California Greenhouse Gas Inventory for 2000-2012*. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf.

As discussed above, the Project is consistent with the GHG emission reductions adopted by the 2006 Global Warming Solutions Act (AB 32) and the 2008 Sustainable Communities and Climate Protection Act (SB 375). Additionally, the Project's post-buildout emissions trajectory can reasonably be expected to exhibit a declining trend. Therefore, the Project would not obstruct attainment of the horizon-year (2050) goal of Executive Order S-3-05. In light of the foregoing, the Project's contribution to the cumulative impact of global climate change would be less than significant.

3.8.4 Significance of Impacts Prior to Mitigation

As discussed in Section 3.8.2, Project-level GHG impacts would be less than significant.

3.8.5 Mitigation

No mitigation is required as Project-level GHG impacts would be less than significant.

3.8.6 Conclusion

The proposed Project, at both a Project-specific and cumulative level of analysis, would be consistent with the statewide reduction mandate established by AB 32, as well as the County's own General Plan and regional reduction targets established by SB 375. Further, the Project would not obstruct attainment of the horizon-year (2050) goal set forth in Executive Order S-3-05. Therefore, Project impacts would be less than significant.

Table 3.8-1
State of California GHG Emissions by Sector

Sector	Total 1990 Emissions (MMTCO₂e)	Percent of Total 1990 Emissions	Total 2012 Emissions (MMTCO₂e)	Percent of Total 2012 Emissions
Agriculture	23.4	5%	37.86	8%
Commercial	14.4	3%	14.20	3%
Electricity Generation	110.6	26%	95.09	21%
Forestry (excluding sinks)	0.2	<1%		
Industrial	103.0	24%	89.16	19%
Residential	29.7	7%	28.09	6%
Transportation	150.7	35%	167.38	36%
Recycling and Waste	N/A	N/A	8.49	2%
High GWP Gases	N/A	N/A	18.41	4%
Forestry Sinks	(6.7)	N/A	N/A	N/A

N/A – data not provided

Source: *California Greenhouse Gas Inventory for 2000-2012*. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf

Table 3.8-2
Project Design Features to Reduce GHG Emissions

Strategy to Reduce GHG Emissions	Description	Emission Reduction	Basis for Emission Reduction
Land Use and Community Design			
Pedestrian Oriented Development	The Otay Ranch Resort Village land use plan locates a school, parks, and commercial land uses in proximity to residential areas to encourage pedestrian and bicycle travel as an alternative to the automobile. In addition, the Resort Village Trail and Pathway system provide alternate routes to these destinations.	Conservatively, no credit was taken for mixed uses at the site and no reduction was assumed.	CAPCOA White Paper, Appendix B
Street Widths, Pavement and Street Trees	The Otay Ranch Resort Village land use plan includes narrow streets and reduced paving, which reduces heat buildup and the demand for air conditioning. Street trees also are included in the land use plan in order to provide shade that further reduces ambient air temperatures.	No reduction assumed.	CAPCOA White Paper, Appendix B
Transit Facilities and Alternative Transportation Modes			
Public Transportation	The applicant or designee will coordinate with the Chula Vista Transit (CVT) and the San Diego Association of Governments (SANDAG) to evaluate the feasibility of providing bus service to the site. Currently, CVT provides bus service through the Chula Vista Eastern Territories including the Eastlake Business Center and nearby Southwestern College.	No reduction assumed.	CAPCOA White Paper, Appendix B
Transportation Demand Management	The applicant or designee shall develop a transportation demand management program to ensure ridesharing and carpooling for residents and employees.	No reduction assumed.	N/A
Alternative Travel Modes	Otay Ranch Resort Village streets will provide for a maximum travel speed of 30 miles per hour, which allows the streets to be used by electric carts and bicycles.	No reduction assumed.	CAPCOA White Paper, Appendix B
Alternative Travel Modes	Off-street pathways and trails in the Resort Village will accommodate pedestrian and bicycle travel.	No reduction assumed.	CAPCOA White Paper, Appendix B
Alternative Travel Modes	The Homeowners Association will partner with the elementary school to create a “walking school bus program” for neighborhood students to safely walk to and from school to reduce vehicular trips for drop-off and pick-up.	No reduction assumed.	N/A
Energy Efficiency			
Energy Efficiency	Indoor residential appliances will carry the Environmental Protection Agency’s (EPA) ENERGYSTAR® certification, as	Accounted for in CalEEMod Model.	CAPCOA White Paper, Appendix B

Strategy to Reduce GHG Emissions	Description	Emission Reduction	Basis for Emission Reduction
	applicable.		
Energy Efficiency	All residential units will be part of the local utility demand response program to limit peak energy usage for cooling. Through the site design and building permit process, the Project will incorporate solar panels on buildings to offset the Project's overall electricity usage by 30%. Peak solar performance tends to coincide with peak energy usage. Thus, the Project-wide incorporation of solar will further limit peak energy usage.	Unknown (as to demand response program participation). No reduction assumed (as to demand response program participation). (See below for information regarding commitment for provision of on-site solar resources.)	N/A
Water Conservation			
Low-Flow Fixtures	Indoor residential plumbing products would comply with the 2013 CALGreen Code, including future updates to CALGreen as these updates apply to homes in the project built under the updated code. The GHG emission reductions benefits of this PDF have been quantitatively incorporated into the Project's GHG inventory by including a measure within CalEEMod to account for the use of low-flow fixtures in all buildings.	Accounted for in CalEEMod Model.	CalEEMod Model
Water Conservation Plan	The Project includes a Water Conservation Plan that that will reduce outdoor water usage by 30% compared to existing outdoor water usage for typical residential homes. Through the Project's site plan process and, in the case of individual homeowners, the Project's CC&Rs, the Water Conservation Plan will require compliance with the County's "Water Conservation in Landscaping Ordinance" (aka, "Model Landscape Ordinance") for all outdoor landscapes in the Project, including common areas, public spaces, parkways, medians, parking lots, parks, and all builder or homeowner installed private front and backyard landscaping. The Water Conservation Plan goes beyond the County's Ordinance by applying to all landscaping installed in the Project. Consistent with the County's Ordinance, the Water Conservation Plan requires the use of a water allocation-based approach to landscape zones, use of drought-tolerant, low-water usage native plants, high-efficiency weather- or evapotranspiration-based irrigation controllers, soil moisture	30% for outdoor uses.	Water Conservation Plan

Strategy to Reduce GHG Emissions	Description	Emission Reduction	Basis for Emission Reduction
	sensors, and drip emitters, soaker hose (e.g., netafim), or equivalent high-efficiency drip irrigation, and limitations on the use of natural turf in residential development to no more than 30% of the outdoor open space. Landscape plans and construction documents for developer and builder installed landscaping will be reviewed and approved by PDS for conformance with the Project's Water Conservation Plan. Individual homeowners will also have to show compliance with the Water Conservation Plan for front and backyard landscaping and may require separate permitting through the County for landscaping of 1,000 square feet or greater in size. The GHG emission reductions benefits of this PDF have been quantitatively incorporated into the Project's GHG inventory by including a measure within CalEEMod to account for a reduction in outdoor water use for irrigation of 30%. This is consistent with the requirements of the Resort Village Water Conservation Plan, Appendix VI to the Resort Village Specific Plan.		
Building and Site Design			
California 2013 Title 24 Building Energy Efficiency Standards as well as the 2013 "CALGreen" Building Code	Residential buildings would be designed to meet the California 2013 Title 24 Building Energy Efficiency Standards as well as the 2013 "CALGreen" Building Code, including future updates to these codes as these updates apply to homes in the project built under the updated codes. The GHG emission reduction benefits of this PDF have been quantitatively incorporated into the Project's GHG inventory by including a measure within CalEEMod to account for a reduction in Title 24 energy use.	CEC impact analysis for Title 24 as of 2013.	CEC 2013
Curbside recycling	Project-wide curbside recycling for single-family, multi-family, resort, school, commercial, and retail establishments would be required in accordance with the California Integrated Waste Management Act (AB 939). The GHG emission reductions benefits of this PDF have been quantitatively incorporated into the Project's GHG inventory by including a measure within CalEEMod to account for a reduction in solid waste generation of 20%.	20% reduction in solid waste generation from CalEEMod defaults.	County of San Diego 2014
EV Plug-Ins	Dedicated circuits for electric vehicle plug-	No reduction	N/A

Strategy to Reduce GHG Emissions	Description	Emission Reduction	Basis for Emission Reduction
	in facilities/stations would be installed in all residential garages per the 2015 CALGreen Interim Code Update (Effective July 1, 2015). The GHG emission reduction benefits of this PDF conservatively have not been quantified and not incorporated into the Project's GHG inventory.	assumed.	
Passive Solar Design	The site design will incorporate passive solar design and building orientation principles to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.	No reduction assumed.	CAPCOA White Paper, Appendix B
Passive Solar Design	Vertical landscape elements such as trees and large shrubs shall be installed in order to shade southern and western building facades to reduce energy needed for heating and cooling.	No reduction assumed	CAPCOA White Paper, Appendix B
Solar Access – Hot Water	All single-family structures will be designed and constructed to allow for the later installation of solar hot water heaters.	No reduction assumed.	N/A
Lighting			
Energy-Efficient Lighting	As required by the construction document approval process, and subject to the approval of PDS, energy efficient LED lighting in compliance with the lead agency's illumination and energy conservation requirements will be installed along streets, parks, parking lots, and other public spaces. Through the building permit process, private developers and home builders in the project are required to use energy efficient lighting and design in accordance with Title 24 requirements. The GHG emission reduction benefits of this PDF conservatively have not been quantified and not incorporated into the Project's GHG inventory.	No reduction assumed.	N/A
Renewable Energy			
Solar Power	Through the site design and building permit process, the Project will incorporate solar panels on buildings to offset the Project's overall electricity usage by 30%.	30% offset of the Project's electrical energy usage.	Project-specific design feature

Table 3.8-3
Summary of Annual Project GHG Emissions in 2020 With and Without PDFs
per County's 2015 GHG Guidance

Emission Sources	Proposed Project	
	Project Without PDFs (metric tons)	Project With PDFs (as Proposed) (metric tons)
Area Sources	586	586
Electricity Use	5,359	2,852
Natural Gas Use	3,813	3,535
Water Consumption	1,091	732
Solid Waste Handling	1,349	1,080
Vehicles	28,821	24,930
Amortized Construction	977	977
Total CO₂e Emissions	41,997	34,692
Percent Reduction	17.40%	
CO₂ Equivalent Emissions per Service Population	4.6	

Table 3.8-4
Summary of Annual BAU Versus Project GHG Emissions
per SMAQMD's CEQA Guide

Emission Sources	Proposed Project	
	BAU Condition (metric tons)	Proposed Project (metric tons)
Area Sources	586	586
Electricity Use	5,509	2,852
Natural Gas Use	4,076	3,535
Water Consumption	1,091	732
Solid Waste Handling	1,349	1,080
Vehicles	32,776	24,930
Amortized Construction	977	977
Total CO₂e Emissions	46,364	34,692
Percent Reduction	25.17%	

Table 3.8-5
Summary of Project GHG Emissions at Full Buildout in 2025

Emission Sources	Proposed Project (metric tons)
Area Sources	586
Electricity Use	2,852
Natural Gas Use	3,535
Water Consumption	732
Solid Waste Handling	1,080
Vehicles	21,993
Amortized Construction	977
Total CO₂e Emissions	31,755
Project Without PDFs	41,997
Percent Reduction	24.39%
CO₂e Emissions per Service Population (metric tons per service population)	4.2

**Table 3.8-6
Summary of Project GHG Emissions in 2030**

Emission Sources	Proposed Project (metric tons)
Area Sources	586
Electricity Use	2,852
Natural Gas Use	3,535
Water Consumption	732
Solid Waste Handling	1,080
Vehicles	20,579
Amortized Construction	977
Total CO₂e Emissions	30,341

**Table 3.8-7
Summary of Project GHG Emissions in 2050**

Emission Sources	Proposed Project (metric tons)
Area Sources	586
Electricity Use	2,852
Natural Gas Use	3,535
Water Consumption	732
Solid Waste Handling	1,080
Vehicles	17,558
Amortized Construction	977
Total CO₂e Emissions	27,521

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3.9 Energy Use and Conservation

Appendix F (Energy Conservation) of the CEQA Guidelines provides that potentially significant energy implications of a project must be considered in an EIR, with particular emphasis on avoiding or reducing the inefficient, wasteful and unnecessary consumption of energy. As such, this discussion considers the proposed Project's consumption of energy resources, particularly electricity, natural gas and transportation fuels, during both the project's construction and operational phases.

3.9.1 Existing Conditions

In 2012, California's per-capita energy consumption rate was one of the lowest in the country and ranked 49th compared to other states (EIA 2014). This is largely because of California's proactive energy efficiency programs and mild weather, which reduce energy demands for heating and cooling.

The transportation sector makes up the single largest consumer of energy in California, accounting for 38 percent of the state's total energy demand, and nearly all of this energy is provided by petroleum (EIA 2014). In 2012, total gasoline consumed in the state was 14.6 billion gallons (BOE 2014a). Diesel fuel is the second largest transportation fuel in California behind gasoline. In 2012, more than 2.6 billion gallons of diesel were sold in California (BOE 2014b).

The industrial sector accounts for approximately 23 percent of the total energy consumption in California. The residential and commercial sectors both account for approximately 19 percent of the energy consumption in the state. In 2013, electric energy consumption for all land uses in California totaled 278,680 gigawatt-hours (GWh) (CEC 2013a).

In 2013, according to statistics tracked by the California Energy Commission (CEC), installed in-state power facilities in California generated 199,783 GWh of electricity (CEC 2014a), which represents a significant decline from the state's peak electric generation of 230,102 GWh in 2006 (CEC 2006). While in-state electricity production has declined primarily with the decommissioning of the San Onofre Nuclear Power Plant in 2013 and the decommissioning of older obsolete fossil fuel plants, new solar photovoltaic, solar thermal, and combined cycle natural gas power plants have been brought on-line or are under construction to both replace the older decommissioned plants and to reduce California's carbon footprint with renewable and cleaner natural gas power facilities. Additionally, eleven new photovoltaic power facilities constituting almost 4,250 megawatts (MW) of power are approved in California (CEC 2012).

Natural gas is the second most widely used energy source in California. Natural gas is a hydrocarbon fuel found in reservoirs beneath the earth's surface and is used for space and water heating, process heating (e.g., smelting, metal melting, creating polymers), and electricity generation, and as transportation fuel. Depending on yearly conditions, 40 to 45 percent of natural gas is consumed for electricity generation; 10 percent is consumed in facilitating the extraction of oil and gas, while the rest is used for everything from space heating to fuel for bus fleets (CEC 2014a).

Natural gas-fired generation has been the primary source of electricity generation in California for many years and fuels over half of electricity consumption, both from in-state and imported sources (CEC 2014a). As natural gas is a resource that can fill in the gaps from other power resources, its total use can vary greatly from year to year. The availability of hydroelectric resources, the emergence of renewable resources for electricity generation, and overall consumer demand are the variables that shape natural gas consumption. In 2012, 23,323 million therms of natural gas were consumed statewide.

Electricity generation in California is largely moving away from non-renewable resources, such as coal. Spurred by regulatory measures and tax incentives, older, less-efficient fossil-fuel burning power plants are being replaced with more efficient combined-cycle natural gas power plants. Combined-cycle plants are up to 50 percent more efficient than the traditional plants they replace. California's electrical system has also become more reliant on renewable energy sources, including cogeneration, wind energy, solar energy, geothermal energy, and hydroelectric plants. In 2013, 18.77 percent of all electricity came from renewable resources such as wind, solar, geothermal, biomass, and small hydroelectric facilities. Large hydroelectric plants generated another 7.76 percent of California's electricity (CEC 2014a).

Regional

Residential land uses in San Diego County consume approximately 6.9 million megawatt-hours (MWh) of electricity and 325 million therms of natural gas each year (CEC 2014a). Commercial and industrial land uses in San Diego County consume approximately 12.6 million MWh of electricity and 217 million therms of natural gas each year (CEC 2014a).

There are three major electricity-generating power plants in the County, which include the Palomar Energy Center, Otay Mesa Energy Center, and the Encina Power Station (SDG&E 2013a). There are also a number of smaller electricity generating plants in the County that are used as backup during times of peak power demand, which are referred to as "peakers." These in-region assets are currently capable of generating approximately 3,071 MW of electricity. SDG&E also provides natural gas in the amount of 150 million cubic feet per day for residential users and 70 million cubic feet per day for commercial and other users (SDG&E 2013b).

Power generation and power use are not linked geographically. Electricity generated within the San Diego region is not dedicated to users in the SDG&E service area. Instead, electricity generated in the County is fed into the statewide utility grid and made generally available to users statewide. SDG&E purchases electricity from this statewide grid, through various long-term contracts. Similarly, natural gas is also imported into southern California and originates from any of a series of major supply basins located from Canada to Texas. Gas is pumped out and shipped to receipt points that connect with major interstate gas pipelines.

Table 3.7-1 lists SDG&E's current energy sources. As shown in **Table 3.7-1**, SDG&E obtained 63.1 percent of its energy from natural gas in 2012. SDG&E's renewable resources are the second largest source in its energy portfolio and include biomass and waste, geothermal, small hydroelectric, solar, and wind sources. SDG&E obtained 19.2 percent of its energy from

renewable resources in 2012. SDG&E's other energy sources include coal, nuclear and unspecified sources.

Existing Regulatory Setting

The following regulations and guidelines provide the framework for energy conservation.

Federal

On the federal level, the U.S. Department of Transportation, the U.S. Department of Energy, and the U.S. Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements.

Federal Energy Policy and Conservation Act and Amendments

Minimum standards of energy efficiency for many major appliances were established by the U.S. Congress in the federal Energy Policy and Conservation Act of 1975, and have been amended by subsequent energy legislation, including the federal Energy Policy Act of 2005. The intent of the National Energy Act of 1978 was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 included an increase in auto mileage standards and addressed conservation measures and building efficiency. The 2007 Act also included a new energy grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs.

Additional relevant regulations at the federal level, including the Corporate Average Fuel Economy Standards (which serves to increase the fuel economy of cars and light trucks), among others, are described in Section 3.8, Climate Change.

State

On the state level, the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) are two agencies with authority over different aspects of energy. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. The CPUC regulates utilities in the energy, rail, telecommunications and water fields.

Energy Action Plan

The California Power Authority, which is now defunct, approved the State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure adequate, reliable, and reasonably priced electrical power and natural gas supplies (CEC 2014b). The CEC's Energy Action Plan II, adopted in 2005, identified a number of initiatives for increasing supply and reducing demand. One example involved the reduction of peak energy demand for the state's water supply infrastructure, which comprises almost 20 percent of the state's electricity consumption. At the beginning of 2008, the CEC and CPUC prepared an update to the Energy Action Plan that examined the state's ongoing actions in the context of global climate change. The update was prepared using the information and analysis prepared for the Integrated Energy Policy Report (IEPR) documents (CEC 2014b).

As described in Section 3.8, Climate Change, there are additional regulations at the state level designed to reduce energy use and greenhouse gas emissions. These include, among others, the Assembly Bill 1493 light-duty vehicle standards (commonly referred to as the "Pavley standards"); Title 24, Part 6, of the California Code of Regulations, which contains energy efficiency standards for the built environment; Title 24, Part 11, of the California Code of Regulations (commonly referred to as "CALGreen"); Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006; and Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act of 2008..

Regional

SDG&E is a CPUC-regulated public utility that is the owner and operator of natural gas and electricity transmission and distribution infrastructure in San Diego County. The CPUC sets the gas and electricity rates for SDG&E and is responsible for making sure that California's utilities customers have safe and reliable utility service at reasonable rates.

In 2004, SDG&E filed a long-term energy resource plan (LTRP) with the CPUC, which identifies how it will meet the future energy needs of customers in SDG&E's service area. The LTRP identifies several energy demand reduction (i.e., conservation) targets, as well as goals for increasing renewable energy supplies, new local power generation, and increased transmission capacity.

Consistent with the State of California's Renewable Portfolio Standard requirements, the LTRP sets a standard for acquiring 20 percent of SDG&E's energy mix from renewables by 2010 and 33 percent by 2020. The LTRP also calls for greater use of in-region energy supplies, including renewable energy installations. By 2020, the LTRP states that SDG&E intends to achieve and maintain the capacity to generate 75 percent of summer peak demand with in-county generation. The LTRP also identifies the procurement of 44 percent of its renewables to be generated and distributed in-region by 2020.

3.9.2 Analysis of Project Impacts and Determination of Significance

Appendix F of the CEQA Guidelines requires inclusion of relevant information in the EIR that addresses the project's energy consumption impacts and its ability to avoid or reduce the

inefficient, wasteful, and unnecessary consumption of energy. Although Appendix F is not described as a threshold for determining the significance of impacts, for purposes of determining the significance of an impact in this EIR, the following criteria are used:

- Would the project result in the wasteful and inefficient use of nonrenewable resources during construction of the project?

Construction of the proposed Project is expected to last approximately 10 years. Construction activities would consume energy through the operation of off-road equipment, trucks, and worker trips.

The off-road equipment, summarized in Section 2.2, Air Quality, and Table 5 of the Air Quality Impact Report (SRA, AECOM 2014), would use diesel fuel during each phase of project construction. The minimum requirement to meet Toxics-Best Available Control Technology (Toxics-BACT) standards is for construction fleets to be comprised of 10% Tier 2 and Tier 3 equipment. The standards for equipment Tiers are set by the U.S. EPA. Based on the analysis given in the Air Quality Impact Report, construction fleets used for the project would be comprised mainly of Tier 2 and Tier 3 equipment, and would therefore meet the Toxics-BACT standards, and lead to an improved efficiency for use of fuel. Benefits also would be associated with the improved fuel efficiency of newer off-road engines in the construction equipment used on the project site as required by the California Air Resources Board's (ARB) off-road diesel regulations as the project progresses toward build-out.

California regulations (CCR Title 13, Sections 2449(d)(3) and 2485) limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. Despite the increase in energy demand, primarily related to fuel use, during construction, project construction equipment requirements, combined with local, state, and federal regulations, which limit engine idling times and require recycling of construction debris, would reduce short-term energy demand due to project construction. Therefore, it is anticipated that the construction phase would not result in a wasteful or inefficient use of energy, and the proposed Project's impact on the wasteful and inefficient use of nonrenewable resources during construction of the project would be *less than significant*.

- Would the project result in the wasteful and inefficient use of nonrenewable resources during the long-term operation of the project?

Long-term operational energy use associated with the project includes electricity and natural gas consumption by residents, energy consumption related to obtaining water, and fuel consumption by operation of vehicles.

Electricity and Natural Gas Consumption

The project's electricity use was estimated using the CalEEMod Model. As outlined in more detail in Section 3.8, Global Climate Change, and the Energy Conservation and Water Conservation Plans of the Resort Village Specific Plan (Appendices III and VI of the Specific Plan), the project proposes land use, community design, recycling, and water and energy conservation features that include the following:

- Building orientation and site design requirements through the Site Plan Approval process that create passive solar heating and cooling opportunities to reduce energy consumption from indoor heating and cooling;
- Stringent building and community energy and lighting efficiency standards in accordance with the state's Title 24 and CALGreen building and energy efficiency code requirements;
- Indoor residential plumbing products would comply with the 2013 CALGreen Code, including future updates to CALGreen as these updates apply to homes in the project built under the updated code;
- Project-wide blue and green-waste recycling for residential, commercial, and institutional land uses;
- A Water Conservation Plan that will reduce site-wide outdoor water usage by 30% compared to existing outdoor water usage for typical residential homes; and,
- A project-wide requirement to equip buildings with solar panels to offset utility electricity usage by 30%.

With project design features that reduce electricity use, the project would result in an estimated use of 16,948 MWh per year of electricity (without considering solar electricity) and 569,270 therms of natural gas each year. Specific project design features intended to reduce GHG emissions are described in **Table 3.8-2**.

The proposed Project's Energy Conservation Plan is developed in accordance with Appendix F of the CEQA Guidelines, and would meet the goals of energy conservation by decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In addition, all future development in the project would be required to comply with the then-applicable energy performance standards outlined by the Title 24 Building Energy Efficiency Standards and CALGreen. These statewide mandatory construction and energy efficiency standards have continued to get more stringent with each code adoption cycle. For example, based on the CEC's comparative analysis of the 2008 and 2013 versions of Title 24, the 2013 version resulted in an overall reduction in energy use of 25% in residential structures, as compared to the 2008 version. And, for the project's climate zone, Climate Zone 10, the energy savings is closer to 28% between the two versions of the code (CEC 2013b). The code requirements reduce the amount of electrical and natural gas energy required for lighting, water heating, indoor and outdoor water usage, and heating and air conditioning in buildings compared to existing buildings. The 2016 update process to the Title 24 standards is contemplating additional energy efficiency savings related to garage and attic space (CEC 2015).

