Biological Resources Technical Report
for the
Newland Sierra Project
San Diego County, California

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GLOSSARY OF TERMS AND ACRONYMS

ACOE	U.S. Army Corps of Engineers
AMSL	above mean sea level
APN	Assessor's Parcel Number
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMO	Biological Mitigation Ordinance
BMP	Best Management Practice
BRCA	Biological Resource Core Areas
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CRA	California Resources Agency
CRPR	California Rare Plant Rank
CSS	Coastal Sage Scrub
CWA	Clean Water Act
PDS	Department of Planning & Development Services
DPW	Department of Public Works
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FESA	Federal Endangered Species Act
FMZ	fuel modification zone
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HLP	Habitat Loss Permit
IID	Imperial Irrigation District
ITP	Incidental Take Permit
LID	Low Impact Development
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
MUP	Major Use Permit
NCCP	Natural Community Conservation Planning
North County Plan	North County Plan of the Multiple Species Conservation Program

NPDES	National Pollution Discharge Elimination System
OHWM	Ordinary High Water Mark
PAMA	Pre-approved mitigation area
RDA	Rural Development Area
RPO	Resource Protection Ordinance
RPP	Resource Protection Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SSC	Species of Special Concern
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service

SUMMARY

The proposed Newland Sierra Project (hereafter referred to as "project" or "proposed project") is a proposed hardline area in the revised draft North County Plan of Multiple Species Conservation Program (MSCP) (County of San Diego 2016), and would implement the relevant portions of the County of San Diego's North County Metropolitan Subregional Plan and Bonsall Community Plan, which identify and coordinate land use patterns, objectives, and goals for the Newland Sierra Community. The project designates parcels for residential and commercial development, open space and parks, and fuel management. Of the 1,985 acres, the proposed project would include 1,209.1 acres of permanent on-site biological open space, 406.6 acres of development, and 369.9 acres of fuel management zones. Off-site road and sewer improvements would also be implemented as part of the proposed project. Additionally, the project would preserve a 212-acre off-site mitigation parcel as additional permanent biological open space.

Biological surveys were conducted from 2000 to 2017 and included vegetation mapping; focused rare plant surveys; a jurisdictional delineation; a nesting raptor survey; a reptile habitat assessment; wildlife crossing and culvert review; and focused surveys for burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), and Harbison's dun skipper (*Euphyes vestris harbisoni*). Additionally, a review of winter puddles was conducted, including surveys for listed large branchiopods (fairy shrimp) in January and February 2017.

Fourteen sensitive vegetation communities occur within the project Site: Diegan coastal sage scrub, coastal sage scrub Baccharis dominated, flat-topped buckwheat scrub (disturbed), coastal sage scrub-chaparral transition, granitic southern mixed chaparral, mafic southern mixed chaparral, scrub oak chaparral, coast live oak woodland, freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub, and non-native grassland.

Based on a jurisdictional delineation, 18.37 acres of jurisdictional resources occurs within the project Site. This includes 5.33 acres of non-wetland waters under the jurisdiction of the Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Approximately 13.04 acres of wetlands and riparian habitat under the jurisdiction of all three agencies (ACOE/RWQCB/CDFW) and the County of San Diego (County) (0.23), the County and CDFW (7.99 acres), or CDFW only (4.82 acres) also occurs on Site. In addition, 30.2 acres of Resource Protection Ordinance (RPO) wetland buffers occurs on Site. Off-site road and sewer improvement areas contain 0.2 acre of non-wetland waters under the jurisdictional of all of the resources agencies, and up to 2.36 acres of riparian

habitat under the jurisdiction of CDFW and the County (1.41 acres), or just CDFW (0.95 acre). In addition, there is 7 acres of RPO wetland buffer.

Focused rare plant surveys recorded eight special-status plants; 13 additional rare plants have potential to occur on Site. Wildlife surveys recorded 20 special-status wildlife species, including one federally and state-listed species: coastal California gnatcatcher. An additional 14 special-status wildlife species have potential to occur on Site.

Development of the project Site and off-site impact areas, as proposed, would result in potentially significant direct and/or indirect effects to special-status plant species; special-status wildlife species; special-status vegetation communities; and jurisdictional resources, including County RPO wetlands and wetland buffers. Impacts would be mitigated through the preservation of 1,422 acres of on-site and off-site open space. In addition, the project would result in potential significant direct effects to foraging or breeding habitat, wildlife movement, and avian species protected under the Migratory Bird Treaty Act. These impacts would also be mitigated through the preservation of on-site and off-site open space.

The mitigation measures for this project would reduce impacts to special-status plants and wildlife and conserve large blocks of habitat for wildlife species. If adopted and implemented, these mitigation measures would reduce the project's impacts on biological resources to less than significant. The proposed project was designed in accordance with the draft North County Metropolitan Subregional Plan and, as such, the project's impacts on local policies, ordinances, and adopted plans would be less than significant.

1 INTRODUCTION

1.1 Purpose of the Report

The purpose of this biological resources technical report is to (1) describe the existing conditions of biological resources within the project Site in terms of vegetation, jurisdictional resources, flora, wildlife, and wildlife habitats; (2) analyze the project's potential impacts to biological resources and explain their significance in view of federal, state, and local laws and policies; and (3) recommend mitigation measures for potential impacts to sensitive biological resources, if necessary. Mitigation recommendations would follow federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA), the County of San Diego's (County) *Guidelines for Determining Significance and Report Format and Contents Requirements: Biological Resources* (County of San Diego 2010a, 2010b), and the County's Resource Protection Ordinance (RPO) (County of San Diego 2011a).

1.2 Project Location and Description

1.2.1 Project Location

The proposed Newland Sierra Project (hereafter referred to as "project" or "proposed project") would be located within the unincorporated portion of the County of San Diego (County) within the North County Metropolitan Subregional Plan area and Bonsall Community Plan area. The North County Metropolitan Subregional Plan area is composed of many non-contiguous areas interspersed among the cities of Escondido, San Diego, San Marcos, Vista, and Oceanside, with the most easterly portion adjacent to Valley Center. The North County Metropolitan Subregional Plan area includes the communities of Hidden Meadows and Twin Oaks. The majority of the project Site is located in the community of Twin Oaks. The project Site is directly west of Interstate (I) 15, north of State Route (SR) 78, and south of SR-79 (Figure 1, Regional Map). The cities of Escondido and San Marcos are approximately 1 mile south of the Site.

The project Site consists of approximately 1,985 acres and is bounded by I-15 on the east, Deer Springs Road on the south, and Twin Oaks Valley Road on the west, with a small portion of the northwestern edge of the Site traversed by Twin Oaks Valley Road. Gopher Canyon Road is located approximately 1.5 miles north of the Site's northern boundary and approximately 2.5 miles north of proposed development.

The project Site lies in the San Marcos U.S. Geological Survey (USGS) 7.5-minute quadrangle, Township 11 West, Range 2 and 3 West, and Sections 11, 12, 13, 14, 15, 18, 19, 23, 24, 25, 30, 35, and 36. The latitude and longitude of the approximate center of the Site is 33°12′47″ N and -117°09′07″ W (Figure 2, Vicinity Map).

1.2.2 Project Description

The Newland Sierra Project (also referred herein as "Community" or "project") is a 1,985-acre mixed-use community within the unincorporated area of San Diego County designed in accordance with the County of San Diego General Plan Community Development Model. The majority of the Community is within the Twin Oaks community of the North County Metropolitan Subregional Plan area, and a portion is within the Bonsall Community Planning area. The Specific Plan includes a residential component consisting of 2,135 dwelling units, which equates to an overall density of 1.08 dwelling units per acre (du/ac) over the entire 1,985 acres. The Community Development Model influenced the design and pattern of the seven neighborhoods (also referred to as "planning areas") with the highest densities located in the Town Center. The Town Center includes a maximum of 81,000 square feet of general commercial uses, as well as educational and park uses. The Community also includes open space, parks, pocket parks, overlooks, trails, bike lanes, pathways, and a 6-acre school site.

Sustainability

The proposed project would promote sustainability through Site design that would conserve energy, water, open space, and other natural resources. The project would offer defining attributes, including a commitment to carbon neutrality by offsetting 100 percent of the project's construction and operational greenhouse gas (GHG) emissions through the life of the project. As part of this commitment, the project would implement core sustainable development features, including solar on all residential units and a network of solar-powered street lights; low-water-use landscaping throughout the Community, with restrictions on the use of turf; possible indoor pre-plumbing for grey water systems in single-family residential dwelling units, if feasible; electric vehicle chargers in single-family garages and electric vehicle charging stations in commercial areas; and integration of community gardens and vineyards throughout the Community. The project would also implement a Transportation Demand Management (TDM) program to reduce automobile trips, both internal and external to the Community. The project's carbon neutrality and energy-, water-, and transportation-efficient requirements, combined with its balance of interrelated land uses, high level of preservation, and high-quality neighborhood design, make the project the first large-scale planned community in San Diego County to achieve a 100 percent reduction in the project's construction and operational GHG emissions.

Access Points and Internal Circulation

The project's multimodal transportation network would support pedestrian, equestrian, bicycle, shuttle service, and vehicular use throughout the Community, with connections to off-site roads supporting the same. The project Site would have two primary access roads along Deer Springs Road at Mesa Rock Road and Sarver Lane, with an additional access point at Camino Mayor off

North Twin Oaks Valley Road. The Mesa Rock Road access would be built as a six-lane entry road with a median that transitions into a four-lane divided road farther into the Site, and then into a two-lane undivided roadway until it reaches the Sarver Lane access where it would transition into a three-lane undivided roadway. The loop road is primarily designed with a width of 32 feet and would include striped bike lanes and a 10-foot-wide multi-use pathway along its entire length. The bike lanes and multi-use pathway would connect to bike routes and a 10-foot-wide multi-use pathway along Deer Springs Road.

An electric bike share program would be included to further link the neighborhoods to one another and reduce internal vehicle trips. The electric bike share program would include the placement of a kiosk in close proximity to each planning area to allow electric bikes to be taken from one kiosk and left at another, encouraging sustainable transportation between planning areas within the project. The program includes the placement of eight kiosks throughout the Community, with 10 to 20 electric bikes at each kiosk. Additionally, the project would include bike lanes, an extensive trail system consisting of roadside pathways within the linear greenbelts, and pathways. With incorporation of these internal circulation features, the project would provide residents the opportunity to access employment, education, and recreational and commercial uses via multiple modes of transportation.

1.2.2.1 Off-Site Improvements

In addition to the improvements described above, traffic impacts to off-site roadways would necessitate various off-site improvements. These improvements are identified as mitigation measures to reduce traffic impacts. They include improvements to the Deer Springs Road/I-15 Interchange, Deer Springs Road, Twin Oaks Valley Road, Buena Creek Road, Monte Vista Drive, S. Santa Fe Avenue, and various intersections, and they are necessary to improve the capacity and operations of these roadways. Several of these roadway improvements are located within the jurisdiction of another lead agency. Because these additional off-site improvements are identified as mitigation measures, the EIR discusses the environmental effects of the improvements to the extent known at this time, and as required by CEQA, in less detail than the significant effects of the proposed project (See CEQA Guidelines Section 15126.4(a)(1)(D)).

Deer Springs Road

Of the off-site mitigation requirements identified in the EIR, the improvements to Deer Springs Road would involve two options. Option A would improve an approximately 6,600-foot-long section of the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road to a 2.1B Community Collector (two lanes of travel with a continuous center turn lane). The balance of the road southwest into the city of San Marcos and east to I-15, including its

intersections with Sarver Lane and Mesa Rock Road, would be improved to a 4.1A Major Road (a four-lane road with a raised median). Consistent with these sets of improvements, Option A would reclassify Deer Springs Road in the Mobility Element of the County's General Plan from a 6.2 Prime Arterial (six-lane) to a 4.1A Major Road with Raised Median and a 2.1B Community Collector with Continuous Turn Lane classifications. The centerline of Deer Springs Road would be realigned to ensure a minimum 750-foot turning radii along the entire alignment.

Option B would construct the entire length of the road from the I-15 interchange to its intersection with Twin Oaks Valley Road as a four-lane road, with an approximately 7,600-foot-long section of the road between Sarver Lane and Mesa Rock Road as a 4.1B Major Road (four lanes of travel with a continuous center turn lane), and the balance of the road, including its intersections with Sarver Lane and Mesa Rock Road, as a 4.1A Major Road. Option B would not reclassify Deer Springs Road; the roadway would remain as a 6.2 Prime Arterial (six-lane) in the Mobility Element of the General Plan. The centerline of Deer Springs Road would be realigned to ensure a minimum 750-foot turning radii along the entire alignment.

Both Option A and Option B would provide increased capacity on Deer Springs Road relative to existing conditions, although when considering level of service, only Option B would meet the County's level-of-service standards at project buildout. As is standard, the ultimate design of the road would be subject to County final engineering review and approval, whereby the County may require minor adjustments to the design details described herein.

Off-Site Utilities Improvements

Off-site sewer and water improvements would be completed in accordance with the approved water and sewer master plans prepared for the project. These improvements would be made in conjunction with surface improvements to Sarver Lane, Deer Springs Road, and Twin Oaks Valley Road. Additional segments of sewer would be improved in Twin Oaks Valley Road to Del Roy Avenue and East of Twin Oaks Valley Road within an existing Vallecitos Water District easement. Additionally, an 800-foot-long pipeline segment would require upsizing from the existing 18-inch-diameter line to a 21-inch-diameter line. This segment is located north of East Mission Road between Twin Oaks Valley Road and Vineyard Road within the City of San Marcos. The existing sewer is located behind a commercial/retail development. For the purposes of this analysis, it is assumed that the entire 30-foot-wide easement would be impacted to upsize the existing sewer line.

1.2.2.2 Proposed Open Space Design

The biological open space for the proposed project would include three large, interconnected, open space blocks within the project Site, as well as a large off-site biological open space parcel. The design of the proposed biological open space is described below.

The proposed on-site open space design consists of two large continuous blocks of key biological resources (approximately 1,024 acres) situated within the northern half and along the eastern boundary of the project Site, and a third large block of open space in the center of the proposed Site that connects the abovementioned blocks of open space to open space located east and south of the project Site (Figure 4, Proposed Open Space Design and MSCP Preserves). These connected blocks of habitat create an on-site biological open space preserve of approximately 1,209.1 acres, which has been designated as a proposed hardline area in the draft North County Plan of the County of San Diego Multiple Species Conservation Program (North County Plan; County of San Diego 2016).

The majority of the proposed open space design would be located within the northern half of the project Site to form a contiguous block of habitat that is roughly 10,600 feet by 4,300 feet (870.2 acres, Block 1). The northern half of the Site has previously been described as having the greatest potential to support wildlife due to the east–west connection with the San Marcos Mountains (PSBS 2003). In addition, the northern half of the project Site is positioned to take maximum advantage of interconnected blocks of habitat. The northern portion of the proposed open space design provides a diverse representation of the natural and environmental conditions that occur within the larger project area. Draft North County Plan pre-approved mitigation area (PAMA)-designated lands are located to the west and north of the proposed on-site biological open space, which signifies that the lands adjacent to the proposed biological open-space also support biological conservation value. As described in the draft North County Plan, "[t]he PAMA represents areas that the County and the Wildlife Agencies recognize as important to preserve in order to meet the Plan's conservation goals." The PAMA area has been "pre-approved for mitigation because [it] had (1) high composite habitat value, (2) critical core and linkages, or (3) helped meet the conservation goals."

Biological open space is also proposed along the eastern boundary of the project Site adjacent to I-15 which serves as important habitat for coastal California gnatcatcher and many other wildlife species, as further described in Environmental Setting. This provides a contiguous on-site block of habitat that is roughly 7,000 feet by 1,000 feet (153.9 acres, Block 2). This block of habitat facilitates wildlife movement through the project Site to open space to the north and south, and provides cover for wildlife crossing I-15 and live-in habitat for many species.

Block 3 open space would be located in the south-central portion of the Site and includes coastal sage scrub at the northern end, but is predominantly composed of chaparral. This block includes four peaks, boulders, steep slopes, valleys, and moderate slopes. Segments of proposed development occur to the east, west, and north, while natural habitat and avocado groves occur to the south. This block of habitat is approximately 7,000 feet by 1,200 feet (185 acres) and serves as live-in habitat for smaller species and some birds and movement habitat for larger wildlife species. The area links the northern and eastern blocks to undeveloped lands south and east of the proposed project through three corridors (Figure 4). At its narrowest, the southern slope portion of Block 3 is approximately 295 feet wide, but averages around 650 to 700 feet wide. This portion of Block 3 abuts PAMA lands, which are composed of coastal sage scrub, chaparral, and general agriculture. Orchards have been shown to convey larger wildlife (Nogeire et al. 2013), and as a result all wildlife movement for all classes of wildlife (e.g., mammalian, avian, reptilian, air-based, ground-based, generalists, sage scrub specialists) are expected to use the connection and habitats present.

The proposed on-site biological open space design includes a diverse array of environmental features including ridgetops, hill tops, and rocky outcrops, which allow for a variety of potential nest, roost, and other resources for raptors, bats, and granite-associated reptiles such as granite spiny lizard (*Sceloporus orcuttii*) and granite night lizard (*Xantusia henshawi*). The majority of this area primarily consists of dense chaparral, and contains a diverse representation of the vegetation communities that occur on Site and in the vicinity, including riparian forest and scrub, coastal sage scrub, non-native grassland, and oak woodland. The two largest riparian areas located within the project Site would be included in the open space: the South Fork of Gopher Canyon and the South Fork of Moosa Canyon (Figure 4). The South Fork of Gopher Canyon, which is located along Twin Oaks Valley Road, holds water part of the year. The topography in this area of the open space is highly diverse and includes elevations from approximately 700 feet AMSL to 1,750 feet AMSL.

Overall, the entire proposed on-site biological open space contains a diversity of environmental characteristics present in the vicinity, including representative populations of special-status plant and animal species observed on Site; existing dirt trails and canyon bottoms currently used by wildlife for movement across the Site; and the north–south-trending tributary to Gopher Canyon along Twin Oaks Valley Road, which provides linkage opportunities to the San Marcos Mountains.

Although fuel management zones would not be counted as mitigation or open space, they do contribute to wildlife movement and live-in habitat for many species, particularly when the surrounding habitat is very dense and when the areas are thinned 50 percent or less. These areas add an additional 63 acres to Block 1, 52 acres to Block 2, and 100 acres to Block 3. These additional acres are not included in the approximately 1,209 acres of open space preserve.

In addition to the network of on-site biological open space designated as a proposed hardline area within the proposed project Site, the proposed project would permanently preserve a 212-acre off-site parcel located in Ramona, which has been identified as a conservation priority and is designated as a PAMA in the draft North County Plan. The 212-acre block of continuous habitat is situated between segments of the Cleveland National Forest and San Diego County Parks land. The parcel includes a variety of upland and wetland vegetation communities and is situated in a key natural gap in the adjacent agricultural (ranches, poultry farms) landscape amid cattle ranch lands and open space.

1.3 Survey Methodologies

1.3.1 Literature Review

Special-status biological resources present or potentially present on Site were identified through an extensive literature search using the following sources: U.S. Fish and Wildlife Service (USFWS) (USFWS 2014), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2014a), California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants* (2014), San Diego Plant Atlas (SDNHM 2014a), San Diego Bird Atlas (SDNHM 2014b). Plant species proposed for coverage under the draft *North County Multiple Species Conservation Program* (County of San Diego 2009) were also reviewed. General information regarding wildlife species present in the region was obtained from Unitt (2004) for birds, Bond (1977) for mammals, Stebbins (2003) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies. The *Soil Survey, San Diego Area, California Part 1* (Bowman 1973) was overlaid with the project boundary to identify potentially occurring sensitive plants based upon known soil associations. Native plant community classifications used in this report follow *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) as modified by the County and noted in *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). The literature review also included review of *Merriam Mountains Project Biological Technical Report: Summary of Studies and Impact Analysis* (PSBS 2007) and *Biological Resources Technical Memorandum for the Merriam Mountains Specific Plan and the General Plan Amendment/Circulation Element, San Diego County, California* (Dudek 2009).

In terms of regional preserve planning efforts, the proposed project is located within the County of San Diego. Therefore, the County RPO (County of San Diego 2011a), Significance Guidelines and Format and Content Requirements (County of San Diego 2010a, 2010b), and the Planning Agreement between the County and the Agencies (County of San Diego 2008a and 2014) are applicable to the project.

1.3.2 Field Reconnaissance

Surveys for the project Site have occurred between 2000 and 2017. The most current biological surveys, conducted by Dudek between 2013 through 2017, consisted of updated vegetation mapping (including off-site impact areas), rare plant surveys, a jurisdictional delineation (including some of the off-site impact areas), nesting raptor survey, reptile habitat assessment, wildlife crossing and culvert review, and focused surveys for burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), and Harbison's dun skipper (*Euphyes vestris harbisoni*). In addition, after substantial rains in January 2017, a habitat assessment for fairy shrimp was conducted. Sampling of puddles for fairy shrimp species was conducted in winter 2017. Table 1-1 lists the dates, conditions, and survey focus for each survey performed.

All field surveys were conducted in accordance with the County requirements and included directed searches and habitat assessments for the County list of potential sensitive faunal and floral species. The entire project Site, and off-site areas, were surveyed by personnel qualified to perform biological surveys. Sensitive biological resources were mapped and analyzed with the project plans. Focused surveys for special-status plant and wildlife species, as well as a formal jurisdictional delineation, were not conducted for the off-site sewer upgrades, road improvements at Buena Creek/Mar Vista Drive and Buena Creek/Santa Fe Avenue, portions of Deer Springs Road and the I-15 interchange.

Table 1-1
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
Vegetation Mapping and Jurisdictional Delineation				
3/29/13	n/a	PCS, DM	Vegetation mapping	0%–50% cloud cover (cc), 62–70 degrees Fahrenheit (°F), 0–4 miles per hour (mph) wind
4/2/13	n/a	PCS, MB	Vegetation mapping	0%–50% cc, 60°–70°F, 0–4 mph wind
4/24/13	0730–1500	PCS, CJF	Jurisdictional delineation	100% cc, 58°–65°F, 0–2 mph wind, occasional rain
5/10/13	0830–1630	KJM, TSL	Jurisdictional delineation	0% cc, 70°–72°F, 0–2 mph wind
7/17/13	0800–1500	TSL, VRJ	Jurisdictional delineation	0%-10% cc, 74°–82°F, 0–5 mph wind
3/10/15	1000–1130	CJF	Vegetation mapping (off-site)	0%cc, 78°–80°F, 0–1 mph wind
3/31/15	1300–1500	CJF	Jurisdictional delineation (off-site)	0%cc, 82°–84°F, 0–1 mph wind
7/25/16	1150–1430	EJB	Vegetation mapping (off-site)	0%cc, 86°F, 0 mph wind
Rare Plant Survey				
4/29/13	0730–1630	DG, PCS, ACT	Rare plant survey	100% cc, 62°–82°F, 8–10 mph wind, cool/foggy, sunny

Table 1-1
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
5/1/13	0800	DG, ACT	Rare plant survey	100% cc, 65°F, 0 mph winds, calm/overcast
5/3/13	0830–1530	PCS, CJF, DG, MLB	Rare plant survey	20% cc, 79°F, 0–1 mph wind, hot/sunny
5/10/13	0730	ACT	Rare plant survey	0% cc, 62°F, 0 mph wind, clear/sunny
5/20/13	1015–1445	BAS, MLB	Rare plant survey	0% cc, 67°–83°F, 1–5 mph wind
5/21/13	0700–1600	CJF, PCS	Rare plant survey	0%–100% cc, 62°–83°F, 0–4 mph wind
5/23/13	730	ACT	Rare plant survey	10% cc, 61°F, 4–8 mph wind, breezy
5/25/13	0830	PCS, CJF	Rare plant survey	0% cc, 63°F, 0 mph wind
7/22/13	0730–1530	MLB, DAM	Rare plant survey	Hot/sunny
7/23/13	0730–1530	MLB, DAM	Rare plant survey	Hot/sunny
7/24/13	0830–1500	SG, DG	Rare plant survey	Hot/sunny
7/25/13	0800–1440	SG, DG	Rare plant survey	Hot/sunny
8/1/13	0730–1500	SG, DG	Rare plant survey	Overcast, cool then sunny/warm
Burrowing Owl Surveys				
4/11/13	0730–0900	PCS	Focused burrowing owl (BUOW) survey	0% cc, 55°–58°F, 0 mph wind
5/5/13	0730–0900	PCS	Focused BUOW survey	90% cc, 60°F, 0–3 mph wind
6/1/13	0815–0945	PCS	Focused BUOW survey	0% cc, 67°–71°F , 0–2 mph wind
6/23/13	0800–0930	PCS	Focused BUOW survey	100% cc, 61°F, 0 mph wind
Raptor Surveys				
4/24/13	0730–1245	JDP/PL	Raptor survey	0–100% cc, 54°–56°F, 0–5 mph wind, fog
4/30/13	0715–1315	JDP/PL	Raptor survey	0–100% cc, 56°–73°F, 0–5 mph wind
California Gnatcatcher Surveys				
5/9/13	0600-1200	BAO	Focused California gnatcatcher (CAGN) survey	80–20% cc, 55°–70°F, 0–0 mph wind
5/18/13	0530-1200	BAO	Focused CAGN survey	100–50% cc, 58-70°F, 3–0 mph wind
5/25/13	0600-1200	BAO	Focused CAGN survey	100–50% cc, 57-71°F, 0–5 mph wind
10/4/13	0730–0920	PML	Follow-up survey for CAGN presence/absence	0% cc, 63°–71°F, 0–5 mph wind
Harbison's Dun Skipper Survey				
6/8/13	1400-1700	BAO	Flight survey	30-0% cc, 72-80°F, 3–0 mph wind
7/7/13	1200-1500	BAO	Flight survey	0% cc, 85-88°F, 0–3 mph wind
12/21/13	1100-1430	BAO	Larvae survey	100% cc, 56°F, 3–5 mph wind
Least Bell's Vireo and Southwestern Willow Flycatcher				
5/3/13	0630–1030	MAB	Least Bell's vireo (LBVI) survey	10–0% cc,50°–80°F, 0–5 mph wind
5/14/13	0700–1015	MAB	LBVI	0% cc, 65°–75°F, 0–4 mph wind
5/23/13	0530–1100	BAO	LBVI/Southwestern willow flycatcher (SWFL)	50%–100% cc, 58°–70°F, 0–3 mph wind,
6/02/13	0530–1045	BAO	LBVI/SWFL	25%–100% cc, 62°–73°F, 0–3 mph wind

Table 1-1
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
6/24/13	0605–1100	PML	LBVI/SWFL	100%–40% cc, 62°–75°F, 0–4 mph wind, 10 mph gusts
7/03/13	0515–1045	BAO	LBVI/SWFL	0%–20% cc, 62°–80°F, 0–3 mph wind
07/13/13	0530–1100	BAO	LBVI/SWFL	0%–50% cc, 65°–82°F, 0–5 mph wind
Wildlife Crossing Survey				
9/11/14	0900–1530	MP	Wildlife crossing and culvert mapping survey	0% cc, 80°–95°F, 0–1 mph wind
9/12/14	0900–1530	MP	Wildlife crossing and culvert mapping survey	0% cc, 78°–94°F, 0–3 mph wind
9/13/14	0900–1230	MP	Wildlife crossing and culvert mapping survey	0% cc, 76°–94°F, 0–1 mph wind
9/15/14	0900–1200	MP	Wildlife crossing and culvert mapping survey	0% cc, 74°–86°F, 0–1 mph wind
Reptile Habitat Assessment				
8/14/14	0830–1430	CJF, PCS, EJB	Reptile habitat assessment	0% cc, 68°–92°F, 0–1 mph wind
8/21/14	0830–1715	CJF, EJB, KCD	Reptile habitat assessment	0–100% cc, 70°–82°F, 0–3 mph wind
Fairy Shrimp Habitat Assessment				
1/26/17	1100-1530	PML	Fairy shrimp habitat assessment	10% cc, 62°-67°F, 2-8 mph winds
1/31/17	0830-1518	PML, CJF, PCS, KM	Fairy shrimp habitat assessment and Pass 1 for preserve areas	10%-0% cc, 63°-76°F, 0 mph wind
2/7/17	0830-1500	PML	Pass 1 for Puddles 29-37 (development area)	80-50%cc, 57-66°F, 1-10 mph wind
2/8/17	0820-1440	PML	Pass 1 for Puddles 21-28, 38-40 (development area)	90-10%cc, 59-65°F, 0-8 mph wind
2/9/17	0820-1300	PML	Pass 2 for Puddles 1-20 (preserve area)	30-0%cc, 58-70°F, 1-10 mph wind
2/14/17	0820-1500	PML	Pass 2 for Puddles 29-37 (development area), Pass 1 Puddles 41-45 (preserve area)	50-10%cc, 63-74°F, 0-8 mph wind
2/15/17	0900-1500	PML	Pass 2 for Puddles 21-28, 38-40 (development area)	10%cc, 63-80°F, 0-10 mph wind
2/16/17	0840-1515	PML	Pass 3 for Puddles 1-20 (preserve area)	0%cc, 59-70°F, 3-10 mph wind
2/21/17	0800-1400	PML	Pass 3 for Puddles 29-37 (development area), Pass 2 for Puddles 41-45 (preserve area)	20-40%cc, 60-70°F, 0-4 mph wind
2/23/17	0900-1500	PML	Pass 3 for Puddles 21-28, 38-40 (development area)	10-0%cc, 56-65°F, 2-10 mph wind
2/24/17	1030-1530	PML	Pass 4 for Puddles 1-20 (preserve area)	0%cc, 57-63°F, 1-8 mph wind

KJM = Kamarul J. Muri (TE-051250-0)
PCS = Patricia C. Schuyler
ACT = Andy C. Thomson
CJF = Callie J. Ford
DG = Doug Gettinger
EJB = Erin J. Bergman
TSL = Thomas S. Liddicoat
MAB = Melissa A. Blundell

VRJ = Vipul R. Joshi
KM = Karen Mullen
SG = Scott Gressard
BAS = Britney A. Strittmater

MLB = Michelle L. Balk
PML = Paul Lemons (TE-051248-4)
BAO = Brock A. Ortega (TE-813545-5)

JDP = Jeffery D. Priest (TE-840619-2)
DM = Danielle Mullen
KCD = Katie C. Dayton
MP = Marshall Paymard
BUOW = Burrowing Owl
CAGN = California Gnatcatcher
LBVI = Least Bell's Vireo
WIFL = Southwestern Willow Flycatcher

1.3.3 Resource Mapping

Vegetation communities and land uses on and within 100 feet of the Site were mapped in the field directly onto a 300-foot-scale (1 inch = 300 feet), aerial photograph-based field map of the project Site. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on Site was determined.

Consistent with the latest County of San Diego *Report Format and Content Requirements: Biological Resources* (County of San Diego 2010b), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

1.3.4 Flora and Fauna

Focused surveys for special-status plant species has been conducted within suitable habitat throughout the project Site. Two separate passes, spring and summer, were conducted to record species that have different blooming periods throughout the year. During these surveys, all plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formally CNPS list) follow the *California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2014). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2014) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2014). A list of plant species observed within the project study area is presented in Appendix A.

Dudek conducted a protocol three visit presence/absence survey for the federally listed threatened coastal California gnatcatcher within suitable habitat throughout the project Site. Protocol three-visit presence/absence surveys were conducted on the project Site in 2002, 2004, and 2013. Eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's Vireo, and the state- and federally listed endangered southwestern

willow flycatcher were conducted within suitable riparian habitat throughout the Site in 2013. During rare plant surveys, host plants for Hermes copper butterfly (*Lycaena hermes*) and Harbison's dun skipper were recorded, if present, to determine the need for focused surveys for these two species. No host plants for Hermes copper were found so no focused surveys were conducted. A survey for Harbison's dun skipper was conducted in suitable habitat in 2013. A nesting raptor survey was conducted within suitable habitat throughout the project Site. A four-pass focused burrowing owl survey was conducted in accordance with CDFW recommendations in the Staff Report of Burrowing Owl Mitigation (CDFG 2012a). In response to information provided by the U.S. Fish and Wildlife Service, a review of winter puddles and surveys for listed large branchiopods (fairy shrimp) were conducted between January and February 2017.

In addition to species actually detected, expected wildlife use of the Site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU) (2016) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA) (2016) or SDNHM (2002) for butterflies, and Moyle (2002) for fish. A list of wildlife species observed within the project study area is presented in Appendix B.

1.3.4.1 Focused Surveys for Special-Status Plants

Focused surveys for rare plants were conducted in April/May and July/August 2013, at the appropriate phenological stage of the plant (blooming and fruiting) to detect and identify the target species. Field survey methods conformed to CNPS *Botanical Survey Guidelines* (CNPS 2001), *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000), and *General Rare Plant Survey Guidelines* (Cypher 2002). Due to the mature density of a majority of the vegetation on Site, the survey primarily was conducted by walking along established roads and using binoculars, when necessary, to detect special-status species. Areas that had more open vegetation, such as grasslands, scrub habitat, and open chaparral, were surveyed by walking transects through the habitat. Special-status plant observations were mapped in the field using a Global Positioning System (GPS) receiver or were mapped directly onto an aerial field map to record the location of special-status plant populations. The special-status plant observations were then digitized into the geodatabase by Dudek GIS technician, Lesley Terry, using ArcGIS software.

1.3.4.2 Focused Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher

Eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's Vireo, and the state- and federally listed endangered southwestern willow flycatcher were

conducted in all areas of suitable vireo and flycatcher habitat within the project Site. Focused surveys for these species were initiated on May 3, 2013, and continued through July 13, 2013. Weather conditions, time of day, and season were appropriate for the detection of flycatcher and vireo (Table 1-1). Surveys for flycatcher were conducted concurrently with the vireo surveys. All surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat. This route was arranged to cover all suitable habitat on Site and within 500 feet of the Site (see Appendix C). A vegetation map (1 inch = 100 feet) of the project Site was available to record any detected vireo or flycatcher. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed survey methods described in accordance with *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* (Sogge et al. 2010). Because there is a project planned in this area, a total of five surveys of the suitable habitat were conducted, with one visit between May 15 and May 31, two visits between June 1 and June 24, and two visits between June 25 and July 17. The surveys during the final period were separated by more than 5 days, per protocol requirements. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If a flycatcher had been detected, playing of the tape would have ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines* (USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats during the period from April 10 to July 31. The Site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and 12 noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

1.3.4.3 Coastal California Gnatcatcher Surveys

Dudek conducted focused protocol surveys for the federally listed threatened coastal California gnatcatcher on the proposed project Site in suitable scrub habitat in spring and summer of 2013. Dudek biologists with federal permits for California gnatcatcher surveys conducted such surveys on Site pursuant to the accepted protocol of the USFWS's *Coastal California Gnatcatcher* (Polioptila californica californica) *Presence/Absence Survey Protocol* (1997). The survey included three visits at a minimum of 7-day intervals. Survey routes completely covered all areas of suitable coastal scrub habitat on Site. Survey conditions (time of day and weather conditions) were within protocol limits specific in the survey protocol (see Table 1-1). The biologists played

a tape of recorded vocalizations approximately every 50 to 100 feet to elicit a response from any gnatcatcher present on Site. All other avian species detected during surveys were recorded. The full survey report is provided in Appendix D.

1.3.4.4 Raptor Surveys

A habitat assessment and survey within the proposed project Site was conducted in April 2013 for a variety of raptors, including golden eagle (*Aquila chrysaetos*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), turkey vulture (*Cathartes aura*), and red-shouldered hawk (*Buteo lineatus*). The surveys included traversing all roads and open areas on Site while searching for potentially suitable nesting resources (e.g., trees, large rock outcroppings), as well as assessing foraging habitat. All raptors or special-status species were mapped when observed.

1.3.4.5 Harbison's Dun Skipper Survey

There are no official survey protocols for this species. Since the species is tied to its host plant, San Diego sedge (*Carex spissa*), Dudek focused on portions of the project that supported small populations of San Diego sedge. The species flight season is generally between May and July, while the larvae overwinter in sedge leaf "tents" that are affixed to one another. These sedge tents, combined with typical bent leaves and chewed leaves are indicative signs of larval presence and unique to the Harbison's larvae, thus providing a good search image. To survey for the species, Dudek conducted two adult flight-season surveys in June and July 2013, then followed up with a winter larval survey in December 2013. Survey conditions (time of day and weather conditions) were within appropriate limits (see Table 1-1).

1.3.4.6 Reptile Habitat Assessment

A habitat assessment within the proposed project Site was conducted in August 2014 for a variety of reptiles, including red-diamond rattlesnake (*Crotalus ruber*), Blainville's horned lizard (*Phrynosoma blainvillei*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*). The surveys included traversing all roads and open areas on Site while searching for potentially suitable foraging resources (e.g., ants and termites) and sign of reptiles (e.g., tracks and scat). All reptiles or additional special-status species were mapped when observed.

1.3.4.7 Burrowing Owl Habitat Surveys

A four-pass survey for burrowing owl within the proposed project Site was conducted according to CDFW recommendations in *The Staff Report on Burrowing Owl Mitigation* (CDFG 2012a). The surveys were initiated in April and concluded in June 2013. With the exception of the first

survey pass, which was only slightly under the recommended temperature, weather conditions, time of day, and season were appropriate for the detection of burrowing owl (Table 1-1). Prior to conducting burrowing owl habitat surveys, relevant sources pertaining to burrowing owl occurrences, including CNDDB (CDFW 2014a), the Biological Technical Report by Pacific Southwest Biological Services (PSBS 2007), and the Biological Resources Technical Memorandum (Dudek 2009) were examined along with mapped vegetation communities for the Site and surrounding areas. Burrowing owl was detected in 1998 surveys for Safa Ranch, which covered the northern part of the central valley of the present project Site. The 1998 report had no discussion on this species; any detection of this species must have been in the grassy area of the central valley. No observations have been made of burrowing owl in the numerous field visits since 1998 (PSBS 2007). Based on positive observations of the species in the vicinity and vegetation communities present (i.e., approximately 16 acres of suitable non-native grasslands on Site), a habitat assessment and surveys were conducted.

The survey area included approximately 16 acres of suitable non-native grassland habitat plus a 500-foot buffer excluding paved roads and other developed areas. The survey consisted of walking the entire survey area where suitable open (e.g., grasslands, disturbed, and ruderal fields) habitat occurred, while searching for burrowing owls, sign, and potential burrow sites. The survey was conducted such that 100 percent coverage of the suitable habitat and buffer area was covered (i.e., approximate 30-meter transects were walked across the entire Site). While walking the survey area, the biologist searched for owls, owl sign, and potential burrow sites. Climatic conditions at the time of the survey were within protocol guidelines and consisted of 0 to 30 percent cloud cover; 0- to 4-mile-per-hour breezes; and 60°F to 80°F temperatures. All potential burrows were examined for sign and documented using a GPS unit. Surveys were conducted under good weather conditions that would permit clear detection of individuals should they occur on Site.

1.3.4.8 Wildlife Crossing and Culvert Mapping Survey

A wildlife crossing and culvert mapping survey was conducted within the proposed project Site in September 2014. The survey assessed potential wildlife corridors and/or structures that would facilitate wildlife movement within the proposed project and proposed open space. The survey included traversing all roads, open areas, and potential wildlife crossing locations within the proposed project footprint and/or its periphery. All potential wildlife crossing structures including bridges, culverts, and existing open space areas were documented using a GPS unit. Moreover, any existing structures that could potentially hinder wildlife movement (e.g., barbed-wire fencing and chain-link fencing) within the proposed project Site were documented to allow for a better understanding of the pre-project conditions.

1.3.4.9 San Diego and Riverside Fairy Shrimp Surveys

Over the many years of surveys which have occurred within the project Site, no suitable features for fairy shrimp have been detected. While some ponding occurred within the old quarry area, these areas have been highly modified, and there are no historically suitable soils in the area. However, the San Diego region experienced a number of large rain events in January 2017, totaling 8 inches of rain for the month and over 25 inches for the winter thus far, which lead to ponding of water within the project Site (MesoWest 2017). Following the last large rain event in January 2017, an assessment and mapping of potential features (i.e., vernal pools, ephemeral basins, and road ruts) was conducted throughout the proposed development area and select portions of the proposed biological open space areas. During these efforts, Dudek reviewed the specific on-site microhabitats (e.g., flat topography, soil types, and slopes) and mapped features which held water 7 days after a significant storm event. No vernal pools were detected and all features would be classified as puddles. Following the habitat assessment, Dudek biologists holding federal permits (i.e., 10(a)(1)(A) Recovery Permit) for fairy shrimp initiated a wet-season survey generally in accordance with the USFWS survey protocol for listed fairy shrimp species (USFWS 2015) where all shrimp species were identified. During the habitat assessment all features identified were mapped using a GPS unit.

1.3.5 Jurisdictional Wetlands Delineation

The jurisdictional wetlands delineations were conducted in accordance with the methods prescribed in the 1987 Wetland Delineation Manual (ACOE 1987), the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (ACOE 2008), and guidance from the U.S. Army Corps of Engineers (ACOE)/U.S. Environmental Protection Agency (EPA) Rapanos Guidance (ACOE and EPA 2008). The proposed project is planned to be processed as a preliminary jurisdictional determination and therefore would not require conformance with the Rapanos Guidance (i.e., no significant nexus determination will be conducted).

Pursuant to the federal Clean Water Act (CWA), ACOE and Regional Water Quality Control Board (RWQCB) "wetlands" include areas supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Non-wetland waters include channels that display evidence of an ordinary high water mark (OHWM) features but do not meet the three-parameter criteria for a wetland. Areas regulated by the RWQCB are generally coincident with the ACOE, but can also include isolated features that have evidence of surface water inundation pursuant to the state Porter-Cologne Water Quality Act. These areas generally support at least one of the three ACOE wetlands indicators but are considered isolated through the lack of surface water hydrology/connectivity downstream. A predominance of hydrophytic

vegetation or vegetation suitable for riparian wildlife species, where associated with a stream channel, was used to determine CDFW-regulated wetlands.

The County's RPO (County of San Diego 2011a) identifies environmental resources present within the County, including wetlands, and provides measures to preserve these resources. The RPO defines wetlands as lands that have one or more of the following attributes: (1) lands that periodically support a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) lands in which the substratum is predominantly undrained hydric soil; or (3) lands where an ephemeral or perennial stream is present and whose substratum is predominately non-soil, and where such lands contribute substantially to the biological functions or values of wetlands in the drainage system. County-regulated wetlands were identified where a predominance of hydrophytic vegetation was associated with a stream channel or where an area supported at least one of the three wetlands indicators (i.e., hydrology, hydric soils, or hydrophytic vegetation).

A 350-scale (1 inch = 350 linear feet) aerial field map with geo-referenced overlays of the project boundary, topography, and mapped vegetation communities was conducted to identify particular topographic patterns (i.e., low points) and associated vegetation communities (i.e., mapped as herbaceous or riparian) on Site that may suggest a jurisdictional area, based on the parameters described earlier. Additionally, areas previously documented as jurisdictional (i.e., PSBS 2007 and Dudek 2009) were included in the field map review. Any areas of particular interest as a result of the map review were re-assessed directly in the field. In 2015, a jurisdictional delineation of the off-site impact areas was completed.

To assist in the determination of jurisdictional areas within project Site, data was collected at 10 sampling points. Hydrology, vegetation, and soils were assessed, and sampling data were collected on approved ACOE forms. The Site was evaluated for evidence of an OHWM, surface water, saturation, wetland vegetation, and nexus to a traditional navigable water. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations.

An informal wetlands delineation was conducted for the off-site sewer improvements based on the observation of wetland vegetation communities and topography since the boundaries of the wetlands were easily discernable.

1.3.6 Survey Limitations

Focused surveys for potentially occurring special-status plants have been conducted for the proposed project Site (i.e., spring and summer) to document rare plants that have different seasonal blooming periods. The southwest has experienced a decrease in rainfall over the last few years, which affects some plant growth. The nearest weather station is located in Vista,

California (Vista 1 NE), and generally receives an average rainfall of approximately 13.09 inches per year and 1.09 per month (Western Regional Climate Center 2014). Precipitation water year (i.e., July 1 to June 30) amounts for Vista from 2010 to 2011 were recorded at 22.60 inches; from 2011 to 2012 were recorded at 10.94 inches; from 2012 to 2013 were recorded at 7.89 inches. Additional survey limitations included the mature density of a majority of the vegetation on Site; therefore, surveys were conducted by walking along established roads and using binoculars and those areas could not be 100 percent surveyed.

Previous surveys on the project Site have documented occurrences of summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), Ramona horkelia (*Horkelia truncata*), and Engelmann oak (*Quercus engelmannii*). On-site populations of Ramona horkelia were confirmed present and blooming prior to initiating surveys. Summer holly is an evergreen shrub, and Engelmann oak is deciduous tree; therefore both were identifiable at the time of the surveys.

The majority of the surveys were conducted during the daytime to maximize the detection of most animals. Birds represent the largest component of the vertebrate fauna, and, because most birds are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. Daytime surveys may result in fewer observations of animals that are more active at night, such as mammals.

Reptiles and amphibians are secretive in their habits and are difficult to observe using standard meandering transects. A reptile habitat assessment was conducted to identify suitable areas and reptile sign (e.g., prey, scat and tracks).

In addition, it should be noted that some areas along the eastern boundary of the proposed project were not accessible during the wildlife crossing and culvert mapping survey due to on-site barriers (e.g., barbed wire or chain-linked fencing) and the density of chaparral.

To account for survey limitations, special-status wildlife species that could occur, based on pertinent distribution and habitat preference literature and recorded off-site observations, are analyzed based upon their potential to occur and adequate measures to avoid and minimize impacts are provided in this report.

Focused surveys for special-status plant and wildlife species, as well as a formal jurisdictional delineation, were not conducted for the off-site sewer upgrades, road improvements at Buena Creek/Mar Vista Drive and Buena Creek/Santa Fe Avenue, portions of Deer Springs Road and the I-15 interchange.

1.4 Environmental Setting (Existing Conditions)

The project Site is located within the northern portion of the Merriam Mountains, a narrow chain of low mountains generally running north–south with a variety of east–west trending ridgelines and scattered peaks. These mountains originate near the northern end of the urban parts of the City of Escondido and are bordered by Gopher Canyon Road to the north, I-15 to the east, and Twin Oaks Valley Road to the west. The Merriam Mountains are approximately 8.5 miles long, and the project Site is situated on approximately 3 miles of the northern portion of the Merriam Mountains. The project Site is in a dry climate with monthly average temperatures near Vista ranging from approximately 44°F–83°F. The City of Vista generally receives an average annual rainfall of less than 13.09 inches per year (Western Regional Climate Center 2014).

The undeveloped Site contains natural features of scenic and biological value including rugged topography and rock outcroppings. Much of the vegetation covering the existing Site is mature and well-developed. Elevation of the Site ranges widely, from approximately 660 feet above mean sea level (AMSL) along Twin Oaks Valley Road traversing the northwestern portion of the Site to 1,750 feet AMSL directly northeast of Twin Oaks Crest Drive. The perimeter of the project Site has an overall gentle sloping topography. Within the project Site, the topography is more varied. Overall, there are approximately five locations where elevation is above 1,500 feet AMSL (one in the southern and four in the north–central areas of the project Site). Topography generally increases toward the center of the Site, forming a number of ridgelines and some prominent rock outcrops. In some locations the gentle sloping perimeter gradually rises to higher elevations, and in other areas the slopes are more acute.

Eighteen soils types in 10 soil series occur on Site, including 78 acres of Los Posas soils. Las Posas soils often support endemic plants that have either evolved to do well on these nutrient-poor soils or can outcompete other plants and thrive on such soils. The Las Posas soils series is the only soil type mapped on Site that is known to support mafic conditions, and these soils are thought to occur in the northwestern and southeastern corners of the project Site. In the northwest, the soil occurs to west of and immediately adjacent to Twin Oaks Valley Road. In the southeast, this soil was thought to occur in two small locations directly adjacent to and north of Mesa Rock Road along I-15. However, no mafic soil indicators, or mafic endemic plant species, were observed at the two southeastern locations. Therefore, this area is not considered to support mafic conditions or soils. To date, only one special-status plant species typically associated with mafic conditions, Ramona horkelia, has been identified on Site, but it was not mapped in Las Posas soils.

Land use within the project Site and in the surrounding areas is a mixture of undeveloped lands and rural residential areas. Portions of the Site have been and continue to be used for various unauthorized uses, including horseback riding, hiking, mountain biking, off-roading, motorcycling, shooting, and illegal dumping. The northwest portion of the Site contains an

abandoned quarry, fronting Twin Oaks Valley Road, and an abandoned private landing strip in the north-central portion of the Site.

1.4.1 Regional Context

In San Diego County, several resource conservation planning efforts have been completed or are currently in progress with the long-term goal of establishing a regional conservation program to protect native habitat lands and their associated biota. These efforts are intended to establish biological preserves and long-term management and monitoring consistent with the State Natural Community Conservation Planning Act and to contribute to the County's Multiple Species Conservation Program (MSCP), which began in 1998 when the County approved the South County Plan of the MSCP.

In the current County of San Diego Draft North County Plan of the MSCP, the proposed project is identified as a proposed hardline area, which are project areas where the development impact areas and the preserved open space areas have been predetermined and hardlined for the purposes of the conservation plan (County of San Diego 2016). Additionally, the proposed project would implement the relevant portions of the County of San Diego's North County Metropolitan Subregional Plan and Bonsall Community Plan, which identifies and coordinates land use patterns, objectives, and goals for the Newland Sierra Community. The draft North County Plan of the MSCP is a comprehensive habitat conservation planning program and development take permit that attempts to preserve native habitat for a multitude of sensitive species and guides development for which the County, USFWS, and CDFW entered into a Planning Agreement (County of San Diego 2008a and 2014; Figure 5, Regional Context). The proposed project is a proposed hardline area in the draft North County Plan; however, until the North County Plan is approved, the Planning Agreement between the County and the Agencies (County of San Diego 2008a and 2014) remains in place and applies to the project.

The proposed project has been identified as a proposed hardline area in the draft North County Plan (County of San Diego 2016), which means that the proposed development areas and proposed biological open space areas have been incorporated into the overall conservation strategy of the County's draft North County Plan. In order for the proposed project to obtain approval for the loss of coastal sage scrub and any associated incidental take of California gnatcatcher through the County's Section 4(d) habitat loss permit (HLP) process, the proposed project must demonstrate conformance with overall programmatic goals and policies established for the San Diego County Natural Community Conservation Planning (NCCP) subregion and make the specific findings applicable to issuance an HLP. A Draft HLP including 4(d) findings is included as Appendix E. The proposed project may also obtain take authorization through Section 7 consultation with the USFWS.

The draft North County Plan anticipates the following conservation goals for the San Marcos-Merriam Mountains Core Area (Planning Unit 9):

a) Conserve oak woodlands, coastal sage scrub (particularly in Twin Oaks) to maintain populations and connectivity of coastal California gnatcatcher and other coastal sage scrub-dependent species, and chaparral on mafic or gabbro soils that support sensitive plant species, such as chaparral beargrass and Parry's tetracoccus, San Diego thornmint (particularly in San Marcos Mountains), or California adolphia;

b) Ensure that a core community of coastal California gnatcatcher and other coastal sage scrub-dependent species remains in the coastal sage scrub block in Twin Oaks;

c) Conserve the north-south connectivity of coastal California gnatcatcher habitat along I-15 between the Riverside County line and the City of Escondido. Maintain the east-west connectivity of natural habitats on either side of I-15 for dispersal of coastal sage scrub community birds;

d) Conserve the riparian and upland habitats of Gopher Canyon Creek for water quality and sensitive species, such as southwestern pond turtle and least Bell's vireo; and,

e) Ensure the San Diego thornmint population in the Palisades open space preserve is maintained and enhanced, if practicable.

Consistent with generally accepted preserve design principles, the project preserves a large block of open space, including the northern and northwestern portions of the Site, and provides off-site regional linkages between off-site lands in the San Marcos Mountains to the west and north along Gopher Canyon and to the San Luis Rey River. Figure 3 depicts the areas that would be preserved as biological open space, development areas, and LBZs and FMZs. Focused planning areas for the San Diego Association of Governments North County Multiple Habitat Conservation Program, which abuts the North County Plan to the south and west, and the planning maps for the County of San Diego North County Metropolitan Subregional Plan North County Plan: San Diego County General Plan (County of San Diego 2011b) indicate that most existing connectivity is in the northern and northwestern portions of the Site, with connectivity to the south and east being limited by I-15 and existing urban development.

The Merriam Mountains and Gopher Canyon are recognized by the County of San Diego North County Metropolitan Subregional Plan as Resource Conservation Areas (RCA). RCAs are lands requiring special attention in order to conserve resources in a manner best satisfying public and private objectives. The appropriate implementation actions will vary depending upon the conservation objectives of each resource but may include: public acquisition, establishment of open space easements, application of special land use controls, such as cluster zoning, large lot zoning, scenic or natural resource preservation overlay zones, or by incorporating special design

considerations into subdivision maps or special use permits. RCAs shall include but are not limited to groundwater problem areas, coastal wetlands, native wildlife habitats, construction quality sand areas, littoral sand areas, astronomical dark sky areas, unique geological formations, and significant archaeological and historical sites. Within RCAs, County departments and other public agencies shall give careful consideration and special environmental analysis to all projects that they intend to carry out, propose, or approve; and shall select those conservation actions most appropriate to the project and consistent with the intent of this overlay designation.

The following criteria were used in selecting resources worthy of conservation:

1. Areas necessary for the protection of wildlife and representative strands of native vegetation.
2. Areas containing rare and/or endangered plants.
3. Wildlife habitats which are:
    a. in large blocks, if possible;
    b. wide, rather than long and narrow, to minimize adverse effects along their margins; and
    c. in contact with other wild areas and floodplains to provide migration corridors.
4. Areas containing mineral resources. Conservation measures should ensure future availability.
5. Areas that provide the scenic mountainous backdrop to development within the community.

The Merriam Mountain RCA is characterized as having "Resources in this area similar to the San Marcos Mountains including the same species of rare plants plus *Comarostaphylis diversifolia*" (County of San Diego 2011b). Concerning the San Marcos RCA, the definition states as follows: "These mountains are especially significant because they have rare and endangered plant species such as Cleveland sage (*Salvia clevelandii*), Tetracoccus dioicus, and southern mountain misery (*Chamaebatia australis*). These mountains are also valuable as visual landmarks of great scenic beauty" (County of San Diego 2011b)[1]. Gopher Canyon RCA was also "delineated to include the scenic oak woodlands along Gopher Canyon" (County of San Diego 2011b).

The project must also be in conformance with the County's RPO. However, the project footprint is not strictly in conformance with RPO; therefore, the project includes a proposed amendment to the RPO that would exempt the project from the requirements of the ordinance with the implementation of superior regional resource protection. The project's Resource Protection Plan (RPP) serves as the functional equivalent of the County RPO for the proposed project (Dudek

[1] Based on multiple rare plant surveys, Cleveland sage, Parry's tetracoccus (*Tetracoccus dioicus*), and southern mountain misery have not been detected on the Site.

2017a). The RPP is a comprehensive planning document addressing the preservation, enhancement, and management of sensitive resources (habitat, wetlands, slopes, cultural) within the 1,985-acre project Site. It has been designed specifically for the proposed project as it relates to biological resources. The plan provides assurances and funding for long-term resource protection, management, restoration, and enhancement of the proposed biological open space. As part of the proposed project, the on-site preserve would consist of 1,209.1 acres of habitat into three cohesive, contiguous blocks, and protect the biological open space from future encroachment through organized habitat management and land stewardship in perpetuity. An analysis of the project with application of RPO is included in the RPP (Dudek 2017a).

The proposed off-site biological open space is located entirely within a PAMA in the Eastern Ramona area of the draft North County Plan.

1.4.2 Habitat Types/Vegetation Communities

Twenty-two vegetation communities and non-native communities or land cover types were mapped by Dudek within the proposed project Site. Native vegetation communities within the project Site include coast live oak woodland, Diegan coastal sage scrub (including disturbed), coastal sage scrub Baccharis dominated (including disturbed), coastal sage scrub-chaparral transition, flat-topped buckwheat scrub (disturbed), granitic southern mixed chaparral (including disturbed), mafic southern mixed chaparral, scrub oak chaparral, freshwater marsh, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, and southern willow scrub/tamarisk scrub. Four non-native vegetation communities, disturbed wetlands, eucalyptus woodland, non-native woodland and non-native grassland, occurs within the project Site. Five land cover types (non-vegetated area) occur within the project Site: intensive and extensive agriculture, orchards and vineyards, urban/developed, and disturbed habitat. The vegetation communities and land cover types listed above are described below, their acreages are presented in Table 1-2, and their spatial distributions are presented in Figures 6A–6E, Biological Resources.

The Site is largely dominated by undisturbed chaparral which covers 91 percent of the project Site. Pockets of coastal sage scrub habitat are scattered throughout the chaparral and cover approximately 4 percent of the project Site. In general, riparian habitats (mulefat scrub, oak riparian forest, southern willow scrub, and southern willow scrub/tamarisk scrub) are located along Twin Oaks Road in the northwest, scattered within the old airplane landing strip in the north, directly north of the junction of Gist Road and Sarver Lane, and adjacent to I-15, with a few additional scattered locations throughout the Site. The project Site is composed of approximately 3 percent of developed and disturbed habitat. Disturbed habitat on Site is mainly associated with the old quarry located in the northwestern section of the project Site and also includes numerous dirt roads which traverse the Site. Developed areas are primarily located in the southern portion of the project Site and include paved roads and residential areas.

In September 2010, the CDFW published the *List of California Vegetation Alliances and Associations* (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2014). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2014):

1 = critically imperiled

2 = imperiled

3 = vulnerable to extirpation or extinction

4 = apparently secure

5 = demonstrably widespread, abundant, and secure

For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2014). Because NatureServe ranks vegetation communities at the global level, they have few rankings at the state or province level available. However, the *List of California Vegetation Alliances and Associations* (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. The *List of California Vegetation Alliances and Associations* (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California.

CDFW's guidelines for determining high priority vegetation types include considering any communities listed with a ranking of S1 to S3 and ascertaining whether the specific stands of the community type within the project Site are "considered as high-quality occurrences of a given community." The consideration of stand quality includes cover of non-native invasive species, human-caused disturbance, reproductive viability, and insect or disease damage (CDFG 2012b).

In addition, the County requires mitigation at varying ratios for many vegetation communities (County Report Format and Content Requirements for Biological Resources, 2010). These vegetation communities follow the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). Vegetation communities considered special-status are those with an "S" ranking of 1, 2, or 3 (CDFG 2010), as well as communities that require mitigation by the County (Table 5 in County of San Diego 2010a). These communities are denoted in Table 1-2 with an asterisk (*). Vegetation communities mapped in the off-site improvement areas are quantified in Tables 1-3 and 1-4. As described in Section 1.2.2, the Deer Springs Road improvements includes

an Option A and an Option B. Table 1-3 includes the off-site acreage for the Deer Springs Road Option A; Table 1-4 includes the off-site acreage for the Deer Springs Road Option B; and Table 1-5 includes the off-site acreage for the remaining road and sewer improvements.

Table 1-2
On-Site Vegetation Communities and Land Cover Types

General Vegetation Community/Land Cover Type	Code[1]	Acres
Coastal Scrub		
Diegan coastal sage scrub (including disturbed) *	32500	68.2
Coastal sage scrub – Baccharis dominated (including disturbed)	32530	2.0
Flat-topped buckwheat – disturbed*	32800	1.7
Coastal sage – chaparral transition*	37G00	7.8
	Subtotal	*79.7*
Chaparral		
Granitic southern mixed chaparral* (including disturbed)	37121	1,700.7
Mafic southern mixed chaparral*	37122	58.8
Scrub oak chaparral*	37900	44.3
	Subtotal	*1,803.8*
Woodland		
Coast live oak woodland *	71160	9.1
Riparian		
Freshwater marsh*	52400	0.1
Southern coast live oak riparian forest*	61310	5.2
Mulefat scrub*	63310	0.2
Southern willow scrub*	63320	2.5
Southern willow scrub/tamarisk scrub*	63320/63810	0.3
	Subtotal	*8.3*
Non-native Communities and Land Covers		
Eucalyptus woodland	79100	0.5
Intensive agriculture	18200	<0.0
Orchard and vineyards	18100	2.0
Urban/developed	12000	9.2
Disturbed habitat	11300	57.0
Non-native grassland*	42200	16.1
	Subtotal	*84.8*
	Total [2]	**1,985.6**

1 Holland (1986) as modified by Oberbauer et al. (2008)
2 May not total due to rounding
* Considered special-status by the County of San Diego (2010a).

Table 1-3
Deer Springs Road Off-Site Vegetation Communities and Land Cover Types (Option A)

General Vegetation Community/Land Cover Type	Code[1]	Acres
Coastal Scrub		
Coastal sage – chaparral transition*	37G00	1.7
	Subtotal	*1.7*
Chaparral		
Granitic southern mixed chaparral* (including disturbed)	37121	1.7
	Subtotal	*1.7*
Woodland		
Coast live oak woodland * (including disturbed)	71160	3.1
Riparian		
Southern coast live oak riparian forest*	61310	1.4
Disturbed wetland	11200	0.1
Mulefat scrub	63310	0.04
Southern willow scrub	63320	0.1
	Subtotal	*1.6*
Non-native Communities and Land Covers		
Agriculture	18000	2.5
Eucalyptus woodland	79100	1.8
Orchard and vineyards	18100	2.0
Urban/developed	12000	33.2
Disturbed habitat	11300	3.6
Non-native grassland*	42200	1.4
Intensive agriculture	18200	1.6
Extensive agriculture	18300	6.1
	Subtotal	*52.2*
	Total [2]	**60.3**

1 Holland (1986) as modified by Oberbauer et al. (2008)
2 May not total due to rounding
* Considered special-status by the County of San Diego (2010a).

Table 1-4
Deer Springs Road Off-Site Vegetation Communities and Land Cover Types (Option B)

General Vegetation Community/Land Cover Type	Code[1]	Acres
Coastal Scrub		
Coastal sage – chaparral transition*	37G00	2.1
	Subtotal	*2.1*
Chaparral		
Granitic southern mixed chaparral* (including disturbed)	37121	2.4
	Subtotal	*2.4*
Woodland		
Coast live oak woodland*	71160	3.3

Table 1-4
Deer Springs Road Off-Site Vegetation Communities and Land Cover Types (Option B)

General Vegetation Community/Land Cover Type	Code[1]	Acres
Riparian		
Southern coast live oak riparian forest*	61310	1.4
Disturbed wetland	11200	0.1
Mulefat scrub	63310	0.04
Southern willow scrub	63320	0.1
Subtotal		*1.6*
Non-native Communities and Land Covers		
Agriculture	18000	2.6
Eucalyptus woodland	18300	2.0
Orchard and vineyards	18100	2.3
Urban/developed	12000	33.9
Disturbed habitat	11300	3.9
Non-native grassland*	42200	1.8
Intensive agriculture	18200	1.6
Extensive agriculture	18300	6.1
Subtotal		*54.1*
Total [2]		**63.7**

[1] Holland (1986) as modified by Oberbauer et al. (2008)
[2] May not total due to rounding
* Considered special-status by the County of San Diego (2010a).