California, with its Renewable Portfolio Standard, is also on the forefront of implementing renewable energy solutions and requirements for industry and homeowners. Further, on December 5, 2007, the CEC adopted the 2007 Integrated Energy Policy Report, which established the goal of requiring all new residential homes and all new commercial buildings to be "net zero" energy by 2020 and 2030, respectively. In summary, as a result of these project

design features and energy efficiency code requirements, future land uses associated with the project would operate at significantly higher energy efficiency than current land uses.

Water Conveyance

The provision of potable water to residences consumes large amounts of energy through its supply, treatment, and distribution. As a result of the Water Conservation Plan (Appendix VI of the Specific Plan), the proposed Project would reduce potable water demand for both indoor and outdoor use by an average of 78 gallons per day per single family home. Further, the proposed Project would comply with CALGreen's standards for indoor plumbing, require high-efficiency irrigation equipment, limit natural turf in residential development to no more than 30 percent of the outdoor open space, and require all landscaping in the project, including private homeowner landscaping not typically required to meet the requirements of the County's Landscape Ordinance, to comply with the County's Landscape Ordinance. Total water use for the project with water conservation measures would be 467 million gallons of water per year. This would result in an estimated use of 5,933 MWh of electricity. Title 24 standards would also improve water use efficiency for the development associated with the project. The reduction of water demand would also result in a decrease in overall per capita energy consumption associated with the supply, treatment, and distribution of potable water.

Fuel Consumption

Energy in the form of fuel (gasoline and diesel) would be consumed by vehicles associated with the project through the generation of new vehicle trips. As discussed in Section 2.9, Transportation and Traffic, the project would generate a total of 27,191 daily trips. Due to the mix of land uses provided by the project, including the multiple use area, not all trips would leave the project site. Approximately 19.4 percent of the total trips, or 5,275 trips per day, are expected to remain internal to the project site. For example, a portion of the shopping trips would be satisfied by the commercial uses located within the project site, as would a certain percentage of school and recreational trips.

The project includes design measures to enhance walkability and to improve the on-site pedestrian network. The non-vehicular modes of travel, including walking and bicycling, would be encouraged through the provision of trails throughout the project site, connecting to the planned 28.6 acres of recreational open space and other activity centers, and by focusing higher residential densities adjacent to the planned mixed-use and commercial development.

Vehicle miles traveled (VMT) can be used to determine energy consumption based on assumptions of fuel economy and fleet mix. Based on the design measures and location, the project would generate roughly 68million VMT per year. In addition to the project design features, various federal and state regulations on vehicle and fuel manufacturing would likely result in the substantial reduction of the project's vehicle fuel consumption each year into the future. Specifically, the federal café standards, and the state's low carbon fuel standard and Pavley standards are anticipated to improve the fuel economy of vehicles.

Summary

As discussed above, future land uses associated with the proposed Project would increase the demand for energy resources. However, despite the overall increase in demand for energy as a result of the project, state energy programs, the Energy Conservation Plan, Water Conservation Plan, and project design features that emphasize energy efficient design of future land uses would minimize wasteful, inefficient energy consumption. Land uses associated with the project would operate at higher energy efficiency than current land uses. The reduction of water demand would also result in a decrease in overall per capita energy consumption associated with the supply, treatment, and distribution of potable water. Due to the mix of land uses provided by the project, including the multiple use area, not all trips would leave the project site. The project includes design measures to enhance walkability and to improve the on-site pedestrian network. In addition to the project design features, various federal and state regulations on vehicle and fuel manufacturing would likely result in the substantial reduction of the project's vehicle fuel consumption each year into the future.

Therefore, the proposed Project would be developed in accordance with Appendix F of the CEQA Guidelines, and would meet the goals of energy conservation by decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. Energy consumption associated with operation of the project would not be expected to be wasteful or inefficient. Therefore, the project's operational impacts relating to energy consumption would be *less than significant*.

CHAPTER 4.0 PROJECT ALTERNATIVES

4.1 Rationale For Alternative Selection

In accordance with Section 15126.6(a) of the CEQA Guidelines, an EIR must contain “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,” as well as an evaluation of the “comparative merits of the alternatives.” In addition, Section 15126.6(b) of the CEQA Guidelines states that “the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.”

The proposed Project would develop the 1,869-acre Project site with 1,938 dwelling units, a resort, parks, an elementary school site, and a public safety site, all within a development footprint, including roads and graded slopes, of approximately 779.6 acres. Approximately 1,089.0 acres would be designated as Preserve Open Space and would be preserved. This EIR concludes that the proposed Project would result in significant impacts to aesthetics, air quality, biological resources, cultural resources including paleontology, geology and soils, hazards and hazardous materials, noise, solid waste, and transportation and traffic. Mitigation measures would reduce impacts to less-than-significant levels for all issue areas except direct and cumulative impacts to aesthetics and air quality, which remain significant and unavoidable even after adopting all recommended feasible mitigation measures. In addition, the proposed Project would contribute to significant unavoidable cumulative impacts on solid waste disposal. No significant impacts to agricultural resources, hydrology and water quality, land use and planning, mineral resources, population and housing, public services (except solid waste disposal), or utilities and service systems were identified in this EIR.

4.1.1 Alternatives Selected for Analysis

The Project alternatives that are considered and discussed in this section are summarized below:

Alternative	DU	Change	Developed Acreage	Preserve Conveyance Obligation*	Change in Preserve Acreage	Preserve + Non Preserve OS	Change
Proposed Project	1,938 DU	--	779.6 ac.	891 ac	--	1,089.0 ac	--
A	0 DU	-1,938 DU	0.0 ac	0.0 ac	-891 ac	1,868.8 ac	+779.6 ac
B	1,938 DU	0	762 ac.	±826.1 ac	-64.9 ac	±1,107 ac	+18 ac
C	1,241 DU	-697 DU	484 ac.	±562.4 ac	-328.6 ac	±1,385 ac	+296 ac
D	1,938 DU	0	484 ac.	±543.4 ac	-347.6 ac	±1,385 ac	+296 ac
E	1,391 DU	-547 DU	550.1 ac.	±627.4 ac	-263.6 ac	±1,318.9 ac	+230 ac
F	1,938 DU	0	550.1 ac.	±621.9 ac	-269.1 ac	±1,318.9 ac	+230 ac
G	465 DU	-1,473 DU	224 ac.	±261 ac	-630 ac	±1,645 ac	+556 ac

*Conveyance Obligation is based on 1.188 acre per proposed developed acreage, minus “common uses” such as parks, schools, and arterial roadways.

DU = dwelling units; ac = acres; OS = open space

Non-Preserve Open Space – Open Space that is not conveyed to the Otay Ranch Preserve/Owner Manager in satisfaction of Preserve Conveyance Obligation

These alternatives were selected based on avoiding or reducing impacts of the proposed Project. Alternatives B, D, and F achieve the same number of dwelling units (1,938) as the proposed project and increase the total Preserve/Open Space acreage. Alternatives C, E, and G reduce the number of dwelling units and increase Preserve/Open Space acreage. The Preserve Conveyance Obligation of each alternative is also included in the summary table. As with the proposed Project, Alternatives B through F would each still include the elementary school and public safety sites, while Alternative G would provide only the public safety site. Alternative A, the “no project” alternative mandated by CEQA, is also included in this section.

The six site development alternatives are described below:

- Alternative B would develop the Project site as described in the existing Otay SRP. This alternative would result in the development of 1,938 dwelling units, which is the same as the proposed Project; however, 1,408 of these dwelling units would be multi-family residential units compared to the 57 proposed by the project, which reduces the number of single family homes to 530. This alternative would result in 1,107 acres of Preserve, which is approximately 18 acres more than the proposed Project. Additionally, Alternative B would provide for 134.4 acres of resort use and an approximately 141.5-acre golf course. While not included in the SRP, Alternative B would also include a location for a public safety site.
- Alternative C would develop the Project site within a reduced development footprint of 484 acres, would reduce the total number of dwelling units to 1,241, but increase the number of multi-family homes to 859 as compared to the proposed 57 multi-family homes, and reduce the number of single family homes to 382. Development would be focused within the western portion of the site, providing 1,107 acres of Preserve Open Space and 287 acres of Non-Preserve Open Space (i.e. – open space that would not be conveyed to the Otay Ranch Preserve in satisfaction of the preserve conveyance obligation). Other uses associated with Alternative C include 113.7 acres of resort uses and an 82.9-acre golf course.
- Alternative D would develop the Project site within the same reduced development footprint of 484 acres as Alternative C (on the western portion of the Project site), but provide the same number of dwelling units (1,938) as the proposed Project by increasing the number of multi-family residential units to 1,544 and reducing the number of single family homes to 394. As with Alternative C, 1,107 acres of Preserve Open Space 278 acres of Non-Preserve Open Space would be provided, 61.3 acres of resort uses would be provided, though no golf course would be included.
- Alternative E would focus development on approximately 550.1 acres in the western portion of the site, but would extend farther to the northwest in comparison to Alternatives C and D. It would reduce the number of dwelling units to 1,391 in comparison to the proposed Project, and would consist of 1,319 single-family units and 72 multi-family units. Approximately 1,107 acres of Preserve Open Space and 212 acres of Non-Preserve Open Space and 19.9 acres of resort uses would be provided.
- Alternative F would develop the Project site within the same reduced development footprint of 550.1 acres as Alternative E (on the western portion of the Project site,

extending farther to the northwest in comparison to Alternatives C and D), provide the same number of dwelling units (1,938) as the proposed Project, and include 1,268 single-family residential units and 670 multi-family residential units. As with Alternative E, approximately 1,107 acres of Preserve Open Space and 212 acres of Non Preserve Open Space and 19.9 acres of resort uses would be provided.

- Alternative G would reduce the development footprint to a total of approximately 224 acres located in the eastern portion of the Project site. It would consist of 465 single-family residential units on 151.2 acres, a 2.0 acre public safety site and a 17.4-acre resort site in the same location as the proposed Project. Approximately 1,107 acres of Preserve Open Space and 538 acres of Non Preserve Open Space would be provided. This alternative would not include an elementary school site.

These alternatives are compared to the impacts of the proposed Project and are assessed relative to their ability to meet the basic objectives of the proposed Project as listed in Section 1.1 of this EIR.

The impacts of each alternative, including the No Project Alternative are analyzed in Sections 4.2 through 4.7 of this EIR. The discussion of alternatives provides: (1) a description of the alternative considered; (2) the identification of the impacts of the alternative; and (3) a comparative analysis of the impacts of each alternative to the proposed Project. The focus of this comparative analysis is to determine if the alternative is capable of avoiding or lessening any significant effects of the proposed Project.

Table 4.0-1, Comparison of Alternatives to Proposed Project, summarizes the environmental impacts of the Project alternatives compared to the impacts of the proposed Project.

4.1.2 Alternatives Considered but Rejected from Further Study

4.1.2.1 *Alternative Project Location*

In accordance with CEQA Guidelines Section 15126.6(f)(2), an alternative location for a project should be considered if development of another site is feasible and if such development would avoid or substantially lessen the significant impacts of the proposed Project. Factors that may be considered when identifying an alternative site location include the size of the site, its location, the General Plan (or Subregional Plan) land use designation, and availability of infrastructure. CEQA Guidelines Section 15126.6(f)(2)(A) states that a key question in looking at an off-site alternative is “whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location.”

As noted in Section 1.0 of this EIR, the Otay SRP was the basis for the proposed land use types, density, and community character within this particular area of the County. Otay Ranch and the proposed Project also were designed with the vision of the Otay SRP in mind. If another parcel in the general vicinity of the proposed Project site were to become available, development would likely result in impacts similar to those identified for the proposed Project, such as potential effects to aesthetics and air quality. Selection of another location may have avoided impacts to biological resources, cultural resources, and geology and soils, which are specific to this

location; however, these impacts were found to be less than significant with mitigation. Due to the original vision of the proposed Project (conforming to the Otay SRP) and the likelihood that another site would not substantially reduce significant environmental effects, this alternative was rejected from further consideration.

4.1.2.2 *First Project Submittal Alternative*

The First Project Submittal Alternative would develop 2,120 dwelling units, consisting primarily of higher density single-family detached and attached housing types on 783.9 acres with 1,085.1 acres of Preserve lands. In comparison to the proposed Project, this alternative proposal would have included 182 more dwelling units, an increased development footprint of 4.9 acres, and a decrease in Preserve lands of 4.9 acres. In addition, resort uses would be 55.8 acres, or an increase of 38.4 acres over the proposed Project, which would include lakeside facilities.

This alternative would be inconsistent with the Otay SRP because it included 182 more dwelling units than anticipated in Village 13 by the Otay SRP. This alternative would not meet the objectives of the County MSCP Subarea Plan South County Segment because it included development on a ridgeline with important QCB habitat. This also would not meet the goals of the Otay Ranch RMP because it increased the amount of development in the Otay Ranch Preserve.

Additionally, this alternative would have slightly increased the number of vehicle trips compared to the proposed Project, which would result in increased air quality, noise and traffic impacts. The increased footprint would result in greater impacts to biological and cultural resources compared to the proposed Project.

Because this alternative would not meet the goals, objectives, and policies of the Otay SRP, the Otay Ranch RMP, or the County MSCP Subarea Plan South County Segment, it was rejected from further study.

4.1.2.3 *Spring Valley Sewer Interceptor Alternative*

The major sewer facilities within the Spring Valley area proximate to the Project site are the Central Avenue Trunk Sewer and the Spring Valley Interceptor. The Central Avenue Trunk Sewer is a 15-inch gravity line, which conveys flows westerly from Proctor Valley Road to a connection with the Spring Valley Interceptor at the intersection of Central Avenue and Bonita Road. Connection to the Spring Valley Interceptor sewer facility would not require any changes to on-site sewer infrastructure as proposed. However, significant off-site sewer infrastructure installation would be required, as described below.

From Lift Station 1 (on-site), sewage flows would be conveyed along Otay Lakes Road to an off-site lift station in Salt Creek. At this location, the off-site lift station would pump flow through dual 12-inch force mains to a 15-inch gravity sewer that would convey flow to the Spring Valley Interceptor. The 12-inch force main and a portion of the 15-inch gravity main would be constructed in Otay Lakes Road, Hunte Parkway, and Proctor Valley Road (east of Mount Miguel Road) within the existing right-of-way. Once the 15-inch gravity sewer enters Proctor

Valley Road west of Mount Miguel Road it would need to be installed outside of the Right-of-Way within an existing public trail/landscape buffer area easement. The sewer would then enter the street Right-of-Way at Rolling Ridge Road until the San Diego County Water Authority easement is reached. At this location, the sewer main would cross the water main and be placed parallel to a 72-inch and 66-inch water aqueduct within the San Diego County Water Authority easement for approximately 2,000 linear feet. Past this point, the 15-inch sewer main would be installed in a siphon both within the existing road and adjacent to the road. The pipe then turns onto San Miguel Road and would require installation of a portion of the sewer in a tunnel before tying into the existing gravity sewer. While there may be some available capacity in the Central Avenue Trunk Sewer System, a new sewer line connecting to the Spring Valley Interceptor would be required to serve the entire Project site. Refer to Appendix C-16 for additional information.

The Otay Ranch Resort Village Project is within the County of San Diego; however it is not currently within the boundaries of the County Sanitation District. The project would have to be annexed into the SDCSD before it would be able to receive sewer service from County facilities as an alternative. However, implementation of the Spring Valley Interceptor alignment alternative requires extensive off-site infrastructure installation, operation and maintenance that may result in greater impacts to traffic, aesthetics, biological and cultural resources, public services, air quality, recreation, noise and disturbance to numerous residential neighborhoods. As such, it is not an alternative that would substantially lessen the significant effects of the proposed Project in regards to the installation of sewer infrastructure. Therefore, the Spring Valley Interceptor alignment alternative was rejected from further study.

4.1.2.4 2-Lane Otay Lakes Road Alternative

Otay Lakes Road is currently an undivided 2-lane road from Lake Crest Drive within the City of Chula Vista to SR-94 within the unincorporated area including the entire frontage along the Village 13 project site. Otay Lakes Road is approximately 26-feet wide with unimproved shoulders, turn-outs, and a dirt parking area between the Lower and Upper Otay Reservoirs. Current traffic volumes on Otay Lakes Road east of Wueste Road are approximately 2,927 ADT (Average Daily Trips). The Year 2030 without Project ADT is projected to be approximately 6,400 ADT east of Wueste Road. The 6,400 daily trips could be accommodated on a 2-lane road at an acceptable level of service within both the City of Chula Vista and County of San Diego.

Implementation of the proposed Village 13 project would increase the traffic volumes on Otay Lakes Road, east of Wueste Road, from approximately 6,400 ADT to 25,860 ADT. Per the City of Chula Vista and County of San Diego standards, a 2-lane road can accommodate 7,500 ADT and 13,500 ADT, respectively, at an acceptable level of service. The proposed project would therefore be required to widen Otay Lakes Road from 2-lanes to 4-lanes from Lake Crest Drive to Strada Piazza (Project Driveway #2) to mitigate for project's traffic impacts.

In response to impacts associated with the widening of Otay Lakes Road from 2-lanes to 4-lanes, an alternative to keep Otay Lakes Road as a 2-lane improved road was considered. The main impacts to be reduced by the 2-lane alternative are impacts to City of San Diego MHPA Cornerstone Lands (Impact BI-2).

While minimizing improvements to Otay Lakes Road would generally reduce impacts to the City of San Diego MHPA Cornerstone Lands and within the City of Chula Vista, additional impacts would be expected to occur which could not be mitigated by implementation of the 2-lane Alternative. Most notably, Otay Lakes Road between Lake Crest Drive and Strada Piazza would be significantly impacted (LOS F) if Otay Lakes Road remained at 2-lanes. As noted above, the volumes projected under the Existing Plus Project scenario of 25,860 ADT is almost twice the acceptable traffic volumes under the County of San Diego standard of 13,500 ADT for a 2-lane road, and over 3 times more than the City of Chula Vista standard of 7,500 ADT for a 2-lane road.

In addition to traffic impacts, keeping Otay Lakes Road as a 2-lane road would result in inconsistencies with both the County of San Diego General Plan Mobility Element as well as the City of Chula Vista General Plan Circulation Plan East. The County General Plan Mobility Element identified Otay Lakes Road as a 4-lane Major Road. While the project proposes a General Plan Amendment to reduce the roadway classification from a Major Road to a Boulevard, the amendment would (1) maintain Otay Lakes Road as a 4-lane road and (2) achieve and acceptable Level of Service. Further, the Chula Vista General Plan calls for Otay Lakes Road to be widened as a 6-lane Prime Arterial. While the project would only widen the road to 4-lanes, it would not preclude future widening to 6-lanes.

Lastly, maintaining Otay Lakes Road as a two lane road could pose a potential risk in the event of an evacuation associated with a wild fire. As discussed in Section 2.6, the greatest wild fire threat is associated with Santa Ana conditions and an east-west burning fire. This fire pattern would trigger evacuations to the west, along Otay Lakes Road. A two-lane road that is at least 50% undersized may result in delays for evacuees, or could hinder further rescue efforts of response units coming from the west.

Thus, while keeping Otay Lakes Road as a 2-lane road would reduce impacts to City of San Diego MHPA Cornerstone Lands, the impacts associated with the General Plan inconsistencies and to LOS would be much greater and therefore, this alternative was considered but rejected.

4.2 Analysis of the No Project Alternative (Alternative A)

4.2.1 No Project Alternative Description and Setting

The No Project Alternative would leave the Project site in its existing state. As such, the property would continue to be vacant. No development associated with the proposed Project would occur on the property. **Table 4.0-1** provides a summary comparison of the impacts of the Alternatives to the proposed Project.

4.2.2 Comparison of the Effects of the No Project Alternative (Alternative A) to the Proposed Project

Aesthetics

As discussed in Section 2.1, Aesthetics, the proposed Project would result in significant and unavoidable impacts to scenic vistas, scenic highways, and the visual character of the area. No feasible mitigation measures exist to avoid this Project impact.

Under Alternative A, no houses, resort uses, commercial uses, school, parks, or public safety site would be constructed. None of the Project site would be graded and the existing landforms on the site would remain. Significant aesthetic impacts resulting from the proposed Project would be avoided as no alterations to scenic vistas, scenic highways, or the visual character of the area would occur. Alternative A would result in ***no impact*** to aesthetics when compared to the proposed Project.

Air Quality

As discussed in Section 2.2, Air Quality, the proposed Project would result in significant and unavoidable impacts to air quality from construction-related air pollutant emissions. The proposed mitigation measures would reduce these impacts, but not to a less than significant level.

No temporary construction emissions or long-term air emissions from Project-related traffic or operations would occur under Alternative A. ***No impact*** on air quality would occur under Alternative A as compared to the proposed Project.

Biological Resources

As discussed in Section 2.3, Biological Resources, development of the proposed Project would result in significant impacts to biological resources; however, mitigation measures are proposed that would reduce these impacts to a less than significant level. Since no development would occur under this alternative, the Project site would remain in its current undeveloped state and impacts to sensitive biological resources would not occur. When compared to the proposed Project, Alternative A would avoid impacts to biological resources. The No Project Alternative, however, would not provide for the improvement of wildlife crossings under Otay Lakes Road as included in the proposed Project.

Relative to regional conservation planning, Alternative A would not satisfy the objectives set forth in the Otay Ranch RMP or the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system. The proposed Project would provide for the conveyance of approximately 891 acres to the Otay Ranch Preserve. Additionally, without the development of Village 13 pursuant to the Otay SRP, it is foreseeable that the 1,089.0 acres of land designated as Preserve by the proposed Project would not be available for conveyance to the Otay Ranch Preserve by other Otay Ranch property owners. Because Alternative A would result in no development occurring on the Project site, no Preserve land would be conveyed to the regional Preserve under this alternative. This would not meet the proposed Project's objective

of implementing the goals, objectives, and policies of the Otay Ranch RMP and County MSCP Subarea Plan South County Segment.

Although Alternative A would hinder the ability of the Otay Ranch RMP and County MSCP Subarea Plan to establish a comprehensive, large-scale managed Preserve system, the No Project Alternative would result in ***no impact*** to biological resources as compared to the proposed Project.

Cultural Resources

As discussed in Section 2.4, Cultural Resources, development of the proposed Project would result in significant impacts to prehistoric and historic cultural resources; however, mitigation measures are proposed that would reduce project-level and cumulative impacts to less than significant levels.

Under Alternative A, no development would occur. Cultural resources identified on the Project site would remain and would not be affected. Additionally, there would be no construction and grading activities, so the potential for impacts to unknown (buried) cultural resources would be avoided. ***No impacts*** to cultural resources would occur under Alternative A as compared to the proposed Project.

Geology and Soils

As discussed in Section 2.5, Geology and Soils, development of the proposed Project would result in significant impacts to geology and soils; however, mitigation measures would be implemented that would reduce these impacts to a less than significant level.

Alternative A would avoid impacts associated with geology and soils, because no development on the Project site would occur. ***No impacts*** would occur under Alternative A as compared to the proposed Project.

Hazards and Hazardous Materials

As discussed in Section 2.6, Hazards and Hazardous Materials, development of the proposed Project would result in significant impacts related to hazards and hazardous materials; however, mitigation measures would be implemented that would reduce these impacts to a less than significant level.

Alternative A would result in no development on the Project site. As discussed in Section 2.6, the proposed Project would result in the increased potential to expose people to hazards and hazardous materials. Alternative A would eliminate the potential to expose people to these hazards. As a result, ***no impacts*** from hazards and hazardous materials would occur under Alternative A as compared to the proposed Project.

Noise

As discussed in Section 2.7, Noise, the proposed Project would result in significant impacts to noise; however, mitigation measures would be implemented that would reduce these impacts to a less than significant level.

Under Alternative A, no development of the Project site would occur. No additional traffic noise would be created by the proposed Project, nor would construction-related activities take place that would lead to significant temporary noise impacts. Under Alternative A, ***no impacts*** related to noise would occur as compared to the proposed Project.

Solid Waste

As discussed in Section 2.8, Solid Waste, the proposed Project would contribute to significant cumulative impacts to solid waste disposal.

Under Alternative A, the Project site would remain undeveloped and no solid waste would be generated that would require disposal in a landfill. Under Alternative A, ***no impacts*** to solid waste would occur as compared to the proposed Project.

Transportation and Traffic

As discussed in Section 2.9, Transportation and Traffic, the proposed Project would result in significant traffic impacts along certain roadway segments in the traffic study area, absent mitigation. However, improvements and mitigation have been identified to reduce these traffic impacts to less than significant levels.