Table 1-5
Off-Site Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Coastal Scrub								
Diegan coastal sage scrub (including disturbed)*	—	0.5	—	—	—	—	0.9	1.4
Coastal sage – chaparral transition*	—	—	—	—	—	—	0.3	0.3
Chaparral								
Granitic southern mixed chaparral* (including disturbed)	2.9	—	3.2	—	—	—	—	6.1
Woodland								
Coast live oak woodland (including disturbed)*	—	—	1.0	—	<0.01	—	0.1	1.1
Riparian								
Southern willow scrub*	0.1	—	—	3.3	—	—	—	3.4
Arundo-dominated riparian	—	—	—	0.3	—	—	—	0.3

Table 1-5
Off-Site Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Non-native Communities and Land Covers								
Intensive agriculture	—	—	0.8	—	—	—	—	0.8
Extensive agriculture	—	—	0.1	—	—	—	—	0.1
Eucalyptus woodland	—	—	—	—	0.6	—	0.2	0.8
Orchard and vineyards	0.8	—	—	—	—	—	—	0.8
Urban/developed	0.4	1.8	2.2	1.1	1.2	0.4	8.9	14.9
Disturbed habitat	0.8	—	0.4	0.8	0.1	—	1.6	2.9
Non-native grassland*	—	—	<0.1	—	—	—	1.8	1.9
Non-native woodland	—	—	0.3	—	—	—	—	0.3
Subtotal	*1.9*	*1.8*	*3.8*	—	*1.9*	—	*12.6*	*22.4*
Total [1]	**4.9**	**2.3**	**7.9**	**5.5**	**1.9**	**0.4**	**13.9**	**31.4**

[1] May not total due to rounding
* Considered special-status by the County of San Diego (2010a).

1.4.2.1 Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub is the wide-spread coastal sage scrub in coastal southern California from Los Angeles into Baja California (Oberbauer et al. 2008). The community mostly consists of drought deciduous species such as California sagebrush, Eastern Mojave buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), laurel sumac (*Malosma laurina*), and black sage (*Salvia mellifera*). Diegan coastal sage scrub is typical on low moisture-available sites, such as steep, xeric slopes or clay-rich soils that release stored water slowly. This community integrates with types of chaparral at higher elevations. Within the project Site, there are five main locations along the length of the project Site including north and adjacent to Mesa Road, along Gist Road (with a small patch occurring at the intersection of Gist Road and Country Garden Lane), along North Twin Oaks Valley Road, and two patches of habitat west of I-15 and east of the abandoned airstrip (Figures 6A–6E). Coastal sage scrub that contains 20 to 50 percent native species by percent cover were mapped as "disturbed" associations. Disturbed Diegan coastal sage scrub occurs in small patches along Mesa Rock Road, Gist Road, and within the old rock quarry (Figures 6A–6E).

Areas mapped as Diegan coastal sage scrub within the project Site are dominated by California sagebrush. The *Artemisia californica* (California sagebrush scrub) alliance has a rank of G5S5 in CDFW (CDFG 2010) meaning it is globally secure and secure in the state. Most Diegan coastal sage scrub within the NCCP area is considered sensitive by CDFW; impacts must be considered per CEQA Section 15065 (CDFG 1993). It is considered sensitive by the County and requires

mitigation per the County Report Format and Content Requirements for Biological Resources (County of San Diego 2010c).

The Diegan coastal sage scrub on Site consists of five main patches of dense habitat, with several smaller areas around them mapped as disturbed coastal sage scrub, and a small amount is mapped in the off-site improvement areas (see Tables 1-3, 1-4, and 1-5). As described above, the proposed project incorporates approximately 1,209.1 acres of on-site open space that would largely be established in the northern portion of the Site, with additional open space dedicated adjacent to and within developed areas. Mitigation for Diegan coastal sage scrub is subject to the NCCP flowchart, based on the quality of the Diegan coastal sage scrub for long-term conservation. The Diegan coastal sage scrub is considered "Intermediate" and a 2:1 mitigation ratio is applied.

1.4.2.2 Coastal Sage Scrub – Baccharis (32530)

Diegan coastal sage scrub – Baccharis dominated is similar to Diegan coastal sage scrub but dominated by Baccharis species (desert broom [*B. sarothroides*] and/or coyote brush [*B. pilularis*]) (Oberbauer et al. 2008). This community typically occurs on disturbed sites or those with nutrient-poor soils and often found within other forms of Diegan coastal sage scrub and on upper terraces of river valleys. This community is distributed along coastal and foothills areas in San Diego County. Within the project Site, this community is mapped directly north of Mesa Rock Road adjacent to I-15 and within the old rock quarry (Figures 6A–6E).

Areas mapped as coastal sage scrub – Baccharis within the project Site are dominated by California sagebrush and coyote brush. The *Artemisia californica* (California sagebrush scrub) alliance and *Baccharis pilularis* (coyote brush scrub) alliance have a rank of G5S5 by CDFW (CDFG 2010) meaning it is globally secure and secure in the state. Diegan coastal sage scrub – Baccharis dominated is considered sensitive by CDFW and USFWS as coastal sage scrub is the vegetation classification used in the NCCP/HCP, it has foraging value for gnatcatchers and would fit within the description for gnatcatcher Critical Habitat. The Planning Agreement for the North and East County NCCPs requires all coastal sage scrub forms to be mitigated consistent with the NCCP Planning Guidelines. Although this vegetation community is not considered sensitive by the County (2010c), it is similar to Diegan coastal sage scrub and would therefore require a 2:1 mitigation ratio.

1.4.2.3 Flat-Topped Buckwheat (32800)

Flat-topped buckwheat is a nearly monoculture community usually resulting from disturbance and transitioning to coastal sage scrub or chaparral Oberbauer et al. 2008. Species characteristic of this community, Eastern Mojave buckwheat and common deerweed (*Acmispon glaber*),

appear over time. This community often occurs in disturbed areas in the coastal and foothill areas of San Diego County and often intergrades with Diegan coastal sage scrub. Within the project Site, this community is mapped within the old rock quarry (Figures 6A–6E).

The area mapped as disturbed flat-topped buckwheat within the project Site are dominated by Eastern Mojave buckwheat (*Eriogonum fasciculatum*), but also is composed of 20 to 50 percent non-native herbs and grasses. The *Eriogonum fasciculatum* (California buckwheat scrub) alliance has a rank of G5S5 in CDFW (CDFG 2010) meaning it is globally secure and secure in the state. Flat-topped buckwheat is not considered special-status by CDFW (CDFG 2010); -it is considered sensitive by the County and mitigation is required (2010c).

1.4.2.4 Granitic Southern Mixed Chaparral (37121), Mafic Southern Mixed Chaparral (37122)

Granitic southern mixed chaparral (37121) is characterized by broad-leaved sclerophyll shrubs ranging from 5 to 10 feet in height (Oberbauer et al. 2008). Granitic southern mixed chaparral is characterized by chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos* spp.), white fairy-lantern (*Calochortus albus*), ceanothus (*Ceanothus* spp.), and other species with patches of bare soil. This habitat often occurs on dry, rocky, often steep slopes with little soil and moderate temperatures.

Mafic southern mixed chaparral (37122) is similar to granitic southern mixed chaparral, but it occurs on mafic (gabbro), metavolcanic, or metasedimentary derived soils (Los Posas and Boomer Soils) in the coastal region. These soils can have a very red or dark brown appearance with an affiliation for sensitive plant species and are rarer than granitic types of chaparral.

Southern mixed chaparral occurs throughout the majority of the project Site, including mafic southern mixed chaparral where it occurs on Las Posas series soils within the northeastern most portion of the project Site, and adjacent to North Twin Oaks Valley Road (Figures 6A–6E). Disturbed granitic southern mixed chaparral occurs east of Gist Road, along the abandoned airstrip, and within the old rock quarry (Figures 6A–6E). Southern mixed chaparral, including mafic southern mixed chaparral, also occurs in some of the off-site improvement areas (see Tables 1-3, 1-4, and 1-5).

Areas mapped as southern mixed chaparral are dominated by chamise. The *Adenostoma fasciculatum* (chamise) alliance has a rank of G5S5 by CDFW (CDFG 2010), meaning it is globally secure and secure in the state. Southern mixed chaparral (including disturbed) is not considered special status by CDFW, but it is considered sensitive by the County, and requires mitigation (of San Diego 2010c).

1.4.2.5 Coastal Sage – Chaparral Transition (37G00)

Coastal sage – chaparral transition habitats include a mix of sclerophyllous, woody chaparral species and drought-deciduous, malacophyllous sage scrub species (Oberbauer et al. 2008). Chamise and California sagebrush (*Artemisia californica*) are dominant in equal cover. Generally, laurel sumac, black sage, and lemonade sumac (*Rhus integrifolia*) are more common in coastal sage scrub, while *Ceanothus* spp. and mission manzanita (*Xylococcus bicolor*) are more common in chaparrals. Areas mapped as coastal sage – chaparral transition within the project Site are dominated by California sagebrush with some chamise. Within the project Site, this is mapped east of Gist Road, and in some of the off-site improvement areas (see Tables 1-3, 1-4, and 1-5) (Figures 6A–6E). This community type is considered a coastal sage habitat type by the County of San Diego (HLP Ordinance – Code of Regulatory Ordinances Section 86.100), consistent with the NCCP Conservation Guidelines and Process Guidelines.

The *Artemisia californica* (California sagebrush scrub) alliance has a rank of G5S5 by CDFW (CDFG 2010) meaning it is globally secure and secure in the state. Coastal sage-chaparral transition is not considered special-status by CDFW (CDFG 2010) but is considered sensitive by the County and requires mitigation (County of San Diego 2010c).

1.4.2.6 Scrub Oak Chaparral (37900)

Scrub oak chaparral habitats are composed of a dense, evergreen chaparral that is typically dominated by scrub oak (*Quercus* spp.) with birchleaf mountain mahogany (*Cercocarpus betuloides*). In San Diego, scrub oak (*Quercus berberidifolia*) is usually the dominant species with over 50 percent vegetation cover usually occurring in small patches within a variety of other vegetation communities (Oberbauer et al. 2008). Within the project Site, this is mapped directly west of Mesa Rock Road, surrounding Gist Road, and directly north of the water tower southeast of Camino Mayor (Figures 6A–6E).

Areas mapped as scrub oak chaparral within the project Site are dominated by scrub oak. The *Quercus berberidifolia* (Scrub oak chaparral) alliance has a rank of G4S4 in CDFW (CDFG 2010), meaning it is apparently secure globally and in the state. Scrub oak chaparral is not considered special-status by CDFW, but it is considered sensitive by the County, and it requires mitigation (of San Diego 2010c).

1.4.2.7 Coast Live Oak Woodland (71160)

Coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia*) with a canopy height reaching 33 to 82 feet in height (Oberbauer et al. 2008). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), laurel sumac, or dominated blue elderberry (*Sambucus nigra* ssp. *caerulea*). Coast

live oak woodland occurs throughout the project Site and off-site areas including west along Sarver Lane, along and east of Gist Road, east of the water tower located southeast of Camino Mayor, west along North Twin Oaks Valley Road, and along Deer Springs Road (Figures 6A–6E). A portion of coast live oak woodland is mapped as riparian habitat under the jurisdiction of CDFW. These areas were located adjacent to stream channels, but did not have hydrophytic vegetation in the canopy cover or understory; therefore, it did not qualify as County RPO wetlands, which are defined as areas supporting a predominance of hydrophytes.

Areas mapped as coast live oak woodland within the project Site are dominated by coast live oak. The *Quercus agrifolia* (coast live oak woodland) alliance has a rank of G5S4 by CDFW (CDFG 2010), meaning it is globally secure and apparently secure in the state. Coast live oak woodland is not considered special-status by CDFW; it is considered sensitive by the County and requires mitigation (of San Diego 2010c).

1.4.2.8 Freshwater Marsh (52400)

Freshwater marshes are typically dominated by perennial, emergent monocots to 13 to 16 feet tall often forming completely closed canopies. Characteristic species include species such as sedges (*Carex* spp.), flatsedges (*Cyperus* spp.), bulrush (*Scirpus* spp.), cattail (*Typha* spp.), and rushes (*Juncus* spp.). Within the project Site, there is one small area mapped west of North Twin Oaks Valley Road (Figures 6A–6E).

Areas mapped as freshwater marsh within the project Site are dominated by cattails. The *Typha (angustifolia, domingensis, latifolia)* (cattail marshes) alliance has a rank of G5S5 by CDFW (CDFG 2010) meaning it is globally secure and secure in the state. Freshwater marsh is not considered special-status by CDFW; -it is considered sensitive by the County and requires mitigation (2010c). In addition, the freshwater marsh within the project Site is considered an RPO wetland under the jurisdiction of the County.

1.4.2.9 Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forests (61310) consists of dense riparian forests dominated by evergreen sclerophyllous trees (e.g., coast live oak) with a closed, or nearly closed, canopy (Oberbauer et al. 2008). This community appears to be richer in herbs and poorer in understory scrubs than other riparian communities and is a homogenous mixture of coast live oak woodland and southern riparian woodland. Southern coast live oak riparian forest includes coast live oak communities found along rivers, creeks, and drainages throughout San Diego County. Southern coast live oak riparian forest is mapped in four locations including west along North Twin Oaks Valley Road, along the northwestern portion of the project Site and west of I-15, along Gist Road

and north of Mesa Rock Road (Figures 6A–6E). It is also mapped along the off-site improvement portion of Deer Springs Road.

Areas mapped as oak riparian forest within the project Site are dominated by coast live oak. The Quercus agrifolia (Coast live oak woodland) alliance has a rank of G5S4 by CDFW (CDFG 2010) meaning it is globally secure and apparently secure in the state. Southern coast live oak riparian forest is not considered special-status by CDFW; it is considered sensitive by the County and requires mitigation (of San Diego 2010c). In addition, the southern coast live oak riparian forest within the project Site is considered an RPO wetland under the jurisdiction of the County.

1.4.2.10 Mulefat Scrub (63310)

Mulefat scrub is a depauperate, tall, herbaceous riparian scrub strongly dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Site factors include intermittent stream channels with fairly coarse substrate and moderate depth to the water table (Oberbauer et al. 2008). This community type is widely scattered along intermittent streams and near larger rivers. Within the project Site, there are small patches along the abandoned airstrip and directly adjacent to Gist Road (Figures 6A–6E).

Areas mapped as mulefat scrub within the project Site are dominated by mulefat. The *Baccharis salicifolia* (mulefat thickets) alliance has a rank of G5S4 by CDFW (CDFG 2010) meaning it is globally secure and apparently secure in the state. Mulefat scrub is not considered special status by CDFW; -it is considered sensitive by the County and requires mitigation (of San Diego 2010c). In addition, the freshwater marsh within the project Site is considered an RPO wetland under the jurisdiction of the County.

1.4.2.11 Southern Willow Scrub (63320)

Southern willow scrub is a dense, broad-leafed, winter-deciduous riparian thicket dominated by several willow species (*Salix* spp.), with scattered emergent Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). This community was formerly extensive along the major rivers of coastal southern California, but now much reduced (Oberbauer et al. 2008). Southern willow scrub is mapped throughout the project Site along North Twin Oaks Road, the abandoned airstrip, and east of Gist Road (Figures 6A–6E). There is also a small patch of southern willow scrub mapped adjacent to Camino Mayor in the off-site improvement area.

Areas mapped as southern willow scrub within the project Site are dominated by red willow (*Salix laevigata*). The *Salix laevigata* (red willow thickets) alliance has a rank of G3S3 by CDFW (CDFG 2010) meaning it is vulnerable to extirpation or extinction globally and in the state. Southern willow scrub is considered special status by CDFW; it is considered sensitive by

the County and mitigation is required (of San Diego 2010c). In addition, the southern willow scrub within the project Site is considered an RPO wetland under the jurisdiction of the County.

1.4.2.12 Southern Willow Scrub/Tamarisk Scrub (63320/63810)

Southern willow scrub/tamarisk scrub contains characteristics of both southern willow scrub (described above) and tamarisk scrub communities. Tamarisk scrub community is a weedy, virtual monoculture of any of several tamarisk species, usually supplanting native vegetation following major disturbance (Oberbauer et al. 2008). This community type typically occurs on sandy or gravelly braided washes or intermittent streams, often in areas where high evaporation increases the stream's saltiness. Tamarisk is a strong phreatophyte and a prolific seeder, which predispose the species to be aggressive competitors in disturbed riparian corridors. This community type is widely scattered and increases its range throughout the drier parts of California. Within the project Site, this community is mapped within the abandoned airstrip (Figures 6A–6E).

The area mapped as southern willow scrub/tamarisk scrub within the project Site is dominated by both red willow and tamarisk sp. In addition to the southern willow scrub description above, the *Tamarix* sp. (tamarisk thickets) semi-natural stands does not have a global or state rank and is not considered special status by the CDFW (CDFG 2010); however, both southern willow scrub and tamarisk scrub are considered sensitive by the County and require mitigation (County of San Diego 2010c). In addition, this vegetation community is considered an RPO wetland under the jurisdiction of the County.

1.4.2.13 Eucalyptus Woodland (79100)

Eucalyptus habitats range from single species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory (Oberbauer et al. 2008). In most cases, eucalyptus forms a dense stand with a closed canopy. Eucalyptus species produces a large amount of leaf and bark litter, the chemical and physical characteristics which limit the growth of other species in the understory. Within the project Site, one area is mapped along the northwestern boundary of the project Site, west of North Twin Oaks Valley Road and east of Satin Doll Lane (Figures 6A–6E). Additionally, eucalyptus is mapped along the off-site improvement portion of Deer Springs Road.

The areas mapped as Eucalyptus woodlands within the project Site is dominated by *Eucalyptus* spp. The *Eucalyptus* (*globulus, camaldulensis*) (eucalyptus groves) semi-natural stands does not have a global or state rank and not considered special status by CDFW (CDFG 2010); no mitigation is required per the County (County of San Diego 2010c).

1.4.2.14 Agriculture (18000), Intensive Agriculture (18200), Extensive Agriculture (18300)

Agriculture (18000) lands support an active agricultural operation. Areas mapped as intensive agriculture includes dairies, nurseries, and chicken ranches (Oberbauer et al. 2008). Open spaces for intensive agriculture are used for livestock and there is usually no vegetation present except between animal holding areas. Within the project Site, there is a small avocado grove at the intersection of Deer Springs Road and Deer Springs Place (Figures 6A–6E). Additional areas are mapped as agriculture and extensive agriculture in the off-site improvement areas.

Agriculture, intensive agriculture, and extensive agriculture are not considered special status by CDFW, and mitigation is required per the County for extensive agriculture only if the area is categorized as field and pasture (County of San Diego 2010c). The extensive agriculture mapped within the off-site areas is considered row crops and therefore does not require mitigation.

1.4.2.15 Orchard and Vineyards (18100)

Orchards and vineyards are usually composed of artificially irrigated habitat dominated by one (or sometimes several) tree or shrub species (Oberbauer et al. 2008). The trees are typically low and bushy with an open understory. Vineyards include single species crops planted in rows that are usually supported by wood and wire trellises. Understory growth of both orchard and vineyard crops often include short grasses and other herbaceous plants between rows. Within the project Site, apparently non-commercial orchard crops are mapped in five locations directly along the boundary of the project Site (east and west of Gist Road, north of Camino Califia, east of Camino Mayor, and west of North Twin Oaks Valley Road) (Figures 6A–6E). Additional orchards and vineyards are mapped along the off-site improvement portion of Deer Springs Road and Camino Mayor.

Orchard and vineyards are not considered special status by CDFW, and no mitigation is required per the County (County of San Diego 2010c).

1.4.2.16 Urban/Developed (12000)

Urban/developed (12000) refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Within the project Site, developed areas include paved roads and residential areas along North Twin Oaks Valley Road, a small portion of Joni Lane, land west of Deer Springs Place, a portion of Deer Springs Road by I-15 and Mesa Rock Road (Figures 6A–6E). Additional developed areas are mapped in the off-site improvement areas, and mainly consist of Deer Springs Road, Twin Oaks Valley Road, Camino Mayor, Mesa Rock Road, Sarver Lane, and residential, commercial, or industrial areas.

Developed areas are not considered special status by CDFW (CDFG 2010), and no mitigation is required per the County (County of San Diego 2010c).

1.4.2.17 Disturbed Habitat (11300)

Disturbed habitats are areas that have been physically disturbed and no longer recognizable as native or naturalized vegetation association (Oberbauer et al. 2008). These areas may continue to retail soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Examples of these areas may include graded landscapes or areas, graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, areas repeatedly cleared for fuel management, or repeatedly used areas that prevent revegetation (e.g., parking lots, trails that have persisted for years). There disturbed habitat mapped throughout the entire project Site that consist of dirt trails, an abandoned airstrip, the old rock quarry, and other disturbed areas (Figures 6A–6E). Additional disturbed habitat is mapped within the off-site improvement areas.

Disturbed habitat is not considered special-status by CDFW (CDFG 2010), and no mitigation is required per the County (County of San Diego 2010c).

1.4.2.18 Non-Native Grasslands (42200)

Non-native grasslands consists of dense to sparse cover of annual grasses with flowering culms between 0.5 to 3 feet in height (Oberbauer et al. 2008). In San Diego County, the presence of (*Avena* spp.), bromes (*Bromus* spp.), stork's bill (*Erodium* spp.), and mustard (*Brassica* spp.) are common indicators. Within the project Site, non-native grasslands are mapped along Gist Road and along North Twin Oaks Valley Road (Figures 6A–6E). Additional non-native grassland is mapped within the off-site improvement areas.

Non-native grassland has a rank of G4S4 by CDFW (CDFG 2010), meaning it is apparently secure globally and in the state. Because non-native grassland can provide habitat for a variety of species, the County requires mitigation for impacts to it; therefore, it is considered sensitive by the County (County of San Diego 2010c).

1.4.2.19 Non-Native Woodland (79000)

Non-native woodland is described by Oberbauer et al. (2008) as a woodland of exotic trees, usually intentionally planted, which are not maintained or artificially irrigated. Non-native woodland is recognized an upland vegetation community (i.e., not dominated by hydrophytic vegetation) and not associated with any wetlands or waters of the U.S.). Non-native woodland differs from the eucalyptus woodland vegetation community in that non-native woodland is not dominated by eucalyptus species. It is mapped in the off-site improvement areas along Sarver Lane.

Non-native woodland does not have a global or state rank, and is not considered special status by CDFW (CDFG 2010); no mitigation is required per the County (County of San Diego 2010c).

1.4.2.20 Arundo-Dominated Riparian (65100)

Arundo-dominated riparian is described in Oberbauer et al. (2008) as densely vegetated riparian thickets dominated almost exclusively by giant reed (*Arundo donax*). The arundo-dominated riparian observed within the project Site is associated with the off-site sewer improvements.

Arundo-dominated riparian does not have a global or state rank, and is not considered special status by CDFW (CDFG 2010); however, as it is a disturbed wetland, mitigation is required per the County (County of San Diego 2010c). This vegetation community may require mitigation per the resource agencies. In addition, this vegetation community is considered an RPO wetland under the jurisdiction of the County.

1.4.2.21 Disturbed Wetland (11200)

Disturbed wetland is a land cover described by Oberbauer (2008) for areas that are inundated by water, but have been altered by human activity. These areas can hold water permanently or periodically, and include artificial structures such as concrete-lined channels, rip-rap, Arizona crossings, detention basins, and culverts.

This land cover is mapped along Sycamore Drive in a rip-rap lined channel within the Deer Springs Road Off-site Improvement area, as well as within the 100-foot survey buffer of the Twin Oaks Valley Road improvements at the southern end of the proposed improvement area. The disturbed wetland mapped is the City of San Marcos' detention basin, which contained some ponding and occasional mulefat and eucalyptus trees.

Disturbed wetland does not have a global or state rank, and is not considered special status by CDFW (CDFG 2010); however, as it is a disturbed wetland, mitigation is required per the County (County of San Diego 2010c). This vegetation community may require mitigation per the resource agencies. Since the area mapped as disturbed wetland is a rip-rap lined channel, it is not considered an RPO wetland under the jurisdiction of the County.

1.4.3 Flora

A total of 230 vascular plant species, consisting of 159 native species (69 percent), and 71 non-native species (31 percent), were recorded on Site during 2013 surveys (Appendix A).

1.4.4 Fauna

The project Site supports habitat for common upland and riparian species. Chaparral, coastal scrub, woodland, riparian, and non-native habitats (e.g., eucalyptus and non-native grassland) within the

project Site provide foraging and nesting habitat for migratory and resident bird species and other wildlife species. Riparian streams or puddles, may provide refuge for amphibian species. Rock outcroppings, chaparral, coastal scrub, and woodlands within the project Site provide cover and foraging opportunities for wildlife species, including reptiles and mammals.

A list of the wildlife species observed within and adjacent to the project Site during focused burrowing owl surveys, jurisdictional delineations, raptor surveys, rare plant surveys, riparian bird surveys, and vegetation mapping is provided in Appendix B. There were 133 wildlife species observed on the project Site. Species richness in the project Site is moderate due to the property size and amount of undeveloped native land. Species richness is generally increased with the presence of more habitat types and ecotones, but the project Site is primarily one habitat type (91 percent is chaparral). Although species richness is moderate, the number of species and the wildlife population levels (i.e., number of individuals) is typical for undeveloped areas in this region, particularly those areas that support the habitat types on Site. Special-status wildlife species are addressed in Section 1.4.6.

1.4.4.1 Reptiles and Amphibians

Nine reptile species were observed within and adjacent to the project Site during surveys: Blainville's horned lizard (*Phrynosoma blainvillii*), western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), southern alligator lizard (*Elgaria multicarinata*), coastal whiptail, California kingsnake (*Lampropeltis californiae*), western patch-nosed snake (*Salvadora hexalepis*), ringneck snake (*Diadophis punctatus*), and gophersnake (*Pituophis catenifer*). Four amphibian species were documented within the project Site during surveys: Baja California treefrog (*Pseudacris hypochondriaca*), Northern Pacific treefrog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and western spadefoot toad (*Spea* [=*Scaphiopus*] *hammondi*).

1.4.4.2 Birds

Eighty-six bird species were detected during surveys: red-winged blackbird (*Agelaius phoeniceus*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (Icterus bullockii), great-tailed grackle (*Quiscalus mexicanus*), western meadowlark (*Sturnella neglecta*), brown-headed cowbird (*Molothrus ater*), hooded oriole (*Icterus cucullatus*), double-crested cormorant (*Phalacrocorax auritus*), bushtit (*Psaltriparus minimus*), western tanager (*Piranga ludoviciana*), blue grosbeak (*Passerina caerulea*), black-headed grosbeak (*Pheucticus melanocephalus*), song sparrow (*Melospiza melodia*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), black-chinned sparrow (*Spizella atrogularis*), white-crowned sparrow (*Zonotrichia leucophrys*), Bell's sparrow (*Artemisiospiza belli*), sagebrush sparrow (*Artemisiospiza nevadensis*), American kestrel (*Falco sparverius*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Spinus psaltria*), American goldfinch (*Spinus tristis*), ash-throated flycatcher

(*Myiarchus cinerascens*), black phoebe (*Sayornis nigricans*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), Cassin's kingbird (*Tyrannus vociferans*), pacific-slope flycatcher (*Empidonax difficilis*), Cooper's hawk, sharp-shinned hawk, red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk, Anna's hummingbird (*Calypte anna*), Costa's hummingbird (*Calypte costae*), rufous hummingbird (*Selasphorus rufus*), Allen's hummingbird (*Selasphorus sasin*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), ruby-crowned kinglet (*Regulus calendula*), white-breasted nuthatch (*Sitta carolinensis*), Northern mockingbird (*Mimus polyglottos*), California thrasher (*Toxostoma redivivum*), California quail (*Callipepla californica*), turkey vulture, blue-gray gnatcatcher (*Polioptila caerulea*), California gnatcatcher (*Polioptila californica*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), band-tailed pigeon (*Patagioenas fasciata*), mourning dove (*Zenaida macroura*), rock pigeon (*Columbia livia*), greater roadrunner (*Geococcyx californianus*), phainopepla (*Phainopepla nitens*), European starling (*Sturnus vulgaris*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), white-throated swift (*Aeronautes saxatalis*), Swainson's thrush (*Catharus ustulatus*), western bluebird (*Sialia mexicana*), American robin (*Turdus migratorius*), cedar waxwing (*Bombycilla cedrorum*), oak titmouse (*Baeolophus inornatus*), common yellowthroat (*Geothlypis trichas*), orange-crowned warbler (*Oreothlypis celata*), Wilson's warbler (*Cardellina pusilla*), yellow-rumped warbler (*Setophaga coronata*), yellow warbler (*Setophaga petechia*), Townsend's warbler (*Setophaga townsendi*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), red-naped sapsucker (*Sphyrapicus nuchalis*), Northern flicker (*Colaptes auratus*), canyon wren (*Catherpes mexicanus*), rock wren (*Salpinctes obsoletus*), Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), wrentit (*Chamaea fasciata*), mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), killdeer (*Charadrius vociferus*), and white-faced ibis (*Plegadis chihi*).

1.4.4.3 Mammals

Thirteen mammal species were detected (directly or indirectly) within the project Site during surveys: kangaroo rat (*Dipodomys* sp.), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), brush rabbit (*Sylvilagus bachmani*), long-tailed weasel (*Mustela frenata*), striped skunk (*Mephitis mephitis*), Botta's pocket gopher (*Thomomys bottae*), raccoon (*Procyon lotor*), San Diego desert woodrat (*Neotoma lepida intermedia*), California ground squirrel (*Spermophilus* [*Otospermophilus*] *beecheyi*), striped skunk (*Mephitis mephitis*), and mule deer (*Odocoileus hemionus*).

Bats occur throughout most of Southern California and may use any portion of the project Site as foraging habitat. There is a moderate potential for special-status bat species to occur on Site (see Section 1.4.6). Additionally, there is a low potential for additional bat species to forage or roost

within trees within the project Site. No bat species were detected within the project Site because the majority of the surveys were conducted during daylight hours and, due to low potential, did not include focused efforts to locate roosting bats.

1.4.4.4 Invertebrates

Twenty-two invertebrate species were observed on the project Site during surveys: brown elfin (*Callophrys augustinus*), Sonoran blue (*Philotes sonorensis*), acmon blue (*Plebejus acmon*), western pygmy-blue (*Brephidium exile*), California sister (*Adelpha bredowii*), queen (*Danaus gilippus*), monarch (*Danaus plexippus*), Chalcedon variable checkerspot (*Euphydryas chalcedona chalcedona*), common buckeye (*Junonia coenia*), Lorquin's admiral (*Limenitis lorquini*), mourning cloak (*Nymphalis antiopa*), red admiral (*Vanessa atalanta*), painted lady (*Vanessa cardui*), Behr's metalmark (*Apodemia mormo virgulti*), funereal duskywing (*Erynnis funeralis*), pale swallowtail (*Papilio eurymedon*), western tiger swallowtail (*Papilio rutulus*), anise swallowtail (*Papilo zelicaon*), Pacific sara orangetip (*Anthocharis sara sara*), cabbage white (*Pieris rapae*), checkered white (*Pontia protodice*), and versatile fairy shrimp (*Branchinecta lindahli*).

1.4.4.5 Fish

No fish species were documented in the project Site during biological surveys or expected to occur on Site. In addition, no open waters exist within the project Site. The two largest riparian areas located within the project Site, the South Fork of Gopher Canyon and the South Fork of Moosa Canyon, do not support perennial water sources or native fish populations.

1.4.5 Sensitive Plant Species

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of the California Endangered Species Act (CESA) and the federal Endangered Species Act (FESA) (CDFW 2014b), (2) plant species with a CRPR 1 through 4 (CDFW 2014c; CNPS 2014), and (3) plant species considered "sensitive" by the County (Table 2 in County of San Diego 2010a).

Special-status plant surveys were conducted on the project Site to determine the presence or absence of plant species that are considered endangered, rare, or threatened under CEQA Guidelines Section 15380 (14 CCR 15000 et seq.), as described in Section 1.3.4.1. Each of these special-status species is described in Sections 1.4.5.2 (County List A and B Species) and 1.4.5.3 (County List C and D Species). Special-status plant species known to occur in the surrounding region and their potential to occur on Site are described in Table 1-6 and Appendix A. Species that were observed or have moderate potential to occur are provided in Table 1-6; plants that are

not expected to occur or have low potential to occur are included in Appendix F. These tables include all species on Lists A–D from the County (County of San Diego 2010a). Plant species' CRPR are also included where applicable (CNPS 2014). Their potential to occur is based on an evaluation of known records in the San Marcos quadrangle and the surrounding eight quadrangles (CDFW 2014a; CNPS 2014; SDNHM 2014a; USFWS 2014), as well as elevation, habitat, and soils present on Site and Dudek's knowledge of biological resources in the area and regional distribution of each species.

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
Arctostaphylos rainbowensis	Rainbow Manzanita	None/ None	1B.1	List A	Chaparral/ evergreen shrub/ December–March/ 740–1,770 feet	No	Moderate potential to occur.	A handful of shrubs were recorded on a chaparral slopes west of Interstate 15 near Windsong Lane south of Mesa Rock Road (CDFW 2015);
Asplenium vespertinum	Western spleenwort	None/None	4.2	List D	Chaparral, cismontane woodland, coastal scrub/rocky/perennial rhizomatous herb/February–June/ 591–3,281 feet	No	Moderate potential to occur.	This species was recorded in the San Marcos quad (CNPS 2014), and there is suitable vegetation and rocky areas on Site. Not observed during 2007 or 2013 surveys, but species may occur within dense chaparral that could not be 100 percent surveyed.
Baccharis vanessae	Encinitas baccharis	FT/ SE	1B.1	List A	Chaparral (maritime), cismontane woodland/sandstone/ deciduous shrub/August–November/ 200–2,400 feet	No	Moderate potential to occur.	Suitable vegetation is present. Previously assumed to only occur on sandstone soils, but has since been confirmed on Cieneba soils which occurs on site and has been found within dense scrub oak (USFWS 2011). Recorded in the vicinity[2] with the nearest occurrence located on Cieneba soils approximately 7.5 miles south of the project Site (CDFW 2015); however, species is not known from any sites north of SR-78, except one location in San Mateo Wilderness. Not observed during 2007 or 2013 surveys, but species may occur

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
								within chaparral that could not be 100 percent surveyed.
Brodiaea orcuttii	Orcutt's brodiaea	None/ None	1B.1	List A	Closed-cone conifer forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentine/ bulbiferous herb/May–July/ 100–5,550 feet	Yes	Detected on Site during focused surveys.	Recorded within San Marcos quad (CNPS 2014), but clay soils (Las Posas) on Site limited to preserve area west of Twin Oaks Valley Road; no vernal pools or seep-related habitats are present and grasslands are limited on Site. However, this species was observed during the 2013 surveys. Two isolated populations were observed in the open space, just northeast of the abandoned airstrip.
Caulanthus simulans	Payson's jewel-flower	None/None	4.2	List D	Chaparral, coastal scrub; sandy and granitic/annual herb/(Feb) March–May (June)/300–7,200 feet	No	Moderate potential to occur.	Suitable vegetation and soils on Site. Recorded in the vicinity;[2] not detected during 2007 or 2013 surveys, but species may occur within dense chaparral that could not be 100 percent surveyed.
Ceanothus verrucosus	Wart-stemmed ceanothus	None/ None	2B.2	List B, MSCP	Chaparral/shrub/ December–April/3–1,247 feet	No	Moderate potential to occur.	Suitable chaparral vegetation present and species is known from mountains south of San Marcos. Nearest occurrence is less than one mile west of the project Site within the Palisades Estates in the San Marcos Mounts. This occurrence occurs

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
								on Las Posas soils in mafic chaparral (CDFW 2015). Conspicuous shrub was not observed on Site during surveys; only *C. tomentosus* found on Site; however, species may occur within dense chaparral that could not be 100 percent surveyed.
Clarkia delicata	Delicate clarkia	None/None	1B.2	List A	Chaparral, cismontane woodland/often gabbroic /annual herb/April–June/ 770–3,300 feet	No	Moderate potential to occur.	Suitable vegetation present, and gabbroic soils are limited to areas west of Twin Oaks Valley Road and potentially the area where Ramona horkelia was observed. Recorded in the vicinity.[2] Not detected during 2007 or 2013 surveys, but species may occur within dense chaparral that could not be 100 percent surveyed.
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	None/None	1B.2	List A	Chaparral, cismontane woodland/evergreen shrub/ April–June/100–1,800 feet	Yes	Detected on Site during focused surveys.	This species was found throughout the Site within southern mixed chaparral and two occurrences in scrub oak chaparral (PSBS 2007) and during 2013 focused plant surveys.
Dichondra occidentalis	Western dichondra	None/None	4.2	List D	Chaparral, cismontane woodland, coastal scrub, valley	No	Moderate potential	Suitable vegetation is present on Site, but the species was not

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
					and foothill grassland/ rhizomatous herb/March–May/160–1,650 feet		to occur.	detected during 2007 or 2013 surveys. Species may occur within dense chaparral that could not be 100 percent surveyed. Recorded in the vicinity.[2]
Dudleya viscida	Sticky dudleya	None/None	1B.2	List A	Coastal bluff scrub, chaparral, coastal scrub; rocky/perennial herb/May–June/30–1,800 feet	No	Moderate potential to occur.	Suitable habitat present on Site, but not detected during 2007 or 2013 surveys. Species may occur within dense chaparral or other areas that could not be 100 percent surveyed. Recorded in the vicinity.[2]
Horkelia truncata	Ramona horkelia	None/None	1B.3	List A	Chaparral, cismontane woodland/clay, gabbroic/ perennial herb/May–June/1,300–4,300 feet	Yes	Detected on Site during focused surveys.	A single population of seven individuals of this plant was located in the southeastern portion of the Site (PSBS 2007) and three populations were detected on Site in 2013, but could occur in other chaparral habitat on Site. All occurrences within southern mixed chaparral; not associated with mapped or Site-specific mafic soil.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None	4.3	List A	Chaparral, coastal scrub/ annual herb/January–July/ <2,900 feet	No	Moderate potential to occur.	Suitable habitat on Site, but not detected during 2007 or 2013 surveys, but species may occur within dense chaparral that could not be 100 percent surveyed. Recorded in the vicinity.[2]

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
Monardella hypoleuca ssp. *lanata*	Felt-leaved monardella	None/None	1B.2	List A	Chaparral, cismontane woodland/rhizomatous herb/ June–August/1,000–3,600 feet	No	Moderate potential to occur.	Suitable vegetation is present on Site, and species is recorded within San Marcos quad (CNPS 2014). Not observed during 2007 or 2013 surveys, but species may occur within dense chaparral that could not be 100 percent surveyed.
Pentachaeta aurea ssp. *aurea*	Golden-rayed pentachaeta	None/None	4.2	List D	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/ annual herb/ March–July/260–6,070 feet	No	Moderate potential to occur.	Suitable habitat on Site, but not detected during 2013 focused plant surveys, and its distribution in San Diego County appears to limited (Jepson Online Interchange 2014). Species may occur within dense chaparral that could not be 100 percent surveyed. Recorded in the vicinity.[2]
Piperia cooperi	Chaparral rein orchid	None/None	4.2	List D	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/ March–June/50–5,200 feet	Yes	Detected on Site during focused surveys.	Detected on Site during 2013 focused surveys. One occurrence in the east-central portion of the Site within southern mixed chaparral in 2013, but probably occurs in other areas on Site.
Pseudognaphalium leucocephalum	White rabbit-tobacco	None/None	2B.2	None	Chaparral, cismontane woodland, coastal scrub, riparian woodland/sandy, gravelly/perennial herb/ (July)	Yes	Detected on Site during focused	Detected on Site during focused surveys in 2013.

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
					August–November (December)/0–6,890 feet		surveys.	
Quercus engelmannii	Engelmann oak	None/ None	4.2	List D	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/ deciduous tree/March–June/400–4,250 feet	Yes	Detected on Site during focused surveys.	One occurrence in the northwestern corner and several occurrences throughout the north-central portion of the Site within southern mixed chaparral. Several additional individuals occur in coast live oak woodlands in the southeastern corner of the Site, although some appear to be hybridized with *Q. agrifolia*.
Salvia munzii	Munz's sage	None/None	2B.2	List B	Chaparral, Coastal scrub/ perennial evergreen shrub/ February–April/ 394–3,494 feet	No	Detected on Site during focused surveys.	Detected on Site in 2014.
Selaginella cinerascens	Ashy spike-moss	None/None	4.1	List D	Chaparral, Coastal scrub/ perennial rhizomatous herb/ N/A/66–2,100 feet	Yes	Detected on Site during focused surveys.	Detected on Site in 2013. Two occurrences in the north-central portion and one occurrence in central portion of the Site, but probably occurs in other areas on Site. All occurred within southern mixed chaparral.

Table 1-6
Plant Species Detected or Moderate Potential to Occur On Site

Scientific Name	Common Name	Status[1]	CRPR[1]	County[1]	Primary Habitat Associations/ Life Form/ Blooming Period/Elevation Range	Verified on Site (Direct/Indirect Evidence)	Potential to Occur On Site	Status On Site or Potential to Occur
Tetracoccus dioicus	Parry's tetracoccus	None/ None	1B.2	List A	Chaparral, coastal scrub/ deciduous shrub/ April–May/ 550–3,300 feet	No	Moderate potential to occur.	Suitable vegetation and soils are present and species is recorded within the San Marcos quad with four occurrences occurring less than 1.5 miles west of the project Site. These occurrences occur on Las Posas soils in mafic chaparral (CNPS 2014). This conspicuous shrub species likely would have been identified during previous surveys if present and was not detected during 2013 focused plant surveys; however, species may occur within dense chaparral that could not be 100 percent surveyed.

1.4.5.1 USFWS-Designated Critical Habitat

There is USFWS-designated critical habitat for San Diego ambrosia (*Ambrosia pumila*), thread-leaved brodiaea (*Brodiaea filifolia*), and spreading navarretia (*Navarretia fossalis*), within 5 miles of the project Site (USFWS 2014), as shown in Figure 7, Critical Habitat. None of the critical habitats are located within or in proximity to the project Site. Based on the habitat, soils, known distribution of these species, and lack of observations during focused plant surveys in 2007 (PSBS 2007) and 2013, these species are not expected or have low potential to occur on the Site (see Appendix F).

1.4.5.2 County List A and B Species

Plants categorized as County List A species are plants that are rare, threatened, or endangered in California and elsewhere. Plants categorized as County List B are rare, threatened, or endangered in California, but more common elsewhere (County of San Diego 2010a). County List A and B species that have been observed in the project Site, or have moderate potential to occur based on their life history, are described as follows and included in Table 1-6.

Rainbow Manzanita (*Arctostaphylos rainbowensis*), List A

Rainbow manzanita is a CRPR 1B.1 species (CNPS 2014) and a County List A species (County of San Diego 2010a). This evergreen shrub occurs within chaparral at elevations between 740 to 1,770 feet. This species blooms from December to March (CNPS 2014). Rainbow manzanita was not detected during the 2013 focused surveys, however according to County records, a handful of shrubs have been recorded on chaparral slopes of the Merriam Mountains, west of Interstate 15 near Windsong Lane south of Mesa Rock Road (CDFW 2015), which is south of all other reported sites.

Encinitas Baccharis (*Baccharis vanessae*), List A

Encinitas baccharis is a CRPR 1B.1 (CNPS 2014) and County List A species (County of San Diego 2010a). This deciduous shrub blooms from August to November. It occurs on sandstone soils in chaparral (maritime) and cismontane woodlands at elevations of 200 to 2,400 feet (CNPS 2014). Previously this species was assumed to only occur on sandstone soils, but has since been confirmed on Cieneba soils which occurs on Site and has also been found growing under dense scrub oak (USFWS 2011). Encinitas baccharis was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation and soils are present. This species may occur within dense chaparral that could not be 100 percent surveyed.

Orcutt's Brodiaea (*Brodiaea orcuttii*), List A

Orcutt's brodiaea is a CRPR 1B.1 (CNPS 2014) and County List A species (County of San Diego 2010a). This bulbiferous herb blooms from May to July and is usually restricted to clay soils. Typical habitats for this species include closed-cone conifer forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and/or vernal pools. The elevation range in which the species is generally found ranges from 100 to 5,550 feet. Despite the lack of suitable soils and other habitat characteristics required for this species, two isolated populations totaling 50 plants were observed in the open space, just northeast of the abandoned airstrip.

Delicate Clarkia (*Clarkia delicata*), List A

Delicate clarkia is a CRPR 1B.2 (CNPS 2014) and County List A species (County of San Diego 2010a). This annual herb blooms from April to June. It occurs on gabbroic soils in chaparral and cismontane woodlands at elevations of 770 to 3,300 feet (CNPS 2014). Delicate clarkia was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation is present and gabbroic soils are present within the area west of Twin Oaks Valley Road. This species may occur within dense chaparral that could not be 100 percent surveyed.

Summer Holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), List A

Summer holly is a CRPR 1B.2 (CNPS 2014) and County List A species (County of San Diego 2010a). This evergreen shrub blooms from April to June. It occurs in chaparral and cismontane woodlands at elevations of 100 to 1,800 feet (CNPS 2014). There are numerous individuals of summer holly detected throughout the Site within southern mixed chaparral and two occurrences in scrub oak chaparral (Figures 6A–6E).

Sticky Dudleya (*Dudleya viscida*), List A

Sticky dudleya is a CRPR 1B.2 (CNPS 2014) and County List A species (County of San Diego 2010a). This perennial herb blooms from May to June. It occurs on rocky soils in coastal bluff scrub, chaparral and coastal scrub at elevations of 30 to 1,800 feet (CNPS 2014). Sticky dudleya was not detected during previous surveys and was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation (e.g., chaparral and coastal scrub) is present. This species may occur within dense chaparral that could not be 100 percent surveyed.

Ramona Horkelia (*Horkelia truncata*), List A

Ramona horkelia is a CRPR 1B.3 (CNPS 2014) and County List A species County of San Diego 2010a). This perennial herb blooms from May to June. It occurs in chaparral and cismontane woodlands on clay soils at elevations of 1,312 to 4,265 feet (CNPS 2014). Three populations, two evidenced by single individuals and a third population of approximately 60 individuals were

detected on Site within southern mixed chaparral (Figures 6A–6E). This species was found along two existing roads in the northeastern portion of the Site, and most occurrences are found on exposed open slopes or in rock crevasses, which would have likely been observed. However, additional locations in inaccessible areas are possible.

Robinson's Pepper-Grass (*Lepidium virginicum* var. *robinsonii*), List A

Robinson's pepper-grass is a CRPR 1B.2 (CNPS 2014) and County List A species (County of San Diego 2010a). This annual herb blooms from January to July. It occurs in chaparral and coastal scrub at elevations below 2,900 feet (CNPS 2014). Robinson's pepper-grass was not detected during previous surveys and was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation is present. This species may occur within dense chaparral that could not be 100 percent surveyed.

Parry's Tetracoccus (*Tetracoccus dioicus*), List A

Parry's tetracoccus is a CRPR 1B.2 and County List A species. This deciduous shrub blooms from April to May. It occurs in chaparral and coastal scrub at elevations of 500 to 3,300 feet (CNPS 2014). Parry's tetracoccus was not detected during previous surveys and was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation is present and the species is known to occur within the San Marcos quad. Specifically, the species has been recorded at three locations just to the west of the project Site approximately 1 to 1.25 miles from the project boundary. Three additional observations were recorded from 1.5 to 2 miles south of the project Site. This species may occur within dense chaparral that could not be 100 percent surveyed.

Wart Stemmed Ceanothus (*Ceanothus verrucosus*), List B

Wart stemmed ceanothus is a CRPR 2.2 (CNPS 2014) and County List B species (County of San Diego 2010a). This shrub blooms from December to April. It occurs in chaparral at elevations of 3 to 1,247 feet (CNPS 2014). Wart stemmed ceanothus was not detected during the 2007 or 2013 focused surveys; however, species is known to occur within the mountains south of San Marcos. This species may occur within dense chaparral that could not 100 percent surveyed.

Munz's Sage (*Salvia munzii*), List B

Munz's sage is a CRPR 2.3 and County List B species. This perennial evergreen shrub typically blooms February through April. It occurs in chaparral and coastal scrub habitat types at elevations of 394 to 3,494 feet (CNPS 2014). One population, consisting of four individuals, was detected in southern mixed chaparral, but it likely occurs throughout other suitable habitat on Site (Figures 6A–6D). In addition, a similar non-sensitive species, fragrant sage (*Salvia*

clevelandii) was observed throughout the project Site but is not considered special status and, therefore, was not mapped during the 2013 focused surveys.

1.4.5.3 County List C and D Species; Other

Plants categorized as County List C species are plants that may be rare, but more information is needed to determine their true rarity status. Plants categorized as County List D are of limited distribution and are uncommon, but not presently rare or endangered (County of San Diego 2010a). County List C and D species that have been observed on the project Site, or have moderate potential to occur on Site, are described as follows and included in Table 1-6.

Western Spleenwort (*Asplenium vespertinum*), List D

Western spleenwort is a CNPS 4.2 and County List D species. This perennial rhizmatous herb blooms from February to June. It occurs in chaparral, cismontane woodland, and coastal scrub at elevations of 591 to 3,281 feet (CNPS 2014). Western spleenwort was not detected during the 2007 or 2013 focused surveys; however, the species is known to occur within the San Marcos quad and suitable vegetation is present on Site. This species may occur within dense chaparral that could not 100 percent surveyed.

Payson's Jewel-Flower (*Caulanthus simulans*), List D

Payson's jewel-flower is a CNPS 4.2 and County List D species. This annual herb blooms from March to May. It occurs on sandy and granitic soils in chaparral and coastal scrub at elevations of 300 to 7,200 feet (CNPS 2014). Payson's jewel-flower was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation is present on Site. This species may occur within dense chaparral that could not 100 percent surveyed.

Western Dichondra (*Dichondra occidentalis*), List D

Western dichondra is a CNPS 4.2 and County List D species. This rhizomatous herb blooms from March to May. It occurs in chaparral, cismontane woodland, coastal scrub and valley and foothill grassland at elevations of 160 to 1,650 feet (CNPS 2014). Western dichondra was not detected during the 2007 or 2013 focused surveys; however, suitable vegetation is present on Site. This species may occur within dense chaparral that could not 100 percent surveyed.

Golden-Rayed Pentachaeta (*Pentachaeta aurea* ssp. *aurea*), List D

Golden-rayed pentachaeta is a CNPS 4.2 and County List D species. This annual herb blooms from March to July. It occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, and valley and foothill grassland at elevations of 260 to 6,070 feet (CNPS 2014). Golden-rayed pentachaeta was not detected during the 2007 or 2013

focused surveys and its distribution in San Diego County appears to be limited (Jepson Online Interchange 2014); however, the species may occur within dense chaparral that could not 100 percent surveyed.

Chaparral Rein Orchid (*Piperia cooperi*), List D

Chaparral rein orchid is a CNPS 4.2 and County List D species. This perennial herb blooms from March to June. It occurs in chaparral, cismontane woodland, and valley and foothill grasslands at elevations of 50 to 5,200 feet (CNPS 2014). This species had one occurrence (5 individuals) in the east-central portion of the Site within southern mixed chaparral (Figures 6A–6E), but likely occurs throughout other suitable habitat types.

Engelmann Oak (*Quercus engelmannii*), List D

Engelmann oak is a CNPS 4.2 and County List D species. This deciduous tree blooms from March to June. It occurs in chaparral, cismontane, woodland, riparian woodland, and valley and foothill grasslands at elevations of 394 to 4,265 feet. During 2013 surveys, this species had one occurrence in the northwestern corner and several occurrences throughout the north–central portion of the Site within southern mixed chaparral (approximately 29 individuals). Several additional individuals occur in coast live oak woodlands in the southeastern corner of the Site (includes PSBS 2007 observations) (Figures 6A–6E).

Ashy Spike-Moss (*Selaginella cinerascens*), List D

Ashy spike-moss is a CNPS 4.1 and County List D species. This perennial rhizomatous herb occurs in chaparral and coastal scrub at elevations of 66 to 2,100 feet. This species has two occurrences in the north–central portion and one occurrence in central portion of the Site (Figures 6A–6E). All occurred within southern mixed chaparral.

1.4.6 Sensitive Animal Species

Endangered, rare, or threatened wildlife species, as defined in the CEQA Guidelines, Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" and, as used in this report, include (1) endangered or threatened wildlife species recognized in the context of the CESA and FESA; (2) California Species of Special Concern (SSC) and Watch List (WL) species, as designated by the CDFW (2014d); (3) mammals and birds that are fully protected (FP) species, as described in Fish and Game Code, Sections 4700 and 3511; (4) Birds of Conservation Concern (BCC), as designated by the USFWS (2008); and (5) wildlife species considered "sensitive" by the County (Table 3 in County of San Diego 2010a).

Special-status wildlife species known to occur in the surrounding region and their potential to occur on Site are described in Table 1-7 and Appendix B. Species that were observed or

have high or moderate potential to occur are provided in Table 1-7; species that are not expected to occur or have low potential to occur are included in Appendix G. These tables include all Group I and II species from the County (2010a). Their potential to occur is based on an evaluation of known records in the San Marcos quadrangle and the surrounding eight quadrangles (CDFW 2014a; SDNHM 2014b; USFWS 2014), as well as range, elevation, habitat, and soils present on Site and Dudek's knowledge of biological resources in the area and regional distribution of each species.

1.4.6.1 USFWS-Designated Critical Habitat

There are 706 acres of critical habitat for California gnatcatcher within the project Site (Figure 7). The majority of the critical habitat (99 percent) is mapped as chaparral, woodland, or grassland and is not considered typically suitable for California gnatcatcher nesting.

There is critical habitat within 5 miles for the following species: arroyo toad (*Anaxyrus californicus*), least Bell's vireo, southwestern willow flycatcher, and San Diego fairy shrimp (*Branchinecta sandiegonensis*) (Figure 7). Critical habitat for arroyo toad, least Bell's vireo, and southwestern willow flycatcher is located along the San Luis Rey River corridor, located approximately 4 miles north of the proposed project Site. There is no suitable habitat for arroyo toad on Site, and surveys for least Bell's vireo and southwestern willow flycatcher were negative.

There is a small area designated as critical habitat for San Diego fairy shrimp approximately 4 miles southwest of the project Site (San Marcos Northeast, Southeast, and Southwest units) (Figure 7); however, due to the lack of vernal pools on the project Site, this species has low potential to occur (see Appendix G). Previously, no features were found within the project Site that might support San Diego fairy shrimp. The significant rain events in January 2017 caused low areas within existing dirt roads to pond with enough water to be sustained beyond the 7-day threshold which would trigger protocol surveys (USFWS 2015). The Site does not support vernal pool habitat and all features mapped within the project Site have been categorized as puddles. The Site includes steep hills with dirt roads that exhibit significant off-road-vehicle use and erosion. Soils on Site are predominately sandy loam and there are no areas of clay soils that would support the typical vernal pool habitat. The closest known location of occupied pools are approximately 5 miles southwest of the project Site in San Marcos, with other occurrences 15 miles to the southeast in Ramona and 16 miles northwest within Camp Pendleton (USFWS 2017). These sites contain the typical vernal pool habitat which support San Diego fairy shrimp (i.e. open areas with clay soils, mima mounds, and generally flat topography). None of the puddles surveyed contained San Diego fairy shrimp, only versatile fairy shrimp have been collected (see Appendix H for more information).

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Amphibians						
Spea [=*Scaphiopus*] *hammondi*	Western spadefoot	None/SSC/ Group II	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats.	Observed	Observed	Observed in substantial numbers in large artificial puddle within quarry. Other occurrences documented approximately 1 mile north (in 1997) and 5 miles south of the Site (in 2001; CDFW 2014a).
Reptiles						
Anniella pulchra pulchra (Anniella stebbinsi)	Silvery legless lizard	None/SSC/ Group II; recent studies indicate it may be more sensitive.	Sparse vegetation of chaparral and riparian, loose soil for burrowing.	No	Moderate potential to occur.	May occur within riparian or woodland habitat. Species not detected in the vicinity (CDFW 2014a).
Aspidoscelis [Cnemidophorus] hyperythra beldingi	Belding's orange-throated whiptail	None/WL/Group II	Coastal scrub (low elevation), chaparral, Valley–Foothill hardwood, especially washes and sandy areas with patches of brush and rocks.	Observed	Observed	Detected on Site (PSBS 2007). Species found often in openings or along trails in coastal sage scrub or chaparral, and was occasionally observed on throughout the Site.
Aspidoscelis tigris stejnegeri	Coastal whiptail	None/SSC/ Group II	Deserts and semiarid areas with sparse vegetation and open areas, also in woodland and riparian areas, especially where ground may be firm soil, sandy, or rocky.	Observed	Observed	Detected on Site (PSBS 2007) and in 2013 and 2014.

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Coleonyx variegatus abbotti	San Diego banded gecko	None/SSC/ Group I	Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops.	No	Moderate potential to occur.	May occur on Site; there is suitable vegetation and rock outcrops are present. Species not observed on Site.
Crotalus ruber	Red-diamondback rattlesnake	None/SSC/ Group II	Variety of shrub habitats where there is heavy brush, large rocks, or boulders. Chaparral, woodland, grassland, and desert areas, especially in rocky areas and dense vegetation.	Observed	Observed	Detected on Site (PSBS 2007) and likely occurs within rocky or boulder areas in the northeastern portion of the Site.
Diadophis punctatus similis	San Diego ringneck snake	None/None/ Group II	Open, rocky areas in moist habitats near intermittent streams: marsh, riparian woodland, sage scrub.	Observed	Observed.	Detected on Site (PSBS 2007). Highest potential within canyon bottoms, drainages, microhabitats at base of rock clusters, and within dense chaparral debris piles.
Plestiodon [=Eumeces] skiltonianus interparietalis	Coronado Skink	None/WL/ Group II	Grassland, chaparral, pinyon juniper sage woodland, pine-oak and pine forests in coastal ranges in Southern California. Especially prefers early successional stages or open areas, found in	No	High potential to occur.	Suitable habitat present. Probably occurs on Site, but not observed. Species detected 0.5 mile northeast (in 1995) and approximately 4.5 miles southwest (in 2006) of the Site (CDFW 2014a).

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
			rocky areas close to streams and on dry hillsides.			
Lichanura [=Charina] trivirgata roseofusca	Rosy boa	None/None/ Group II	Desert and chaparral from coast to Mojave and Colorado Deserts, especially in moderate to dense vegetation and rocky cover; habitats with mix of brushy cover and rocky soil like coastal canyons and hillsides, desert canyons, washes, and mountains.	No	Moderate potential to occur.	Suitable habitat present. Closest species detections documented approximately 5 miles north and 6.5 miles northwest of the Site in 1923 and 1927, respectively. In 1967 species detected approximately 10 miles southwest of the Site (CDFW 2014a).
Phrynosoma blainvillei	Blainville's horned lizard	None/SSC/ Group II	Coastal sage scrub, chaparral in arid and semi-arid climate, especially friable, rocky, or shallow sandy soils.	Observed	Observed	Detected on Site (PSBS 2007) and during recent surveys in 2013. The species was detected in two locations: southeastern corner of the project Site—directly northwest of the end of Mesa Rock Road—and southeast of the abandoned landing strip (directly west of the water tower). During 2014 reptile habitat assessments, two horned lizard scats were mapped in the northeastern

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
						portion of the Site. It is likely to occur throughout the Site where harvester ants occur and where openings occur in the chaparral.
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/SSC/ Group II	Brushy or shrubby vegetation in coastal Southern California, especially use small mammal burrows for refuge.	Observed	Observed	Detected on Site during 2013 surveys. Species detected in the southeastern corner, directly east of Mesa Rock Road. Suitable habitat present. Next closest species detection occurred 6.5 miles (in 2000) southwest and 7.5 miles south (in 2005) of the Site (CDFW 2014a).
Thamnophis hammondii	Two-striped garter snake	None/SSC/ Group I	Coastal California from Salinas to northwest Baja, from sea level to approx. 7,000 feet AMSL; especially highly aquatic, found in or near permanent fresh water, often along streams with rocky beds and riparian growths.	No	Moderate potential to occur.	May occur in streams along Deer Springs. Closest species detections approximately 6.5–7.0 miles southwest of the Site in 1998 and 1991. Additional detections 13.5 miles northwest of the Site recorded in 1999 (CDFW 2014a).

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Birds						
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/Group I	Riparian and oak woodlands, montane canyons.	Observed	Observed	Detected on Site in 2013. This species has been recorded nesting within and adjacent to the Merriam Mountains (Unitt 2004). Additional nesting occurrences are approximately 4 miles northwest of the Site (in 2003) and further CNDDB occurrences are 6 and 11 miles north and northeast, respectively, off-sites (CDFW 2014a).
Accipiter striatus (nesting)	Sharp-shinned hawk	None/WL/ Group I	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	Observed	Not expected to nest; observed foraging on Site.	Detected on Site during recent surveys (Dudek 2013). Species detected soaring overhead at the abandoned landing strip in the northern portion of the project Site (Dudek 2013). Not observed during previous surveys (PSBS 2007). Not expected to nest as they are not known to nest on the coastal slope in Southern California. No nesting detected in project Site.

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/ Group I	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	No	Moderate potential to occur.	Probably occurs on Site, but not observed (PSBS 2007). Species detected on project Site in 1992 and numerous locations surrounding the vicinity, including directly outside of the Site's northwest boundary (in 2001; CDFW 2014a).
Artemisiospiza [Amphispiza] belli belli (nesting)	Bell's sage sparrow	BCC/WL/ Group I	Coastal sage scrub and dry chaparral along coastal and inland valleys.	Observed	Observed	*A. belli* detected on Site in 2013. Closest additional species detection documented approximately 2.5 miles northeast of project Site in 2000 (CDFW 2014a). Additional occurrences documented 6 and 11 miles southwest and southeast, respectively, of the Site (CDFW 2014a).
Buteo lineatus	Red-shouldered hawk	None/None/ Group I	Riparian and woodland habitats, eucalyptus.	Observed	Observed	Detected on Site (PSBS 2007) and in 2013.