Under Alternative A, no development would be constructed on-site. Eliminating development on the Project site would also eliminate the Project's traffic contributions to existing and planned roadways. No impacts to intersections or roadway segments would occur. ***No impacts*** would occur to transportation and traffic as compared to the proposed Project.

4.3 Analysis of Alternative B (Existing Otay SRP)

4.3.1 Alternative B Description and Setting

Under Alternative B, the 1,869-acre Project site would be developed as defined in the existing Otay SRP. As shown in **Figure 4.0-1**, development of the Project site would consist of 530 single-family homes and 1,408 multi-family homes for a total of 1,938 homes. Resort uses would encompass most of the southwestern portion of the Project site for a total of 134.4 acres and includes 800 rooms. An additional 141.5 acres are identified for a golf course. Two parks would be included under this alternative for a total of 16.4 acres. While no public safety site was included within Village 13 in the Otay SRP, which located a fire station in Village 15, Alternative B would include a Public Safety Site. This alternative would include the realignment of Otay Lakes Road from its existing location on the southern edge of the Project site to the approximate middle of the site (refer to **Figure 4.0-1**). This alternative includes 1,107 acres of

Preserve land. **Table 4.0-1** provides a summary comparison of the impacts of Alternative B to the proposed Project.

4.3.2 Comparison of the Effects of the Existing Otay SRP Alternative (Alternative B) to the Proposed Project

Aesthetics

As discussed in Section 2.1, Aesthetics, the proposed Project would result in significant and unavoidable impacts to scenic vistas, scenic highways, and the visual character of the area. No feasible mitigation measures exist to avoid or minimize this effect.

Alternative B would develop the Project site with 1,938 homes, resort uses, parks, and a golf course, and result in a development footprint of 761.6 acres, a decrease of 18 acres compared to the proposed Project. Development under Alternative B would result in similar impacts to aesthetics when compared to the proposed Project because Alternative B would provide for generally the same amount of development distributed throughout the site as the proposed Project. Additionally, development under this alternative would consist primarily of multi-family homes and include up to 800 hotel rooms, resulting in development at a greater intensity in terms of height, bulk, and scale when compared to the proposed Project. Development of multi-family homes and a larger resort area requires larger pads. Due to the existing topography of the site, large pads would have a greater visual impact compared to the more terraced single-family neighborhoods proposed by the project. Therefore, like the proposed Project, development under this alternative would result in *significant impacts*.

Air Quality

As discussed in Section 2.2, Air Quality, the proposed Project would result in significant and unavoidable impacts to air quality from construction-related pollutant emissions. Mitigation measures proposed would reduce these impacts, but not to a less than significant level.

Alternative B would result in the development of approximately the same number of acres as the proposed Project; therefore, construction emissions are anticipated to be the same under Alternative B as would occur from development of the proposed Project.

Alternative B would result in the development of 1,938 dwelling units and other uses (resort, golf course, parks, and Open Space). These other uses would result in similar stationary source emissions under this alternative when compared to the proposed Project. However, the increased acreage for resort and golf course uses proposed by this alternative would result in 3,728 more ADT. This increase in trips would result in an increase in vehicular emissions (primarily carbon monoxide). Therefore, operational emissions associated with this alternative would be greater than the proposed Project.

The increase of mobile emissions associated with Alternative B would result in greater impacts to air quality when compared to the proposed Project; therefore, impacts to air quality would *remain significant and unavoidable*.

Biological Resources

As discussed in Section 2.3, Biological Resources, development of the proposed Project would result in significant impacts to biological resources; however, proposed mitigation measures would reduce these impacts to a less than significant level.

Alternative B would result in the development of approximately the same number of acres as the proposed Project. However, this alternative would not provide for the same conservation/preservation of high-quality habitat for the Quino checkerspot butterfly or high-quality vernal pools, nor would it provide for wildlife corridors as would the proposed Project. This alternative impacts the K8 vernal pool group, which includes San Diego Fairy Shrimp. Alternative B also would impact 25 Quino checkerspot butterfly sighting areas, which is 13 more than the proposed Project. Additionally, Alternative B includes Otay Lakes Road as a six-lane prime arterial running through the Project site, including the rocky canyon in the eastern portion, which is proposed to be a wildlife crossing under the proposed Project. As such, impacts to biological resources would be greater under this alternative when compared to the proposed Project.

Relative to regional conservation planning, Alternative B would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative B, approximately 762 acres would be developed. Of this amount, approximately 67 acres are “common uses” (as defined by the Otay Ranch RMP), including 40.2 acres for circulation element roads (Otay Lakes Road), 16.4 acres for parks, and 10.0 acres for an elementary school. As a result, the total amount of land conveyed to the Otay Ranch Preserve would be roughly 826 acres, which is 65 acres less than the proposed Project.

Development under Alternative B would result in greater impacts to biological resources because it would conserve/preserve less habitat for the Quino checkerspot butterfly, not conserve/preserve high-quality vernal pools, and not provide wildlife corridors as proposed by the Project. Development under Alternative B would result in **greater impacts** to biological resources when compared to the proposed Project.

Cultural Resources

As discussed in Section 2.4, Cultural Resources, development of the proposed Project would result in significant impacts to cultural resources; however, while mitigation measures would be implemented that would reduce Project impacts to a less than significant level, cumulative impacts would remain significant and unavoidable.

Development under Alternative B would result in similar impacts to cultural resources when compared to the proposed Project because Alternative B would result in the development of essentially the same number of acres as the proposed Project. Similar to the proposed Project, development under Alternative B would require adherence to the mitigation measures discussed

in Section 2.4. Overall, impacts to cultural resources under Alternative B would be similar to the proposed Project.

Geology and Soils

As discussed in Section 2.5, Geology and Soils, development of the proposed Project would result in significant impacts to geology and soils; however, mitigation measures would be implemented that would reduce these impacts to a less than significant level.

Development under Alternative B would generally result in the same number of acres developed as the proposed Project. Similar potential for rock fall, soil erosion, seismic ground shaking, and surficial instability would result when compared to the proposed Project. Similar to the proposed Project, development under Alternative B would require adherence to the mitigation measures discussed in Section 2.5. Overall, Alternative B would result in similar geology and soils impacts when compared to the proposed Project.

Hazards and Hazardous Materials

As discussed in Section 2.6, Hazards and Hazardous Materials, development of the proposed Project would result in significant impacts related to wildland fire hazards; however, mitigation measures would be implemented that would reduce this impact to a less than significant level.

Development under Alternative B would result in the same number of dwelling units as the proposed Project and would be subject to a similar level of wildland fire hazards as the proposed Project. Alternative B includes a public safety site and therefore meets the General Plan Safety Element Response Objective of five minutes. Similar to the proposed Project, development under Alternative B would require adherence to the mitigation measures discussed in Section 2.6. As a result, impacts from hazards and hazardous materials would be similar to the proposed Project.

Noise

As discussed in Section 2.7, Noise, the proposed Project would result in significant traffic-generated noise impacts and operational noise impacts associated with mechanical equipment in residential and commercial developments and deliveries to the neighborhood commercial site; however, mitigation measures would be implemented that would reduce these impacts to a less than significant level.

Alternative B would increase vehicular trips by 3,728 ADT, and result in increased operational noise levels when compared to the proposed Project. Noise impacts associated with construction activities would be similar to the proposed Project, as this alternative calls for the development of approximately the same number of acres. Other operational noise emissions are anticipated to be the same under Alternative B and the proposed Project. Overall, Alternative B would result in ***greater impacts*** related to noise when compared to the proposed Project.

Solid Waste

As discussed in Section 2.8, Solid Waste, the proposed Project would contribute to significant cumulative impacts to solid waste disposal.

Development of 1,938 dwelling units under Alternative B would cause a similar demand for solid waste disposal, and the cumulative impact would *remain significant and unavoidable* under this alternative.

Transportation and Traffic

As discussed in Section 2.9, Transportation and Traffic, the proposed Project would result in significant traffic impacts in the traffic study area, absent mitigation. Improvements and mitigation have been identified to reduce these impacts to less than significant levels.

Based on the trip generation rates presented in Section 2.9, the proposed Project would generate 27,191 ADT. As discussed above, Alternative B would decrease the number of single-family homes to 530 and increase to 1,408 the number of multi-family homes, which would result in a net decrease of 2,702 residential ADT. However, the proposed 134.4 acres of resort uses, and 141.5 acres of golf course uses would increase traffic from these uses, for a net increase of approximately 3,728 ADT in comparison to the proposed Project. The increase of ADT under this alternative would result in *greater traffic impacts* when compared to the proposed Project.

4.3.3 Summary of Alternative B Analysis

Development of the Project site under Alternative B would result in the same number of housing units and approximately the same amount of acreage would be developed as the proposed Project. However, this alternative would include a larger amount of acreage devoted to multi-family uses, resort uses, and a golf course, and would result in an increase in traffic volumes by approximately 3,728 ADT as compared to the proposed Project. This alternative would result in similar impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, and solid waste when compared to the proposed Project. Impacts to air quality, biological resources, noise, and traffic would be greater under Alternative B when compared to the proposed Project. Additionally, Alternative B would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.4 Analysis of Alternative C

4.4.1 Alternative C Description and Setting

Under Alternative C, development would occur only within the western portion of the Project site (**Figure 4.0-2**). This alternative would result in the development of fewer homes (1,241), but would provide for a different distribution between single-family homes (382 compared to the proposed 1,881) and multi-family homes (859 homes compared to the proposed 57). Alternative C would designate 113.7 acres of land for resort uses and a golf course would be provided on 82.9 acres. Alternative C would still provide the public safety and school sites. Local parks

would be reduced from nine sites and 29.6 acres to one site of 10.6 acres (which meets the PLDO requirement for park demand). **Table 4.0-1** provides a summary comparison of Alternative C to the proposed Project.

4.4.2 Comparison of the Effects of Alternative C to the Proposed Project

Aesthetics

Alternative C would concentrate land uses within the western portion of the Project site and reduce the development footprint by roughly 296 acres compared to the proposed Project. Development under Alternative C would generally result in reduced impacts to aesthetics when compared to the proposed Project because of the reduced area of development. Although this alternative proposes fewer homes, development within the western portion of the Project site would be at a greater intensity in terms of height, bulk, and scale when compared to the proposed Project. While development under Alternative C would not fully mitigate all impacts to aesthetics, it would result in less impact than the proposed Project.

Air Quality

Alternative C would result in the development of 697 fewer dwelling units, have a smaller footprint of development in comparison to the proposed Project, but would provide increased acreage of resort uses and a golf course when compared to the proposed Project. The net result of Alternative C would be a decrease of 3,308 ADT in comparison to the proposed Project. Therefore, construction and operational emissions associated with Alternative C would be less than the proposed Project.

Biological Resources

Under Alternative C, the development footprint of the Project site would be reduced by roughly 296 acres and the eastern portion of the Project site would remain undeveloped. Because the Project site is predominantly composed of coastal sage scrub, Alternative C would reduce the overall acreage of CSS impacts.

Alternative C would not provide for the same conservation/preservation of high-quality habitat for the Quino checkerspot butterfly as it includes development on a central ridgeline with approximately seven Quino sightings. This alternative does not impact the K8 vernal pool group, which includes San Diego Fairy Shrimp.

Relative to regional conservation planning, Alternative C would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative C, approximately 484 acres would be developed. Of this amount, approximately 10.6 acres are parks, which are a common use and not subject to Preserve conveyance requirements. As a result, the total amount of land conveyed to the Otay Ranch

Preserve would be roughly 562.4 acres, which is 328.6 acres less than the proposed Project. Due to the smaller development footprint, while Alternative C would designate a larger Preserve area than the proposed project, a smaller amount of the Preserve would be conveyed to public ownership.

When compared to the proposed Project, Alternative C would result in less overall impacts to biological resources, although the actual resources impacted vary between the proposed Project and this alternative and the overall dedicated Preserve size would be smaller.

Cultural Resources

Development under Alternative C would result in reduced impacts to cultural and paleontological resources when compared to the proposed Project because Alternative C would focus development within the western portion of the Project site. This avoids development within the eastern portion of the Project site, resulting in the disturbance of 25 fewer significant and limited significance archaeological resources than would the proposed Project. While the impact to cultural resources from development under Alternative C would remain significant, it would result in less impact than would the proposed Project.

Geology and Soils

Development under Alternative C would focus development within the western portion of the Project site. This would avoid development within the eastern portion of the Project site and would result in less potential for rock fall, soil erosion, and surficial instability when compared to the proposed Project. However, potential impacts from seismic ground shaking would be the same as the proposed Project. Similar to the proposed Project, development under Alternative C would require adherence to the mitigation measures discussed in Section 2.5 of this EIR. Therefore, Alternative C would result in similar impacts to geology and soils when compared to the proposed Project.

Hazards and Hazardous Materials

Development under Alternative C would result in 1,241 dwelling units within the Project site, but would reduce the footprint of development and, therefore, may reduce the potential for wildland fire impacts. Alternative C is within the 5-minute response radius from an existing fire station. Overall, however, Alternative C would result in hazards and hazardous materials impacts similar to the proposed Project, and development under Alternative C would require adherence to the mitigation measures identified in Section 2.6 of this EIR.

Noise

Alternative C would reduce vehicular trips by 3,308 ADT and result in decreased operational noise levels when compared to the proposed Project. Noise impacts associated with construction activities would be reduced, as less grading and site preparation (blasting, hauling trips, etc.) would be required with the reduced acreage to be graded under this alternative. The reduction in ADT under this alternative would reduce operational noise emissions after development of the

Project site. Overall, Alternative C would result in less impact related to noise when compared to the proposed Project.

Solid Waste

Alternative C would provide fewer dwelling units than the proposed Project; therefore, solid waste disposal requirements would be reduced. However, the cumulative impact would still be significant and unavoidable because a reduction of 697 dwelling units in comparison to the proposed Project would not avoid the future need for additional landfill space. However, the cumulative impacts of solid waste disposal under Alternative C would be similar to the proposed Project.

Transportation and Traffic

Based on the trip generation rates presented in Section 2.9 of this EIR, the proposed Project would generate 27,191 ADT. Alternative C would decrease the number of single-family homes to 382 and increase the number of multi-family homes to 859, which would result in a net decrease of 8,574 residential ADT. The proposed 113.7 acres of resort uses and 82.9 acres of golf course uses would increase traffic from these uses, though the net result of Alternative C would be a decrease of approximately 3,308 ADT in comparison to the proposed Project. The decrease in ADT under this alternative would result in reduced traffic impacts when compared to the proposed Project.

4.4.3 Summary of Alternative C Analysis

Development of the Project site under Alternative C would result in reducing the number of housing units from 1,938 to 1,241 and reducing the amount of acreage that would be developed by 296 acres compared to the proposed Project. However, this alternative would include a larger amount of acreage devoted to multi-family uses, resort uses, and a golf course. Overall, Alternative C would decrease traffic volumes by approximately 3,308 ADT as compared to the proposed Project. This alternative would result in similar impacts to geology and soils, hazards and hazardous materials, and solid waste when compared to the proposed Project. Impacts to aesthetics, air quality, biological resources, cultural resources, noise, and traffic would be less under Alternative C when compared to the proposed Project. Additionally, Alternative C would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.5 Analysis of Alternative D

4.5.1 Alternative D Description and Setting

Under Alternative D, development of the 1,869-acre site would occur only within the western portion of the Project site as shown in **Figure 4.0-3**. This alternative would result in the development of 394 single-family homes (compared with the proposed Project's 1,881) and 1,544 multi-family or single-family attached homes (compared with the proposed Project's 57) for the same total of 1,938 dwelling units as the proposed Project. Alternative D would designate

61.3 acres of land for resort uses, compared to 17.4 acres under the proposed Project. No golf course would be included. An elementary school site and public safety site would be reserved under this alternative. Local parks would be reduced from nine sites of 29.6 total acres to two sites of 16.6 total acres. As shown in **Figure 4.0-3**, Alternative D would locate the resort uses adjacent to Otay Lakes Road, overlooking Lower Otay Lake. **Table 4.0-1** provides a summary comparison of the impacts of the Alternatives to the proposed Project.

4.5.2 Comparison of the Effects of Alternative D to the Proposed Project

Aesthetics

Alternative D would concentrate land uses within the western portion of the Project site and reduce the development footprint by roughly 296 acres as compared to the proposed Project. Development under Alternative D would generally result in reduced impacts to aesthetics when compared to the proposed Project because of the reduced area of development. Although this alternative proposes all development within the western portion of the Project site, the resulting development would be at a greater intensity in terms of height, bulk, and scale when compared to the proposed Project. While development under Alternative D would not fully mitigate all impacts to aesthetics, it would result in less impact than the proposed Project.

Air Quality

Alternative D would result in the development of the same number of dwelling units; however, the resort uses would increase to 61.3 acres and cause a net increase of 1,742 ADT. The reduced development footprint would reduce construction air emissions, but not to a level that would avoid a significant air quality impact. Overall, the air quality impacts of Alternative D would be similar to the proposed Project.

Biological Resources

Under Alternative D, the development footprint of the Project site would be reduced by roughly 296 acres and the eastern portion of the Project site would remain undeveloped. Because the Project site is predominantly composed of coastal sage scrub, Alternative D would reduce the overall acreage of CSS impacts.

Alternative D would not provide for the same conservation/preservation of high-quality habitat for the Quino checkerspot butterfly as it includes development on a central ridgeline with approximately seven Quino sightings. This alternative does not impact the K8 vernal pool group, which includes San Diego fairy shrimp.

Relative to regional conservation planning, Alternative D would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative D, approximately 484 acres would be developed. Of this amount, approximately 10.6 acres are parks and 10 acres are for an elementary school site, which are common uses and not subject to Preserve conveyance requirements. As a result, the total amount of land conveyed to the Otay Ranch Preserve would be roughly 564.3 acres, which is 327.6 acres less than the proposed Project. Due to the smaller development footprint, while Alternative D would designate a larger Preserve area than the proposed project, a smaller amount of the Preserve would be conveyed to public ownership.

When compared to the proposed Project, Alternative D would result in less overall impacts to biological resources, although the actual resources impacted vary between the proposed Project and this alternative and the overall dedicated Preserve size would be smaller.

Cultural Resources

Development under Alternative D would result in reduced impacts to cultural and paleontological resources when compared to the proposed Project because Alternative D would focus development within the western portion of the Project site. This avoids development within the eastern portion of the Project site, resulting in the disturbance of 20 fewer significant and limited significance archaeological resources than would the proposed Project. While the impact to cultural resources from development under Alternative D would remain significant, it would result in less impact than would the proposed Project.

Geology and Soils

Development under Alternative D would focus development within the western portion of the Project site. This would avoid development within the eastern portion of the Project site and would result in less potential for rock fall, soil erosion, and surficial instability when compared to the proposed Project. However, potential impacts from seismic ground shaking would be similar to the proposed Project. Development under Alternative D would require the same adherence to the mitigation measures discussed in Section 2.5 of this EIR. Therefore, Alternative D would result in similar impacts to geology and soils when compared to the proposed Project.

Hazards and Hazardous Materials

Development under Alternative D would result in the same 1,938 dwelling units as the proposed Project, but would reduce the footprint of development, and, therefore, may reduce the potential for wildland fire impacts. Alternative D is within the 5-minute response radius from an existing fire station. Overall, however, Alternative D would result in hazards and hazardous materials impacts similar to the proposed Project and development under Alternative D would require adherence to the mitigation measures identified in Section 2.6 of this EIR.

Noise

Alternative D would result in the same 1,938 dwelling units as the proposed Project, but would decrease the number of single-family homes to 394 and increase to 1,544 the number of multi-family homes. This would result in a net decrease of 2,974 residential ADT. However, the

proposed 61.3 acres of resort uses would increase traffic from these uses for a net Project increase of approximately 1,742 ADT under Alternative D in comparison to the proposed Project. Noise impacts associated with construction activities would be reduced, as less grading and site preparation (blasting, hauling trips, etc.) would be required with the reduced acreage to be graded under this alternative. Operational noise emissions are anticipated to be similar to the proposed Project after development of the Project site. Overall, Alternative D would result in similar impacts related to noise when compared to the proposed Project.

Solid Waste

Alternative D would provide the same number of dwelling units as the proposed Project and would cause a similar demand for solid waste disposal. Therefore, the cumulative impact of Alternative D would be significant and unavoidable. Overall, Alternative D would result in similar impacts of solid waste disposal when compared to the proposed Project.

Transportation and Traffic

Based on the trip generation rates presented in Section 2.9 of this EIR, the proposed Project would generate 27,191 ADT. Alternative D would decrease the number of single-family homes to 394 and increase to 1,544 the number of multi-family homes, which would result in a net decrease of 2,974 residential ADT. However, the proposed 61.3 acres of resort uses would increase traffic, for a net increase of approximately 1,742 ADT under Alternative D in comparison to the proposed Project. The relatively small increase of ADT under this alternative would result in a similar level of traffic impacts when compared to the proposed Project.

4.5.3 Summary of Alternative D Analysis

Development of the Project site under Alternative D would result in the same number of housing units, although in a different mix with more multi-family homes compared to the proposed Project, and would reduce the amount of acreage that would be developed by 296 acres compared to the proposed Project. This alternative would include a larger amount of acreage devoted to multi-family and resort uses. Overall, Alternative D would increase traffic volumes by approximately 1,742 ADT as compared to the proposed Project. This alternative would result in similar impacts to air quality, geology and soils, hazards and hazardous materials, noise, solid waste, and traffic when compared to the proposed Project. Impacts to aesthetics, biological resources, and cultural resources would be less under Alternative D when compared to the proposed Project. Additionally, Alternative D would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.6 Analysis of Alternative E

4.6.1 Alternative E Description and Setting

Under Alternative E, development would occur only within the western portion of the Project site (**Figure 4.0-4**). This alternative would result in the development of fewer homes (1,391 compared to 1,938 with the proposed Project) and would slightly increase the number of multi-

family homes (72 homes compared to the proposed 57). Lands designated for resort uses would be increased slightly to 19.9 acres and the golf course would not be provided. Six local park sites totaling 12 acres would be provided. Under Alternative E, an elementary school site and public safety site would be reserved. **Table 4.0-1** provides a summary comparison of the impacts of the Alternatives to the proposed Project.

4.6.2 Comparison of the Effects of Alternative E to the Proposed Project

Aesthetics

Alternative E would concentrate land uses within the western portion of the Project site and reduce the development footprint by roughly 229.5 acres as compared to the proposed Project. Development under Alternative E would generally result in reduced impacts to aesthetics when compared to the proposed Project due to the reduced area of development. Although this alternative proposes fewer homes, development within the western portion of the Project site would be at a greater intensity in terms of height, bulk, and scale when compared to the proposed Project. While development under Alternative E would not fully mitigate all impacts to aesthetics, it would result in fewer impacts than the proposed Project.

Air Quality

Alternative E would result in the development of 547 fewer dwelling units, have a smaller footprint of development in comparison to the proposed Project, and would result in a net decrease of 5,493 ADT. The reduced development footprint would reduce construction air emissions, but not to a level that would avoid a significant air quality impact. Overall, the air quality impacts of Alternative E would be similar to the proposed Project; however, the reduction in vehicle trips would result in reduced emissions.

Biological Resources

Under Alternative E, the development footprint of the Project site would be reduced by roughly 227.0 acres and the eastern portion of the Project site would remain undeveloped. Because the Project site is predominantly composed of coastal sage scrub, Alternative E would reduce the overall acreage of CSS impacts.

Relative to regional conservation planning, Alternative E would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative D, approximately 550.1 acres would be developed. Of this amount, approximately 12 acres are parks and 10 acres are for an elementary school, which are common uses and not subject to Preserve conveyance requirements. As a result, the total amount of land conveyed to the Otay Ranch Preserve would be roughly 627.4 acres, which is 263.6 acres less than the proposed Project. Due to the smaller development footprint, while Alternative E would

designate a larger Preserve area than the proposed project, a smaller amount of the Preserve would be conveyed to public ownership.

When compared to the proposed Project, Alternative E would result in less overall impacts to biological resources, although the actual resources impacted vary between the proposed Project and this alternative and the overall dedicated Preserve size would be smaller.

Cultural Resources

Development under Alternative E would result in reduced impacts to cultural and paleontological resources when compared to the proposed Project because Alternative E would focus development within the western portion of the Project site. This avoids development within the eastern portion of the Project site, resulting in the disturbance of 23 fewer significant and limited significance archaeological resources than the proposed Project. While the impact to cultural resources from development under Alternative E would be significant, it would result in less impact than would the proposed Project.

Geology and Soils

Development under Alternative E would focus development within the western portion of the Project site. This would avoid development within the eastern portion of the Project site and would result in less potential for rock fall, soil erosion, and surficial instability when compared to the proposed Project. However, potential impacts from seismic ground shaking would be the same as the proposed Project. Development under Alternative E would require adherence to the mitigation measures discussed in Section 2.5 of this EIR. Therefore, Alternative E would result in similar impacts to geology and soils when compared to the proposed Project.