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Cathartes aura	Turkey vulture	None/None/ Group I	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting and resting.	Observed	Observed	Detected on Site (PSBS 2007) and in 2013.
Elanus leucurus (nesting)	White-tailed kite	None/FP/ Group I	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian.	No	Moderate potential to occur.	May occur in oak woodlands or riparian habitat on the Site. Closest species nesting occurrence approximately 4.5 miles east of the Site on San Luis Rey River (CDFW 2014a). No juveniles have been observed in the vicinity however.
Icteria virens (nesting)	Yellow-breasted chat	None/SSC/ Group I	Dense, relatively wide riparian woodlands and thickets of willow, vine tangles, and dense brush.	No	Moderate potential to occur.	May occur in eastern or western riparian habitats during spring–summer periods; not detected. Several species occurrences documented along San Luis Rey River, approximately 4.5 miles northwest of the Site (CDFW 2014a). Generally, the available habitat is not of typical height and density.
Picoides nuttallii	Nuttall's woodpecker	None/ None/ None	Low-elevation oak and riparian deciduous habitats; tree cavities and	Observed	Observed	Detected on Site in 2013. Species detected in the southern portion of the project Site within oak riparian

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
			foliage provide cover; requires snags and dead limbs for nest excavation (2).			forest adjacent to Gist Road (north of Sarver Lane).
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC/ Group I	Coastal sage scrub, coastal sage scrub–chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer.	Detected by vocalizations	Observed	Detected on Site. Calls of this species were detected by an experienced and permitted biologist within the southern mixed chaparral in the western section of the abandoned landing strip during focused southwestern willow flycatcher and least Bell's vireo surveys on June 24, 2013 however, no individuals were detected during a follow up Site visit in October 2013. During a habitat assessment on August 14, 2014, this same individual was observed. An additional location was observed during the spring 2013 focused surveys along I-15 north of the Mesa Rock cul-de-sac. Species occurrences recorded in southeastern portion of the Site in 2002–2003 (CDFW 2014a;

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Setophaga petechia	Yellow warbler	BCC/SSC/ Group II	Nests in foothill riparian woodlands dominated by cottonwoods, alders, and willows; winters in a variety of habitats.	Observed	Observed	Detected on Site in 2013. Several closest occurrences are also documented from approximately 5–8 miles north, northeast, and east of project Site near or in the San Luis Rey River (CDFW 2014a).
Sialia mexicana	Western bluebird	None/None/Group II	Open forests of deciduous, coniferous or mixed trees, savanna, edges of riparian woodland.	Observed	Observed	Detected on Site in 2013.
Tyto alba	Barn owl	None/None/Group II	Open habitats including grassland, chaparral, riparian, and other wetlands.	Observed	Observed	Detected on Site in 2013. Suitable open habitats occur on Site.

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
Mammals						
Antrozous pallidus	Pallid bat	None/SSC/ Group II/ WBWG:H	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	No	Moderate potential to occur.	May forage in riparian habitat on the Site. Several scattered occurrences documented southeast and northwest of the Site. Closest occurrence documented approximately 5 miles southeast in 1968. Suitable rocky outcrops occur.
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/ Group II	Coastal sage scrub, chaparral, riparian–scrub ecotone; more mesic areas.	No	Moderate potential to occur.	May occur on Site but not detected. Species occurrences documented in several locations around Site. Closest detections are approximately 2.5 miles northeast and 5.5 miles southeast of the Site in 1993 and 1953, respectively (CDFW 2014a).
Perognathus fallax fallax	Northwestern San Diego pocket mouse	None/SSC/ Group II	Coastal sage scrub, grassland, sage scrub–grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams.	No	High potential to occur.	Suitable vegetation occurs on Site, as does loam and sandy loam soil types. Closest species occurrence approximately 2.5 miles northeast of the Site in 1993. Additional detections scattered approximately 8.5–

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
						13 miles in all directions from Site (CDFW 2014a).
Lasiurus blossevillii	Western red bat	None/SSC/ Group II/ WBWG: H	Prefers open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for feeding.	No	Moderate potential to occur.	May occur along riparian areas during migration. Species not detected in vicinity.
Myotis ciliolabrum	Western small-footed myotis	None/None/Group II/WBWG:M	Caves, old mines, abandoned buildings.	No	Moderate potential to occur.	No suitable roosting locations on Site or nearby. Species not detected in vicinity.
Myotis yumanensis	Yuma myotis	None/None/Group II/WBWG:LM	Closely tied to open water which is used for foraging; open forests and woodlands are optimal habitat.	No	Moderate potential to occur.	Very little roosting habitat on Site. May forage in riparian areas with water. Several species occurrences documented approximately 10.5 miles northwest of project Site (CDFW 2014a).
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/ Group II	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	Sign observed	Observed	Detected on Site (PSBS 2007) and 2014. Woodrat middens were detected throughout the Site, but the majority were not mapped.
Odocoileus hemionus	Mule deer	None/None/Group II	Coastal sage scrub, chaparral, riparian, woodlands, forest; often browses in open areas adjacent to	Sign observed	Observed	Detected on Site during early surveys of property (PSBS 2007). Sign (e.g., scat) was occasionally observed infrequently throughout the Site.

Table 1-7
Wildlife Species Detected or Moderate or High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/ County/ Other)[1]	Primary Habitat Associations	Verified on Site (Direct/ Indirect Evidence)	Potential to Occur On Site	Status on Site or Potential to Occur
			cover.			It is not likely that this species spends much time on the Site due to the density of chaparral. Sign would have been ubiquitous on the network of dirt roads.
Invertebrates						
Danaus plexippus	Monarch butterfly	None/None/Group II	Overwinters in eucalyptus groves.	Observed	Observed	Detected on Site during 2013 surveys. Suitable eucalyptus woodland on Site; however, no winter roosts were detected. Closest significant roost occurrence approximately 9.5 miles west of the Site in 1997 (CDFW 2014a).

1.4.6.2 County Group I Species and/or SSC Species

County Group 1 and/or CDFW SSC species that have been observed in the project Site, or have high potential to occur, are described below and included in Table 1-7.

Amphibians

Western spadefoot (*Spea [=Scaphiopus] hammondi*) – SSC/ Group II

The western spadefoot toad is a CDFW SSC and County Group 2 species. It is endemic to California and northern Baja California, Mexico. Spadefoot ranges from the north end of California's Central Valley near Redding, south, west of the Sierras and the deserts, and into northwest Baja California, Mexico (Jennings and Hayes 1994; Stebbins 2003). Although the species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its

range, the western spadefoot toad occurs from sea level to 4,000 feet amsl, but mostly at elevations below 3,000 feet (Stebbins 2003).

The western spadefoot toad is almost completely terrestrial, entering water only to breed. The species aestivates in upland habitats near potential breeding sites in burrows approximately 1 meter (3 feet) in depth (Stebbins 1972). The species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). However, the species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998).

Western spadefoot was detected during a Site visit conducted on March 27, 2014, in a large puddle at the old quarry located in the north western section of the project Site, along North Twin Oaks Valley Drive. In February 2017, two puddles within the quarry were observed supporting this species. There are no impacts expected to occur within the quarry.

Reptiles

Coastal Whiptail (*Aspidoscelis tigris stejnegeri*) – SSC/ Group II

Coastal whiptail is a CDFW SSC and County Group 2 species It is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, north into Ventura County, and south into Baja California, Mexico (Lowe et al. 1970; Stebbins 2003). The western whiptail (*A. tigris*) is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. According to Stebbins (2003), the species ranges from deserts to montane pine forests where it prefers warmer and drier areas. The species is also found in woodland and streamside growth, and it avoids dense grassland and thick shrub growth.

Coastal whiptail was detected on Site in 2007 (PSBS 2007) but according to the PSBS technical reports, the location was not mapped; one individual was observed in 2014 (Figures 6A–6E). This species is also recorded approximately 0.7 mile northeast and 1 mile southeast of the project Site (CDFW 2014a). Suitable habitat is assumed to occur throughout the project Site where openings occur.

Suitable habitat within the project Site includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), woodland (coast live oak woodland), riparian (southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub), and disturbed habitat.

Red-Diamond Rattlesnake (*Crotalus ruber*) – SSC/ Group II

The red-diamond rattlesnake is a CDFW SSC and County Group 2 species. It is found in a variety of habitats from the coast to the deserts, from San Bernardino County into Baja California, Mexico (below 5,000 feet in elevation). It commonly occurs in rocky areas within coastal sage scrub, chaparral, juniper woodlands, and desert habitats, but can also be found in areas devoid of rocks (Lemm 2006).

Red-diamond rattlesnake was detected within rocky or boulder areas in the northeastern portion of the Site (PSBS 2007) (Figures 6A–6E). This species is also recorded approximately 1 mile northeast of the project Site (CDFW 2014a). It is assumed to occur throughout the project Site.

Within the project Site, suitable habitat includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), woodland (coast live oak woodland), non-native grasslands, and disturbed habitat.

Blainville's Horned Lizard (*Phrynosoma blainvillii*) – SSC/ Group II

The Blainville's horned lizard (previously coast horned lizard) is a CDFW SSC and a County Group 2 species. It is found from the Sierra Nevada foothills and central California to coastal Southern California. It is often associated with coastal sage scrub, especially areas of level to gently sloping ground with well-drained loose or sandy soil, but it can also be found in annual grasslands, chaparral, oak woodland, riparian woodland, and coniferous forest between 30 and 7,030 feet AMSL (Jennings and Hayes 1994). This reptile typically avoids dense vegetation, preferring 20 percent to 40 percent bare ground in its habitat. The Blainville's horned lizard can be locally abundant in areas where it occurs, with densities near 20 adults per acre. Adults are active from late March through late August, and young are active from August through November or December. Up to 90 percent of the diet of the Blainville's horned lizard consists of native harvester ants (*Pogonomyrmex* spp.).

This species was detected on Site during previous (PSBS 2007) and 2013–2014 surveys. On recent surveys, the species was detected in two locations: in the southeastern corner of the project Site (directly northwest of the end of Mesa Rock Road) and southeast of the abandoned landing strip (directly west of the water tower); horned lizard scat was also mapped in two areas (Figures 6A–6E). Additional CNDDB records occur throughout the immediate vicinity of the project Site (CDFW 2014a).

Suitable habitat on Site includes most upland vegetation communities and undeveloped land cover (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage –

chaparral transition], woodland [coast live oak woodland], and non-native communities and land covers [disturbed habitat and non-native grasslands]).

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*) – SSC/ Group II

The coast patch-nosed snake is a CDFW SSC and County Group 2 species. It ranges from west-central Nevada south to the tip of Baja California and northwestern Sonora, and from coastal Southern California to southwestern Utah and central Arizona. The coast patch-nosed snake is found at elevations from below sea level to around 2,130 meters (6,988 feet) AMSL (Goldberg 1995).

The coast patch-nosed snake is diurnal (Stebbins 2003) and can be found throughout the day during the milder months of spring. Activity is restricted to the mornings and late afternoons during the summer months. As an active, diurnal snake, it will occasionally take refuge in rock crevices, in small mammal burrows, and under vegetation. May and June are the typical months of peak activity; however, in the southern part of its range, activity may extend all year during mild to warm weather. The subspecies is a broad generalist in its diet and an opportunistic feeder that probably preys on anything it can overpower including small mammals (*Dipodomys*), lizards (*Aspidoscelis*, *Coleonyx*), and the eggs of lizards and snakes (Stebbins 2003). Jennings and Hayes (1994) also found that the patch-nosed snake may adjust its activities around that of one of its prey, the whiptail lizard (*Aspidoscelis* spp.).

Coast patch-nosed snake was observed on Site in 2013 in the southeastern portion of the Site (Figures 6A–6E). There are no CNDDB points within the project Site; the closest location is approximately 15 miles from the Site (CDFW 2014a).

Suitable habitat occurs on Site and includes chaparral (southern mixed chaparral, scrub oak chaparral), and coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition).

Birds

Cooper's Hawk (*Accipiter cooperii) – *CDFW WL/Group I

The Cooper's hawk is a CDFW WL and a County Group 1 species. It is found throughout California in wooded areas. It inhabits live oak, riparian, deciduous, or other forest habitats near water. Nesting and foraging usually occur near open water or riparian vegetation. Nests are built in dense stands with moderate crown depths, usually in second-growth conifer or deciduous riparian areas. Cooper's hawks use patchy woodlands and edges with snags for perching while they are hunting for prey such as small birds, small mammals, reptiles, and amphibians within broken woodland and habitat edges (Zeiner et al. 1990a).

Cooper's hawk was observed on Site during biological surveys in 2007 (PSBS 2007) and in 2013, but locations were not mapped. There are no CNDDB records for this species within the project Site; however, this species has been recorded breeding both within and adjacent to the Merriam Mountains (Unitt 2004). Additional nesting occurrences are approximately 4 miles northwest of the Site (in 2003) and additional detections occur approximately 6 and 11 miles north and northeast, respectively, of the Site (CDFW 2014a).

Within the proposed project Site, there are no permanent water sources; however, ephemeral and intermittent sources are present. The project Site may support nesting opportunities within habitats supporting large trees (i.e., coast live oak woodland, scrub oak chaparral, oak riparian forest, or eucalyptus woodland). Suitable foraging habitat includes most vegetation communities and undeveloped land cover on Site (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [eucalyptus woodland, intensive agriculture, orchards and vineyards, disturbed habitat, and non-native grasslands]).

Sharp-Shinned Hawk (*Accipiter striatus*) – CDFW WL/Group 1

The sharp-shinned hawk is a CDFW WL and County Group 1 species. It is a common migrant and winter resident throughout California and likely breeds south in Coast Ranges and at scattered locations in Transverse and Peninsular Ranges. However, this species is not known to breed on the coastal slope in southern California. Sharp-shinned hawks breed in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine and winters in lowland woodlands and other habitat. North facing slopes with plucking perches are critical requirements for this species. This species often forages in opening at edges of woodlands, hedgerows, brushy pastures, and shorelines hunting for prey such as small birds, small mammals, insects, reptiles, and amphibians (Zeiner et al. 1990a).

Sharp-shinned hawk was detected on Site soaring overhead after a red-tailed hawk at the abandoned landing strip in the northern portion of the project Site (Figures 6A–6E). This species was not observed during previous surveys (PSBS 2007). There is a low potential for this species to nest on the coastal slope in Southern California, and nesting species are not detected in vicinity (CDFW 2014a). There are no CNDDB records (CDFW 2014a) or breeding records (Unitt 2004) for this species within the project Site.

The project Site may support suitable foraging habitat, including most vegetation communities and land covers on Site (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-

topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [eucalyptus woodland, agriculture/intensive agriculture, orchards and vineyards, disturbed habitat, and non-native grasslands]).

Bell's Sage Sparrow (*Artemisiospiza belli belli*) – BCC/CDFW WL/Group 1

The Bell's sparrow is a USFWS BCC, CDFW WL species, and County Group 1 species. The recently designated Bell's sparrow (*Artemisiospiza belli*) consists of *A. b. belli* and *A. b. canescens*, both formerly considered subspecies of the sage sparrow (*Amphispiza belli*) and now split from the sagebrush sparrow (*A. nevadensis*) (Chesser et al. 2013). The nominate form of Bell's sparrow, as Bell's sage sparrow, is designated as a special-status species. This species occurs in chaparral and coastal scrub communities along the Coast Ranges of central California and in the Transverse Ranges of Southern California. This species occurs as a non-migratory resident on the western slope of the central Sierra Nevada Range, and in the coastal ranges of California, southward from Marin County and Trinity County, extending into north–central Baja California, Mexico (County of Riverside 2008). The range of this species overlaps with that of at least one other subspecies of sage sparrow (County of Riverside 2008). This species occupies semi-open habitats with evenly spaced shrubs that are 3.3 to 6.6 feet high (County of Riverside 2008). This species is uncommon to fairly common in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and lower foothills of the mountains within its range.

This species was detected on Site during biological surveys in 2013, in the northeastern portion of the Site but was not mapped. Based on the range of the *A. belli* subspecies, it is assumed the special-status subspecies (*A. b. belli*) occurs on Site. There are no CNDDB records for this species within the project Site, and no breeding or wintering records have been documented for the Merriam Mountains since 1997 (Unitt 2004). Additionally, the closest CNDDB occurrence is documented approximately 2.5 miles northeast of project Site in 2000 (CDFW 2014a). Additional occurrences are documented 6 and 11 miles southwest and southeast, respectively, of the Site (CDFW 2014a).

Within the project study area, suitable habitat includes chaparral (southern mixed chaparral, scrub oak chaparral) and coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, and flat-topped buckwheat, coastal sage – chaparral transition).

Red-Shouldered Hawk (*Buteo lineatus*) – Group 1

The red-shouldered hawk is a County Group 1 species. Red-shouldered hawks inhabit a broad range of North American forests, but favor mature, mixed deciduous–coniferous woodlands,

especially bottomland hardwood, riparian areas, flooded deciduous swamps, oak woodlands, eucalyptus groves, and suburban areas with nearby woodlots (Dykstra et al. 2008). This species nests in riparian habitats near permanent water and forages along edges of wet meadows, swamps, and emergent wetlands (Zeiner et al. 1990a)

Red-shouldered hawk was detected on Site soaring overhead throughout various locations in 2007 (PSBS 2007) and in 2013 (Figures 6A–6E). Breeding is confirmed within and adjacent to the Merriam Mountains (Unitt 2004).

Within the proposed project Site, there are no permanent water sources; however, ephemeral and intermittent sources are present. The proposed project Site may support nesting opportunities within habitats with large tress (i.e., coast live oak woodland, scrub oak chaparral, oak riparian forest, or eucalyptus woodland). Suitable foraging habitat includes most vegetation communities on Site (i.e., southern mixed chaparral, scrub oak chaparral, Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition, coast live oak woodland, freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub, eucalyptus woodland, intensive agriculture, orchards and vineyards, disturbed habitat, and non-native grasslands).

Turkey Vulture (*Cathartes aura*) – Group 1

The turkey vulture is not considered special status by any state or federal agencies; however, it is considered a County Group 1 species where breeding occurs. In California, it is common during the breeding season and is a yearlong resident west of the Sierra Nevada, especially in coastal areas. Summer and yearlong ranges also include the southeastern United States; portions of Texas, Mexico, Central America, and South America; and some islands in the Caribbean (Kirk and Mossman 1998).

Turkey vultures use a variety of habitats while foraging on both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, non-intensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner et al. 1990a). Nest locations tend to be difficult to find and are usually located in a crevice among granite boulders (Unitt 2004). However, the species prefers hilly areas that provide deflective updrafts for flight and generally avoids extensive areas of row-crop farmland (Kirk and Mossman 1998).

Turkey vultures were observed foraging over the Site in 2007 (PSBS 2007) and in 2013/2014, but the observations were not mapped. One turkey vulture nest was located within the Merriam Mountains during surveys occurring between 1993 and 1996 (Unitt 2004). The proposed project

Site may support nesting opportunities within crevices within the quarry or granite boulders on Site, but no nests or nesting behavior was observed. Suitable foraging habitat includes most vegetation communities and land covers on Site (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [eucalyptus woodland, agriculture/intensive agriculture, orchards and vineyards, disturbed habitat, and non-native grasslands]).

Northern Harrier (*Circus cyaneus*) – SSC/ Group 1

The northern harrier is a CDFW SSC and County Group 1 species. Northern harriers use a wide variety of open habitats in California including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes (Macwhirter and Bildstein 1996). The species can also forage over coastal sage scrub or other open scrub communities (Bloom Biological 2007a). Nesting areas are associated with marshes, pastures, grasslands, prairies, croplands, desert shrub-steppe, and riparian woodland (Macwhirter and Bildstein 1996). Winter habitats similarly include a variety of open habitats dominated by herbaceous cover. Northern harrier populations are most concentrated in areas with low vegetation.

This species has not been detected on Site during any of the biological surveys conducted by PSBS in 2007 and Dudek in 2009, 2013, and 2014 (Dudek 2009; PSBS 2007). There are no CNDDB records for this species within the project Site, and no breeding or wintering records have been documented for the Merriam Mountains (Unitt 2004). The closest nesting occurrence for this species is approximately 10.5 miles east of project Site on Camp Pendleton where it is reported to have two to three pairs nesting every year (CDFW 2014). Suitable foraging habitat includes riparian (freshwater marsh, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub), and non-native communities and land covers (disturbed habitat, and non-native grasslands).

Coastal California Gnatcatcher (*Polioptila californica californica*) – Federally Threatened/ SSC/ Group I

The coastal California gnatcatcher is federally threatened, CDFW SSC, and County Group 1 species. This species occurs in coastal Southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. The California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in Southern California, ranging from Ventura and northern Los Angeles Counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego Counties. The species' range continues

south to El Rosario, Mexico. Initially it was reported that 99 percent of all California gnatcatcher locality records occurred at or below an elevation of 984 feet AMSL (Atwood 1990; Atwood and Bolsinger 1992). Since that time, data collected at higher elevations show that the species may occur as high as 3,000 feet AMSL, but that more than 99 percent of the known California gnatcatcher locations occurred below 2,500 feet AMSL (65 FR 63680). Because of the natural topography of the Southern California hills and mountain ranges, most of the higher-elevation locations are more inland, where population densities tend to be much lower than coastal populations.

The California gnatcatcher typically occurs in or near coastal scrub vegetation which is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of this community include California sagebrush, various species of sage (*Salvia* spp.), California buckwheat, lemonadeberry, California bush sunflower (*Encelia californica*), and cactus (e.g., *Opuntia* spp.). California gnatcatchers also occur in chaparral, grassland, and riparian vegetation communities where the coastal scrub community is close by (Bontrager 1991). The use of these vegetation communities appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the breeding season. The California gnatcatcher tends to occur most frequently within the California sagebrush-dominated stands on mesas, gently sloping areas, and along the lower slopes of the Coast Ranges (Atwood 1990). The California gnatcatcher occurs in high frequencies and densities in coastal scrub communities with an open or broken canopy, whereas it is absent from coastal scrub dominated by tall shrubs and occurs in low frequencies and densities in low coastal scrub with a closed canopy (Weaver 1998).

California gnatcatchers glean insects and spiders from foliage of shrubs, primarily California buckwheat and coastal sagebrush (Atwood 1993). Their diet is primarily composed of spiders, but is also composed of wasps, bees, and ants (Burger et al. 1999). California gnatcatcher habitat use has been positively associated with insect abundance and diversity (Redak et al. 1996, as cited in Diffendorfer et al. 2002).

California gnatcatchers nests usually are located in a small shrub or cactus 1 to 3 feet above the ground. Territory size varies and is influenced by season and locale (Preston et al. 1998), but is unrelated to vegetation structure (Braden et al. 1997). During the breeding season, territories in coastal areas are often smaller—averaging 5.7 acres (Atwood et al. 1998)—than those in more inland regions, which average 8.4 acres (Braden et al. 1997).

Focused surveys for California gnatcatcher on the project Site have resulted in the detection of two pairs and various individuals. The pair detected in 2003 was located within the planned development footprint near the terminus of the cul de sac on Mesa Rock Road (PSBS 2007). During the 2013 protocol surveys, no California gnatcatcher were detected within previous

locations, but were instead located adjacent to I-15 within a mix of sage scrub communities, north of the 2003 observation and planned development. Individuals have variously been anecdotally detected within other patches of sage scrub on Site. Calls of this species were also detected by an experienced and permitted biologist within the matrix of southern mixed chaparral and disturbed habitat in the western section of the abandoned landing strip (Figures 6A–6E). Species occurrences for this species are recorded in the southeastern portion of the Site in 2002–2003 (CDFW 2014a; USFWS 2014), with numerous occurrences documented throughout the vicinity in surrounding sites. The closest occurrence outside of the Site is located approximately 0.5–1.0 mile northeast of project boundary in 1996 and 2007 (CDFW 2014a; USFWS 2014).

The project Site supports foraging and nesting opportunities within the coastal scrub habitats (i.e., Diegan coastal sage scrub, coastal sage scrub – Baccharis, and flat-topped buckwheat) and foraging opportunities in the remaining vegetation communities. It also provides for movement and dispersal opportunities within and through the Site.

Yellow Warbler (*Setophaga [Dendroica] petechia*) – BCC/SSC/ Group II

Yellow warbler is a USFWS BCC, CDFW SSC, and County Group 2 species. Yellow warbler is widely distributed, with a breeding range from northern Alaska eastward to Newfoundland and southward to northern Baja California and Georgia. This species is a migrant throughout much of North America and winters from Southern California, Arizona, and the Gulf Coast southward to central South America (AOU 1998). In California, it is a migrant and summer resident (Heath 2008). It breeds in riparian woodlands southward from the northern border of California, generally west of the Sierra Nevada to the coastal slopes of Southern California, and from coastal and desert lowlands up to 2,700 meters (8,860 feet) AMSL in the Sierra Nevada and other montane chaparral and forest habitats (Lowther et al. 1999; Grinnell and Miller 1944).

Yellow warbler usually nests in wet, deciduous thickets, especially those dominated by willows (*Salix* spp.), and in disturbed and early successional habitats (Lowther et al. 1999). In Southern California, it nests in lowland and foothill riparian woodlands dominated by cottonwoods (*Populus* spp.), alders (*Alnus* spp.), or willows and other small trees and shrubs typical of low, open-canopy riparian woodland (Garrett and Dunn 1981). Nest trees most often are willows, hawthorns (*Crataegus* spp.), raspberry (*Rubus* spp.), northern white cedar (*Thuja occidentalis)*, honeysuckle (*Lonicera* spp.), and Spiraea (*Spiraea* spp.) (Lowther et al. 1999). It also nests in montane chaparral, open ponderosa pine and mixed conifer habitats with substantial amounts of brush, but nesting in these habitats is perhaps relatively recent (Gaines 1977). During migration, yellow warblers occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous–coniferous woodlands, shrublands, forests,

suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994).

Yellow warbler was detected on Site during biological surveys in 2013 (Figures 6A–6E). This species may also occur in preserved eastern or western riparian habitats during spring and summer periods. Several of the closest occurrences are documented from approximately 5 to 8 miles north, northeast, and east of project Site near or in the San Luis Rey River (CDFW 2014a). Possible breeding occurs in the southern half of the Merriam Mountains with confirmed breeding to the northwest of the project Site (Unitt 2004). Suitable nesting and foraging habitat includes riparian habitats on Site (i.e., southern coast live oak riparian forest, mulefat scrub, southern willow scrub, and southern willow scrub/tamarisk scrub).

Mammals

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*) – SSC/ Group II

Northwestern San Diego pocket mouse is a CDFW SSC and County Group 2 species. It occurs in coastal scrub, chaparral, grasslands, sagebrush, and similar habitats in western San Diego County. Microhabitat includes sandy, herbaceous areas, usually in association with rocks or coarse gravel (CDFW 2014a).

This species was not detected on Site, nor where focused surveys conducted, but it has a high potential to occur. Suitable vegetation occurs on Site, as does loam and sandy loam soil types. In addition, the closest species occurrence is approximately 2.5 miles northeast of the Site (in 1993) and additional detections are scattered approximately 8.5 to 13 miles in all directions from the Site (CDFW 2014a).

Suitable habitat on Site includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), disturbed habitat, and non-native grasslands.

San Diego Desert Woodrat (*Neotoma lepida intermedia*) – SSC/ Group II

San Diego desert woodrat is a CDFW SSC and County Group 2 species. This species is found in coastal Southern California into Baja California, Mexico (Reid 2006). Marginal eastern records for the San Diego desert woodrat in the United States include San Luis Obispo, San Fernando in Los Angeles County, the San Bernardino Mountains and Redlands in San Bernardino County, and Julian in San Diego County (Hall 1981). Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.

Sign of this species (i.e., middens) was detected throughout the Site (PSBS 2007) and in 2013, but the majority of the middens were not mapped. Suitable habitat within the project Site includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), coast live oak woodland, and disturbed habitat.

1.4.6.3 County Group II Species

County Group II species that have been observed in the project Site, or have high potential to occur (Table 1-7), are described below.

Reptiles

Belding's Orange-Throated Whiptail (*Aspidoscelis *hyperythra beldingi) – WL/Group II

The Belding's orange-throated whiptail is a CDFW WL and County Group 2 species. Its current range includes southwestern California and Baja California, Mexico, from the southern edges of Orange County (Corona del Mar) and San Bernardino County (near Colton), southward to the Mexican border. This species is located on the coastal slope of the Peninsular Ranges and extends from near sea level to 3,412 feet AMSL (northeast of Aguanga, Riverside County) (Jennings and Hayes 1994). It commonly occurs in coastal sage scrub, chaparral, grassland, juniper, and oak woodland.

This species was detected on Site in 2007, where it "was often found in openings or along trails in coastal sage scrub or chaparral, and was occasionally observed on the site" (PSBS 2007). The location was not mapped. In addition, there is one CNDDB occurrence record within the north–central portion of the project Site for this species (CDFW 2014a).

Within the project Site suitable habitat includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), woodland (coast live oak woodland), non-native grasslands, and disturbed habitat.

San Diego Ringneck Snake (*Diadophis punctatus similis*) – Group II

San Diego ringneck snake is a County Group 2 species. The full species is widely distributed in North America, with 12 currently recognized subspecies occurring from southern Washington and Idaho to northern Baja California, Mexico, and from the Atlantic Coast to the Pacific Coast (Crother 2012; Hinojosa 1998; Stebbins 2003; Stoltz 1993). The ringneck snake is widespread in California and is absent only from large portions of the Central Valley, high mountains, desert, and areas east of the Sierra–Cascade crest (Zeiner et al. 1988). Currently there are seven

recognized subspecies in California occurring at elevations ranging from sea level to 2,150 meters (7,050 feet) AMSL (Crother 2012; Nafis 2014; Zeiner et al. 1988). Specifically, the San Diego ringneck snake subspecies is found along the Southern California coast from the northern San Diego County south to Baja California. Mexico (Stebbins 2003). However, the genus *Diadophis* is in need of taxonomic study, and that the seven recognized subspecies in California are nearly genetically indistinguishable (Nafis 2014).

The ringneck snake is found in moist habitats, including woodlands, hardwood and conifer forest, grassland, sage scrub, chaparral, croplands/hedgerows, and gardens (NatureServe 2014; Stebbins 2003). In arid regions, the ringneck snake occurs in forests, woodlands, sage scrub, chaparral, and riparian corridors (Stebbins 2003). Zeiner et al. (1988) state that ringneck snakes are most common in open, relatively rocky areas within valley–foothill, mixed chaparral, and annual grassland habitats. Holland and Goodman (1998) observed the species to be more common in grasslands and more scarce in riparian areas where sandy soils are extensive or not bordered by areas with heavier soils. Ringneck snakes use a wide variety of habitats, but they are usually found on the ground under bark, beneath and inside rotting logs, and under stones and boards (Stebbins 2003).

San Diego ringneck snake was detected on Site (PSBS 2007) but according to the PSBS technical reports, the location was not mapped. SuitableS on Site includes most vegetation communities and undeveloped land cover (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [eucalyptus woodland, orchards and vineyards, disturbed habitat, and non-native grasslands]) where moist microhabitats occur.

Coronado Skink (*Plestiodon skiltonianus interparietalis*) –WL/Group II

The Coronado skink is a CDFW SSC and County Group 2 species. This species is common within grassland, woodlands, pine forests, chaparral, especially open sunny areas (e.g., clearings, edges of creeks) and rocky areas near streams with lots of vegetation. However, this species may also be found in areas away from water. The Coronado skink is found in inland Southern California south through the north Pacific coast region of northern Baja California (Nafis 2014).

Although Coronado skink was not detected during surveys, this species probably occurs on Site. This species detected approximately 0.5 mile northeast (in 1995) and approximately 4.5 miles southwest of the Site (in 2006) (CDFW 2014a).

In addition, suitable habitat occurs on Site and includes chaparral (southern mixed chaparral, scrub oak chaparral), coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition), woodland (coast live oak woodland), riparian (freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub), disturbed habitat, and non-native grasslands.

Birds

Western Bluebird (*Sialia mexicana*) – Group II

The western bluebird is a County Group 2 species. They are common resident birds in San Diego County, where they prefer montane coniferous and oak woodlands (Unitt 2004). They also occur in open forests of deciduous, coniferous or mixed trees, savanna, edges of riparian woodland (Zeiner et al. 1990a). Since this species is not considered special-status by state or federal agencies, it is not tracked in CNDDB. However, the western bluebird was observed during surveys (no locations were mapped) and breeding has been confirmed both within and surrounding the Merriam Mountains (Unitt 2004).