Hazards and Hazardous Materials

Development under Alternative E would result in 1,391 dwelling units within the Project site, but would reduce the footprint of development and, therefore, may reduce the potential for wildland fire impacts. Overall, however, Alternative E would result in hazards and hazardous materials impacts similar to the proposed Project and development under Alternative E would require adherence to the mitigation measures identified in Section 2.6 of this EIR.

Noise

Alternative E would reduce vehicular trips by 5,493 ADT and result in decreased operational noise levels when compared to the proposed Project. Noise impacts associated with construction activities would be reduced as less grading and site preparation (blasting, hauling trips, etc.) would be required with the reduced acreage to be graded under this alternative. The reduction in ADT under this alternative would reduce operational noise emissions after development of the Project site. Overall, Alternative E would result in less impact related to noise when compared to the proposed Project.

Solid Waste

Alternative E would provide 547 fewer dwelling units than the proposed Project; therefore, solid waste disposal requirements would be reduced. However, the cumulative impact would still be significant and unavoidable because the reduction in dwelling units in comparison to the proposed Project would not avoid the need for additional landfill space. Therefore, the cumulative impacts of solid waste disposal under Alternative E would be similar to the proposed Project.

Transportation and Traffic

Based on the trip generation rates presented in Section 2.9 of this EIR, the proposed Project would generate 27,191 ADT. Alternative E would decrease the total number of residences and result in a net decrease of ADT. The resort acreage would be slightly increased in comparison to the proposed Project. The overall decrease of 5,493 ADT under this alternative would result in less traffic impact when compared to the proposed Project. While the impact to transportation and traffic from development under Alternative E would be significant, it would result in less impact than would the proposed Project.

4.6.3 Summary of Alternative E Analysis

Development of the Project site under Alternative E would result in reducing the number of housing units from 1,938 to 1,391, and reducing the amount of acreage that would be developed by 229 acres compared to the proposed Project. This alternative would include a larger amount of acreage devoted to multi-family and resort uses. Overall, Alternative E would decrease traffic volumes by approximately 5,493 ADT as compared to the proposed Project. This alternative would result in similar impacts to geology and soils, hazards and hazardous materials, and solid waste when compared to the proposed Project. Impacts to aesthetics, air quality, biological resources, cultural resources, noise, and traffic would be less under Alternative E when compared to the proposed Project. Additionally, Alternative E would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.7 Analysis of Alternative F

4.7.1 Alternative F Description and Setting

Under Alternative F, development of the 1,869-acre site would occur only within the western portion of the Project site. As shown in **Figure 4.0-5**, this alternative would result in the development of 1,268 single-family homes (as compared to 1,881 under the proposed Project) and 670 multi-family homes (as compared to 57 under the proposed Project) for the same total of 1,938 dwelling units as the proposed Project. Lands designated for resort uses would increase to 19.9 acres, in comparison to 17.4 acres under the proposed Project. Under Alternative F, an elementary school site and public safety site would be reserved and six park sites totaling 16.6 acres would be provided. **Table 4.0-1** provides a summary comparison of the impacts of the Alternatives to the proposed Project.

4.7.2 Comparison of the Effects of Alternative F to the Proposed Project

Aesthetics

Alternative F would concentrate land uses within the western portion of the Project site and reduce the development footprint by roughly 229.5 acres as compared to the proposed Project. Development under Alternative F would generally result in reduced impacts to aesthetics when compared to the proposed Project because of the reduced area of development. Although this alternative proposes all development within the western portion of the Project site, the resulting development would be at a greater intensity in terms of height, bulk, and scale when compared to the proposed Project. Thus, the aesthetic benefits of a smaller project footprint are reduced by the greater intensity of buildings within the development footprint. While development under Alternative F would not fully mitigate all impacts to aesthetics, it would result in less impact than the proposed Project.

Air Quality

Alternative F would result in the development of the same number of dwelling units, with a minor traffic reduction of 1,196 ADT from the greater reliance on multi-family homes as compared to the proposed Project. The footprint of development would be reduced by 229 acres and, therefore, construction air emissions would be reduced, but not to a level to avoid a significant air quality impact. Overall, the air quality impact of Alternative F would be similar to the proposed Project; however, the reduction in vehicle trips would result in reduced emissions.

Biological Resources

Under Alternative F, the development footprint of the Project site would be reduced by roughly 229 acres and the eastern portion of the Project site would remain undeveloped. Because the Project site is predominantly composed of coastal sage scrub, Alternative F would reduce the overall acreage of CSS impacts.

Relative to regional conservation planning, Alternative E would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative E, approximately 550.1 acres would be developed. Of this amount, approximately 16.6 acres are parks and 10 acres are for an elementary school, which are common uses and not subject to Preserve conveyance requirements. As a result, the total amount of land conveyed to the Otay Ranch Preserve would be roughly 621.9 acres, which is 269.1 acres less than the proposed Project. Due to the smaller development footprint, while Alternative F would designate a larger Preserve area than the proposed project, a smaller amount of the Preserve would be conveyed to public ownership.

When compared to the proposed Project, Alternative F would result in less overall impacts to biological resources, although the actual resources impacted vary between the proposed Project and this alternative and the overall dedicated Preserve size would be smaller.

Cultural Resources

Development under Alternative F would result in reduced impacts to cultural resources when compared to the proposed Project because Alternative F would focus development within the western portion of the Project site. This results in the disturbance of 23 fewer significant and limited significance cultural resources in the eastern portion of the Project site than would the proposed Project. While the impact to cultural resources from development under Alternative F would be significant, it would result in less impact than would the proposed Project.

Geology and Soils

Development under Alternative F would focus development within the western portion of the Project site. Alternative F would avoid development within the eastern portion of the Project site, which would result in less potential for rock fall, soil erosion, and surficial instability when compared to the proposed Project. However, potential impacts from seismic ground shaking would be similar to the proposed Project. Development under Alternative F would require the same adherence to the mitigation measures discussed in Section 2.5 of this EIR. Therefore, Alternative F would result in similar impacts to geology and soils when compared to the proposed Project.

Hazards and Hazardous Materials

Development under Alternative F would result in the same 1,938 dwelling units as the proposed Project, but would reduce the footprint of development and, therefore, may reduce the potential for wildland fire impacts. Overall, however, Alternative F would result in hazards and hazardous materials impacts similar to the proposed Project, and the development under Alternative F would require adherence to the mitigation measures identified in Section 2.6 of this EIR.

Noise

Alternative F would result in the same 1,938 dwelling units as the proposed Project, but would decrease the number of single-family homes to 1,268 and increase to 670 the number of multi-family homes. This would result in a minor traffic reduction of 1,196 ADT as compared to the proposed project and, therefore, traffic noise levels would be similar to the proposed Project. Noise impacts associated with construction activities would be reduced, as less grading and site preparation (blasting, hauling trips, etc.) would be required with the reduced acreage to be graded under this alternative. Other operational noise emissions under Alternative F are anticipated to be similar to the proposed Project. Overall, Alternative F would result in similar impacts related to noise when compared to the proposed Project.

Solid Waste

Alternative F would provide the same number of dwelling units as the proposed Project and would cause a similar demand for solid waste disposal. Therefore, the cumulative impact of Alternative E would be significant and unavoidable. Overall, Alternative F would result in similar impacts to solid waste disposal when compared to the proposed Project.

Transportation and Traffic

Based on the trip generation rates presented in Section 2.9 of this EIR, the proposed Project would generate 27,191 ADT. Alternative F would decrease the number of single-family homes to 1,268 and increase to 670 the number of multi-family homes, and would result in a net decrease of 1,196 ADT in comparison to the proposed Project. Overall, this alternative would result in a similar level of traffic impacts when compared to the proposed Project.

4.7.3 Summary of Alternative F Analysis

Development of the Project site under Alternative F would result in the same number of housing units, with many more multi-family homes and fewer single family homes compared to the proposed Project. The amount of acreage that would be developed would be reduced by 229.5 acres compared to the proposed Project. This alternative would include a larger amount of acreage devoted to multi-family and resort uses. Overall, Alternative F would decrease traffic volumes by approximately 1,196 ADT as compared to the proposed Project. This alternative would result in similar impacts to air quality, geology and soils, hazards and hazardous materials, noise, solid waste, and traffic when compared to the proposed Project. Impacts to aesthetics, biological resources, and cultural resources would be less under Alternative F when compared to the proposed Project. Additionally, Alternative F would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.8 Analysis of Alternative G

4.8.1 Alternative G Description and Setting

Under Alternative G, development would occur only within a reduced development footprint of 224 acres in the eastern portion of the Project site (**Figure 4.0-6**). This alternative would result in the development of only 465 single-family detached homes. Lands designated for resort uses would be the same as the proposed Project. Under Alternative G, a public safety site would be reserved, but not the elementary school site. Three park sites totaling 4.3 acres would be provided. **Table 4.0-1** provides a summary comparison of the impacts of the Alternatives to the proposed Project.

4.8.2 Comparison of the Effects of the Alternative G to the Proposed Project

Aesthetics

Alternative G would concentrate land uses within the eastern portion of the Project site and reduce the development footprint by roughly 555.6 acres as compared to the proposed Project. Development under Alternative G would generally result in reduced impacts to aesthetics when compared to the proposed Project because of the reduced area of development and because development would occur farther east of existing development and views would be obstructed by a sloping mesa. While development under Alternative G would not fully mitigate all impacts to aesthetics, it would result in less impact than the proposed Project.

Air Quality

Alternative G would result in the development of 1,473 fewer dwelling units and have a smaller footprint of development, reduce total net vehicle trips by 15,662 ADT, and increase open space in comparison to the proposed Project. Therefore, construction and operational emissions associated with this alternative would be less than the proposed Project. The reduction of construction emissions and mobile emissions associated with Alternative G would result in less air quality impacts than the proposed Project. However, only long-term operational PM_{2.5} emissions at full buildout would be reduced to a less-than-significant level in comparison to the proposed Project. This alternative would result in less impact than the proposed Project; however, long-term operational air quality impacts to VOC, CO, and PM₁₀ would still exceed the County's significance level thresholds and would require mitigation. **Table 4.0-2** provides a summary of Alternative G's long-term operational emissions.

Biological Resources

Under Alternative G, the development footprint of the Project site would be reduced by roughly 555.6 acres and would be located in the eastern portion of the Project site where there are fewer sensitive biological resources. Because the Project site is predominantly composed of coastal sage scrub, Alternative G would reduce the overall acreage of CSS impacts.

Relative to regional conservation planning, Alternative G would satisfy the objectives set forth in the Otay Ranch RMP and the County MSCP Subarea Plan of establishing a comprehensive, large-scale managed Preserve system by designating 1,107 acres as Preserve land, an increase of 18 acres as compared to the proposed Project.

Under Alternative G, approximately 224 acres would be developed. Of this amount, approximately 4.3 acres are parks, which are common uses and not subject to Preserve conveyance requirements. As a result, the total amount of land conveyed to the Otay Ranch Preserve would be roughly 261 acres, which is 630 acres less than the proposed Project. Due to the smaller development footprint, while Alternative G would designate a larger Preserve area than the proposed project, a smaller amount of the Preserve would be conveyed to public ownership.

While the impact to biological resources from development under Alternative G would be significant, it would result in much less impact than would the proposed Project.

Cultural Resources

Development under Alternative G would result in reduced impacts to cultural and paleontological resources when compared to the proposed Project. With the reduced development footprint under Alternative G, there would be 41 fewer significant and limited significance cultural resource sites impacted. While the impact to cultural resources from development under Alternative G would be significant, it would result in less impact than would the proposed Project.

Geology and Soils

With the reduced development footprint under Alternative G, impacts to geology and soils would be less when compared to the proposed Project; however, because the underlying geology is similar, many of the same design considerations per the mitigation measures discussed in Section 2.5 of this EIR would be required.

Hazards and Hazardous Materials

Development under Alternative G would reduce impacts of hazards and hazardous materials, though potential impacts from wildland fire would still occur. Alternative G includes a public safety site and therefore meets the General Plan Safety Element Response Objective of five minutes. Similar to the proposed Project, development under Alternative G would require adherence to the mitigation measures discussed in Section 2.6 of this EIR. Overall, Alternative G would result in less hazards and hazardous materials impacts when compared to the proposed Project.

Noise

Alternative G would reduce vehicular trips by 15,662 ADT and result in lower operational noise levels when compared to the proposed Project. Noise impacts associated with construction activities would also be reduced, as less grading and site preparation (would be required with the reduced acreage of this alternative. Overall, Alternative G would result in less noise impacts when compared to the proposed Project.

Solid Waste

Alternative G would provide fewer dwelling units than the proposed Project and, therefore, solid waste disposal requirements would be reduced. However, the cumulative impact of 465 dwelling units and a resort would still be significant and unavoidable, because a reduction of dwelling units in comparison to the proposed Project would not avoid the need for additional landfill space. However, cumulative impacts of solid waste disposal under Alternative G would be less than the proposed Project.

Transportation and Traffic

Based on the trip generation rates presented in Section 2.9 of this EIR, Alternative G would generate approximately 11,530 ADT, which would be 15,662 ADT less than the proposed Project. While the impact to transportation and traffic from development under Alternative G would be significant, it would result in less transportation and traffic impacts than would the proposed Project.

4.8.3 Summary of Alternative G Analysis

Development of the Project site under Alternative G would result in 1,473 fewer residential units and reduce the amount of acreage that would be developed by 555.6 acres compared to the proposed Project. Overall, Alternative G would decrease traffic volumes by approximately 15,662 ADT as compared to the proposed Project. This alternative would result in fewer impacts to aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, solid waste, and traffic when compared to the proposed Project. Alternative F would result in less Preserve land conveyed to the Otay Ranch Preserve as a result of the reduced development footprint.

4.9 Environmentally Superior Alternative

Table 4.0-1 summarizes the potential environmental impacts associated with the different alternatives and provides a comparison with the potential impacts of the proposed Project. CEQA requires an EIR to identify the environmentally superior alternative among all of the alternatives considered, including the proposed Project. If the “no project” alternative is selected as the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]).

The environmental analysis of alternatives indicates, through a comparison of potential impacts from each of the proposed alternatives and the proposed Project, that Alternative A, the “no project” alternative, would be considered environmentally superior because all potential environmental impacts would be reduced under this alternative. However, as required by CEQA, when the “no project” alternative is selected as environmentally superior, an environmentally superior alternative must be selected among the other alternatives remaining. Based on the environmental analysis of the Project alternatives provided above, Alternative G would be considered the environmentally superior alternative among the remaining alternatives. This alternative would reduce or avoid impacts associated with aesthetics, air quality, biological resources, cultural resources, noise, and transportation and traffic when compared to the proposed Project.

**Table 4.0-1
Comparison of Alternatives to Proposed Project**

Environmental Impacts	Proposed Project	Alternative A No Project	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
Aesthetics	Unmitigable Significant Project- level and Cumulative Impacts	Less than proposed Project; No Impact	Similar to proposed Project; remains significant	Less than proposed Project; remains significant	Less than Proposed Project; remains significant	Less than Proposed Project; remains significant	Less than proposed Project; remains significant	Less than proposed Project; remains significant
Air Quality	Unmitigable Significant Project- level and Cumulative Impacts	Less than proposed Project; No Impact	Greater than proposed Project; remains significant and unavoidable	Less than proposed Project; remains significant	Similar to proposed Project	Less than proposed Project; remains significant	Similar to proposed Project; remains significant	Less than proposed Project; remains significant
Biological Resources	Less than Significant with Mitigation	Less than proposed Project; No Impact	Greater than proposed Project; remains significant	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Much less than proposed Project; remains significant but mitigable
Cultural Resources	Less than Significant with Mitigation	Less than proposed Project; No Impact	Similar to proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable
Geology and Soils	Less than Significant with Mitigation	Less than proposed Project; No Impact	Similar to proposed Project; remains significant but mitigable	Similar to proposed Project	Similar to proposed Project	Similar to proposed Project	Similar to proposed Project	Less than proposed Project; remains significant but mitigable
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less than proposed Project; No Impact	Similar to proposed Project; remains significant but mitigable	Similar to proposed Project	Similar to proposed Project	Similar to proposed Project	Similar to proposed Project	Less than proposed Project; remains significant but mitigable
Noise	Less than Significant with Mitigation	Less than proposed Project; No Impact	Greater than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Similar to proposed Project	Less than proposed Project; remains significant but mitigable	Similar to proposed Project	Less than proposed Project; remains significant but mitigable

Environmental Impacts	Proposed Project	Alternative A No Project	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
Solid Waste	Unmitigable Significant Cumulative Impacts	Less than proposed Project; No Impact	Similar to proposed Project; remains significant and unavoidable	Similar to proposed Project; remains significant	Similar to proposed Project	Similar to proposed Project; remains significant	Similar to proposed Project	Less than proposed Project; remains significant
Transportation and Traffic	Less than Significant with Mitigation	Less than proposed Project; No Impact	Greater than proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable	Similar to proposed Project	Less than proposed Project; remains significant but mitigable	Similar to proposed Project; remains significant but mitigable	Less than proposed Project; remains significant but mitigable

Table 4.0-2
Area Source/Motor Vehicle Emissions for Alternative G, Unmitigated

Phase/Emissions Source	VOC (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO ₂ (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
Full Buildout Operations ¹						
Motor Vehicles	51.35	77.55	590.92	0.70	114.78	22.34
Area Sources	100.01	15.79	206.81	0.57	31.39	30.22
<i>Total Full Buildout Emissions</i>	151.36	93.34	797.73	1.27	146.17	52.56
Screening Level Thresholds	75	250	550	250	100	55
Significant Impact?	Yes	No	Yes	No	Yes	No

Notes:

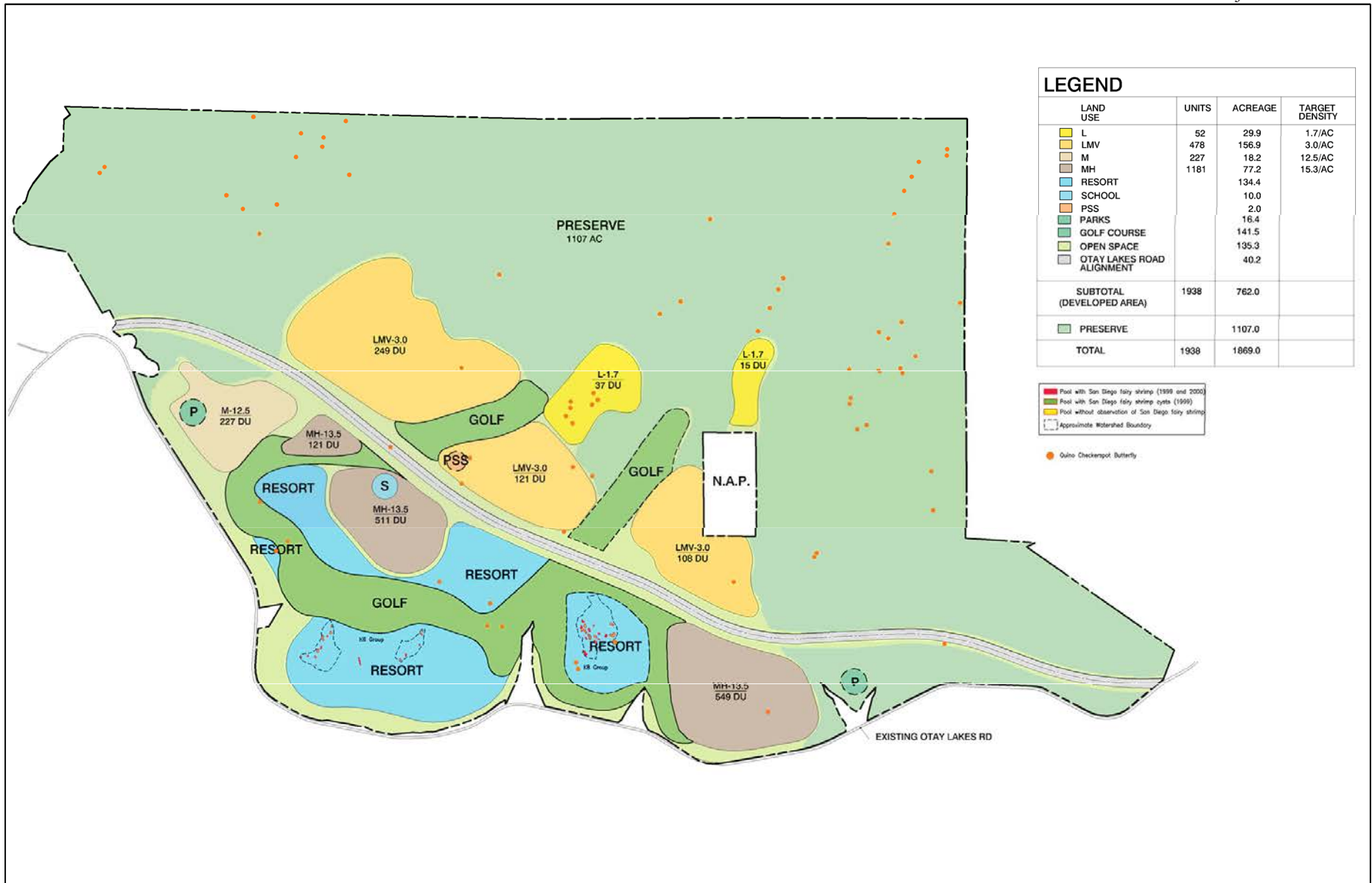
¹ Emissions shown represent the maximum daily motor vehicle- or area-source emissions that would occur from summertime or wintertime operations calculated by URBEMIS.