Suitable nesting habitat on Site includes locations with trees or snags such as coast live oak woodland, southern coast live oak riparian forest, and individual trees within disturbed habitat. Suitable foraging habitat on Site includes coastal scrub (Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat), woodland (coast live oak woodland), riparian (freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub), and non-native communities and land covers (orchards and vineyards, disturbed habitat, and non-native grasslands).

Barn Owl (*Tyto alba*) – Group II

The barn owl is a County Group 2 species. It occurs in a variety of habitats including grassland, chaparral, riparian, and other wetlands throughout the state, avoiding dense forests and open desert habitats (Zeiner et al. 1990a). This species usually nests on ledges, crevices, or other sheltered areas of cliffs or human-made structures. Nests may also be constructed in cavities in trees or snags, burrows, culverts, or nest boxes. The barn owl feeds mainly on small rodents and may also eat crustaceans, reptiles, and amphibians. Small birds, such as blackbirds, serve as an important food source in the winter (Zeiner et al. 1990a).

Barn owl was detected during 2013 surveys, but it was not mapped. Breeding is confirmed to occur within the Merriam Mountains (Unitt 2004).

Suitable nesting habitat includes ledges/crevices/cliffs within the quarry and cavities within large trees on Site within coast live oak woodland, southern coast live oak riparian forest, and

eucalyptus woodland. Suitable foraging habitat on Site includes most vegetation communities and undeveloped land cover (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [freshwater marsh, southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [orchards and vineyards, disturbed habitat, and non-native grasslands]).

Mammals

Mule Deer (*Odocoileus hemionus*) – Group II

The mule deer is a County Group 2 species. It is a common to abundant, yearlong resident or elevation migrant with a widespread distribution throughout most of California (Zeiner et al. 1990b). It occurs throughout most of California, except in deserts and intensively farmed areas without cover (Zeiner et al. 1990b). Throughout its range, mule deer uses coniferous and deciduous forests, riparian habitats, desert shrub, coastal scrub, chaparral, and grasslands with shrubs. It is often associated with successional vegetation, especially near agricultural lands (NatureServe 2014). It prefers a mosaic of various aged vegetation that provides woody cover, meadow and shrub openings, and free water (Zeiner et al. 1990b). Mule deer fawn in a variety of habitats that have available water and abundant forage, including moderately dense shrubs and forests, dense herbaceous stands, and higher-elevation riparian and mountain shrub vegetation.

This species was detected on Site during early surveys of property (PSBS 2007) where sign (e.g. scat) was occasionally observed infrequently throughout the Site. However, according to the PSBS technical reports, the locations were not recorded. Because this species is not considered special-status by state or federal agencies, it is not tracked in CNDDB. However, this species is thought to only occasionally move through the Site as very little sign was observed during recent surveys but would have expected to have been more prevalent with the extensive network of dirt roads and trails which meander through the dense chaparral.

Suitable habitat in the project Site includes most vegetation communities and undeveloped land cover (i.e., chaparral [southern mixed chaparral, scrub oak chaparral], coastal scrub [Diegan coastal sage scrub, coastal sage scrub – Baccharis, flat-topped buckwheat, coastal sage – chaparral transition], woodland [coast live oak woodland], riparian [southern coast live oak riparian forest, mulefat scrub, southern willow scrub, southern willow scrub/tamarisk scrub], and non-native communities and land covers [non-native grasslands]).

Invertebrates

Monarch Butterfly (*Danaus plexippus*) – Group II

The monarch butterfly is a County Group 2 species. It follows a pattern of seasonal migration. In the summer, this species is found in New England, the Great Lakes region, and the northern Rocky Mountains. These areas are occupied from May through late August to mid-September (Urquhart 1987). The New England and Great Lakes populations migrate southwest to wintering grounds in the Sierra Madre mountain range of Mexico. The Rocky Mountains population migrates southwest to wintering grounds along the California coast.

The species' distribution is controlled by the distribution of its larval host plant (i.e., various milkweeds, genus *Asclepias*). Eggs are deposited and hatch on the underside of leaves of the milkweed plant. Upon hatching, the larvae feed upon the fine hairs on the leaves of the plant and stay on the same plant throughout its molting stages. After molting, the larvae leave the milkweed and construct its chrysalis elsewhere. However, once an adult monarch butterfly emerges from the chrysalis, it soon returns to a milkweed plant for foraging and shelter (Urquhart 1987).

Monarch butterfly wintering sites are considered special status by CDFW (2014d). Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast. A few California sites (e.g., Pacific Grove and Natural Bridges) support concentrated numbers of overwintering adults, but adults often winter as scattered individuals or in small clusters (Emmel and Emmel 1973). Sexually mature monarch butterflies mate along their northern migratory route (while returning to their summer grounds) and deposit eggs on milkweed plants. Adults die shortly after mating and laying eggs, leaving the completion of the northern migration to their offspring.

This species was detected on Site during 2013 surveys, but was not mapped because it was not a wintering roost. Suitable habitat on Site includes eucalyptus woodlands and habitat supporting larval host plants (i.e., non-native grasslands), but no winter roosts have been detected on Site.

1.4.7 Wetlands/Jurisdictional Waters

A wetland delineation and waters mapping was conducted on the proposed project Site in 2013 and in the off-site impact areas in 2015, with the exception of the off-site sewer improvements. Waters, including wetlands, were mapped on Site and are quantified in Table 1-8. Off-site wetlands/jurisdictional waters are quantified in Tables 1-9 and 1-10. As described in Section 1.2.2, the Deer Springs Road improvements includes an Option A and an Option B (Table 1-9). Additional road and off-site improvements are shown in Table 1-10.

Table 1-8
On-Site Wetlands, Riparian Habitat, and Non-Wetland Waters

Vegetation Community	Jurisdiction Determination			Total (acres)
	ACOE/RWQCB/ CDFW/County (acres)	*CDFW/County (acres)*	*CDFW-Only (acres)*	
Coast live oak woodland	—	—	4.82	4.82
Freshwater marsh	0.07	—	—	0.07 a
Mulefat scrub	—	0.19	—	0.19
Southern coast live oak riparian forest	—	5.16	—	5.16
Southern willow scrub	0.16	2.33	—	2.49
Southern willow scrub/tamarisk	—	0.30	—	0.30
Total	**0.23**	**7.99**	**4.82**	**13.04**
Non-wetland waters (ephemeral and intermittent)[1]	*5.33*	—	—	*5.33*
RPO wetland buffer[2]	—	—	—	**30.2**

[1] The non-wetland waters are under the jurisdiction of ACOE/RWQCB/CDFW only. They are an overlay and not counted toward total acreage.

[2] RPO wetland buffers are under County jurisdiction and are an overlay and not counted toward the total acreage.

Table 1-9
Off-Site Wetlands, Riparian Habitat, and Non-Wetland Waters (Deer Springs Road)

Option A			
Vegetation Community	*Jurisdiction Determination*		
	ACOE/RWQCB/ CDFW/County	*CDFW/County*	*CDFW-Only*
Mulefat scrub	0.03	—	—
Southern willow scrub	0.10	—	—
Disturbed wetland[1]	0.14		
Southern coast live oak riparian forest	—	1.36	—
Total	**0.13**	**1.36**	**—**
Non-wetland waters (ephemeral and intermittent)[1]	*0.09*	—	—
RPO wetland buffer[2]	3.7		

Option B			
Vegetation Community	*Jurisdiction Determination (Acres)*		
	ACOE/RWQCB/CDFW/County	*CDFW/County*	*CDFW-Only*
Mulefat scrub	0.03	—	—
Southern willow scrub	0.10	—	—
Disturbed wetland	0.14 (not RPO)		
Southern coast live oak riparian forest	—	1.36	—
Total	**0.27**	**1.36**	**—**
Non-wetland waters (ephemeral	*0.09*	—	—

Table 1-9
Off-Site Wetlands, Riparian Habitat, and Non-Wetland Waters (Deer Springs Road)

and intermittent)[1]			
RPO wetland buffer[2]	**3.7**		

1 The disturbed wetland and non-wetland waters are under the jurisdiction of ACOE/RWQCB/CDFW only.
2 RPO wetland buffers are under County jurisdiction and are an overlay and not counted toward the total acreage.

Table 1-10
Additional Off-Site Wetlands, Riparian Habitat, and Non-Wetland Waters (acres)

Vegetation Community	Jurisdiction Determination		
	ACOE/RWQCB/CDFW/County	*CDFW/County*	*CDFW-Only*
Camino Mayor			
Southern willow scrub	—	0.05	—
Non-wetland waters (ephemeral and intermittent)[1]	0.06	—	—
Sarver Lane			
Coast live oak woodland (including disturbed)	—	—	0.95
Non-wetland waters (ephemeral and intermittent)[1]	0.05	—	—
Sewer Improvements[2]			
Southern willow scrub	3.32	—	—
Arundo-dominated riparian	0.26	—	—
Mar Vista[2]			
Coast live oak woodland	<0.01	—	—
I-15 Interchange			
Coast live oak woodland	0.14	—	—
Total	**3.83**	**0.05**	**0.95**
RPO wetland buffer[3]	**1.2**		

1 The non-wetland waters are under the jurisdiction of ACOE/RWQCB/CDFW only.
2 A formal delineation was not conducted for the off-site sewer improvements, nor the Mar Vista and I-15 Interchange improvements. For purposes of this analysis, all riparian habitat is assumed to be under the jurisdiction of all three resource agencies and the County.
3 RPO wetland buffers are under County jurisdiction and are an overlay and not counted toward the total acreage.

Wetland determinations were made at 10 data station (DS) sampling points (Appendix I) to determine the status of three wetland criteria (vegetation, soils, and hydrology) within representative potential wetlands on Site. Six of these data stations are within the project Site, two are located within the off-site impact areas, and two are located outside the project Site. Only those within the project Site or impact area are included in the table below. The extent of wetland and riparian areas was determined by mapping the areas with similar vegetation and topography to sampled locations. The data station sampling point results are summarized in Table 1-11. Data station locations are shown in Figures 8A–8E, Jurisdictional Resources.

Table 1-11
Data Station Point Summary

Data Station (Sample ID No.)	Wetland Determination Field Indicators			Vegetation Community	Jurisdiction
	Vegetation	*Hydric Soils*	*Hydrology*		
1 (Figure 8B)			✓	Coast live oak riparian forest	ACOE/RWQCB Non-wetland waters; CDFW/County Wetlands
2 (Figure 8B)			✓	Coast live oak riparian forest	ACOE/RWQCB Non-wetland waters; CDFW/County Wetlands
3 (Figure 8C)			✓	Coast live oak riparian forest	ACOE/RWQCB Non-wetland waters; CDFW/County Wetlands
4a (Figure 8A)			✓	Southern willow scrub/tamarisk scrub	CDFW/County Wetlands
4b (Figure 8A)				Southern willow scrub/tamarisk scrub	CDFW/County Wetlands
5 (Figure 8B)	✓	✓	✓	Southern willow scrub	ACOE/RWQCB/CDFW/County Wetlands
7a (Figure 8A)			✓	Southern willow scrub	ACOE/RWQCB Non-wetland waters; CDFW/County Wetlands
7b (Figure 8A)				Developed	None

ACOE Wetland Determination

Vegetation communities mapped as wetlands were determined to support all three ACOE parameters that define wetlands (i.e., hydrophytic vegetation, hydric soils, evidence of hydrology). Results of the vegetation mapping and jurisdictional delineation determined there are two areas considered ACOE wetlands: freshwater marsh[2] and southern willow scrub (Figures 8A–8E). For the southern willow scrub, a representative data station pit was completed to evaluate the specific conditions of this area, and DS-5 characterizes southern willow scrub as dominated by hydrophytic vegetation (i.e., willows), supports hydric soil conditions (i.e., depleted matrix), and contained evidence of hydrology (i.e., drainage patterns and sediment deposits). No other areas were determined to be wetlands defined by ACOE. Wetlands under the jurisdiction of ACOE are also considered wetlands under RWQCB and the County, and riparian habitat under CDFW jurisdiction. Wetland areas are shown in Figures 8A–8E.

[2] The ACOE wetland determination of freshwater marsh was provided in the Merriam Mountains Specific Plan Biological Technical Report (PSBS 2007).

Potential Non-Wetland Waters

Non-wetland waters on Site include ephemeral and intermittent channels. Steeply vegetated hillsides traverse the Site and many contain drainages that direct flow into the five subwatersheds as described in the Hydrology/Hydraulic Report (Fuscoe Engineering 2017). These features did not meet all of the three-parameter criteria for ACOE wetlands during the on-site evaluation (i.e., did not support hydrophytic vegetation and/or hydric soil conditions); however, they did support evidence of hydrology in the form of a bed and bank or OHWM. Therefore, these areas were determined to be non-wetland waters of the United States under the joint jurisdiction of ACOE, RWQCB, and CDFW. Areas mapped as non-wetland waters of the United States/state are shown in Figures 8A–8E.

RPO Wetland Determination (On Site)

According to the definition of County RPO wetlands, areas supporting a predominance of hydrophytes qualifies as County RPO wetlands. Five vegetation communities were mapped as County RPO wetlands: freshwater marsh, southern willow scrub, mulefat scrub, southern coast live oak riparian forest, southern willow scrub/tamarisk, and arundo-dominated riparian. These riparian habitats support hydrophytic vegetation and have indicators of hydrology; therefore, these habitats meet the definition of an RPO wetland. The RPO wetlands occur sporadically throughout the Site, and are associated with ephemeral or intermittent stream channels.

The RPO determination for southern willow scrub/tamarisk scrub consists of areas co-dominated by tamarisk and willows, which are both listed as hydrophytic vegetation, and, therefore, meet the definition of an RPO wetland.

The vegetation communities mapped as coast live oak woodland are not dominated by hydrophytes, do not contain a wetland subshrub community, do not support hydric soils, and therefore, do not meet the definition of an RPO wetland.

County RPO wetlands determinations are shown in Figures 8A–8E. Detailed descriptions of the vegetation communities, including predominant species information, are provided in Section 1.4.2.

RPO wetlands occur sporadically within the project Site and are associated with ephemeral or intermittent stream channels. The individual RPO wetlands are relatively small and together total 8.2 acres (0.4 percent of the Site). The RPO wetlands on Site occur in areas where slopes do not exceed 25 percent and where soils are generally not highly erosive. The overall function and value of the RPO wetlands on Site would be low to moderate due to the general lack of regular water resources, and narrow riparian vegetation areas.

RPO Wetland Determination (Off-Site)

RPO wetlands associated with off-site road improvements for Camino Mayor include 0.05 acre of southern willow scrub. Along Deer Springs Road the RPO wetlands include 1.36 acres of southern coast live oak riparian forest, 0.03 acre of mulefat scrub and 0.1 acre of southern willow scrub. In addition, within the sewer improvement area there are 3.32 acres of southern willow scrub, and 0.26 acre of arundo-dominated riparian. Improvements to Mar Vista Road include less than 0.01 acre of County RPO coast live oak woodland. Improvements associated with the I-15 interchange include 0.14 acres of coast live oak woodland which, for purposes of this analysis, is assumed to be County RPO wetlands. County RPO wetlands determinations are shown in Figures 8A–8E. Detailed descriptions of the vegetation communities, including predominant species information, are provided in Section 1.4.2.

1.4.7.1 RPO Wetland Buffer

County Guidelines for Determining Significance (2010a) provide the following examples for the establishment of appropriate RPO wetland buffers, to be based on the best available science:

- A 50-foot wetland buffer would be appropriate for lower quality RPO wetlands where the wetland has been assessed to have low physical and chemical functions, vegetation is not dominated by hydrophytes, soils are not highly erosive, and slopes do not exceed 25 percent.
- A wetland buffer of 50 to 100 feet is appropriate for moderate- to high-quality RPO wetlands that support a predominance of hydrophytic vegetation or wetlands within steep slope areas (greater than 25 percent) with highly erosive soils. Within the 50- to 100-foot range, wider buffers are appropriate where wetlands connect upstream and downstream, where the wetlands serve as a local wildlife corridor, or where the adjacent land use(s) would result in substantial edge effects that cannot be mitigated.
- Wetland buffers of 100 to 200 feet are appropriate for RPO wetlands within regional wildlife corridors or wetlands that support significant populations of wetland-associated sensitive species or where stream meander, erosion, or other physical factors indicate a wider buffer is necessary to preserve wildlife habitat.
- Buffering of greater than 200 feet may be necessary when an RPO wetland is within a regional corridor or supports significant populations of wetland-associated sensitive species and lies adjacent to land use(s) that could result in a high degree of edge effects within the buffer. Although the RPO stipulates a maximum of 200 feet for RPO wetland buffers, actions may be subject to other laws and regulations (such as the Endangered Species Act) that require greater wetland buffer widths.

As described in the RPP (Dudek 2017a), the RPO wetlands occur in areas where slopes do not exceed 25 percent and where soils are not highly erosive making the buffer generally a stable environment. The overall function and value of wetlands on Site would be low to moderate due to the incised channels, general lack of regular water resources, and small riparian vegetation areas. Edge effects of the proposed project would be relatively low intensity given the combined LBZ easements and FMZ buffer the effects from adjacent development by providing a 250-foot area between development and the open space. A broader buffer would not be required because the majority of the RPO wetlands are located within biological open space (6.1 acres; 74 percent of RPO wetlands); 2 acres (23 percent of RPO wetlands), are protected by Limited Building Zone Easements, and a Biological Open Space Easement and only 0.2 acre (3 percent of RPO wetlands) are located within proposed development areas. Therefore, a 75-foot wetland buffer is considered adequate to protect the RPO wetlands on Site (Figures 8A–8E). On Site, the RPO wetland buffers total 30.2 acres.

Impacts to RPO wetlands are within four discrete on-site impact areas and five off-site areas (two locations along Deer Springs Road, Camino Mayor, I-15 interchange, and the sewer improvement area). RPO wetland impact area 1 is located at the northern end of Gist Road at the project Site entrance. This area consists of oak riparian forest associated with an intermittent stream channel. The oak riparian forest is bisected by a dirt trail. Impact area 1 would be impacted by activities occurring within the FMZ. This RPO wetland area would be affected by all three FMZ areas: Zone 1 (Irrigated Structure Setback Zone); Zone 2 (Thinning Zone); and a Special Management Zone where only highly flammable, dead, and dying native species would be removed. RPO wetland impact area 2 is located just north east of area 1 and consists of two small polygons of southern willow scrub (0.08 and 0.05 acre) and associated stream channel. These two wetlands would be directly impacted by the development of the proposed project. Two small patches (0.05 and 0.04 acre) of mule fat scrub comprise RPO impact area 3. These two patches are located immediately adjacent to the on-site portion of Gist Road. The fourth RPO impact area is located along the eastern project boundary and I-15, just north of the Mesa Rock Road cul-de-sac. Of the 0.8 acre of oak riparian forest that comprises this RPO wetland, 0.2 acre of the southern tip would be impacted by activities associated with Zone 2 fuel modification. The five off-site RPO areas impacted by the proposed project are associated with improvements to Deer Springs Road, Camino Mayor, I-15 interchange, and sewer facility upgrade. Improvements to Deer Springs Road would result in both permanent and temporary impacts to oak riparian forest canopy immediately adjacent to the existing road (0.83 acre) and both mulefat scrub (0.03 acre) and southern willow scrub (0.06 acre permanent and 0.04 acre temporary) at Deer Springs Road and Sycamore Drive. Improvements to Camino Mayor would permanently impact a small polygon of southern willow scrub (0.06 acre). Improvements to the I-15 interchange would result in 0.02 acres of permanent impacts to coast live oak woodland and 0.12 acre of temporary impacts. Upgrading sewer facilities near Twin Oaks Valley Road would

result in permanent impacts to 0.35 acre of southern willow scrub and 0.14 acre of arundo-dominated riparian habitat.

1.4.7.2 Hydrologic Context and Connectivity

The project Site is located within two watersheds. The northern portion of the project Site drains into the approximately 562-square-mile San Luis Rey River Watershed (Hydrologic Unit Code [HUC]: 903.00), and the southern portion of the project Site drains into the approximately 210-square-mile Carlsbad Watershed (HUC: 904.00). Partially contained within the San Luis Rey River Watershed is the Lower San Luis Hydrologic Area (HA: 903.10). Within the Lower San Luis HA is the approximately 102.8-square-mile Bonsall Hydrologic Subarea Area (HAS: 903.12; South Fork Gopher Canyon) and the 18.9-square-mile Moosa HSA (HSA: 903.13; South Fork Moosa Canyon). Within the Carlsbad Hydrologic Unit, the project Site drains the San Marcos HA (HA: 904.50). Within the San Marcos HA is the approximately 9.5-square-mile Twin Oaks Hydrologic Subarea Area (HAS: 904.53; San Marcos Creek). Both watersheds are located within the approximately 3,900-square-mile RWQCB San Diego Region (RWQCB Region 9).

The Lower San Luis Hydrologic Area drains a relatively underdeveloped region. However, this watershed is still experiencing significant land development, especially in the region near the project Site. There is generally more extensive existing development within the San Marcos HA. The degree of imperviousness within this watershed can be used to consider the condition and health of the aquatic resources within them, which are often used as a measure for determining the amount of stress a watershed is experiencing (Shilling et al. 2005). The San Luis Rey River is listed on the CWA 303(d) List (impaired water bodies) for bacteria, chloride, and total dissolved solids resulting from point and nonpoint sources (SWRCB 2011). Additionally, Moonlight State Beach within the San Marcos HA is listed on the CWA 303(d) List due to nonpoint and point sources (SWRCB 2011). However, there are no water resources on the CWA 303(d) List within the project Site.

The South Fork of Gopher Canyon drains the northwestern region of the project Site (totaling 434.7 acres), and it flows along North Twin Oaks Road into the San Luis Rey watershed. The South Fork Moosa Canyon drains the eastern region of the project Site toward I-15, and eventually north to flow into the San Luis Rey watershed. This drainage system drains approximately 793.7 acres of the project Site, and flow is conveyed below I-15 through existing culverts and storm drain systems. The South Fork Moosa Canyon drains north to the San Luis Rey River watershed. San Marcos Creek drains the southwestern region of the project Site into the Carlsbad watershed, totaling 754.9 acres. There are no major water bodies located within the project Site.

1.4.7.3 Functions and Values

The beneficial uses associated with the South Fork of Gopher Canyon and South Fork of Moosa Canyon are listed in the Water Quality Control Plan for the San Diego Basin (Region 9) (SWRCB 2012). These uses include potential domestic supply, agricultural supply, industrial service supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat. The beneficial uses associated with San Marcos Creek include potential domestic supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat.

Waters and wetlands are an important part of an ecosystem based on the functions and values they can provide. These functions and values of waters and wetlands in the project Site are characterized as having a low, moderate, or high ability to provide the following:

- Flood storage and flood flow modification
- Nutrient retention and transformation
- Groundwater recharge
- Sediment trapping
- Toxicant trapping
- Wildlife habitat
- Aquatic habitat
- Public use

The drainages on Site have low potential to function for flood storage and flood flow modification, nutrient retention and transformation, groundwater recharge, sediment trapping, toxicant trapping, aquatic habitat, and public use. The drainages on Site are moderately incised and have natural bottoms. However, due to the steep topography of the project Site, water from rainfall likely results in sheet flow or temporary flow and flooding of certain areas before flowing into the groundwater table. Therefore, any groundwater recharge that occurs would be highly localized in areas where sufficient ponding occurs during rain events. Further, as there are currently no existing commercial or residential uses in the project Site, the potential for the Site to function for toxicant and sediment trapping is limited.

The Site is currently subject to illegal/unauthorized activity, including hiking, biking, off-road vehicle activity, parties, trash dumping, homeless activities, and camping. With the development and associated open space preserve, all of these activities except the biking and hiking would cease and the hiking/biking would be managed and kept to select trails. The other trails would be

closed and new trail creation (which currently occurs) would stop. Public use of the drainages does not currently occur nor is it expected to occur proceeding development. The drainages serve as habitat for wildlife, and perhaps for semi-aquatic species, but due to the lack of permanent water resources on Site, there is no habitat for aquatic species.

1.4.8 Habitat Connectivity and Wildlife Corridors

Wildlife corridors are defined as areas that connect suitable wildlife habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with vegetation cover, provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of wildlife from high-density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife corridors are considered sensitive by resource and conservation agencies. For the most part, the area in and around the project Site is very similar with regard to undeveloped landscapes with limited human disturbance, similar topographic relief, and similar vegetation communities.

The proposed project Site is surrounded by undeveloped portions of the Merriam Mountains and adjacent to and east of another large undeveloped land form, the San Marcos Mountains (Figure 9, Wildlife Connectivity). The northern and southern Merriam Mountains, along with the adjacent San Marcos Mountains, represent the largest substantial-sized, essentially native blocks of habitat located west of I-15 in central San Diego County. The Site is currently undeveloped and is intersected by a number of dirt roads and trails that provide connectivity to surrounding undeveloped landscapes. Based on the existing conditions of the Site, wildlife can generally move through the project Site relatively unencumbered.

Wildlife movement within the proposed open space design would occur within three large blocks of open space and four corridors located between development (Figure 9). Open space blocks of habitat (Blocks 1, 2, and 3) are internally linked through Corridors A through D as shown in Figure 9. Corridor A includes an approximately 1,000-foot by 400-foot linkage. Corridor B includes an approximate 700-foot by 750-foot area. Corridor C includes an approximately 1,500-foot by 800-foot linkage. Corridor D includes an approximately 2,250-foot by 200-foot linkage. All of these include varying degrees of fuel modification, which should allow for better wildlife mobility than the dense mature chaparral which covers most of the intact open space. Corridor B connects Block 2 with Block 3 across an internal road. Block 2 is connected to Block 1, without any barriers, along the east side of the project Site. Corridor C connects off-site PAMA to Block 3 across an internal road. Corridor A provides a secondary connection to off-site PAMA to the south and west, by allowing wildlife to cross another internal road and Corridor D. Corridors A and D also provide an additional linkage from Block 1 to off-site areas to the southwest.

The open space configuration for the Newland Sierra project would form a centroid of connectivity to the north, south, east, and west: north along the I-15 corridor and then west into the San Luis Rey River area; south along I-15 into Escondido; east across I-15 to the Escondido and other eastern areas; and west through the San Marcos Mountains and then north into the San Luis Rey River area and beyond. Along I-15, there are four bridges under I-15 which might convey wildlife. These occur at (1) Mesa Rock Road, approximately 1.8 miles south of the property; (2) Lawrence Welk Court, adjacent to the northern boundary of the property; (3) Gopher Canyon Road, approximately 1.4 miles north of the property; and (4) Camino Del Rey, approximately 3 miles to the north. All four of these potential crossing areas are bridge structures that pass under I-15 with north and south-bound highway lanes, are insulated from highway noise, are connected to native habitat and adjacent PAMA areas, and experience low traffic volumes. An additional crossing structure, in the form of an overpass, is located at the southern end of the property at Deer Springs Road. This is a focal point of activity and likely provides little wildlife movement benefit until the late night and early morning hours when traffic and human activity wanes. In September 2014, Dudek reviewed the entire project boundary with I-15 and Deer Springs road to note the location and diameters of potential undercrossings. These undercrossings are fairly small and long, so they likely only support movement by small mammal species like rodents, striped skunks, raccoons, and possibly gray foxes. Additionally, the previously discussed I-15 bridges were documented as were the locations of fencing adjacent to I-15 and culverts. These data are presented within Tables 1-12 and 1-13, as well as in Figure 9. Chain-link fencing appears to only occur at the Deer Springs Road, Mesa Rock Road, and Gopher Canyon Road crossing areas. Otherwise, five-strand barbed-wire fencing runs along both sides of I-15. Therefore, it is likely that a majority of the larger wildlife are only able to make at-grade crossings of I-15 during the late-night and early morning periods when traffic volumes are reduced with some limited use of the existing bridges and underpasses.

Table 1-12
I-15 Bridge Dimensions

	Total Approximate Bridge Width (East to West)	Total Approximate Bridge Length (North to South)	Total Approximate Opening Distance Between I-15 North and I-15 South (East to West)	Total Approximate Max Height of Bridges (pavement to bridge bottom)	Comments
Camino Del Rey	237 feet (ft)	140 ft	63 ft	60 ft	5 strand barbwire fencing installed in the east to west direction, on both the N and S sides of Camino del Rey rd. Fencing terminates at Camino del Rey

Table 1-12
I-15 Bridge Dimensions

	Total Approximate Bridge Width (East to West)	Total Approximate Bridge Length (North to South)	Total Approximate Opening Distance Between I-15 North and I-15 South (East to West)	Total Approximate Max Height of Bridges (pavement to bridge bottom)	Comments
					and Highway 395 intersection.
Gopher Canyon	245 ft	148 ft	95 ft	60 ft	No fencing exists under bridge crossing.
Lawrence Welk Lane	240 ft	110 ft	100 ft	40 ft	5 strand barbwire fencing installed in the east to west direction, on both the N and S sides of Lawrence Welk Road.
Deer Springs	180 ft	50 ft	n/a	60 ft	Deer Springs bridge crosses over I-15. 6-ft chainlink fence installed in north-south direction on East and west sides of I15.
Mesa Rock Rd	212 ft	130 ft	63 ft	50 ft	6-ft chain link fence installed in east-west direction on north and south sides of Mesa Rock Rd.

Table 1-13
Culvert Dimensions Adjacent to the Newland Sierra Project Site

ID	Location	Type	Width	Height	Length	Substrate
CU-1	I-15	Round concrete culvert	4 ft	4 ft	Est. 350 feet	concrete
CU-2	I-15	Round concrete culvert	2 ft	2 ft	Est. 350 feet	concrete
CU-3	I-15	Round corrugated metal culvert	2 ft	2 ft	Est. 350 feet	metal
CU-4	I-15	Round corrugated metal culvert	4 ft	4 ft	Est. 350 feet	metal
CU-5	I-15	Round corrugated metal culvert	2 ft	2 ft	Est. 350 feet	metal
CU-6	I-15	Round corrugated metal culvert	2 ft	2 ft	Est. 350 feet	metal
CU-7	I-15	Round corrugated metal culvert	3 ft	3 ft	Est. 350 feet	metal
CU-8	I-15	Round corrugated metal culvert	4 ft	4 ft	Est. 350 feet	metal/leaves/dirt
CU-9	I-15	Round concrete culvert	4 ft	4 ft	Est. 350 feet	concrete

Table 1-13
Culvert Dimensions Adjacent to the Newland Sierra Project Site

ID	Location	Type	Width	Height	Length	Substrate
CU-10	Champagne Rd	Half-round concrete culvert	4 ft	4 ft	30 ft	dirt/leaves
CU-11	Deer Springs Rd	Half-round, corrugated metal culvert	1 ft	1 ft	30 ft	
CU-12	Deer Springs Rd	Corrugated metal round	1.5 ft	1.5 ft	30 ft	dirt
CU-13	Deer Springs Rd	Corrugated metal round	2ft	2ft	30 ft	dirt
CU-14	Deer Springs Rd	Corrugated metal round	2.5 ft	2.5 ft	30 ft	dirt
CU-15	Deer Springs Rd	Corrugated metal round	2.5 ft	2.5 ft	30 ft	metal

Numerous existing culverts are located adjacent to the proposed project Site along I-15 and Deer Springs Road (Table 1-13). The I-15 culverts are relatively long and small, so it is more likely that they would support small and medium sized mammals such as rodents, striped skunks, raccoons, and possibly gray fox and herpetofauna (reptiles and amphibians). There is a small chance that they would support movement by bobcats or coyotes. Those species would more likely make at-grade crossings of I-15 instead. Large species like mule deer and mountain lion would be unable to use the culverts. The Deer Springs Road culverts, while shorter in length, are smaller in diameter yet still probably only support movement across Deer Springs Road by small mammals and herpetofauna. The largest species that might use these would be raccoon. Despite the size, these culverts do provide some ability for some wildlife to move an east/west direction and a north/south direction. The areas where wildlife are likely to move through depend on the wildlife species and their preferred habitat and movement patterns. These are discussed in more detail below.