VOC =volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide;

PM₁₀ = suspended particulate matter;

PM_{2.5} = fine particulate matter

Source: AECOM 2011

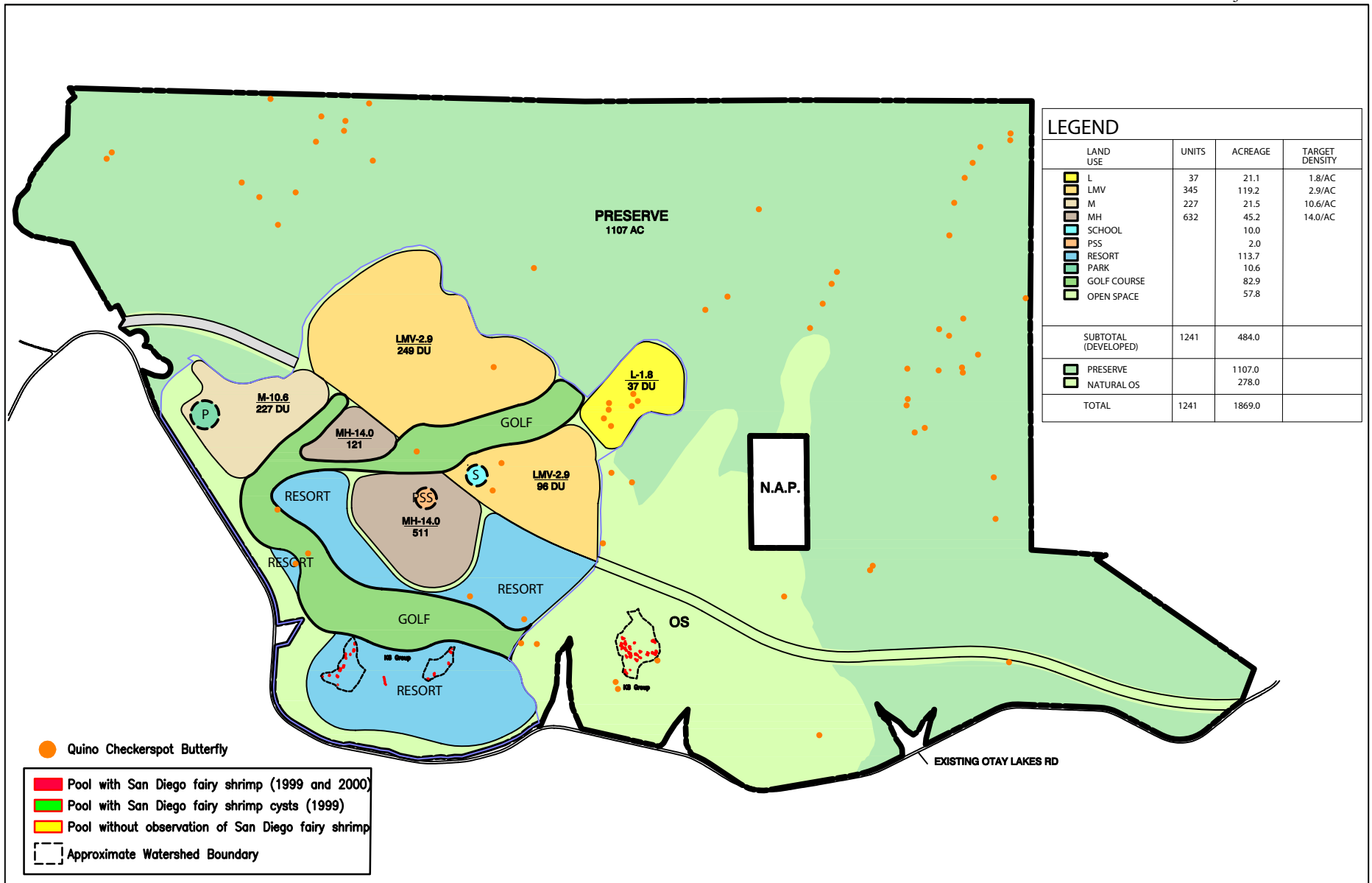


SOURCE: Hunsaker & Associates 2009



No Scale

Figure 4.0-1
Alternative B Land Use Plan

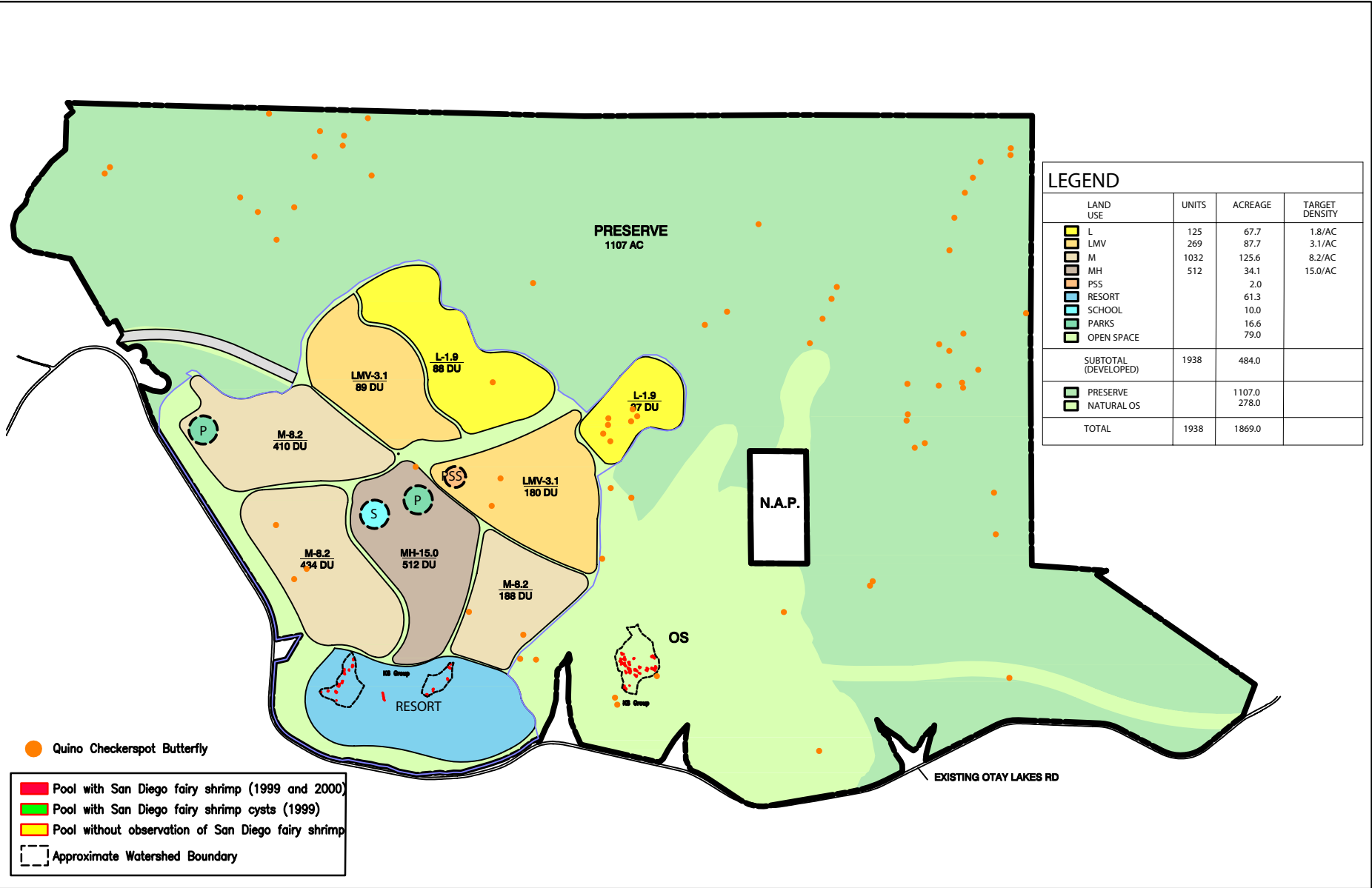


SOURCE: Hunsaker & Associates 2009



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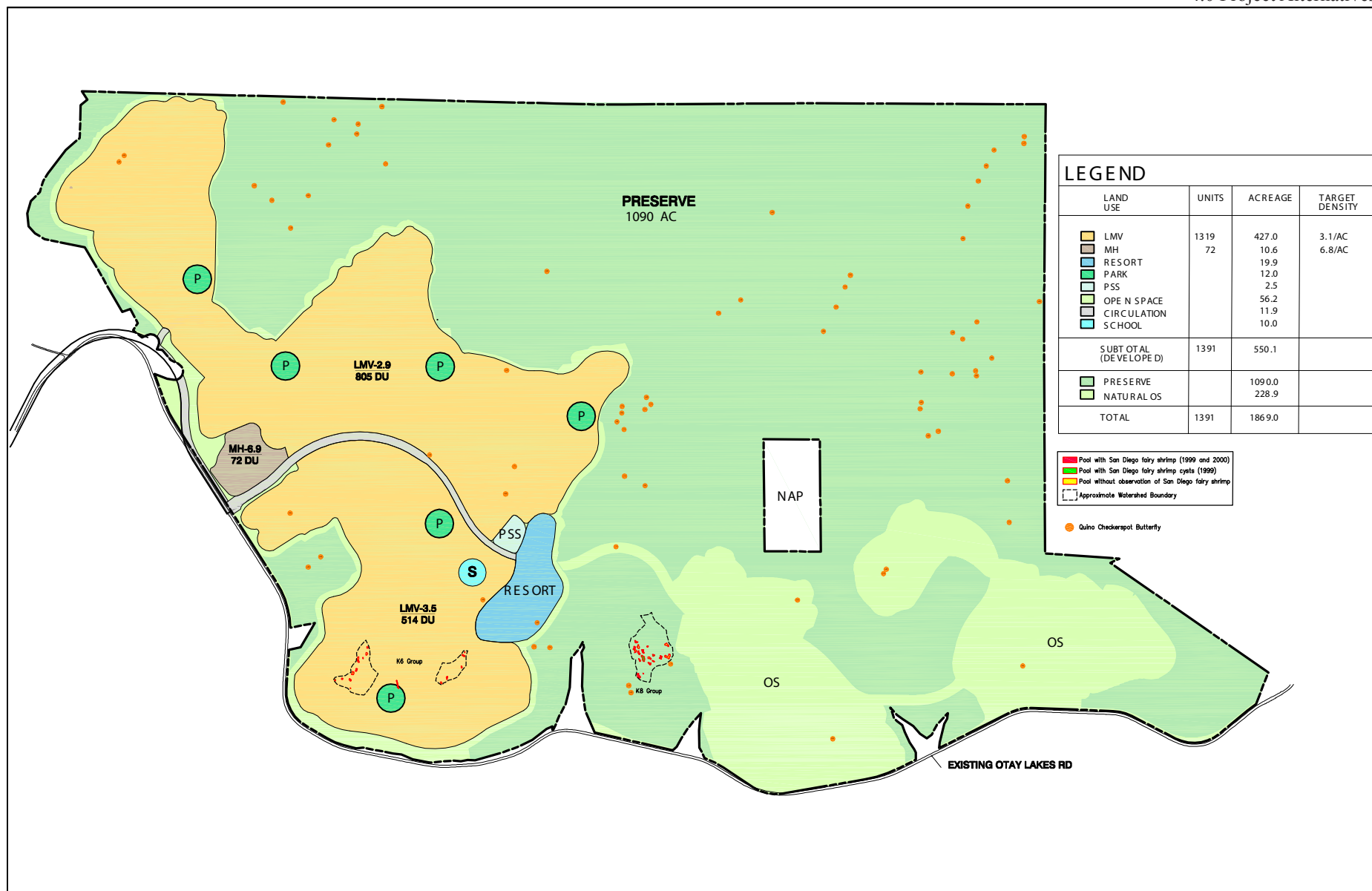
Figure 4.0-2
Alternative C Land Use Plan



SOURCE: Hunsaker & Associates 2014

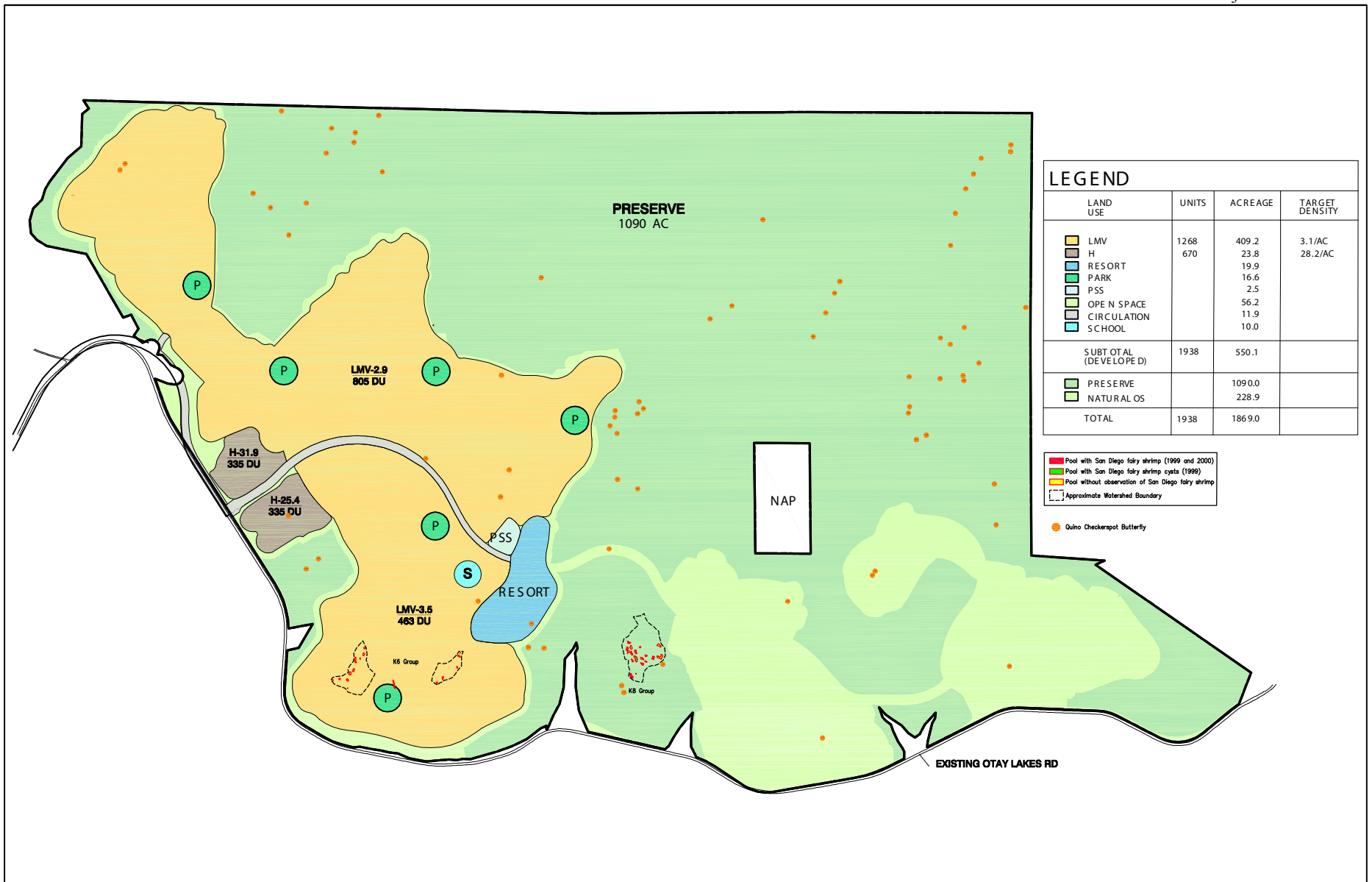


Figure 4.0-3
Alternative D Land Use Plan



No Scale

Figure 4.0-4
Alternative E Land Use Plan

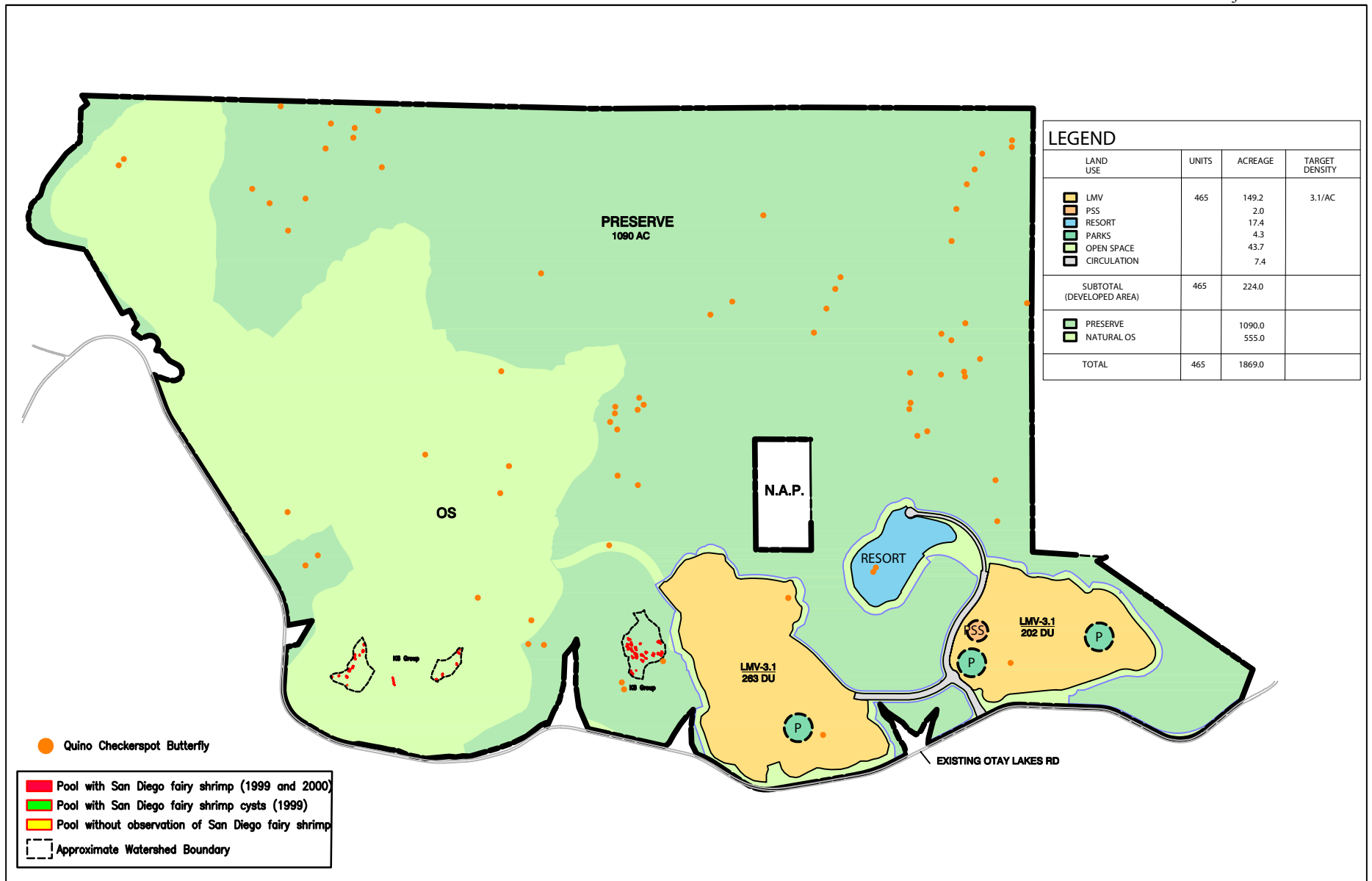


SOURCE: Hunsaker & Associates 2014



No Scale

Figure 4.0-5
Alternative F Land Use Plan



SOURCE: Hunsaker & Associates 2015



No Scale

Figure 4.0-6
Alternative G Land Use Plan

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CHAPTER 7.0 LIST OF MITIGATION MEASURES AND ENVIRONMENTAL DESIGN CONSIDERATIONS

7.1 Aesthetics and Visual Resources

Mitigation Measures

- M-AE-1** All grading plans, landscape plans, and improvement plans for the proposed Project shall be evaluated for Project compliance with the aesthetic design mitigation measures of this EIR, the Resort Village Specific Plan (Development Regulations), the Resort Village Design Plan, and the Resort Village Preserve Edge Plan.
- M-AE-2** Pursuant to Chapter IV, Implementation, of the Otay Ranch Resort Village Specific Plan, Site Plans (“D” Designator) shall be evaluated for Project compliance with the Resort Village Design Plan, the Resort Village Preserve Edge Plan, and the provisions of the Specific Plan related to colors, materials, and other architectural characteristics of adjacent buildings, building massing, siting of buildings and structures including setbacks from tops of slopes, architectural colors adjacent to open space, height, use of non-reflective/non-glare surfaces, and other aesthetic design measures of this EIR.

Environmental Design Considerations

- AE-ED-1** The Project shall incorporate enhanced parkways throughout the Project site to provide pleasant streetscapes and an overall enjoyable atmosphere.
- AE-ED-2** The Resort Village Design Plan directs the Project architecture and landscaping to create cohesive community based on the Italian “Hill Town” theme.
- AE-ED-3** Dark roofs of varying shades shall be used rather than lighter colors.
- AE-ED-4** Architecture and siting of buildings on lots shall be varied to provide visual interest and variation, regardless of the viewer’s location.
- AE-ED-5** Residential, resort, recreational, and public buildings, while unified through a common style and theme, shall be varied in massing, elevation, and density.
- AE-ED-6** Landscaping shall be installed within each constructed phase as it is finished.
- AE-ED-7** Project lighting shall adhere to County codes and requirements.

7.2 Air Quality

Mitigation Measures

M-AQ-1 The applicants shall implement all of the following measures during construction of the proposed Project:

- Water actively disturbed surfaces at least three times daily;
- On-site dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. The use of approved nontoxic soil stabilizers shall be incorporated according to manufacturers' specifications to all inactive construction areas;
- Water sprayers shall be installed on the rock crushing equipment to control particulate emissions during crushing operations;
- Approved chemical soil stabilizers shall be applied according to the manufacturers' specifications to all inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas;
- Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom permitted) if soil material has been carried onto adjacent paved, public thoroughfares from the Project site;
- Traffic speeds on all unpaved surfaces shall be reduced to 15 mph or less, and unnecessary vehicle traffic shall be reduced by restricting access. Appropriate training to truck and equipment drivers, on-site enforcement, and signage shall be provided;
- The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained before and for the duration of on-site operation;
- Termination of grading shall occur if winds exceed 25 mph;
- Hydroseeding of graded pads shall occur if development will not occur within 90 days;
- Minimize simultaneous operation of multiple construction equipment units. During construction vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions;
- All construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. A copy of each unit's BACT documentation shall be provided at the time of mobilization of each applicable unit of equipment;

- All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications;
- All diesel-fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible;
- The use of electrical construction equipment shall be employed where feasible;
- The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible;
- The use of injection timing retard for diesel-powered equipment shall be employed where feasible; and
- Construction diesel fuel shall be comprised of at least 25 percent biodiesel.

M-AQ-2 Project permittees shall implement the following mitigation measures to reduce the air pollutant emissions associated with mobile sources and on-site gas combustion (CAPCOA 2010):

- Plant low-maintenance, drought-resistant plant species that reduce gas-powered landscape maintenance equipment usage and water consumption.
- Equip residential structures with electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.
- All single-family residences shall be constructed with connections for solar water heaters and solar and/or wind renewable energy systems.
- Use regulated low-VOC coatings for all architectural coating activities.
- Incorporate pedestrian trails, paths and sidewalks, and bicycle trails to encourage reduction in vehicle usage and trips.

Environmental Design Considerations

AQ-ED-1 The Project shall incorporate pedestrian trails, paths and sidewalks, and bicycle trails, to encourage reduction in vehicle usage and trips.

AQ-ED-2 Grading shall entail multiple applications of water between dozer/scrapper passes to limit dust.

AQ-ED-3 Paving, chip sealing, or chemical stabilization of internal roadways shall occur after completion of grading.

AQ-ED-4 Sweepers or water trucks shall remove “track-out” at any point of public street access.

AQ-ED-5 Chemical binders, tarps, fencing, or other erosion control and suppression measures shall stabilize dirt storage piles.

7.3 Biological Resources

Mitigation Measures

M-BI-1a **Conveyance.** Prior to the approval of the first Final Map for the Project, the Project applicants shall coordinate with the County of San Diego to establish and annex the Project site into a county-administered Community Facilities District to pay for the on-going management and maintenance of the Otay Ranch Preserve. Prior to the recordation of the first Final Map within each Tentative Map, the Project applicants shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager or its designee at a 1.188 acre for each “Developable Acre” impacted at Final Map as define by the Otay Ranch RMP. The total required conveyance for this project is 887.7 acres.

M-BI-1b **Biological Monitoring.** Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits for any areas adjacent to the Preserve and the off-site facilities located within the Preserve, the Project applicants shall provide written confirmation that a county-approved biological monitor has been retained and will be on-site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area, including trenches, stockpiles, storage areas, and protective fencing. The biological monitor shall also be responsible for implementing the monitoring as required and specified in the restoration plans. The biological monitor shall be authorized to halt all associated activities that may be in violation of the county’s MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the Project. Before construction activities occur in areas adjacent to preserve areas containing sensitive biological resources, all workers shall be educated by a county-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

M-BI-1c **Temporary Fencing.** Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the Project applicants shall install prominently colored fencing and signage wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist

shall provide evidence to the satisfaction of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation, that work was conducted as authorized under the approved land development permit and associated plans.

M-BI-1d Upland Restoration. Restoration areas may incorporate salvaged materials such as seed collection and translocation of plant materials as determined to be appropriate. The project biologist shall review the plant materials prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. Prior to grading, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) shall be submitted to and receive approval from the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

The Conceptual Upland Restoration Plan shall include the following to ensure the establishment of the restoration objectives: a 24- by 36-inch map showing the restoration areas, site preparation information, type of planting materials (species ratios, source, size of container), planting program, 80% success criteria, 5-year monitoring plan, and detailed cost estimate. The cost estimate shall include planting, plant materials, irrigation, maintenance, monitoring, and report preparation. The report shall be prepared by a county-approved biologist and a state of California licensed landscape architect. The habitat created pursuant to the Conceptual Upland Restoration Plan must be placed within an open space easement dedicated to the County of San Diego prior to or immediately following the approval of the Conceptual Upland Restoration Plan.

M-BI-1e Limited Building Zone (LBZ) Easement. In order to protect sensitive biological resources in the adjacent preserve, a Limited Building zone (LBZ) easement will be granted to the County, as shown on the Tentative Map. The purpose of this easement is to limit the need to clear or modify vegetation for fire protection purposes within the preserve, restrict unauthorized access, prohibit landscaping with exotic pest plants that may invade the preserve, and prohibit artificial lighting and focal use areas that would alter wildlife behavior in the preserve. This easement requires the landowner to maintain permanent fencing and signage. The easement precludes 1) placement, installation, or construction of habitable structures, including garages or accessory structures designed or intended for occupancy by humans or animals; 2) landscaping with exotic pest plants; 3) artificial lighting except low-pressure sodium fixtures shielded and directed away from the preserve; and 4) focal use areas including arenas, pools, and patios.

M-BI-1f Fencing and Signage. In order to protect the preserve from entry upon completion of construction, an open space fence or wall will be installed along

all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan and Proposed Fencing, Preserve signage, and Fuel Modification Zones (see map Pocket). The barrier must be a minimum construction of vertical metal fencing, but may be other suitable construction material, as approved by Department of Planning and Development Services and the Director of Parks and Recreation. In order to protect the preserve from entry, informational signs will be installed, where appropriate, along all open space edges where open space is adjacent to residential uses, along internal streets, and as indicated in the Otay Ranch Resort Village Preserve Edge Plan. The signs must be corrosion resistant, a minimum of 6 inches by 9 inches in size, on posts not less than three (3) feet in height from the ground surface, and state "Sensitive Environmental Resources Protected by Easement. Entry without express written permission from the County of San Diego is prohibited."