The majority of the habitat on Site is chaparral (91 percent), is relatively dense, and can support a variety of chaparral species. Of 37 mammal species known to regularly occur in California chaparral communities (Quinn 1990), ten have a potential to occur on Site are found primarily in mature chaparral[3], and are uncommon or absent in other habitat types. These ten species include the brush rabbit (*Sylvilagus bachmani*), Merrian's chipmunk (*Tamias merriami*), California pocket mouse (*Chaetodipus californicus*), California deermouse (*Peromyscus californicus*), dusky-footed woodrat (*Neotoma fuscipes*), agile kangaroo rat (*Dipodomys agilis*), desert cottontail (*Sylvilagus audubonii*), gray fox (*Urocyon cinereoargenteus*), western spotted skunk (*Spilogale gracilis*), and bobcats (*Lynx rufus*) (Quinn 1990).

Of these 10 species, four were observed during the PSBS (2003) wildlife corridor study and more recent focused surveys, and include gray fox, brush rabbit, bobcat, and agile kangaroo rat.

[3] Mature chaparral is characterized by shrubs approximately 3 to 10 feet in height and dense vegetation cover of 50 to100 percent (Quinn 1990).

Although many species are known to use mature chaparral, some chaparral may be very dense and difficult for medium to larger wildlife, such as mule deer, to maneuver through. As such, dirt access roads and trails may serve as a primary route for medium to larger wildlife movement. Research conducted on cougars (i.e., mountain lions; *Puma concolor*) in Southern California have found that cougars consistently used travel paths less rugged than their general surroundings and that dirt roads may even promote cougar movement (Dickson et al. 2005). In addition, the most frequently used travel routes for dispersing cougars in the Santa Ana Mountains was found to be scour zones in stream channels, ridgeline routes, and dirt roads (Beier 1995). A similar result was found in Arizona and Utah where cougars crossed unimproved dirt roads more frequently than improved dirt roads and hard surfaced roads (Van Dyke et al. 1986) suggesting that the intertwining and abundant dirt roads located within the proposed open space would provide great facilitation to wildlife movement, especially those of large mammals, through the dense chaparral that characterizes a large portion of this Site. Similar results have been found by Dudek during a number of movement studies conducted in the Santa Ana Mountain foothills, Transverse Ranges, and Sierra Nevada foothills.

Similarly, dirt roads may also facilitate movement of coyotes (*Canis latrans*), gray foxes, bobcats mule deer, and other species (PSBS 2003; Lovallo and Anderson 1996). Dirt roads have also been shown to provide potentially important landscape linkages for smaller wildlife to pass through unsuitable habitat to more suitable habitat (Brock and Kelt 2004). For example, California ground squirrels may use trails and drainage systems to disperse from colonies (Wiggett and Boag 1989). San Diego pocket mice (*Chaetodipus fallax*) and cactus mice (*Peromyscus eremicus*) will use low-use dirt trails but avoid low-use paved roads of similar width and rural two-lane highways (Brehme et al. 2013). Brock and Kelt (2004) found that the federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*) used dirt roads extensively to move great distances through otherwise inhospitable habitat to find more suitable habitat.

Mountain lions maintain home ranges between 30 and 125 square miles depending on sex, maturity, and season. There can be some overlap between home ranges with multiple female home ranges overlapping the male and more frequent overlapping of female home ranges. The species moves through portions of their home range in search of prey, bedding, mates, and other resources and may or may not spend much time in any portion of their home range depending on those same resources and their needs at the moment. Although mountain lions have been anecdotally reported as occurring on Site, as described in the *Merriam Mountains Specific Plan Final EIR* (County of San Diego 2010d) and within 1.75 miles of the Site by Vickers et al. (2015), the dense chaparral and human influence likely reduce their utilization of the Site to brief periods of time and at broad intervals. The main prey item for mountain lion is typically mule deer in this part of the county, which prefers a mix of more open vegetation to forage in with nearby denser habitat to escape in. The age of chaparral communities is tied to its value to mule

deer. As discussed in Sommer et al. (2007), "Fire in woodland chaparral is closely linked to quantity, quality, and diversity of food plants necessary for successful reproduction and survival of deer populations. In mature or late seral stage chaparral communities, browse quality, quantity, availability, and diversity are primary limiting factors during much of the year." Early to intermediate successional chaparral habitat is best for mule deer forage. While mule deer require some cover for thermal, hiding and escape cover, in shrub communities dominated by woody plants, lack of disturbance over time results in a shift to late seral stage vegetation that is dense and unsuitable for mule deer (Sommer et al. 2007).

While lack of documented occurrence does not indicate a lack of presence, the density of vegetation, combined with a lack of tracks or scat piles within the network of dirt paths and roads supports the assessment that the Site likely does not currently provide high quality mule deer habitat. As discussed above, mule deer and other larger mammals will favor travel along dirt roads and trails – particularly through otherwise difficult terrain and cover – simply to conserve energy. Since mule deer have only been occasionally recorded within the Site, the general lack of suitable prey further reduces the potential for mountain lions to use the Site for extended periods of time. It is likely that they would primarily use the Site for movement purposes.

1.5 Applicable Regulations

1.5.1 Federal

The federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the USFWS, the National Oceanic and Atmospheric Administration, and National Marine Fisheries Service. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any listed wildlife species.[4] "Take" is defined in Section 3(19) of FESA as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Under FESA, the USFWS may issue incidental take statements (ITSs), which authorize the take of listed wildlife species provided such take does not jeopardize the continued existence of the species. The ITSs can be obtained through a consultation process (formal or informal) with the USFWS or National Marine Fisheries Service under Section 7(a)(2) of FESA, which allows federal agencies to consult directly with the USFWS to obtain ITSs for projects that also require

[4] FESA does not prohibit the "take" of listed plant species. (See Section 9(a)(2); see also *Center for Biological Diversity, et al. v. Bureau of Land Management, et al.,* 2o166 DJDAR 8465, 84668468 (9th Cir. 2016), opinion issued August 15, 2016.

other agency permits or approvals. The ITSs also can be obtained through Section 10(a)(1)(B), which requires non-federal agencies or applicants to obtain ITSs for projects on non-federally owned land after the approval of a habitat conservation plan (HCP). As alluded to above, take of federally listed plants is not prohibited; thus, the USFWS does not issue ITSs (under Section 7 or Section 10) for disturbance of listed plants.

Upon development of an HCP, the USFWS can issue ITSs for listed fish and wildlife species where the HCP specifies, at a minimum, the following:

- The level of impact that will result from the take
- Steps that will minimize and mitigate the impacts
- Funding necessary to implement the HCP
- Alternative actions to the take considered by the applicant and the reasons why such alternatives were not chosen
- Such other measures that the Secretary of the Interior may require as being necessary or appropriate for the HCP.

The Habitat Loss Permit (HLP) Ordinance was adopted in March of 1994 in response to both the listing of the coastal California gnatcatcher as a federally threatened species, and the adoption of the Natural Communities Conservation Plan (NCCP) Act by the State of California. Pursuant to the Special 4(d) Rule under the FESA, the County is authorized to issue "take permits" for the California gnatcatcher (in the form of Habitat Loss Permits) in lieu of Section 7 or 10(a) Permits typically required from the USFWS. Although issued by the County, the wildlife agencies must concur with the issuance of a HLP for it to become valid as take authorization under the FESA. The HLP Ordinance states that projects must obtain an HLP prior to the issuance of a grading permit, clearing permit or improvement plan if the project will directly or indirectly impact any of several coastal sage scrub habitat types. The Ordinance requires an HLP if coastal sage scrub or related habitat will be impacted, regardless of whether the Site is currently occupied by gnatcatchers. HLPs are not required for projects within the boundaries of the MSCP since take authorization is conveyed to those projects through compliance with the MSCP. HLPs are also not required for projects that have separately obtained Section 7 or 10(a) permits for take of the gnatcatcher.

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 U.S.C. 703 et seq.). Additionally, Executive Order (EO) 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–

3856). The EO requires federal agencies to work with the USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species.

Pursuant to Section 404 of the CWA, the ACOE regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters of the United States) is defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water mark" which is defined in 33 CFR 328.3(e)."

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle are federally protected under the Bald and Golden Eagle Protection Act, passed in 1940 to protect the bald eagle and amended in 1962 to include the golden eagle (16 U.S.C. 668 et seq.). This act prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by the USFWS. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The act prohibits any form of possession or taking of both eagle species, and the statute imposes criminal and civil sanctions, as well as an enhanced penalty provision for subsequent offenses. Further, the act provides for the forfeiture of anything used to acquire eagles in violation of the statute. The statute exempts from its prohibitions on possession the use of eagles or eagle parts for exhibition, scientific, and Native American religious uses.

However, there is allowance within the act that, after investigation, the Secretary of the Interior may determine that direct and purposeful taking is compatible with the preservation of the bald eagle or the golden eagle. If so, then the Secretary may permit the taking, possession, and transportation of specimens for the scientific or exhibition purposes of public museums, scientific societies, and zoological parks, or for the religious purposes of Indian tribes. The Secretary may also determine that it is necessary to permit the taking of eagles for the protection of wildlife or of agricultural or other interests in any particular locality. This permitting may be for the seasonal protection of domesticated flocks and herds, and may also permit the taking, possession, and transportation of golden eagles for the purposes of falconry if the eagles may cause depredations on livestock or wildlife. Finally, the Secretary of the Interior may permit the taking of golden eagle nests that interfere with resource development or recovery operations, or in an emergency.

1.5.2 State

CDFW administers the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

Sections 3511,4700, and 5515 of the Fish and Game Code designate certain birds, mammals, and fish, respectively, as "fully protected" species. These species may not be taken or possessed without a permit from the Fish and Game Commission, and such take may only occur pursuant to scientific research or in connection with an authorized Natural Community Conservation Plan (NCCP). No "incidental take" of fully protected species is allowed.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (Fish and Game Code, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

Section 2081(b) and (c) of the Fish and Game Code authorizes take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In such cases, CDFW issues the applicant an Incidental Take Permit (ITP), which functions much like an ITS in the federal context. Sections 2081(b) and (c) also require CDFW to coordinate consultations with the USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal ITS or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. As mentioned above, CDFW may not issue a Section 2081(b) ITP for take of "fully protected" species.

Pursuant to Section 1602 of the Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement is required for impacts to jurisdictional wetlands in accordance with Section 1602 of the California Fish and Game Code.

Section 2835 of the Fish and Game Code allows CDFW to authorize incidental take in an NCCP. Take may be authorized for identified species whose conservation and management is provided for in the NCCP, whether or not the species is listed as threatened or endangered under FESA or CESA, provided that the NCCP complies with the conditions established in Section 2081 of the Fish and Game Code. The NCCP provides the framework for the San Diego MSCP subregional plans.

The Porter–Cologne Water Quality Control Act protects water quality and the beneficial uses of water. It applies to both surface water and groundwater. Under this law, the SWRCB develops statewide water quality plans, and the RWQCB develops basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under the Porter–Cologne Water Quality Control Act include isolated waters that are no longer regulated by the ACOE. Developments with impact to jurisdictional waters must demonstrate compliance with the goals of the act by developing storm water pollution prevention plans, standard urban stormwater mitigation plans, and other measures to obtain a CWA Section 401 certification.

CEQA requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guideline 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in guideline 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guideline 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

1.5.3 County

The RPO, administered by the County, regulates biological and other natural resources within the County. These resources include wetlands, wetland buffers, floodways, floodplain fringe, steep slope lands, sensitive habitat lands, and significant prehistoric or historic sites. Generally,

the ordinance stipulates that no impacts may occur to wetlands except for scientific research, removal of diseased or invasive exotic plant species, wetland creation and habitat restoration, revegetation and management projects, and crossings of wetlands for roads, driveways, or trails/pathways when certain conditions are met. The same exemptions apply to impacts to wetland buffer areas and improvements necessary to protect adjacent wetlands. Sensitive habitat lands are unique vegetation communities, and support sensitive species, lands essential to the healthy functioning of a balanced natural ecosystem, or wildlife corridors. Impacts to sensitive habitat lands are permitted when all feasible measures necessary to protect and preserve the sensitive habitat lands are required as a condition of permit approval and mitigation provides at least an equal benefit to the affected species (County of San Diego 2011a).

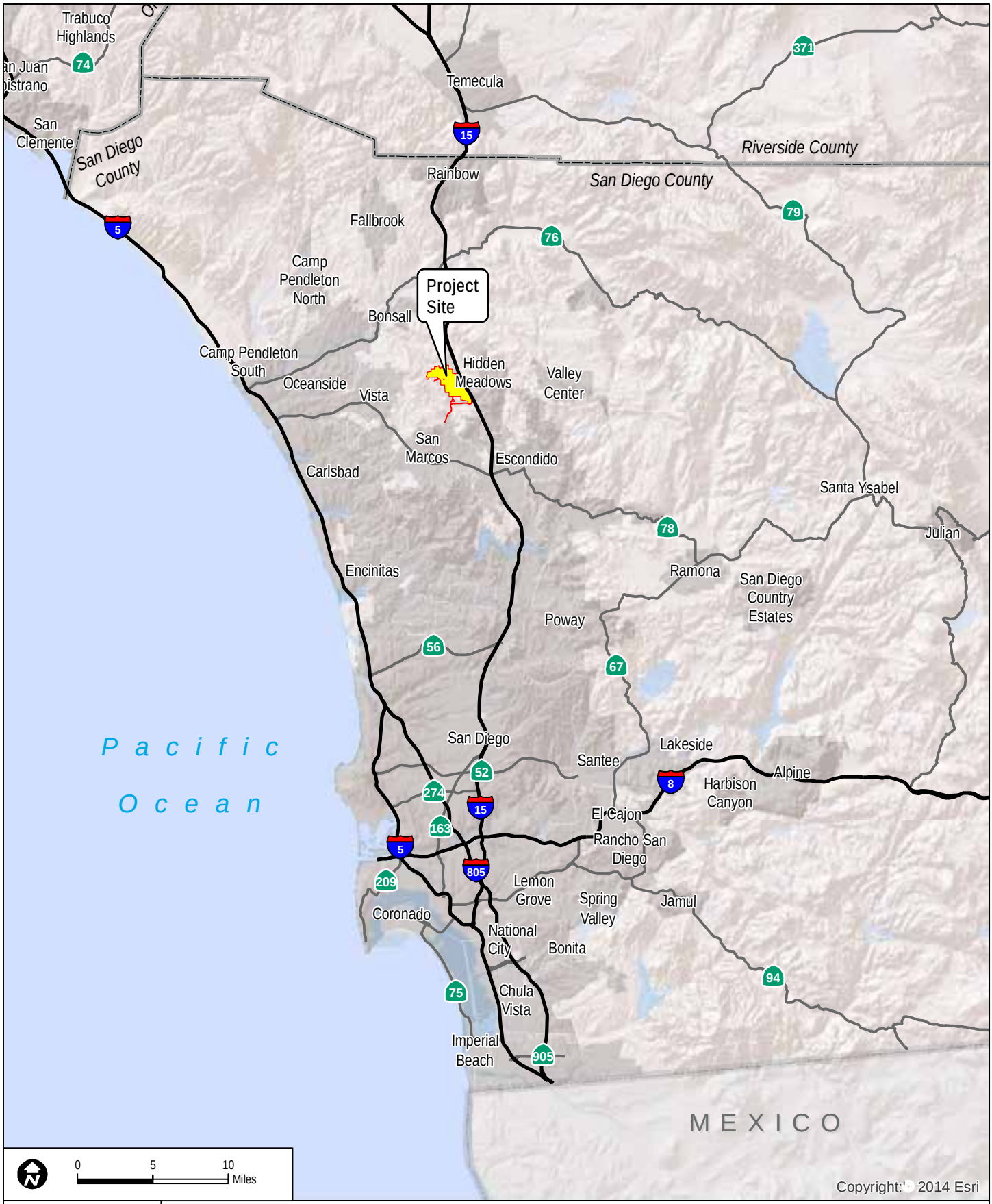

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FIGURE 1

Regional Map

Biological Resources Report for the Newland Sierra Project

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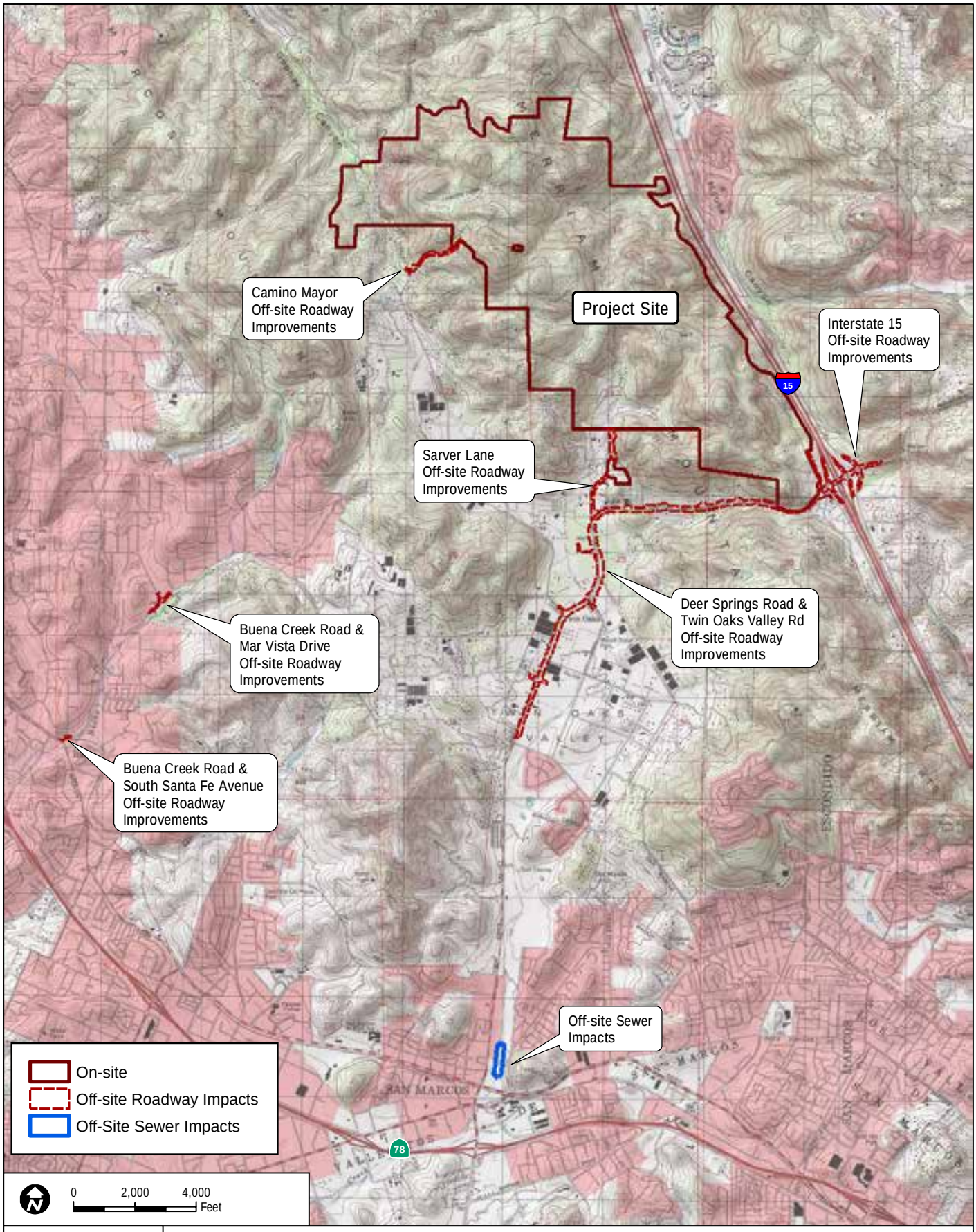

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SOURCE: USGS 7.5-Minute Series San Marcos Quadrangle.

FIGURE 2
Vicinity Map

Biological Resources Report for the Newland Sierra Project

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Off-site Roadway Impacts

Off-site Sewer Impacts

Off-site Sewer Impacts

Off-site Roadway Impacts

Off-site Roadway Impacts

Off-site Roadway Impacts

On-site

Off-site Roadway Impacts

Off-Site Sewer Impacts

Easements

Proposed Preserve Areas

Open Space

Fuel Modification Zone

Development/Access Roads

0 1,000 2,000 Feet

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SOURCE: Bing 2016; Fuscoe Engineering 2016

FIGURE 3

Proposed Project

Biological Resources Report for the Newland Sierra Project

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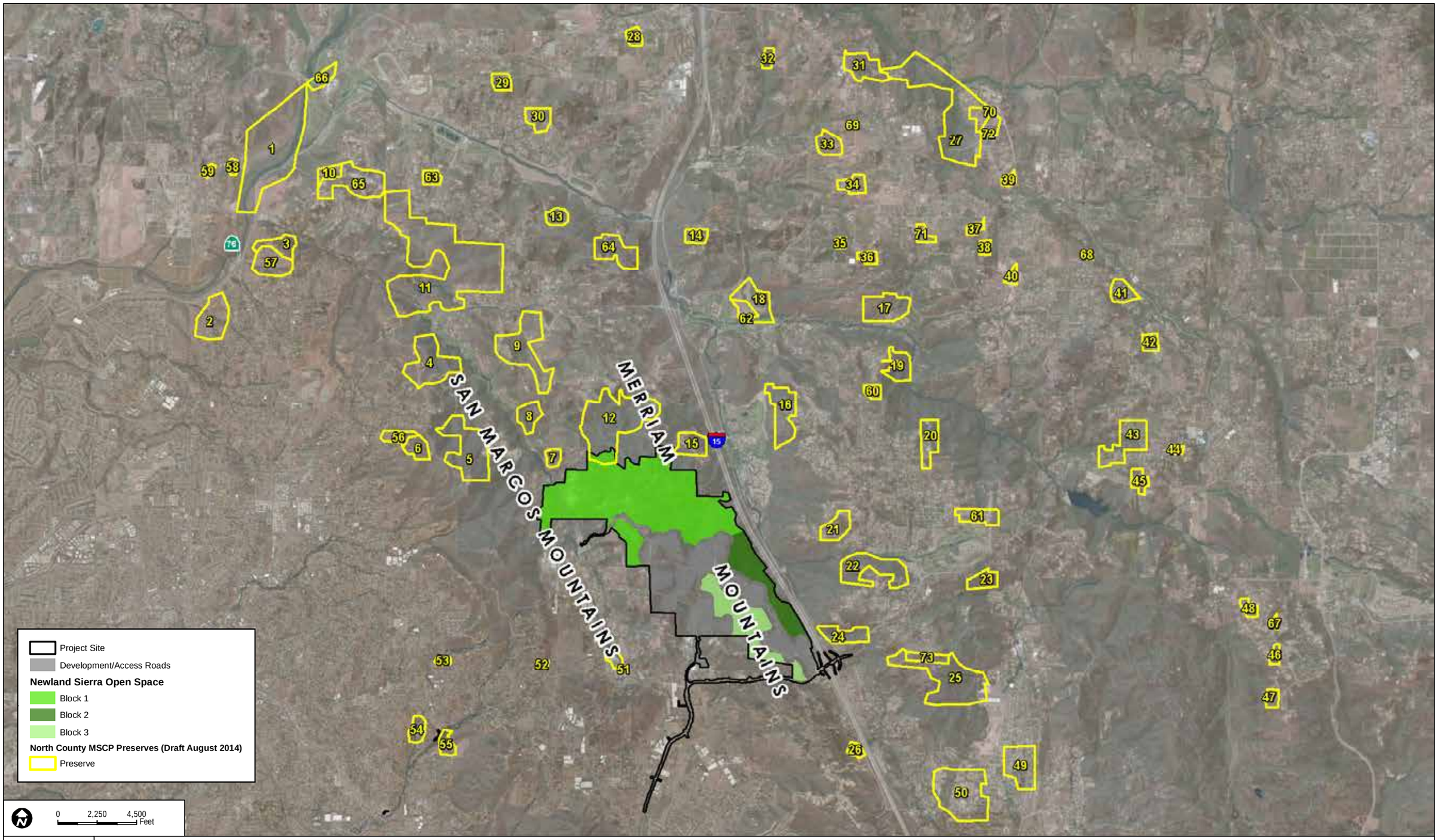

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SOURCE: Bing 2016; County of San Diego 2014

FIGURE 4

Proposed Open Space Design and MSCP Preserves

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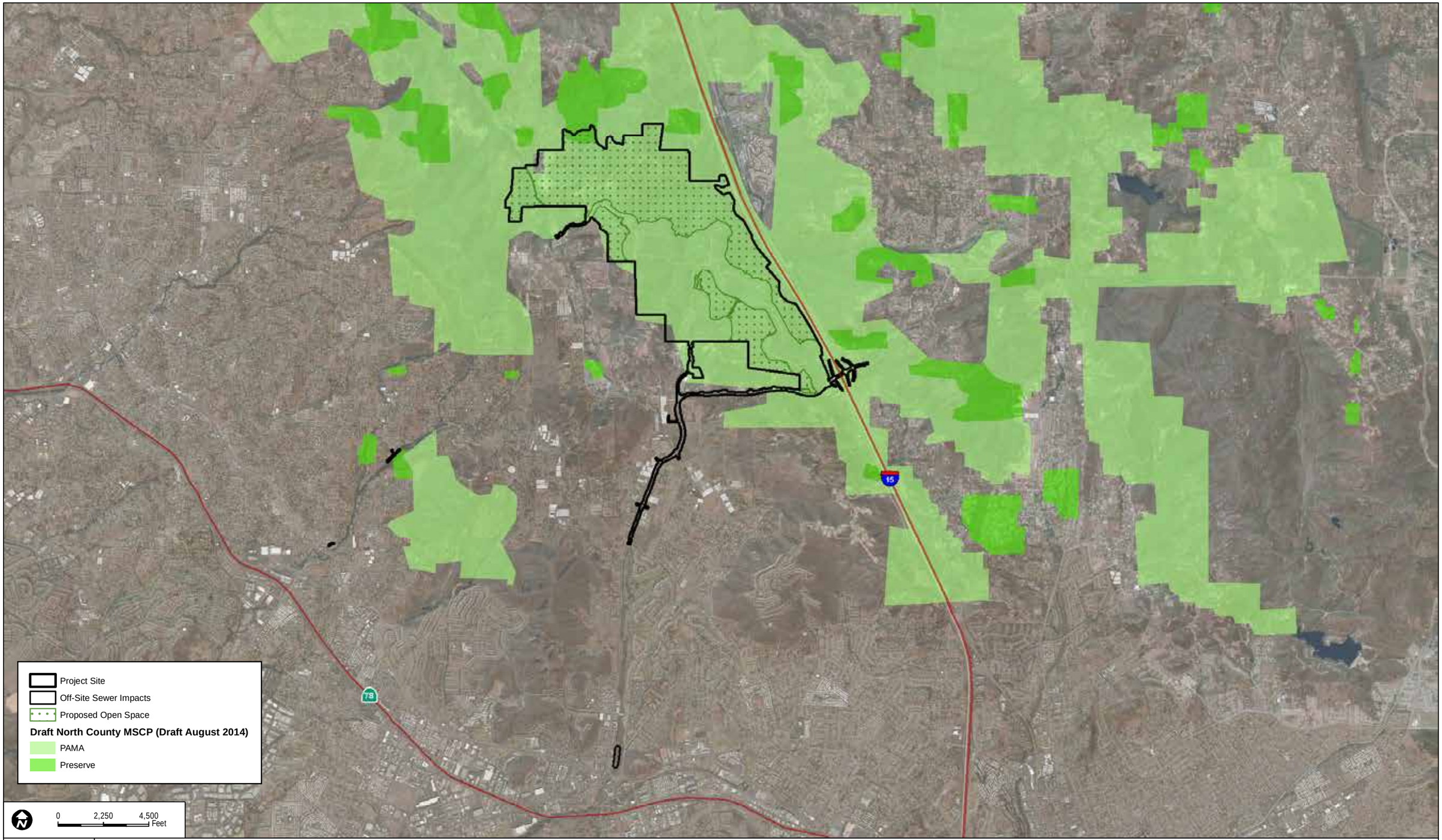

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SOURCE: Bing 2016; SANGIS 2014

FIGURE 5

Regional Context

Biological Resources Report for the Newland Sierra Project

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Project Site
- On-site
- Off-site

Vegetation Communities
- AGR, Agriculture
- CLOW, Coast live oak woodland
- CSS, Diegan coastal sage scrub
- CSS-CHP, Coastal sage - chaparral transition
- CSSB, Coastal sage scrub - Baccharis dominated
- DEV, Urban/developed
- DH, Disturbed habitat
- DW, Disturbed Wetland
- EAGR, Agriculture
- EUC, Eucalyptus woodland
- FWM, Freshwater marsh
- IAGR, Intensive agriculture
- MFS, Mulefat scrub
- NNG, Non-native grassland
- NNW, Non-native Woodland
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- SMX, Southern mixed chaparral
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- SWS, Southern willow scrub
- SWS/TS, Southern willow scrub/tamarisk scrub
- dBSC, Flat-topped buckwheat - disturbed
- dCLOW, Coast Live Oak Woodland - disturbed
- dCSS, Diegan coastal sage scrub - disturbed
- dCSSB, Coastal sage scrub - Baccharis dominated - disturbed
- dSMX, Southern mixed chaparral - disturbed

- Oak Root Zones
- Las Posas Soil Series

Wildlife Species
- Coastal California gnatcatcher
- Nuttall's woodpecker
- Oak titmouse
- Red-shouldered hawk
- Sharp-shinned hawk
- Yellow warbler
- Desert woodrat (midden)
- Blainville's horned lizard
- Blainville's horned lizard (scat)
- Coastal whiptail
- Red diamond rattlesnake

Plant Species
- Engelmann oak
- Munz's sage
- Ramona horkelia
- Summer holly
- ashy spike-moss
- chaparral rein orchid
- Engelmann oak
- Orcutt's brodiaea
- Ramona horkelia
- Summer holly