M-BI-1g **Habitat Manager for the Offsite 10.2-acre Parcel.** In order to provide for the long-term management of the proposed 10.2-acre parcel that will be added to the MSCP Preserve, a habitat manager shall be designated either privately selected, a non-profit organization, or a government agency. If a private or non-profit organization is selected as the habitat manager, a Resource Management Plan (RMP) will be prepared and implemented. The final RMP will be completed to the satisfaction of the Director of Department of Planning and Development Services, as follows: 1) the plan will be prepared and approved pursuant to the most current version of the County of San Diego Biological Report Format and Content Requirements; 2) the habitat land to be managed will be owned by a land conservancy or equivalent; 3) open space easements will be dedicated in perpetuity; 4) a resource manager will be selected and approved, with evidence provided demonstrating acceptance of this responsibility; 5) the RMP funding mechanism will be identified and adequate to fund annual costs for implementation; and 6) a contract between the applicant and County will be executed for the implementation of the RMP, and funding will be established with the County as the third party beneficiary. In lieu of providing a private habitat manager as noted above, the applicant may contract with a federal, state, or local government agency with the primary mission of resource management to take fee title and manage the 10.2-acre parcel of land. Evidence of satisfaction must include a copy of the contract with the agency, and a written statement from the agency that (1) the land contains the specified acreage and the specified habitat, or like functioning habitat; and (2) the land will be managed by the agency for conservation of natural resources in perpetuity.

M-BI-2 Prior to widening Otay Lakes Road, the Project applicants shall mitigate for the 11.09 acres of impacts to Cornerstone Lands and complete an MHPA Boundary Adjustment to the satisfaction of the City of San Diego Development Services Director (or his/her designee). Replacement of MHPA lands within Cornerstone Lands is proposed to be at a 1:1 ratio for lands replaced inside the MSCP Preserve. For replacement lands that are located outside of the MSCP Preserve,

the mitigation is at a 4:1 ratio. Mitigation for impacts to the various vegetation communities shall be based on the tier of the impacted lands in accordance with the mitigation ratios provided by the MSCP. The mitigation and MHPA Boundary Adjustment may be implemented within the Otay Ranch Preserve on property surrounding the existing Cornerstone Lands, north of Otay Lakes Road, or may be off-site at a location determined to be acceptable by the City of San Diego.

M-BI-3 Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the Project shall be required to obtain a HLIT permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and II vegetation communities as shown in **Table 2.3-11** and in accordance with Table 5-3 of the Chula Vista MSCP Subarea Plan. Mitigation for off-site impacts outside of Otay Ranch shall be in accordance with the Chula Vista MSCP Subarea Plan and the Chula Vista HLIT Ordinance.

Prior to issuance of any land development permits, the Project applicants shall mitigate for direct impacts pursuant to Section 5.2.2 of the City of Chula Vista MSCP Subarea Plan. In compliance with the Subarea Plan, the applicants shall secure mitigation credits within a City- and wildlife-agency-approved conservation bank or other approved location offering mitigation credits consistent with the ratios specified in **Table 2.3-11** herein.

The Project applicants shall be required to provide verification of purchase to the City of Chula Vista prior to issuance of any land development permits.

In the event that Project applicants are unable to secure mitigation through an established mitigation bank approved by the City of Chula Vista and the wildlife agencies, the Project applicants shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City of Chula Vista's MSCP Subarea Plan or MSCP Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City of Chula Vista's MSCP Subarea Plan and subject to wildlife agency concurrence.

Prior to issuance of any land development permit for the widening of Otay Lakes Road, and to the satisfaction and oversight of the city's Development Services Director (or his/her designee), the Project applicants shall secure the parcel(s) that would be permanently preserved for in-kind habitat impact mitigation, if a mitigation bank purchase is unavailable, prepare a long-term management and monitoring plan for the mitigation area, secure an appropriate management entity to ensure that long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity.

The long-term management and monitoring plan shall provide management measures to be implemented to sustain the viability of the preserved habitat and

identify timing for implementing the measures prescribed in the management and monitoring plan. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the wildlife agencies as being sufficient to ensure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the wildlife agencies shall be recorded prior to issuance of any land development permits.

M-BI-4 Prior to impacts occurring to waters and wetlands under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 2.15 acres of wetlands shall be created (1:1 creation-to-impact ratio). An additional 4.30 acres of wetlands shall be enhanced (2:1 enhancement-to-impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) approved by the County of San Diego and appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), the Director of Parks and Recreation, ACOE, RWQCB, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to original their conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanent impacted wetlands.

M-BI-5 Prior to impacts occurring to waters and wetlands within the City of San Diego Cornerstone Lands, under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies

during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 2.15 acres of wetlands shall be created (1:1 creation-to-impact ratio). An additional 4.30 acres of wetlands shall be enhanced (2:1 enhancement to impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to original conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanent impacted wetlands.

M-BI-6

Prior to impacts occurring to waters within the County of San Diego under the jurisdiction of ACOE, CDFW, and RWQCB, the Project applicants shall obtain the following permits: ACOE 404 permit, RWQCB 401 Water Quality Certification, and a CDFW Code 1600 Streambed Alteration Agreement. Impacts shall be mitigated at a 1:1 ratio by creation or purchase of credits for the creation of jurisdictional habitat of similar functions and values. A suitable mitigation site shall be selected and approved by the resource agencies during the permitting process. The ratio of wetland mitigation shall be 3:1 overall. A total of 0.01 acre of waters of the U.S. shall be created (1:1 creation-to-impact ratio). An additional 0.02 acre of waters of the U.S. shall be enhanced (2:1 enhancement-to-impact ratio). Creation/enhancement shall occur within the Dulzura Creek/Otay River watershed in accordance with a Conceptual Wetlands Mitigation and Monitoring Plan (Appendix I of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR) that is approved by the County of San Diego and the appropriate resource agencies. The wetland creation shall include at least a 1:1 ratio of each of the wetland vegetation communities impacted. The remainder of the creation/enhancement obligation may be fulfilled with any wetlands type.

Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project applicants shall

prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the Director of Planning and Development Services (or his/her designee), ACOE, and CDFW. The Conceptual Wetlands Mitigation and Monitoring Plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. The temporary impacts to ephemeral and intermittent waters shall be mitigated by restoring them to their original conditions immediately upon completion of the Project, and shall be subject to all of the success criteria and monitoring as the permanently impacted wetlands.

M-BI-7

Option No. 1: This option consists of mitigation in the form of restoration of vernal pools within the Resort Village Project site. This option shall involve restoration and reconfiguration of the K8 vernal pool group. These vernal pools are proposed to be preserved, and a 100-foot minimum buffer is provided for protection of the pools and their watershed. Mitigation shall involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species. A Conceptual Vernal Pool Mitigation Plan shall be prepared that outlines the location and activities of the restoration (Appendix J of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR). The plan will be submitted to and be to the satisfaction of, both the Directors of the Departments of Planning & Development Services and Parks and Recreation. A ratio of at least 1:1 restoration shall include the establishment of new vernal pool basins within the K8 vernal pool group. The balance of the mitigation ratio shall include enhancement of the existing pools. There is a total of 0.26 acre available for enhancement within the existing pools. The additional restoration mitigation requirement (a total of 0.112 acre) shall be directed toward establishing new basins within the K8 vernal pool group to the greatest extent feasible. An additional area of potential vernal pool restoration is located within the K9 mesa, if needed. This area is also composed of suitable soils for vernal pools. These soils are present on the K6 and K8 mesas. This additional area is composed of nonnative grass species, is of relatively flat topography, and exhibits some mounding characteristics similar to mima mounds.

Based on the inundation records, fairy shrimp surveys, and floral inventory, the following potential vernal pools meet the previously applied ACOE jurisdictional criteria:

- K6 – Vernal Pools 1, 3, 5, 6, 7, 8, 9, 10, 12, and 13 (0.11 acre – total basin area)
- K8 – Vernal Pools 1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, A1, and A4 (0.26 acre – total basin area)

Assuming all of K6 is impacted and the mitigation requirement is a combination of 2:1 and 5:1, as outlined above, a total mitigation of 0.239 acre shall be required. This is typically satisfied by providing at least 1:1 as restoration and the

balance as enhancement. Enhancement within the K8 pools will likely be restricted by the resource agencies to those pools not containing fairy shrimp. **Table 2.3-12** summarizes the existing conditions of the pools within the K8 mesa.

Option No. 2: This option consists of mitigation in the form of purchase of vernal pool mitigation bank credits for a total of 0.239 acre at a combined 2:1 and 5:1 mitigation ratio.

M-BI-8

Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable California adolphia, the Project applicants may prepare a Resource Salvage Plan if seed collection is considered to be warranted. As described above in **M-BI-1d**, the project biologist shall review the California adolphia (approximately 20 plants) proposed to be impacted prior to grading and will determine if salvage is warranted. If salvage is not appropriate due to site conditions, plant conditions, or reproductive stage of the plants, a letter indicating that will be prepared and submitted to the Director of the Department of Planning and Development Services and the Director of Parks and Recreation. If determined that salvage is appropriate, a Resource Salvage Plan shall be prepared by a county-approved biologist to the satisfaction of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

The Resource Salvage Plan shall, at a minimum, evaluate options for seed collection within the Preserve or from the plants proposed to be impacted. The Resource Salvage Plan shall include collection methods and timing. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site within the slope restoration areas and will be based on the most reliable methods of successful restoration. The plan shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success; identification of receptor locations; discussion of the goals of the plan; maintenance activities during the monitoring period; monitoring plan; and inclusion of performance standards, reporting schedules, and long-term management. As an alternative, the California adolphia may be included within planting palettes for the slope revegetation areas that shall receive monitoring and shall be required to meet restoration goals and success criteria. Prior to grading the project, a Conceptual Upland Restoration Plan (Appendix H of the Otay Ranch Resort Village Biological Resources Technical Report in **Appendix C-3** to this EIR), as noted in **M-BI-1d**, will be submitted to and receive approval from the Director of the Department of Planning and Development Services (or their designee) and the Director of Parks and Recreation. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Director of Planning and Development Services (or his/her designee) and the Director of Parks and Recreation.

- M-BI-9a** Take Authorization: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) it has secured the necessary take authorization for Quino checkerspot butterfly through either the Section 7 Consultation, Section 10 incidental take permit requirements, or the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment, if/when approved. The Project shall provide preservation of 962 acres of the required mitigation of 966 acres (2 x 483 acres). The Project is required to provide an additional 4 acres of occupied habitat. This mitigation is proposed to be accomplished by restoration of unsuitable habitat within the Preserve to suitable coastal sage scrub. **Figure 2.3-18** illustrates the location of these potential restoration areas. A total of 6.3 acres is designated as potential restoration of which 4 acres will be needed.
- M-BI-9b** Quino Management/Enhancement Plan: Prior to the issuance of the first grading permit that impacts Quino checkerspot butterfly, the Project applicants shall prepare a long-term Quino Checkerspot Butterfly Management/Enhancement Plan that shall, at a minimum, include a survey methodology for on-site preserve areas pre- and post-construction to monitor effects on Quino checkerspot butterfly population health. This plan will be submitted to, and be to the satisfaction of, both the Directors of the Department of Planning & Development Services and of Park and Recreation. The Quino Checkerspot Butterfly Management/Enhancement Plan shall be superseded or unnecessary upon completion and adoption of the County of San Diego Quino Checkerspot Butterfly MSCP Amendment. Adaptive management techniques shall be developed within the plan with contingency methods for changed circumstances. These measures shall ensure that the potential loss of individuals and the loss of habitat for the species related to the proposed development are adequately offset by measures that will enhance the existing preserved population, and shall provide data that will help the species recover throughout its range.
- M-BI-10** Prior to the issuance of the first grading permit that impacts the K6 vernal pool complex, the Project applicants shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) that the Project has secured take authorization of San Diego fairy shrimp through Section 7 Consultation, a Section 10 incidental take permit, or as may be incorporated into the provisions of the MSCP Subarea Plan Quino Checkerspot Butterfly Amendment to achieve the best results toward the survival and recovery of the species.
- M-BI-11** To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance shall occur outside of the breeding season for these species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project applicants shall retain a County-of-San-Diego-approved biologist to conduct a pre-construction survey to determine the presence

or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction, and the results shall be submitted to the County of San Diego for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the County of San Diego, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the County of San Diego for review and approval, and implemented to the satisfaction of the Director of Planning and Development Services (or his/her designee). The County of San Diego's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

M-BI-12 Four wildlife culverts shall be constructed to provide and improve habitat linkages and movement corridors (**Figure 2.3-14**). In general, the design of the wildlife culverts has been developed to be consistent with the MSCP Subarea Plan, where feasible. The wildlife culverts shall have fencing to funnel wildlife movement, shall have a natural bottom with native vegetation at either end, and shall be of size and height of opening so there is direct line of site from one end to the other. Because there is natural light within the culverts, low level illumination is not included. Traffic is generally of low volume on the internal crossings hence the sound insulation is of little benefit. The details of each wildlife culvert or crossing that shall be provided are presented below.

Internal Wildlife Crossing No. 1 (214 feet long × 28.83 feet wide × 13.17 feet tall = openness ratio of 0.44)

This arch culvert structure shall be situated internal to the project site along Strada Piazza, which connects the central portion of the open space to the lake. The 150-foot length is augmented by wing walls on either side of the crossing structure. This is beneficial as it effectively visually decreases the length of the culvert.

Otay Lakes Road Wildlife Crossing No. 1 (95 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 0.68)

This structure shall be located south of Internal Wildlife Crossing no. 1 along Otay Lakes Road. The culvert is sized appropriately and should function as intended. It is well below the grade of Otay Lakes Road to prevent wildlife movement up to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

Internal Wildlife Crossing No. 2 (248 feet long × 43.00 feet wide × 16.18 feet tall = openness ratio of 0.63)

This structure shall be situated along Strada Piazza, which is a single non-split roadway at this location. The culvert slopes 12% to the south. This culvert

conveys wildlife to a location just east of Lower Otay Lake to quality riparian habitat and lands to the east. Wing walls occur at both ends of the culvert. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

Otay Lakes Road Wildlife Crossing No. 2 (58 feet long × 20.75 feet wide × 12.08 feet tall = openness ratio of 1.12)

This structure shall be located south of Internal Wildlife Crossing no. 2 under Otay Lakes Road. This crossing is also located below the grade of Otay Lakes Road to prevent wildlife from gaining access to the surface of the roadway. There is also a six foot wildlife path with a soft surface along this crossing to allow for wildlife movement.

M-BI-13 Prior to issuance of grading permits for development areas adjacent to the Preserve, the Project applicants shall develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Project's Preserve Edge Plan (**Appendix C-23**) shall be implemented to avoid the release of toxic substances associated with urban runoff:

- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled "No Dumping–Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness.
- Parking lots shall be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
- Permanent energy dissipaters shall be included for drainage outlets.

The BMPs contained in the SWPPP shall include silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding.

M-BI-14

- During construction, material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive plant communities. During grading and construction, graded areas shall be periodically watered to minimize dust affecting adjacent vegetation.
- During Project operation, all recreational areas that use chemicals or animal by-products, such as manure, that are potentially toxic or impactive to sensitive habitats or plants shall incorporate methods on-site to reduce

impacts caused by the application and/or drainage of such materials into Preserve areas.

- No invasive nonnative plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat.
- During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
- Dewatering shall be conducted in accordance with standard regulations of RWQCB. A National Pollutant Discharge Elimination System (NPDES) permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of construction. This will minimize erosion, siltation, and pollution within sensitive communities.
- Design of drainage facilities shall incorporate long-term control of pollutants and storm water flow to minimize pollution and hydrologic changes. An Urban Runoff Plan and operational BMPs shall be approved by the San Diego County Department of Planning and Development Services prior to construction.
- Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.
- A hydroseed mix that incorporates native species, is appropriate to the area, and is without invasives shall be used for slope stabilization in transitional areas.
- Peruvian pepper trees and other invasive vegetation would not be planted in streetscapes, or within 50 feet of the Preserve, where they could impact native habitat.

M-BI-15

- No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for coastal California gnatcatcher (February 15 to August 15, annually). If construction occurs during the breeding season, a nesting survey for California gnatcatcher shall be conducted prior to the onset of construction and construction may occur if active nests can be avoided and provided an adequate buffer or noise levels are documented to be below 60 dBA L_{eq} at the nest site.
- No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for coastal California

gnatcatcher (February 15 to August 15, annually). If construction occurs during the breeding season, a nesting survey for California gnatcatcher shall be conducted prior to the onset of construction and construction may occur if active nests can be avoided and provided an adequate buffer or noise levels are documented to be below 60 dBA L_{eq} at the nest site.

- When clearing, grading, or grubbing activities occur during the breeding season for raptors (January 15 to July 31, annually), nesting bird surveys shall be conducted by a qualified biologist for the San Diego County Department of Planning and Development Services to identify active nest locations. Construction activities shall be restricted or modified such that noise levels related to those activities are below 60 dBA L_{eq} , or other Wildlife Agency approved restrictions, in the vicinity of the active nest site.
- Lighting of all developed areas adjacent to the preserve shall be directed away from the preserve, wherever feasible and consistent with public safety. Where necessary, development shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the preserve and sensitive species from night lighting. Consideration shall be given to the use of low-pressure sodium lighting.
- Uses in or adjacent to the preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise-reduction measures or be curtailed during the breeding season of sensitive bird species.
- Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.

Environmental Design Considerations

- BI-ED-1** The Project has been designed around an extensive open space system in close coordination with USFWS. Development areas have been moved specifically to preserve important wildlife corridors, species, and habitat.
- BI-ED-2** The Project includes 141 acres of internal open space.
- BI-ED-3** The Project includes a modification of Otay Lakes Road to accommodate wildlife under-crossings toward the eastern end of Lower Otay Lake. The under-crossings are designed to provide sufficient light to encourage use.

- BI-ED-4** Programs for coastal sage scrub and vernal pool restoration shall be implemented as part of Project development.
- BI-ED-5** A total of 1,091.46 acres of land shall be designated for Preserve uses, including 10.71 acres of thorn mint preserve.
- BI-ED-6** Restoration areas will incorporate salvaged materials, such as individual cactus, native plant mulching, selective soil salvaging, seed collection, and translocation of plant materials as determined to be appropriate. Prior to grading the project, a Conceptual Upland Restoration Plan (**Appendix H**) will be submitted to and receive approval from the director of the Department of Planning and Development Services. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat. No invasive and/or non-native plant species shall be introduced.
- BI-ED-7** A hydroseed mix that incorporates native species, is appropriate to the area, and is without invasives shall be used for slope stabilization in transitional areas.
- BI-ED-8** Peruvian pepper trees and other invasive vegetation would not be planted in streetscapes, or within 50 feet of the Preserve, where they could impact native habitat.
- BI-ED-9** Concurrent with recording each final map, pursuant to the RMP and the MSCP requirement, the property owner(s) shall convey land within the Otay Ranch RMP Preserve at a ratio of 1.188 acres for each acre of development area (no conveyance for certain common land uses including school, parks, or Circulation Element roads).
- BI-ED-10** Restoration areas will incorporate salvaged materials, such as individual cactus, native plant mulching, selective soil salvaging, seed collection, and translocation of plant materials as determined to be appropriate. Prior to grading the project, a Conceptual Upland Restoration Plan (**Appendix H**) will be submitted to and receive approval from the director of the Department of Planning and Development Services. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat. No invasive and/or non-native plant species shall be introduced.
- BI-ED-11** The Conceptual Upland Restoration Plan shall include, but not be limited to, the following to ensure the establishment of the restoration objectives: a 24- by 36-inch map showing the restoration areas, site preparation information, type of planting materials (species ratios, source, size of container, etc.), planting program, 80% success criteria, 5-year monitoring plan, and detailed cost estimate. The cost estimate shall include planting, plant materials, irrigation, maintenance, monitoring, and report preparation. The report shall be prepared by a County approved biologist and a state of California licensed landscape architect. The habitat created pursuant to the Conceptual Upland Restoration Plan must be placed within an open space

easement dedicated to the County prior to or immediately following the approval of the Conceptual Upland Restoration Plan.

- BI-ED-12** Temporary impact areas are proposed to be restored to native habitat appropriate for the location and the previous condition of the area. Restoration plans for temporary impact areas will be prepared that include: a 24- by 36-inch map showing the restoration areas, site preparation information, type of planting materials (species ratios, source, size of container, etc.), planting program, 80% success criteria, 5-year monitoring plan, and detailed cost estimate.
- BI-ED-13** Prominently colored, sturdy fencing shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist for the San Diego County Department of Planning and Development Services. Fencing shall remain in place during all construction activities.
- BI-ED-14** During construction, material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive plant communities. Implementation of this measure shall be documented by a qualified monitoring biologist for the San Diego County Department of Planning and Development Services. During grading and construction, graded areas shall be periodically watered to minimize dust affecting adjacent vegetation. Implementation of this measure shall be documented by a qualified monitoring biologist for the San Diego County Department of Planning and Development Services.
- BI-ED-15** A Storm Water Pollution Prevention Plan (SWPPP) shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, etc., are minimized. Measures that may be incorporated into the plan include use of silt fencing, haybales, and straw wattles. The SWPPP shall be approved by the San Diego County Department of Planning and Development Services.
- BI-ED-16** During Project operation, all recreational areas that use chemicals or animal by-products, such as manure, that are potentially toxic or impactful to sensitive habitats or plants shall incorporate methods on-site to reduce impacts caused by the application and/or drainage of such materials into Preserve areas.
- BI-ED-17** No invasive nonnative plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat. Landscape plans shall be approved by the Project biologist and submitted to the San Diego County Department of Planning and Development Services prior to installation for review and approval.

- BI-ED-18** During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
- BI-ED-19** No clearing, grading, or grubbing activities may occur within occupied gnatcatcher habitat during the breeding season for California gnatcatcher (February 15 to August 15, annually).
- BI-ED-20** When clearing, grading, or grubbing activities occur during the breeding season for raptors (January 15 to July 31, annually), nesting bird surveys shall be conducted by a qualified biologist for the San Diego County Department of Planning and Development Services to identify active nest locations. Construction activities shall be restricted or modified such that noise levels related to those activities are below 60 dBA L_{eq} , or other Wildlife Agency approved restrictions, in the vicinity of the active nest site.
- BI-ED-21** Uses in or adjacent to the Preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy uses or activities adjacent to breeding areas shall incorporate noise-reduction measures or be curtailed during the breeding season of sensitive bird species.
- BI-ED-22** Lighting of all developed areas adjacent to the Preserve shall be directed away from the Preserve, wherever feasible and consistent with public safety. Where necessary, development shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting. Consideration shall be given to the use of low-pressure sodium lighting. All lighting, landscaping, and berming/grading plans shall be submitted to the San Diego County Department of Planning and Development Services for review and approval prior to construction.
- BI-ED-23** Dewatering shall be conducted in accordance with standard regulations of RWQCB. An NPDES permit, issued by RWQCB, to discharge water from dewatering activities shall be required prior to start of construction. This will minimize erosion, siltation, and pollution within sensitive communities.
- BI-ED-24** Design of drainage facilities shall incorporate long-term control of pollutants and storm water flow to minimize pollution and hydrologic changes. An Urban Runoff Plan and operational BMPs shall be approved by the San Diego County Department of Planning and Development Services prior to construction.
- BI-ED-25** Grading and/or improvement plans shall include the requirement that a fencing and signage plan be prepared and that permanent fences or walls be placed along the open space boundaries. Placement of permanent fencing or walls is required at the conclusion of the grading activity and prior to Record Plan approval.

- BI-ED-26** Submit to the director of the Department of Planning and Development Services evidence that permanent signs have been placed to protect all open space easements in accordance with the open space signage exhibit that will be placed on file with the Department of Planning and Development Services as Environmental Review Number 04-19-05.

7.4 Cultural Resources

Mitigation Measures

- M-CR-1** Prior to the issuance of grading permits, the Project applicant shall implement or cause the implementation of a data recovery program, as described below, for the following nine sites located within the proposed grading and brushing envelope:

SDI-11,406	SDI-11,409	SDI-12,368	SDI-12,371
SDI-16,303	SDI-16,309	SDI-16,312	SDI-16,326
SDI-16,332			

Data Recovery Program

The data recovery program is contingent upon extracting a sample that will exhaust the data potential of each site. The County has not adopted a policy that identifies the specific level of excavation required to achieve mitigation of impacts by data recovery. In most cases, the level of sampling is dictated by the information potential of the site. Data recovery is commonly discussed in terms of sampling percentages, referring to the percent of the area of the significant subsurface deposit to be excavated. The general approach for achieving the mitigation of impacts through data recovery would begin with an indexing of the site. The site index shall include a sufficient sample of the subsurface deposit, ranging from 2.5 to 4.0 percent of each deposit, to effectively stratify the deposits into areas of differing artifact content, densities, and activity areas. The small percentage value proposed for site indexing is reflective of the basic characterization of each of the significant sites as quarry locations with minimal evidence of occupation activities. The indexing process shall use a static grid to cover each site, with a sample unit placed in each grid cell. Using a grid will produce a very structured, nonrandom, and uniform index of the content of each cultural deposit. Within the portion(s) of each site that retains the greatest research potential, an additional 2 percent of that area shall be excavated. For most sites in the data recovery program, the area excavated shall be between 2.5 and 3 percent of the significant subsurface deposit (area of greater research potential). This volume of recovery would be sufficient to successfully pursue the research objectives of the research design and to provide other researchers with a large information resource. At the sites considered to retain the greatest research potential, a third level of stratified sampling may be implemented to focus block excavations on areas that demonstrate intense artifact recovery, features, or multi-cultural depositional patterns.

The excavation of the subsurface deposits shall be accomplished with standard 1-meter-square test units excavated by hand in 10-centimeter levels. All units shall be screened, mapped, measured, and photographed through standard stratigraphic control measures. A more detailed description of the field methods to be used is provided in Section 10.5 of the Archaeological/Historical Study provided in this EIR, **Appendix C-4**.

For the phases of work at each site, the first phase shall be the site indexing and the second phase shall be the focused investigation. A third phase, if warranted, would be extremely focused on high-potential elements of any significant site. Each phase has specific goals: the site index is a nonrandom representative sample of the entire site, while the second and third phases are focused, biased, and intuitive studies of the area within the deposit that has the greatest potential.

The grid for each site shall be determined by the number of sample units needed to accomplish the sample level of 2.5 percent. For most sites, the grid shall be set at 15-meter or 25-meter intervals. To calculate the grid size, the number of test units that represent the Phase 1 sample was divided into the calculated area of the deposit. The resulting quotient represents the area within each grid cell, and the square root of this value provides the dimension of the grid cell. For example, assuming a site contained 2,000 square meters of a cultural deposit, a 2.5 percent sample would be 50 square meters. The grid size would be determined by dividing the deposit size (2,000 square meters) by the number of units (50), which equals 40 square meters. The square root of 40 square meters is 6.3 meters; thus, the intersection of each grid line is spaced at 6.3 meters. Within each 6.3-meter by 6.3-meter grid cell, one test unit would be excavated to complete the site index.

For consistency, all of the sites shall be treated similarly, with an index phase followed by a focused, intuitive phase in the area of greatest importance. The phases of the sampling procedure to be used at the sites included in the data recovery program are as follows.

Data Recovery Program Phase 1

The first phase of excavation at any particular site shall typically involve a 2.5 percent sample used to index the site content and document intra-site variation. Test units shall be uniformly distributed within each site using a grid system. For most sites, the presence of multiple rock outcroppings would constitute voids in the sample grid. These areas would be deleted from the calculations of site deposits when the data recovery programs are initiated; however, the areas represented by the outcrops cannot be calculated at this time.

Data Recovery Program Phase 2

The second phase of excavation shall consist of a 2 to 4 percent sample of each site area identified as representing the greatest research potential. The stratification of

the site following the Phase 1 work would typically identify an area of approximately 10 percent of the sample area identified as retaining additional research potential. For this sampling phase, the test units must not be randomly placed but shall be intuitively located at the discretion of the archaeologist.

Data Recovery Program Phase 3

The last phase of excavation shall be conducted at any sites that are found to contain particularly important deposits worthy of extended excavation. The sample size of any such area is dependent on the nature of the deposit and research potential.

The procedures noted above shall be applied to each of the sites listed below in addition to any site-specific mitigation measures. The actual number of square meters to be excavated in any particular site would depend on the site size, importance, and research potential. The projected size of the sample for each of the sites listed below is a minimum of 2.5 percent, but the actual size of the sample needed to satisfy the data needs of the research objectives will ultimately be determined by the assessment of the recovery from the sample. The possibility exists that previously unidentified subsurface deposits would be identified during data recovery, increasing the research potential of a significant site. In this case, the sample size of the Phase 1 or Phase 2 excavation may be readjusted. If the recovery from any site is evaluated as redundant even before the minimum Phase 1 sample level of 2.5 percent is achieved, the consulting archaeologist shall request a variance from the County of San Diego to reduce the sample size to reflect the redundancy of the sample. This request would need to be supported by data and analysis from the excavations in progress at the site(s) in question. At each site, a backhoe may be employed following the completed sampling program to search for any anomalies within the site. Trenches would be used to expose portions of the sites; however, the number of trenches used in this type of investigation would be discussed and approved by the County before initiation.

Backhoe Trenching

All sites that are subject to data recovery and test unit excavations shall be subject to backhoe trenching following the test unit excavations to search for any unusual features or anomalies that would need to be examined further. The number and locations of the trenches to be excavated at each site shall be determined by the archaeologist on the basis of the size of the site and the recovery from the test units. If the trenches reveal the presence of deposits or features within a site that were not previously detected, then additional test units shall be excavated to expose the features and permit further investigation and recordation. For those four significant sites (SDI-12,368; SDI-16,312; SDI-16,326; and 16,332) that lie partially within the development envelope and partially within the Preserve (open space), the data recovery mitigation program would include portions of these sites within the development envelope as well as an area 10-feet-wide extending into the open

space portion of the site. This extension of the data recovery program into the open space portions of the sites is intended to provide mitigation for indirect impacts in the buffer area of the open space that directly affects the development envelope.

Data Recovery Procedures

For all sites that are subject to data recovery, the program to carry out the necessary data recovery procedures, including the applicable field methodologies, laboratory analyses, and special studies for these sites, shall be provided as described below.

The data recovery program must be consistent with the policies and guidelines of the County and with the California Office of Historic Preservation (OHP) publication, Guidelines for Archaeological Research Design Preservation Planning Bulletin No. 5 (1991).

Field Methods

The data recovery program shall focus on the excavation of test units measuring 1-meter-square to a minimum depth of 30 centimeters or until bedrock is encountered. If cultural materials are present beyond this depth, the excavation shall continue until one sterile level is exposed. The units shall be excavated in controlled, 10-centimeter levels. All removed soils shall be sifted through 1/8-inch mesh hardware cloth. All artifacts recovered during the screening process shall be properly labeled with provenience information in the field and subsequently subjected to standard laboratory procedures of washing (if appropriate) and cataloging. The excavation of the units shall be documented with field notes, illustrations, and photographs.

At the conclusion of the test unit excavations, backhoe trenches may be excavated to investigate the site(s) further and search for any unusual features or artifact concentrations. When a backhoe is used, the methodology to be followed is outlined below:

- All trenches must be excavated under the supervision of the Project archaeologist.
- All trenches must be mapped, measured, photographed, and sketched.
- Periodic screening of the excavated material from the trenches shall be conducted.
- Provenience data for all screened soil shall be recorded.

Based on data from the backhoe trenches, the data recovery program could be expanded to focus on features or unique deposits that differ from the materials already studied.

Any features discovered during the archaeological excavations shall be exposed through careful hand excavation. Additional test units may be needed to fully expose the features, which shall then be recorded by sketching and photography. Any datable materials found in association with discovered features shall be collected for radiocarbon dating. If obvious datable samples cannot be found at the sites in the data recovery program, then several bulk soil samples may be collected and processed in an attempt to date the deposits.

At each site, column samples shall be taken to permit microanalysis of midden contents. The columns shall measure 10 centimeters square and shall conform to the walls of selected completed test units to the bottom of the deposit. All of the soil from the column shall be collected and not screened in the field. The samples shall be returned to the laboratory for analysis. In addition, during hand excavation, special attention shall be given to the identification of lithic tools found in situ and their potential for residue analysis. When possible, such tools shall be bagged separately, thereby excluding them from the wet-screening process. A sample of the surrounding soil shall be collected to serve as a control sample, should the artifact be chosen for pollen, phytolith, or blood residue analyses.

Throughout the field operations, standard archaeological procedures shall be implemented. All test units and features shall be mapped using the established datums.

Laboratory Analysis

All of the materials recovered from the field excavations shall be subjected to standard laboratory analysis. Artifacts may be washed, if necessary, to permit proper identification. The artifacts shall be sorted and cataloged, including counts, materials, condition, weight, provenience, and unique artifact identification numbers.

The lithic artifacts recovered from the Project site shall be subjected to analysis, which shall include recordation of critical measurements and weight, and inspection for evidence of use/wear, retouch, patination, or stains. The recovered flakes (or a representative sample) shall be subject to an analysis of attributes such as size, condition, type, termination, and material. The attribute analysis shall include the flake collections recovered during the testing program.

Nonlithic materials, such as ecofacts (shell and bone), shall be subject to specialized analyses. The shell shall be cataloged by species and weight of recovery per level. The bone material shall be weighed and subsequently submitted for specialized faunal analysis. The laboratory analysis of the column samples may include flotation procedures to remove seeds and other microfaunal remains from the soil, followed by the screening of the remainder through a 1/16-inch mesh sieve, if the potential for nonlithic materials is noted in the deposit.

Other specialized studies that shall be conducted if the appropriate materials are encountered during the data recovery program include marine shell species identification, faunal analysis, otolith analysis (for seasonality), oxygen isotopic analysis (also for seasonality), radiocarbon dating, obsidian sourcing and hydration, and blood residue and phytolith studies. These specialized studies are briefly described below.

Shell Analysis

Analysis of any shell recovery would include the speciation of all shell fragments collected. The shell shall be recorded by weight and shall include a count of hinges to determine the minimum number of individuals represented by the recovery.

Faunal Analysis

Any bone material recovered during the data recovery program shall be analyzed by a faunal expert to identify species, types, age, and evidence of burning or butchering. The prehistoric bone recovery shall provide information concerning diet, activity areas within the sites, the habitats exploited, and methods of processing.

Radiocarbon Dating

This dating technique shall be attempted whenever possible. The investigations conducted thus far have not recovered any dateable material, although bulk soil dating was not attempted to determine if the deposits contained sufficient carbon for dating. The radiocarbon dating would be useful in conjunction with the stratigraphic recovery of cultural materials to establish the chronology of the sites. Therefore, the collection of samples for dating should be based on the presence of diagnostic artifacts, features, or geological strata delineations. In conjunction with the research topics, any possible opportunities to delineate parts of sites into Late Prehistoric and Archaic periods shall be advanced through the use of dating methods.

Blood Residue Studies

Organic residue on lithic artifacts may be useful in the determination of the species of animals represented by the residue. However, the use of blood residue studies is necessarily dependent upon the identification of such residues on artifacts. The detection of blood residue shall be made prior to any washing of artifacts so that the residue samples will not be lost.

Isotopic Profiles

The analysis of Oxygen-18 isotopic profiles from shells may be used to determine the season during which the shells were collected. This process measures the ratio of isotopes of oxygen, which is determined by water temperature. A minimum of

five shells shall be used in this analysis, particularly if no other means of determining seasonality can be used. Use of this type of analysis is not likely due to the paucity of shell at the site.

Obsidian Hydration and Sourcing

Any recovered obsidian artifacts shall be submitted to a specialist to determine the source of the lithic material. The obsidian shall also be analyzed to produce hydration readings, which may then be used to provide relative dates for the use of the artifacts.

Monitoring

All brushing and grading activities within the Project site shall be monitored on a full-time basis by one or more archaeologists, as dictated by the size of the grading operation. All utility excavations, road grading, or brush removal must be coordinated with the archaeological monitor. Any known resources that are graded must be intensively monitored during grading to ensure that any important features, isolates, or deposits are either recorded and collected, or excavated. Should any resources be encountered during the monitoring of the brushing and grading that were not previously recorded, the action shall be temporarily halted or redirected to another area while the nature of the discovery is evaluated. Any resources that may be encountered shall require testing to determine their significance. If the testing demonstrates that a resource is significant, then a data recovery program shall be implemented consistent with these mitigation measures.

Cultural Material Curation

Cultural materials recovered from the Project site shall be permanently curated at a facility that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. No other collections from previous studies could be located at the time of this study. Should any additional collections be discovered from previous studies, these will be curated with the collections generated from the site evaluations.

Site-Specific Data Recovery Programs

As part of the data recovery program and other actions described above under mitigation measure M-CR-1, the Project applicant shall also cause a Data Recovery program to be implemented for each of the nine CEQA significant prehistoric sites that would be impacted by implementation of the proposed Project as described below.

- M-CR-1a** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,406, which shall focus on a

uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 858-square-meter deposit. This represents a sample of 21 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 858 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

M-CR-1b Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-11,409, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 10,637-square-meter subsurface deposit. This represents a sample of 266 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 5 percent of the 10,637 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

M-CR-1c Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,368, which shall focus on a uniform indexing of the focused subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 1,735-square-meter deposit. This represents a sample of 43 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-12,368 be subjected to data recovery. This will add five test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 1,735 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

M-CR-1d Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-12,371, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 781-square-meter deposit. This represents a sample of 20 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 781 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

M-CR-1e Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,303, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 67-square-meter deposit. This represents a sample of 2 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 67 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

- M-CR-1f** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,309, which shall focus on a uniform indexing of the subsurface deposit. This first level of index sampling shall consist of a 2.5 percent sample of the 5,496-square-meter deposit. This represents a sample of 137 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 5,496 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1g** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,312, which shall focus on a uniform indexing of the subsurface deposit. Approximately 24 percent of this site will be impacted, including 1,618 square meters of the 4,967-square-meter deposit identified. This first level of index sampling shall consist of a 2.5 percent sample of the 1,618-square-meter deposit. This represents a sample of 41 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer within the open space portion of SDI-16,312 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 1,618 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations, but it is estimated to be a sample of three additional test units.
- M-CR-1h** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,326, which shall focus on a uniform indexing of the subsurface deposit. The site contains three separate deposits, of which only the western deposit will be impacted. The western subsurface component encompasses an area of 860 square meters. This first level of index sampling shall consist of a 2.5 percent sample of the 860-square-meter deposit. This represents a sample of 22 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,326 be subjected to data recovery. This will add eight test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 860 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.
- M-CR-1i** Prior to the issuance of a grading permit, the Project applicant shall cause a Data Recovery program to be implemented for Site SDI-16,332, which shall focus on a uniform indexing of the subsurface deposit. The total area of the subsurface deposits is approximately 1,731 square meters. The development will impact approximately one-third of SDI-16,332, including 924 square meters of the significant subsurface deposits. This first level of index sampling shall consist of a 2.5 percent sample of the 924-square-meter deposit. This represents a sample of 23 square meters for the Phase 1 index. The County of San Diego has also required that a 10-foot-wide buffer strip within the open space portion of SDI-16,332 be

subjected to data recovery. This will add seven test units to the sample. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 10 percent of the 924 square meters; the exact number of Phase 2 excavations shall depend on the results of the Phase 1 excavations.

- M-CR-1j** All cultural materials recovered from the Project, either during the mitigation program or during the past archaeological testing programs, shall be professionally prepared for permanent curation at a local facility meeting the criteria for such curation centers as listed in 36CFR79. The cost to curate collections shall be the responsibility of the applicant. Copies of field notes, reports, maps and catalog data shall be included with the curated collection.
- M-CR-2a** All sites, regardless of significance status, that are located outside of the development area shall be placed in open space easements. The sites may be included in general Project-wide open space preserves, in which case, site-specific easements would not be necessary. For sites that would be preserved within the development envelope, easements shall be dedicated for individual sites unless incorporated within larger biological or other open space designation. The open space designation shall include language that prohibits any type of surface modification to the sites or intrusions into the site by grading, trenching, or other development-related improvements. For any sites located within open space, a park area, or the Preserve, specific requirements for individual sites are necessary to ensure that the sites are not impacted by maintenance or landscaping. Open space areas shall be transferred to County Department of Parks and Recreation (County Parks) and maintained as part of the Preserve. County Parks shall assume responsibility for the protection of the sites in the open space areas as part of the management of the Preserve. Aside from temporary fencing during grading and construction to ensure preservation during this period, no individual site preservation measures are deemed necessary during development activities. Subsequently, the long-term protection of the sites will be achieved through management of the Preserve by County Parks. During grading or brushing, the monitoring archaeologist shall determine the need for temporary fences and direct their installation to provide a physical barrier between the grading machinery and adjacent significant cultural resources that are designated for preservation or eventual data recovery. Once the open space areas are transferred to the Preserve, it will become the responsibility of the Preserve owner/manager to maintain the easements for the archaeological sites.
- M-CR-2b** Prior to any improvements to existing trails or development of new trails, improvement plans shall be reviewed by the Project archaeologist under the direction of the County to determine the potential for impacts to cultural resources, and the need for additional field research, testing, mitigation for potential impacts during construction and use, and monitoring of construction. The requirements of mitigation measure M-CR-1 for data recovery and analysis, including Native

American monitoring, shall be applied during all subsequent surveys if new cultural resources are identified.

M-CR-3 In the event that human burials are encountered, standard procedures for such discoveries shall be implemented, including notification of the County Coroner's Office, the County, the Native American Heritage Commission and local Native American representatives. Fieldwork shall cease in the area of any such discovery. The Native American representative and the County shall be consulted to determine a preferred course of action, and the burial shall be treated according to the requirements of Public Resources Code §5097.98.

M-CR-4 Paleontological monitoring shall be conducted during all mass grading and excavation activities in surface exposures of the Otay Formation to mitigate any adverse impacts (i.e., loss or destruction) to potential nonrenewable paleontological resources. A mitigation monitoring and reporting program consistent with County and CEQA guidelines and requirements shall be developed and implemented prior to any mass grading and/or excavation-related activities, including utility trenching, within the Otay Formation. The mitigation monitoring and reporting program shall be conducted in accordance with the following procedures:

- A. A Qualified Paleontologist or Paleontological Resources Monitor (under the supervision of the Qualified Paleontologist) shall be on-site during all excavation operations within geologic formations that may contain paleontological resources (i.e., the Otay Formation). The Qualified Project Paleontologist is a person with a Ph.D. or master's degree in paleontology or related field, and who has knowledge of San Diego County paleontology, and documented experience in professional paleontological procedures and techniques. A Paleontological Monitor is defined as an individual with at least 1 year of experience in field identification and collection of fossil materials. The Paleontological Monitor shall work under the direct supervision of the Qualified Paleontologist. The applicant shall authorize the Qualified Paleontologist and/or Paleontological Monitor to direct, divert, or halt any grading activity, and to perform all other acts required by the provisions listed below.
- B. The Qualified Paleontologist and/or Paleontological Monitor shall monitor all grading and excavation activities of undisturbed formations of sedimentary rock;
- C. If paleontological resources are unearthed, the Qualified Paleontologist or Paleontological Monitor shall do the following:
 1. Direct, divert, or halt any grading or excavation activity until such time that the sensitivity of the resource can be determined and the appropriate recovery implemented.

2. Salvage unearthed fossil remains, including simple excavation of exposed specimens or, if necessary, plaster-jacketing of large and/or fragile specimens or more elaborate quarry excavations of richly fossiliferous deposits.
 3. Record stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including a detailed description of all paleontological localities within the Project site, as well as the lithology of fossil-bearing strata within the measured stratigraphic section, if feasible, and photographic documentation of the geologic setting.
 4. Prepare collected fossil remains for curation to include cleaning the fossils by removing the enclosing rock material; stabilizing fragile specimens using glues and other hardeners, if necessary; and repairing broken specimens.
 5. Curate, catalog, and identify all fossil remains to the lowest taxon possible; inventory specimens; assign catalog numbers; and enter the appropriate specimen and locality data into a collection database.
 6. Transfer the cataloged fossil remains to an accredited institution (museum or university) in California that maintains paleontological collections for archival storage and/or display. The transfer shall include copies of relevant field notes, maps, stratigraphic sections, and photographs.
- D. The Qualified Paleontologist shall prepare a final Paleontological Resources Mitigation Report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils recovered, and the significance of the curated collection.
- E. Submit two hard copies of the final Paleontological Resources Mitigation Report to the Director of PDS for final approval of the mitigation, and submit an electronic copy of the report according to the County PDS' Electronic Submittal Format Guidelines.

Environmental Design Considerations

CR-ED-1 Grading operations shall be conducted in accordance with a monitoring and recovery program for potential paleontological and/or cultural artifacts.

7.5 Geology and Soils

Mitigation Measures

M-GE-1a Otay Lakes Road, Widening & Realignment (**Appendix C-8**): Excavations of cut slopes shall be observed during grading by an engineering geologist to evaluate

whether the soil and geologic conditions differ significantly from those expected. Cut slopes that expose shared claystone bedding may require slope stabilization consisting of stability fills.

- M-GE-1b** Area A and B, Tentative Map (**Appendices C-6 and 7**): Because of the potential presence of adverse geologic structures, the geologic structure of permanent cut slopes composed of Otay Formation, Fangulomerate materials, or metavolcanic rock should be analyzed in detail by an engineering geologist during grading operations. Grading of cut and fill slopes and intermediate terrace benching shall be designed in accordance with the requirements of the local building codes and the 2010 California Building Code (CBC). Additional recommendations for slope stabilization may be necessary if adverse geologic structure is encountered. Mitigation of unstable cut slopes can be achieved by the use of drained stability fills. In addition, cut slopes exposing cohesionless surficial deposits or rock slopes with unfavorable geologic structure may require stability fills. In general, the Typical Stability Fill Detail presented in Figure 10 (**Appendices C-6 and 7**) should be used for design and construction of stability fills, where required. The backcut for stability fills should commence at least 10 feet from the top of the proposed finished-graded slope and should extend at least 3 feet into formational materials. For slopes that exceed 30 feet in height, the inclination of the backcut may be flattened as determined by the engineering geologist during grading operations.
- M-GE-2a** Otay Lakes Road, Widening & Realignment (**Appendix C-8**): Mitigation measures will be required along the eastern portion of the roadway due to the steepness of the natural slopes and boulder outcrops above the proposed cut slope. The areas of proposed rock fall mitigation are shown on **Figures 2.5-2A and 2.5-2B**. The mitigation shall consist of the construction of a rock fall debris fence or other acceptable catchment device at the toe of the proposed cut slope. The hard rock slopes should be evaluated by an engineering geologist during site development and final locations of the debris fence or alternative method shall be provided at that time.
- M-GE-2b** Area A and Area B, Tentative Map (**Appendices C-6 and 7**): Mitigation shall consist of the construction of rock fall debris fences or other acceptable catchment device at the toe of proposed slopes or at the edge of daylight cut or fill areas. The area of proposed rock fall mitigation for Area A is shown on **Figure 2.5-2A** and Area B on **Figure 2.5-2B**. Area A consists of the northern-most section of proposed residential development, east of Upper Otay Lake and the northern section of Lower Otay Lake. Area B encompasses the eastern-most section of proposed residential development and resort. The hard rock slopes shall be evaluated by an engineering geologist during site development and final locations of the debris fences or alternative method shall be provided at that time.
- M-GE-2c** Area A and Area B, Tentative Map (**Appendices C-6 and 7**): Hard rock slopes shall be analyzed in detail by an engineering geologist during the grading operations. In areas where loose or potentially hazardous rock is encountered during

grading, the loose material shall be scaled off the slope face to mitigate the hazard. If adverse geologic structures are encountered during grading, rock slope stabilization measures such as rock bolting, or rockfall protection systems may be necessary.

- M-GE-2d** When all measures to mitigate rock fall hazards have been provided, a professional opinion from an engineering geologist shall be provided that indicates that the potential risk for rockfall hazards to impact the proposed development would be less than significant with the mitigation measures that were implemented. It should also be stated that with mitigation measures incorporated, the proposed development is considered safe for human occupancy.

Environmental Design Considerations

- GE-ED-1a** All site-specific requirements outlined in the Geotechnical Report for the Project shall be implemented. Specifically, seismic design coefficients have been developed based on the largest probable earthquake in the Project site. Structures developed as part of the proposed Project are required to adhere to these coefficients and criteria and be consistent with the Uniform Building Code (UBC).
- GE-ED-1b** Unsuitable bearing materials encountered on-site, including soil, alluvium, colluvium, weathered bedrock, and uncompacted artificial fill, shall be removed prior to the placement of compacted fill. The actual removal depths shall be evaluated by the geotechnical engineer during grading operations. These materials may be reused as compacted fill provided they are moisture conditioned and properly compacted per all specifications in the Project's Geotechnical Report. The bottom of the excavations shall be scarified to a depth of at least 8 inches, moisture conditioned as necessary, and properly compacted. Excavated soils with an expansion index greater than 50 shall be kept at least 3 feet below finish grades in areas of the structural fill. Sheet-graded pads shall be capped with at least 6 feet of low expansive soils to accommodate minor regrading.
- GE-ED-1c** Building pads with cut-fill transitions shall be undercut at least 3 feet, sloped 1 percent to the adjacent street or deepest fill, and replaced with properly compacted very low to low expansive fill soils to limit the differential settlement potential and provide a uniform bearing surface for structures. Where the thickness of the fill below the building pad exceeds 15 feet, the depth of the undercut shall be increased to one-fifth of the maximum fill thickness. This shall be done in conformance with the guidance provided in the Geotechnical Report, in **Appendix C-6 and 7** to this EIR.
- GE-ED-1d** Proposed building pads that expose bedrock materials at or near finish grade shall be over-excavated and replaced with compacted engineered fill a minimum of 3 feet below proposed finish grade as shown in the Geotechnical Report, **Appendix C-6 and 7** to this EIR. All excavation and lot over-excavation bottoms shall be sloped to a minimum of 1 percent and drain toward the adjacent on-site streets or driveways

to promote subsurface drainage along the bedrock/fill contact. Where steep transitions occur beneath proposed buildings, additional over-excavation (more than 5 feet) may be required, as determined in the field during grading by the Project geotechnical engineer, to reduce the potential for differential settlement. Proposed building pads located above buttress or stabilization fills shall be over-excavated a minimum of 5 feet and capped with a compacted fill blanket to reduce the potential for differential settlement. The removal bottoms shall be observed by the Project geotechnical engineer to evaluate the presence of loose materials and require deeper excavations, if necessary. All excavation and fill requirements specified in the Project Geotechnical Report shall be adhered to.

- GE-ED-1e** Import fill shall consist of granular materials with a very low to low expansion potential (expansion index of 50 or less), generally free of deleterious material and rock fragments larger than 6 inches, and shall be compacted as recommended in the Project Geotechnical Report.
- GE-ED-2** A geotechnical engineer or engineering geologist shall evaluate the hard rock slopes during construction and provide specific design requirements based on each rock fall hazard area, including those identified in **Figure 2.5-1**. Variable slope ratios not exceeding 2:1 shall be used when developing grading plans unless: a report is received from a soil engineer certifying that he or she has investigated the property and that in his or her opinion the proposed steeper slope will be stable and will not endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course. Avoidance of potential hazards from rock falls may include the stabilization of slopes; construction of rock fall protection devices such as catchment basins or rock debris fences; and/or the removal of boulders presenting a potential rock fall hazard and their placement in a non-hazard position such as a deep fill, the toe of a slope, a canyon bottom, or other safe location. Specific recommended environmental design measures are contained in the Geotechnical Report prepared for the Project (Geocon 2010a).
- GE-ED-3** Otay Lakes Road is realigned from its location as shown on the approved Otay SRP to follow the existing location adjacent to Lower Otay Lake. The realignment reduces significant grading and landform alteration impacts.
- GE-ED-4** All grading operations and construction shall be conducted in conformance with applicable County regulations and in conformance with the recommendations included in the geotechnical reports for the Project.
- GE-ED-5** Following grading, lots with fill or cut slopes shall be revegetated with shrubs and ground cover for erosion control, as well as box trees to minimize visual dominance of the graded slope.

7.6 Hazards and Hazardous Materials

Mitigation Measures

- M-HZ-1a** Project grading and improvements plans shall be reviewed by the Director of Public Works to determine that water quality basins are designed to drain within 72 hours and include a mechanism to open a flap gate or similar manual device if the drain time becomes too long. Manual drainage shall be conducted if water is held beyond 72 hours. Routine and semi-annual inspections shall include modification of orifice drain holes, if needed, to provide for optimum performance and suitable drain time.
- M-HZ-1b** The Director of Public Works shall determine the design of the water quality basins include rip-rap fields at inlet scour-protection points to be self-draining concurrent with the processing of grading and improvement plans.
- M-HZ-1c** Routine and semi-annual water quality basin inspections to the satisfaction of the Director of Public Works shall include removal of accumulated trash and debris that may capture and hold rainwater or runoff, or that accumulates around the outlet riser pipe or discharge orifice; repair of erosion or low-lying areas where ponding of water develops; identification and elimination of possible vector harborage or burrowing rodent activity; inspection for sufficient vegetation coverage for basin side slopes and floor; reduction of vegetation height to minimize insect harborage, with the height of ground cover grasses reduced to a maximum height of 6 inches; investigation and elimination or minimization of upstream dry season flow sources if dry season flows are persistent and lead to constant ponding; and notification of San Diego County Vector Control if sources are from off-site properties.

7.7 Noise

Mitigation Measures

- M-N-1a** The Project proponent shall prepare a noise protection easement for those lots identified in **Table 2.7-7** of the Project EIR. The noise protection easement language shall contain a restriction stating that the structure and the outdoor activity area will be placed such that a noise barrier will complement the residence's architecture, reduce noise levels at outdoor activity areas to within acceptable standards, and will not incorporate a solid (opaque) wall in excess of 10 feet.
- M-N-1b** Concurrent with approval of the Final Map, the Project proponents shall dedicate to the County a noise protection easement on each of the lots identified in **Table 2.7-6** for the receptor shown in **Figures 2.7-3, 2.7-4, and 2.7-5** of the Project EIR. These easements are for the protection of noise-sensitive locations from excessive traffic noise. The noise protection easements shall be shown on the Final Map(s).
- M-N-1c** For any lot shown to be exposed to noise levels exceeding 60 dBA CNEL, the noise protection easement shall require that, prior to approval of the building permit or

other development approval, an acoustical study be prepared based on proposed noise barrier placement and housing construction to demonstrate and ensure that interior noise levels are below 45 dBA CNEL.

- M-N-1d** The Project proponent shall construct a noise barrier at the top of slope and at the back of yards for any Noise Sensitive Land Use that would be exposed to a CNEL greater than 60 dBA, as shown in **Figures 2.7-3, 2.7-4, and 2.7-5** of the Project EIR. The barrier shall be at the height specified in **Table 2.7-7**. Barriers may be constructed of masonry, wood, and transparent materials, such as glass or Lucite. Earthen berms or a combination of berms and walls could also be used to provide noise attenuation.
- M-N-1e** Noise barriers, as described in M-N-1d, would not reduce noise levels to second-story elevations due to their lesser barrier heights relative to two-story structures. Where two-story homes are to be located where traffic noise levels would meet or exceed 65 dBA CNEL without abatement (see **Table 2.7-6** of the Project EIR), the noise protection easement required by mitigation measure M-N-1 shall specify that the applicant for a building permit or other development approval must have to demonstrate that interior noise levels due to exterior noise sources would not exceed 45 dBA CNEL prior to approval of the building permit or other development approval. In these cases, it is anticipated that the typical method of compliance would be to provide the homes with air conditioning or equivalent forced air circulation to allow occupancy with closed windows, which for most residential construction would provide sufficient exterior-to-interior noise reduction.
- M-N-2** Prior to Site Plan approval of proposed land uses within the mixed-use, resort, public safety, the applicant or designee(s) shall prepare acoustical studies of proposed mechanical equipment, which shall identify all noise-generating equipment (including emergency generators and generators associated with the proposed sewer pump stations), predict property line noise levels from all identified equipment, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation) as necessary to comply with the County Noise Ordinance, Section 36.404.
- M-N-3** Prior to the issuance of a building permit for commercial land uses containing loading docks, delivery areas, and parking lots, the applicant, or its designee, will prepare an acoustical study(s) of proposed commercial land use site plans, which will identify all noise-generating areas and associated equipment, predict noise levels at property lines from all identified areas, and recommend mitigation to be implemented (e.g., enclosures, barriers, site orientation, reduction of parking stalls), as necessary, to comply with the County Noise Ordinance Section 36.404.
- M-N-4** To reduce construction noise impacts associated with rock drilling and crushing noise generated by Project-related blasting activities, Project applicant(s) of all

phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County.
 - Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.
 - A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.
- Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines.
- Blasting shall not be conducted within 1,000 feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level.
 - All rock drilling activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.
 - All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.

M-N-5 To reduce construction noise impacts associated with rock drilling and crushing noise generated by Project-related blasting activities, Project applicant(s) of all phases of Project development shall conform to the following requirements, which shall be prominently noted on grading plans:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in San Diego County.
 - Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.
 - A blasting plan, including estimates of the air blast over-pressure level and groundborne vibration at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.
- Blasting shall not exceed 0.1 in/sec peak particle velocity (PPV) at the nearest occupied residence in accordance with the County's Noise Guidelines.
- Blasting shall not be conducted within 1,000 feet of on- or off-site sensitive receptors unless the blasting study concludes that a distance less than 1,000 feet is within an acceptable noise level.
 - All rock drilling activities shall be located a minimum distance of 800 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 800-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.
 - All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance Section 36.404. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and noise levels of such activities would be within acceptable County limits at the reduced distances as determined by the noise study.

M-N-6 To reduce impacts associated with groundborne vibration generated by Project-related construction activities, the applicant(s) of all Project phases shall conform to the following requirements, which shall be prominently noted on grading plans:

- Heavy construction equipment shall not be operated within 200 feet of any residential structure.
- Rock blasting shall not be performed within 1,000 feet of a residential structure.

- A vibration analysis assessing the proposed blasting and materials handling associated with proposed project shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the plan.

Noise Abatement Measures

- NA-1** All emergency generators shall be located within enclosures, behind barriers, or oriented within the site design to eliminate the line of site between sensitive receptors and generators.
- NA-2** All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- NA-3** Whenever feasible, electrical power shall be used to run air compressors and similar power tools.
- NA-4** Equipment staging areas shall be located as far as feasible from occupied residences or schools.
- NA-5** For all construction activity on the Project site, noise attenuation techniques shall be employed, as needed, to ensure that noise remains below 75 dBA L_{eq} at future residences. Such techniques may include, but are not limited to, the use of sound blankets on noise-generating equipment and the construction of temporary sound barriers adjacent to construction sites, between affected uses.
- NA-6** All rock crushing activities will be located a minimum distance of 2,000 feet from the nearest property line.

Environmental Design Considerations

- N-ED-1** Blasting procedures shall comply with County codes and requirements.
- N-ED-2** Project features requiring stationary noise emitting components (generators, outdoor mechanical equipment, etc.) shall comply with the County Noise Ordinance for restriction of sound levels at property lines.
- N-ED-3** All emergency generators shall be located within enclosures, behind barriers, or oriented within the site design to eliminate the line of site between sensitive receptors and generators.
- N-ED-4** All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with

manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- N-ED-5** Whenever feasible, electrical power shall be used to run air compressors and similar power tools.
- N-ED-6** Equipment staging areas shall be located as far as feasible from occupied residences or schools.
- N-ED-7** For all construction activity on the Project site, noise attenuation techniques shall be employed, as needed, to ensure that noise remains below 75 dBA L_{eq} at future residences. Such techniques may include, but are not limited to, the use of sound blankets on noise-generating equipment and the construction of temporary sound barriers adjacent to construction sites, between affected uses.
- N-ED-8** All rock crushing activities shall be located a minimum distance of 2,000 feet from the nearest property line.
- N-ED-9** All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- N-ED-10** Whenever feasible, electrical power shall be used to run air compressors and similar power tools.
- N-ED-11** Equipment staging areas shall be located as far as feasible from occupied residences or schools.
- N-ED-12** For all construction activity on the Project site, noise attenuation techniques shall be employed as needed to ensure that noise remains below 75 dBA L_{eq} at nearby residences. Such techniques may include, but are not limited to, the use of sound blankets on noise-generating equipment and the construction of temporary sound barriers adjacent to construction sites, between affected uses.

7.8 Transportation and Traffic

Mitigation Measures

- M-TR-1** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 728th building permit.

- M-TR-2** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between the City/County Boundary and Project Driveway #1 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896th building permit.
- M-TR-3** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the County of San Diego to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Project Driveway #1 and Driveway #2 from two lanes to four lanes (4.2A Boulevard with Raised Median) such that the improvements are operational prior to issuance of the 896th building permit.
- M-TR-4** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500th building permit.
- M-TR-5** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 910th building permit.
- M-TR-6** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median) such that the improvements are operational prior to issuance of the 728th building permit.
- M-TR-7** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, a traffic signal at the intersection of Otay Lakes Road and Wueste Road such that the improvements are operational prior to the 1,500th building permit.
- M-TR-8** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with Caltrans to install, cause to be installed, or make a fair-share payment towards an approved plan or program for the signalization of the intersection of Otay Lakes Road and SR-94 such that the traffic signal is operational consistent with Caltrans requirements.

- M-TR-9** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Lake Crest Drive and Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 910th building permit.
- M-TR-10** Prior to recordation of the first final map, the Project applicant shall enter into an agreement with the City of Chula Vista to secure and construct, or cause to be constructed, the widening of Otay Lakes Road between Wueste Road and the City/County Boundary from two lanes to four lanes (4-Lane Major with Raised Median), such that the improvements are operational prior to issuance of the 728th building permit.
- M-TR-11** Otay Lakes Road, between City/County Boundary and Project Driveway #1 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.
- M-TR-12** Otay Lakes Road, between Project Driveway #1 and Project Driveway #2 (County) - this roadway segment is included in the list of facilities included in the County's TIF Program and is classified as a Major Road (4.1B) in the County of San Diego General Plan Mobility Element. The project applicant proposes to change this roadway segment classification to a Boulevard (4.2A). Accordingly, the project applicant would be responsible for participating in an update to the TIF Program to reflect the change in classification. Subsequently, the project applicant would be responsible for complying with the updated TIF Program to mitigate for cumulative impacts.

Environmental Design Considerations

- TR-ED-1** Otay Lakes Road shall be reclassified, widened, and improved to accommodate existing traffic and traffic from the proposed Project. The road shall be realigned in certain areas where current conditions do not meet County standards.
- TR-ED-2** Off-site segment and intersection improvements shall be made as warranted by direct Project traffic and cumulative traffic conditions.

7.9 Hydrology and Water Quality

Environmental Design Considerations

- HY-ED-1** Energy dissipaters shall be located to reduce velocity of flows to non-erosive conditions.
- HY-ED-2** All storm drains shall be designed to accommodate a 100-year storm event.
- HY-ED-3** An authorized SWPPP shall be implemented, pursuant to requirements under the NPDES and applicable County standards and requirements. Detailed BMPs for erosion/sediment control and for use of construction-related hazardous materials such as vehicle fuel shall be included in the plan.

7.10 Public Services

7.10.1 Fire Protection and Emergency Services

Environmental Design Considerations

- PS-ED-1** The Project shall reserve a 2.1-acre site for the construction of a public safety site to include a fire station and a sheriff's substation.
- PS-ED-2** The Project shall incorporate applicable ignition and fire resistance measures for all structures, including the use of approved sprinkler systems, proper roofing and exterior wall materials, and appropriate design construction of facilities such as eaves, vents, doors, window frames, decks, chimneys, gutters, and fences.
- PS-ED-3** Fire-related water supplies and access facilities within the site (fire hydrant design and spacing, adequate fire flow) shall comply with requirements identified in the Fire Protection Plan.
- PS-ED-4** Project design shall incorporate appropriate fuel management zones (100 feet wide) in designated areas.
- PS-ED-5** Fuel modification zones shall be appropriately maintained by the Homeowners' Association (HOA) or Communities Facilities District (CFD) as outlined in the Fire Protection Plan, including such efforts as inspecting/repairing irrigation systems where permitted, vegetation thinning/pruning, and weed removal.
- PS-ED-6** The design of all access-related features, such as streets, driveways, alleys, gates, speed bumps, walkways, and emergency access roads, shall comply with applicable requirements of the San Diego County Fire Code.

- PS-ED-7** An emergency plan approved by the Rural Fire Protection District shall be prepared and issued to all Project site residents. The plan shall include procedures and guidelines regarding protective actions to take in the event of an emergency.

7.10.2 Schools

Environmental Design Considerations

- PS-ED-8** The Project shall reserve a 10.0-acre elementary school site to accommodate up to 800 students.
- PS-ED-9** The Project applicants shall pay statutory school fees or enter into an agreement with the school district to finance school facilities through an assessment mechanism including site acquisition at levels equal to or greater than the statutory school fee requirement.

7.10.3 Parks

Environmental Design Considerations

- PS-ED-10** A total of 29.6 acres of recreational park area shall be provided throughout the Project site.
- PS-ED-11** Fully improved parks shall be maintained by a CFD or similar assessment mechanism or HOA.
- PS-ED-12** Public pathways shall be provided along Otay Lakes Road and throughout the residential neighborhoods.

7.11 Utilities and Service Systems

7.11.1 Water Supply

Environmental Design Considerations

- UT-ED-1** The Project shall incorporate water conservation features including a low water usage plant palette to reduce outdoor water consumption on single-family lots by a minimum of 30 percent below business as usual, water efficient irrigation systems, and pervious material.
- UT-ED-2** The Project shall include the construction of a 5.0 million gallon reservoir for potable water storage.
- UT-ED-3** All indoor residential plumbing products shall carry the USEPA's WaterSense certification.

- UT-ED-4** High-efficiency irrigation equipment, such as evapotranspiration controllers, soil moisture sensors, and drip emitters, shall be required for all Project components with separate irrigation water meters.
- UT-ED-5** Drought tolerant, low-water usage native plants shall be required in public and private landscaped areas.
- UT-ED-6** Natural turf in residential development shall be limited to no more than 30 percent of the outdoor open space.
- UT-ED-7** A Water Conservation Plan shall be implemented for single-family homes to reduce outdoor irrigation consumption by a minimum of 30 percent from business as usual.
- UT-ED-8** Prior to approval of improvements plans for the first final map filed for County approval, the applicant or designee shall prepare a Subarea Master Plan that identifies the sizing and timing of all on-site and off-site water facilities required for the Project site. This plan shall be reviewed and approved by the Otay Water District prior to approval of the first final map for the Project by the County Board of Supervisors.
- UT-ED-9** Should recycled water be permitted for use on the Project site to irrigate open space, parks, and common areas, the applicant or designee shall first obtain all required regulatory approvals from the San Diego Regional Water Quality Control Board, City of San Diego, and California Department of Public Health, Drinking Water Division. The County of San Diego, Department of Planning and Development Services, shall review and confirm that all such regulatory approvals have been obtained before recycled water may be used on the Project site.

7.11.2 Wastewater

Environmental Design Considerations

- UT-ED-10** A sewer sanitation district shall be formed by the County to serve the Project site. The new district shall enter into a flow transportation agreement with the City of Chula Vista. In addition, the Project shall construct sewer transmission lines, and pay applicable connection and impact fees.

7.11.3 Gas and Electric

Environmental Design Considerations

- UT-ED-11** Residential buildings shall meet the design standards of the United States Green Building Council (USGBC) LEED – New Home Certification or the National Association of Homebuilders (NAHB) National Green Building standard.

- UT-ED-12** All single-family structures shall be designed to facilitate the installation or retrofit of photovoltaic systems.
- UT-ED-13** Project-wide recycling for single-family, multi-family, resort, school, commercial, and retail establishments shall be required.
- UT-ED-14** Electric car plug-in facilities/stations shall be provided in all residential garages and public parking areas.
- UT-ED-15** Private residential and commercial structures shall be designed to improve energy conservation 20 percent above the 2008 Building Energy Efficiency Standards in Title 24 of the California Code of Regulations.
- UT-ED-16** Indoor residential appliances shall carry the USEPA's ENERGYSTAR® certification.
- UT-ED-17** All residential units shall be part of the local utility demand response program to limit peak energy usage for cooling.
- UT-ED-18** The use of passive solar design and building orientation shall take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.
- UT-ED-19** Vertical landscape elements, such as trees, large shrubs, and climbing vines, shall be required to shade southern and western building facades to reduce energy needed for heating and cooling.
- UT-ED-20** All single-family residential units shall be designed to facilitate the later installation of a system that utilizes solar energy as the primary means of heating domestic potable water.
- UT-ED-21** All structures shall include the electrical conduit specifically designed to encourage the later installation of a system that utilizes solar photovoltaic or other renewable energy resources as a means of generating electricity.
- UT-ED-22** Energy efficient lighting for streets, parks, and other public spaces shall be installed. And, private developers shall be required to use energy efficient lighting and design.

7.12 Global Climate Change

7.12.1 Land Use and Community Design

Environmental Design Considerations

GCC-ED-1 Pedestrian-Oriented Development. The proposed Project's land use plan locates a school, parks, and commercial land in proximity to residential areas to encourage pedestrian and bicycle travel as an alternative to the automobile. In addition, the Resort Village Trail and Pathway system provide alternate routes to these destinations.

GCC-ED-2 Street Widths, Pavement, and Street Trees. Narrow streets and reduced paving reduce heat build-up and the demand for air conditioning. Street trees provide shade that further reduces ambient air temperatures.

7.12.2 Transit Facilities and Alternative Transportation Modes

Environmental Design Considerations

GCC-ED-3 Public Transportation.

- Public bus service for the proposed Project could be provided by Chula Vista Transit (CVT) and SANDAG. Currently, CVT provides bus service through the Chula Vista Eastern Territories, including the EastLake Business Center and nearby Southwestern College.
- The proposed Otay Ranch Resort may provide shuttle service to major transportation centers in the County.

GCC-ED-4 Transportation Demand Management. A transportation demand management program could be developed to encourage ridesharing and carpooling for residents and employees.

CC-ED-5 Alternative Travel Modes.

- The proposed streets are designed for a maximum travel speed of 30 mph, which allows the roadway to be used by electric carts and bicycles.
- Off-street pathways and trails in the Resort Village will accommodate pedestrian and bicycle travel.
- HOAs could be encouraged to partner with the elementary school to create a "walking school bus program" for neighborhood students to safely walk to and from school to reduce vehicular trips for drop-off and pick-up.

7.12.3 Building Siting and Construction

Environmental Design Considerations

GCC-ED-6 Building and Site Design

- Residential buildings would be designed to the U.S. Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) – New Home Certification standards, or the National Association of Homebuilders (NAHB) National Green Building standard.
- All single-family structures would be designed to facilitate the installation or retrofit of photovoltaic systems.
- Project-wide recycling for single-family, multi-family, resort, school, commercial, and retail establishments would be required.
- Electric car plug-in facilities/stations would be installed in all residential garages and public parking areas.

GCC-ED-7 Energy Efficiency

- Construction of private residential and commercial structures would improve energy conservation 20 percent above the 2008 Building Energy Efficiency Standards in Title 24 of the California Code of Regulations.
- Indoor residential appliances would be required to carry the USEPA's ENERGYSTAR certification.
- All residential units would be required to be part of the local utility demand response program to limit peak energy usage for cooling.

GCC-ED-8 Water Conservation

- Indoor residential plumbing products would carry the USEPA's WaterSense certification.
- Require high-efficiency irrigation equipment, such as evapotranspiration controllers, soil moisture sensors, and drip emitters for all projects that install separate irrigation water meters.
- Use drought-tolerant, low-water usage native plants in public and private landscaped areas.
- Limit natural turf in residential development to no more than 30 percent of the outdoor open space.
- Implement a Water Conservation Plan for single-family homes to reduce outdoor irrigation consumption by a minimum of 30 percent from business as usual.

7.12.4 Solar Access

Environmental Design Considerations

- GCC-ED-9** Use passive solar design and building orientation to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.
- GCC-ED-10** Require installation of vertical landscape elements such as trees, large shrubs, and climbing vines to shade southern and western building facades to reduce energy needed for heating and cooling.
- GCC-ED-11** Design and construct the plumbing system to allow for the retrofit of a water heating system that uses solar energy as the primary means of heating domestic potable water.
- GCC-ED-12** Design and construct the electrical system to allow for and encourage the retrofit of renewable energy generation such as photovoltaic panels.

7.12.5 Lighting

Environmental Design Considerations

- GCC-ED-13** Energy efficient lighting would be installed for streets, parks, and other public spaces. Private developers would use energy efficient lighting and design.

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INITIAL STUDY AND NOTICE OF PREPARATION

APPENDIX B

GENERAL PLAN AMENDMENT REPORT

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AIR QUALITY IMPACT REPORT

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AREA A TM LEVEL GEOTECHNICAL INVESTIGATION

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**AREA B TM LEVEL
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APPENDIX C-8

OTAY LAKES ROAD WIDENING AND REALIGNMENT GEOTECHNICAL INVESTIGATION

APPENDIX C-9

PHASE I ENVIRONMENTAL SITE ASSESSMENT

APPENDIX C-10

**PHASE I ENVIRONMENTAL SITE
ASSESSMENT WEST RESIDENTIAL AREA
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**OWD WATER SUPPLY ASSESSMENT
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SERVICE AVAILABILITY LETTERS

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NTSB ACCIDENT REPORT

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PRESERVE EDGE PLAN