Index Map

FIGURE 6A
FIGURE 6B
FIGURE 6C
FIGURE 6D
FIGURE 6D
FIGURE 6D
FIGURE 6D

0 165 330 Feet

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7608-01

SOURCE: SANDAG Imagery 2014; Fuscoe Engineering 2017

FIGURE 6A
Biological Resources

Biological Resources Report for the Newland Sierra Project

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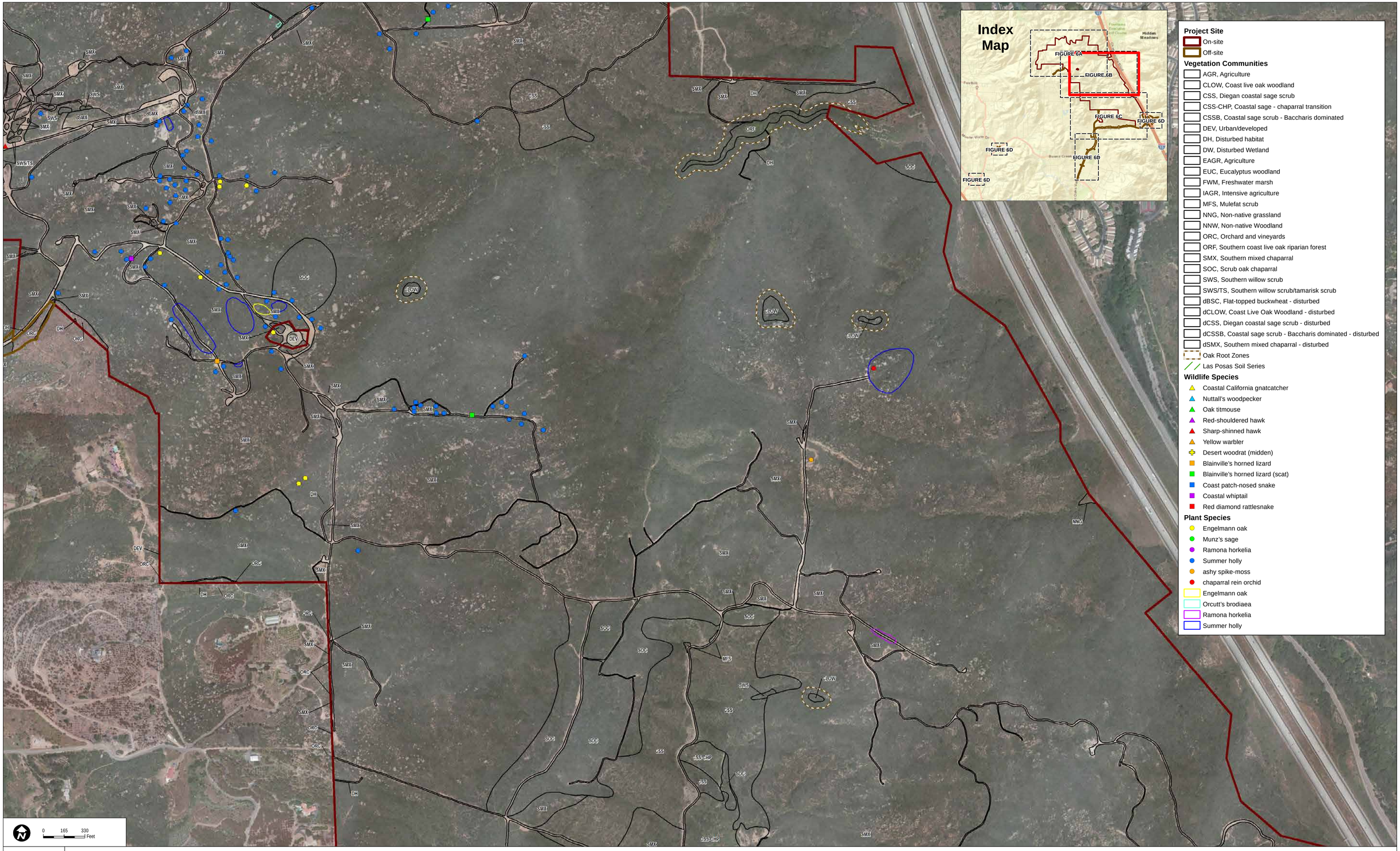

SOURCE: SANDAG Imagery 2014; Fuscoe Engineering 2017

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FIGURE 6B

Biological Resources

Biological Resources Report for the Newland Sierra Project

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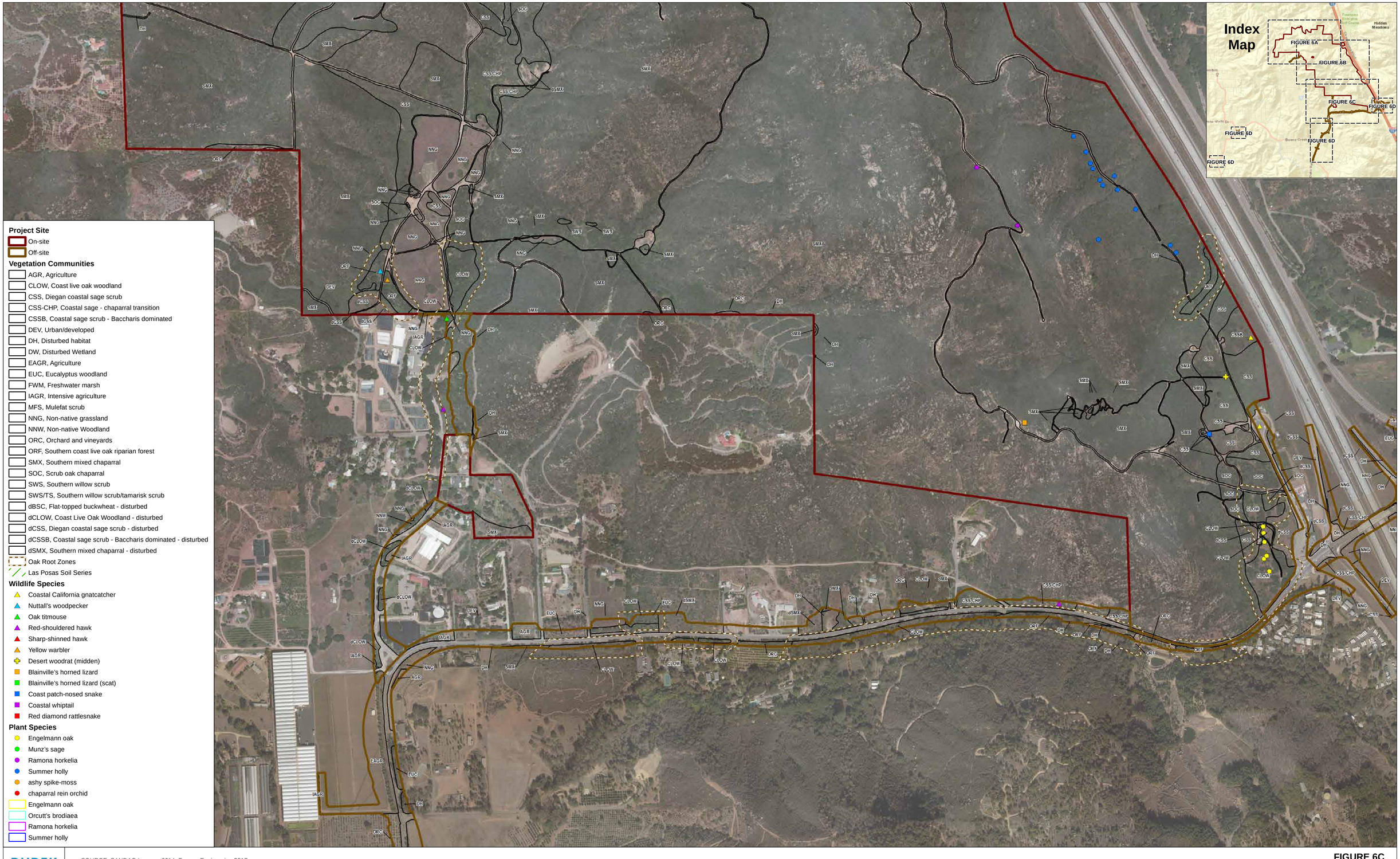

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SOURCE: SANDAG Imagery 2014; Fuscoe Engineering 2017

FIGURE 6C

Biological Resources

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Project Site
- On-site
- Off-site

Wildlife Species
- Coastal California gnatcatcher
- Nuttall's woodpecker
- Oak titmouse
- Red-shouldered hawk
- Sharp-shinned hawk
- Yellow warbler
- Desert woodrat (midden)
- Blainville's horned lizard
- Blainville's horned lizard (scat)
- Coast patch-nosed snake
- Coastal whiptail
- Red diamond rattlesnake

Plant Species
- Engelmann oak
- Munz's sage
- Ramona horkelia
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- ashy spike-moss
- chaparral rein orchid
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- Orcutt's brodiaea
- Ramona horkelia
- Summer holly

Vegetation Communities
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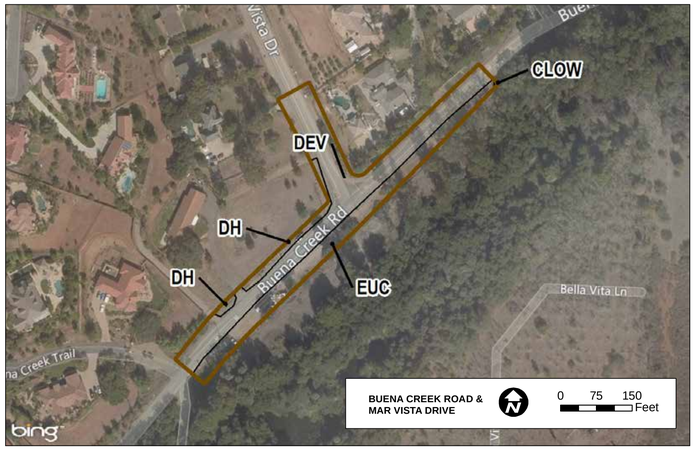

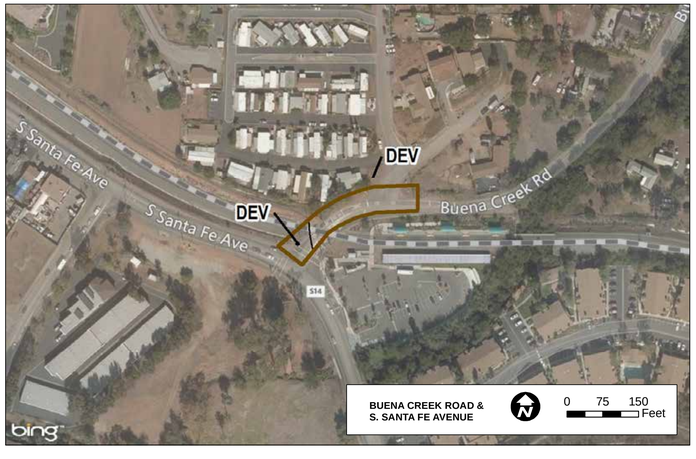

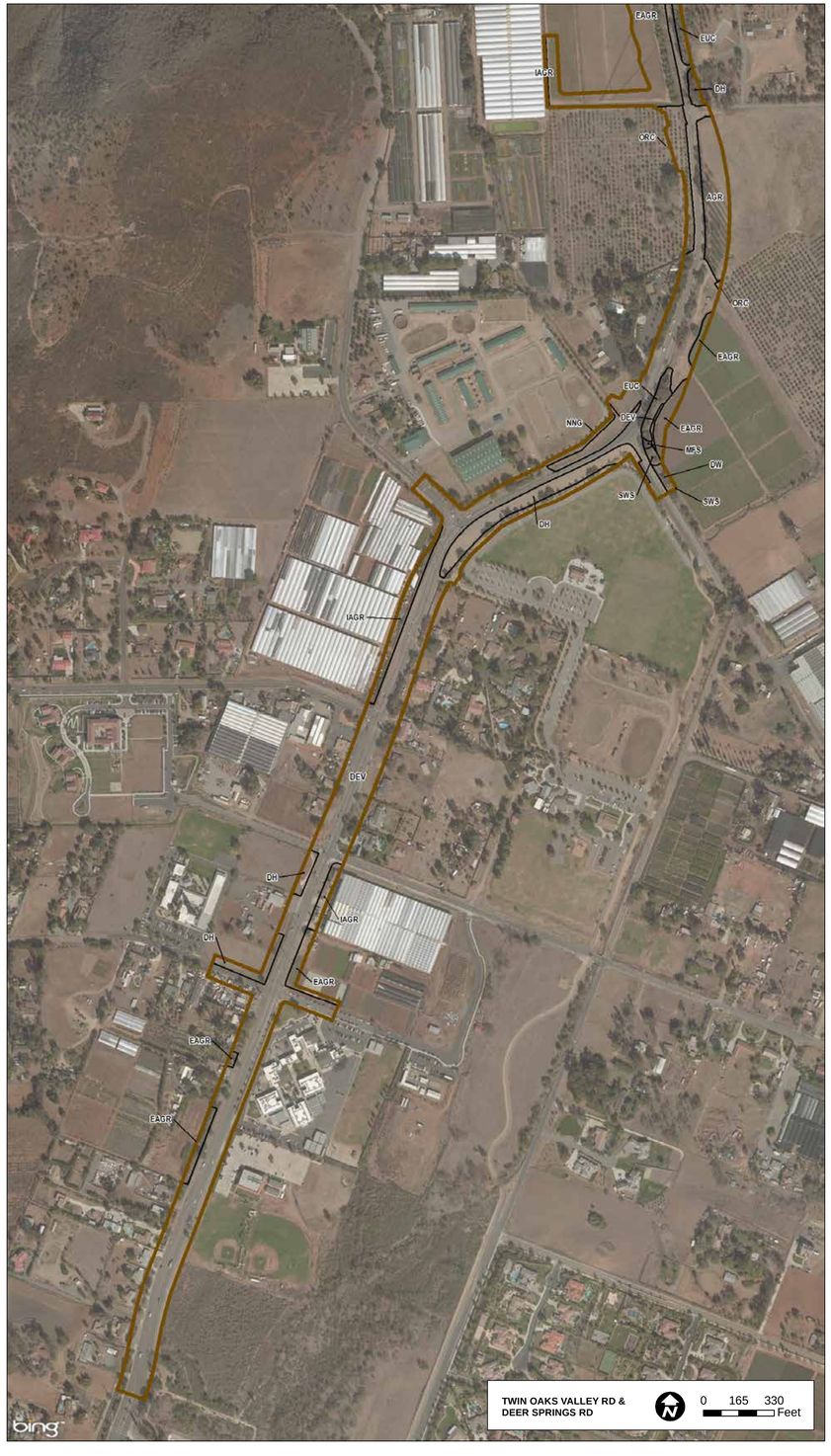

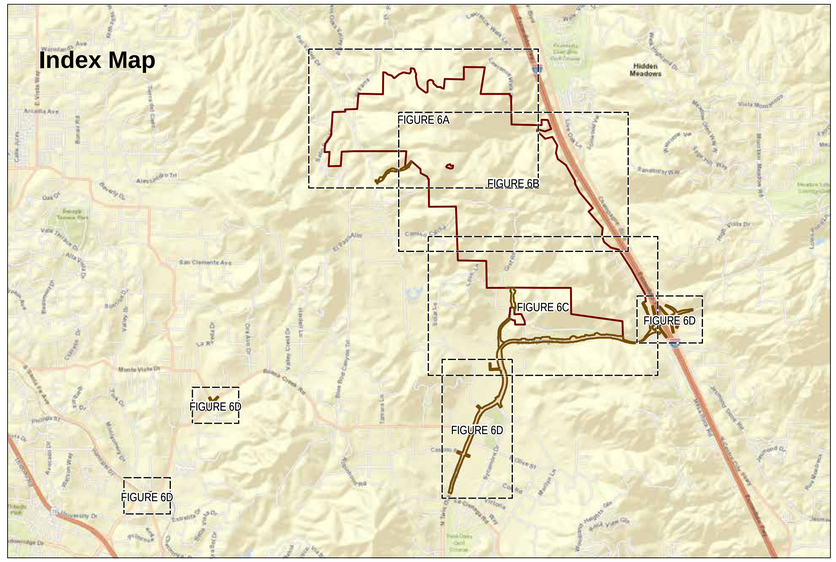

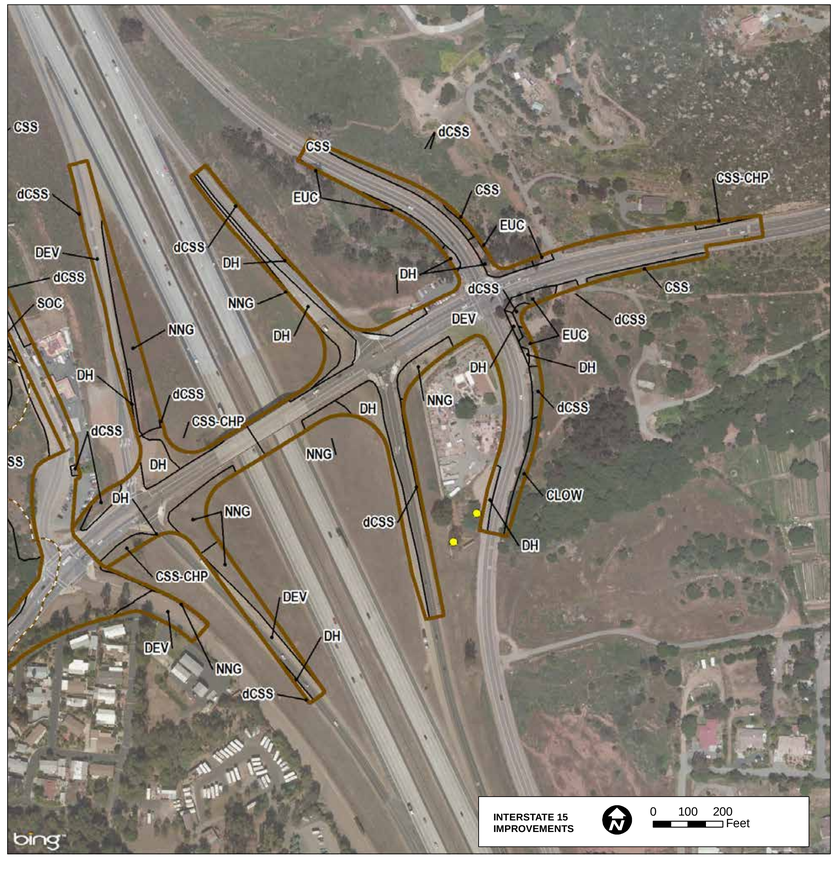

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SOURCE: SANDAG IMAGERY 2014; FUSCOE ENGINEERING 2016

FIGURE 6D
Biological Resources

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Proposed Sewer Line

100-Ft Buffer Of 30-Ft Sewer Easement

Vegetation Mapping

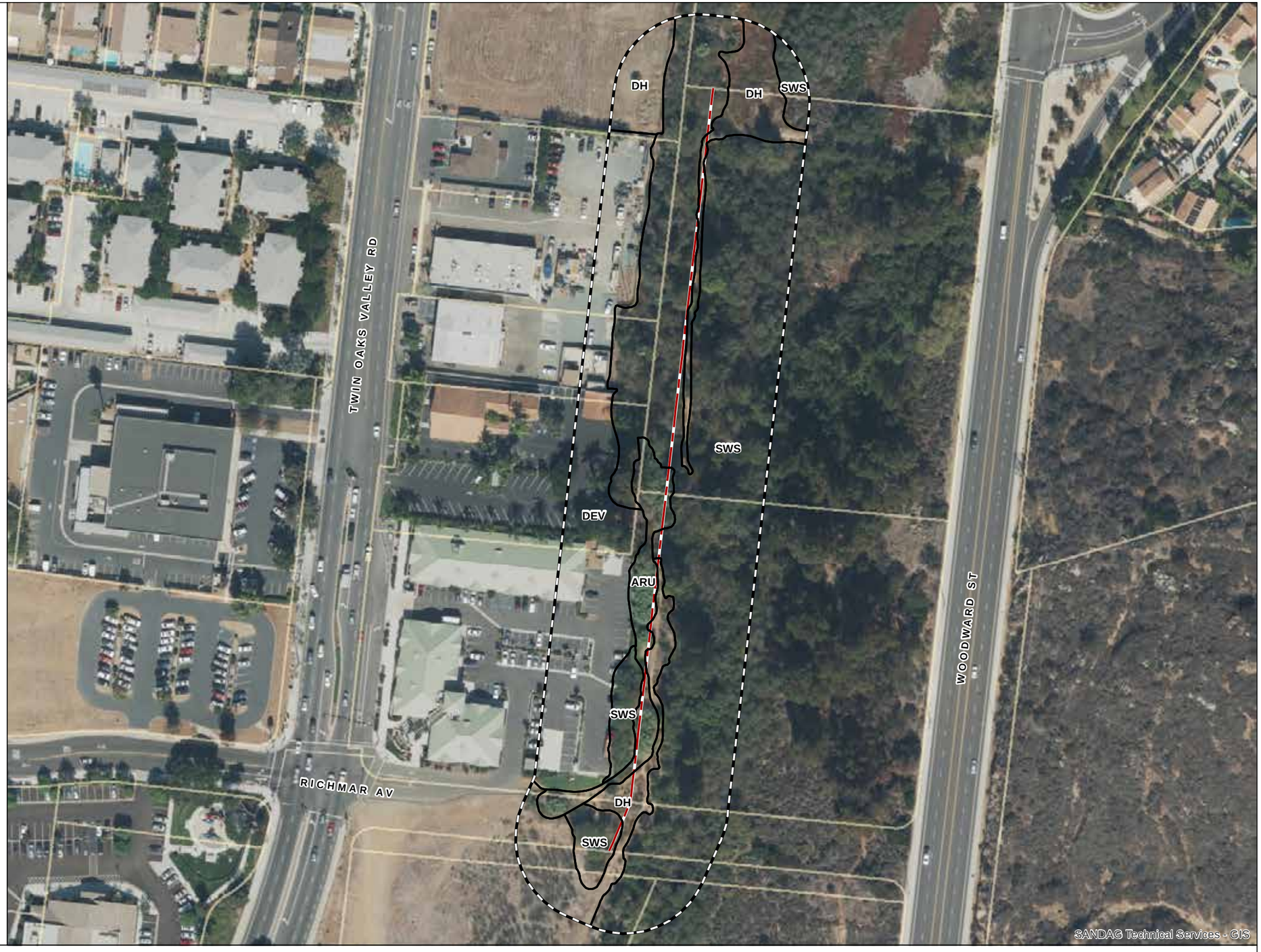
Vegetation Communities/Land Covers

ARU, Arundo Dominated Riparian

DEV, Urban Developed Ornamental

DH, Disturbed Habitat

SWS, Southern Willow Scrub



N 0 60 120 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014

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FIGURE 6E

Biological Resources for Off-Site Wastewater Upgrade East of Twin Oaks Valley Road

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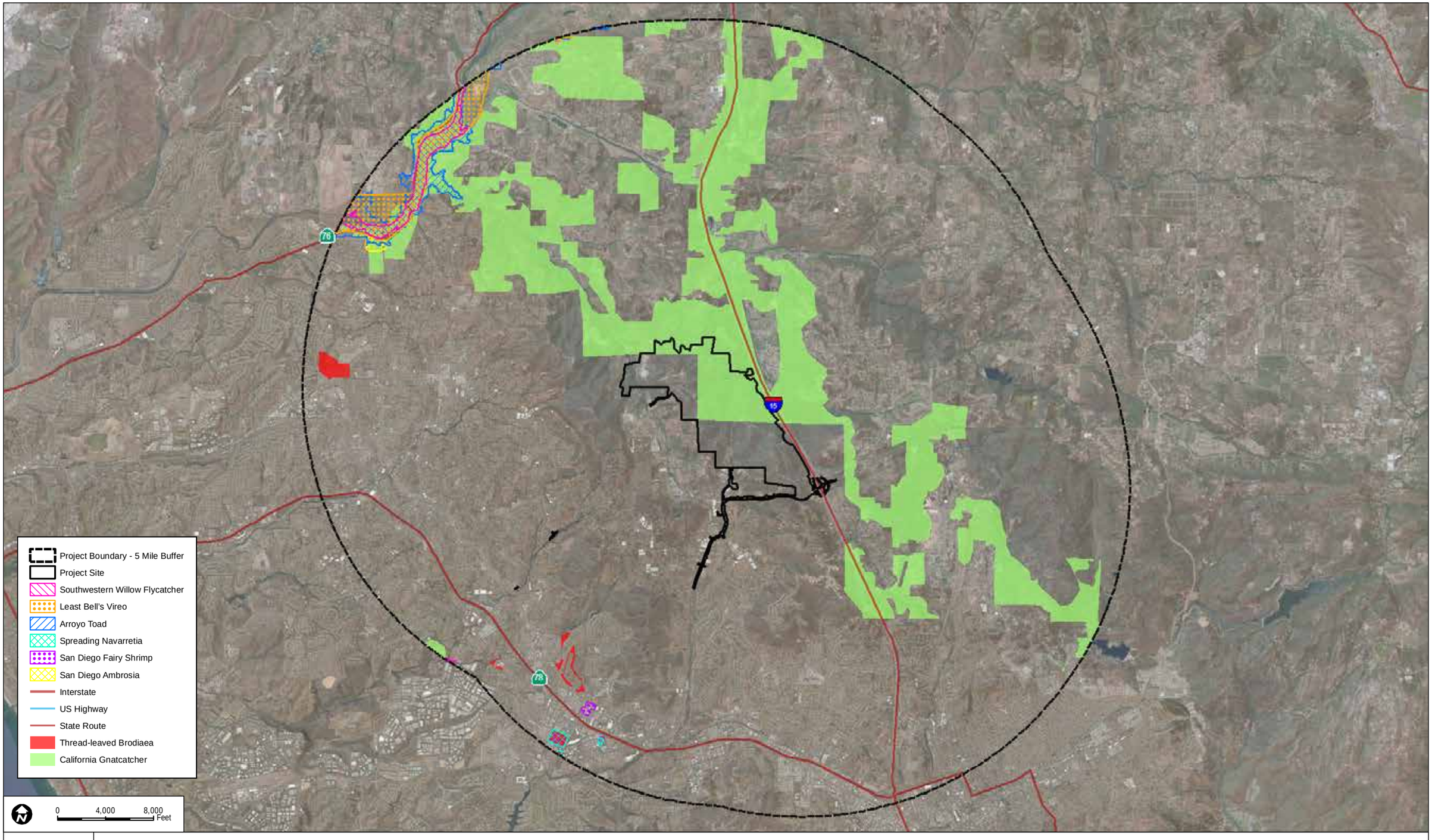

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SOURCE: Bing 2016; USFWS 2014

FIGURE 7

Critical Habitat

Biological Resources Report for the Newland Sierra Project

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Project Site
- On-site
- Off-site
- RPO 75-Ft Buffer
- Data Stations

Jurisdictional Waters (ACOE/CDFW/RWQCB)
- Ephemeral
- Intermittent
- Perennial
- RPO Wetlands

Jurisdictional Wetlands
- ACOE/CDFW/RWQCB/RPO COUNTY WETLANDS
- CDFW/COUNTY RPO WETLANDS
- CDFW ONLY

Vegetation Communities
- CLOW, Coast live oak woodland
- CSS, Diegan coastal sage scrub
- CSS-CHP, Coastal sage - chaparral transition
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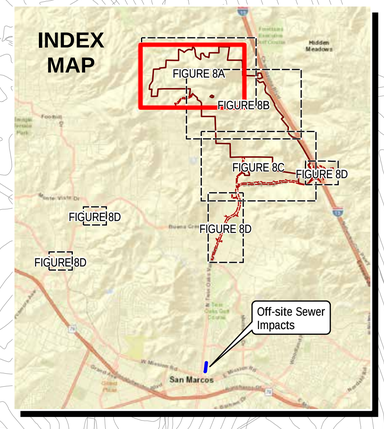

South Fork of Gopher Canyon

South Fork of Moosa Canyon

0 150 300 Feet

SOURCE:Topo-Fuscoe Engineering 2016

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7608-01

FIGURE 8A
Jurisdictional Resources

Biological Resources Report for the Newland Sierra Project

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Project Site
- On-site
- Off-site
- RPO 75-Ft Buffer
- Data Stations
- RPO Wetlands

Jurisdictional Wetlands
- ACOE/CDFW/RWQCB/RPO COUNTY WETLANDS
- CDFW/COUNTY RPO WETLANDS
- CDFW ONLY

Jurisdictional Waters (ACOE/CDFW/RWQCB)
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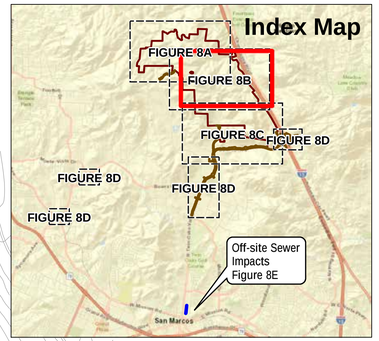
Index Map



0 150 300 Feet

SOURCE: Fuscoe Engineering 2016; CA Department of Conservation 2011

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FIGURE 8B
Jurisdictional Resources

Biological Resources Report for the Newland Sierra Project

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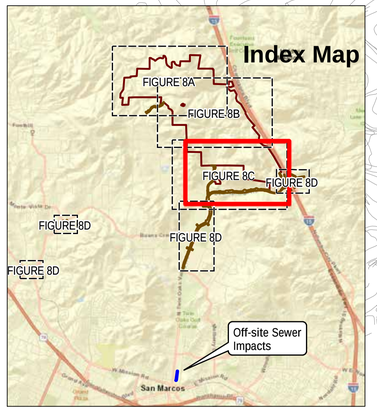

Project Site
- On-site
- Off-site
- RPO 75-Ft Buffer
- Data Stations

RPO Wet

Jurisdictional Wetlands
- ACOE/CDFW/RWQCB/RPO COUNTY WETLANDS
- CDFW/COUNTY RPO WETLANDS
- CDFW ONLY

Jurisdictional Waters (ACOE/CDFW/RWQCB)
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0 165 330 Feet

SOURCE: Fuscoe Engineering 2016; CA Department of Conservation 2011

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FIGURE 8C

Jurisdictional Resources

Biological Resources Report for the Newland Sierra Project

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Project Site
- On-site
- Off-site
- RPO Wetlands

Jurisdictional Wetlands
- ACOE/CDFW/RWQCB/RPO COUNTY WETLANDS
- CDFW/COUNTY RPO WETLANDS
- ACOE/CDFW/RWQCB WETLANDS
- CDFW ONLY

Jurisdictional Waters (ACOE/CDFW/RWQCB)
- Ephemeral
- Intermittent
- Perennial

Vegetation Communities
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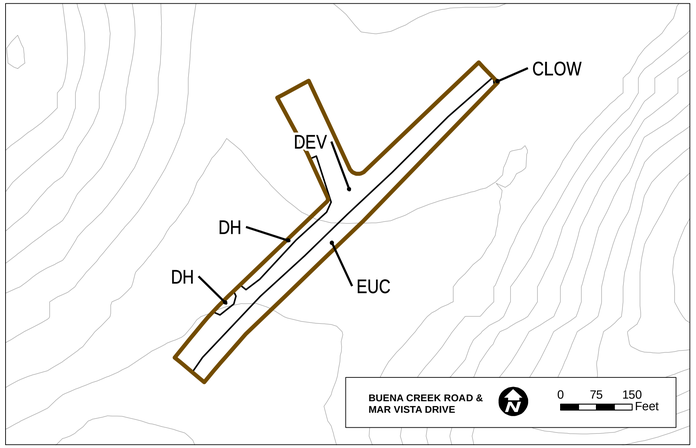

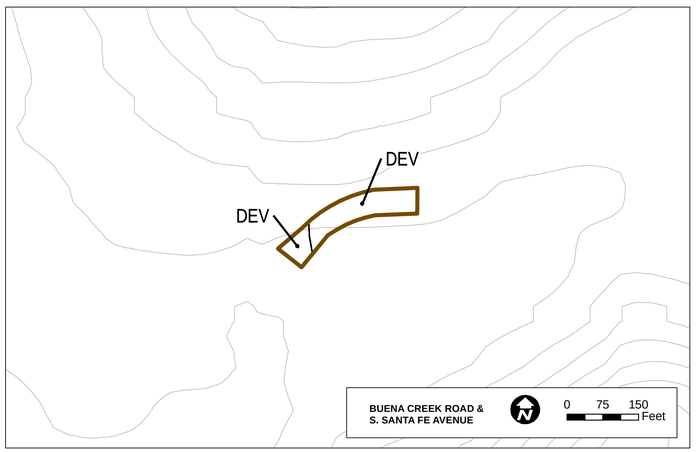

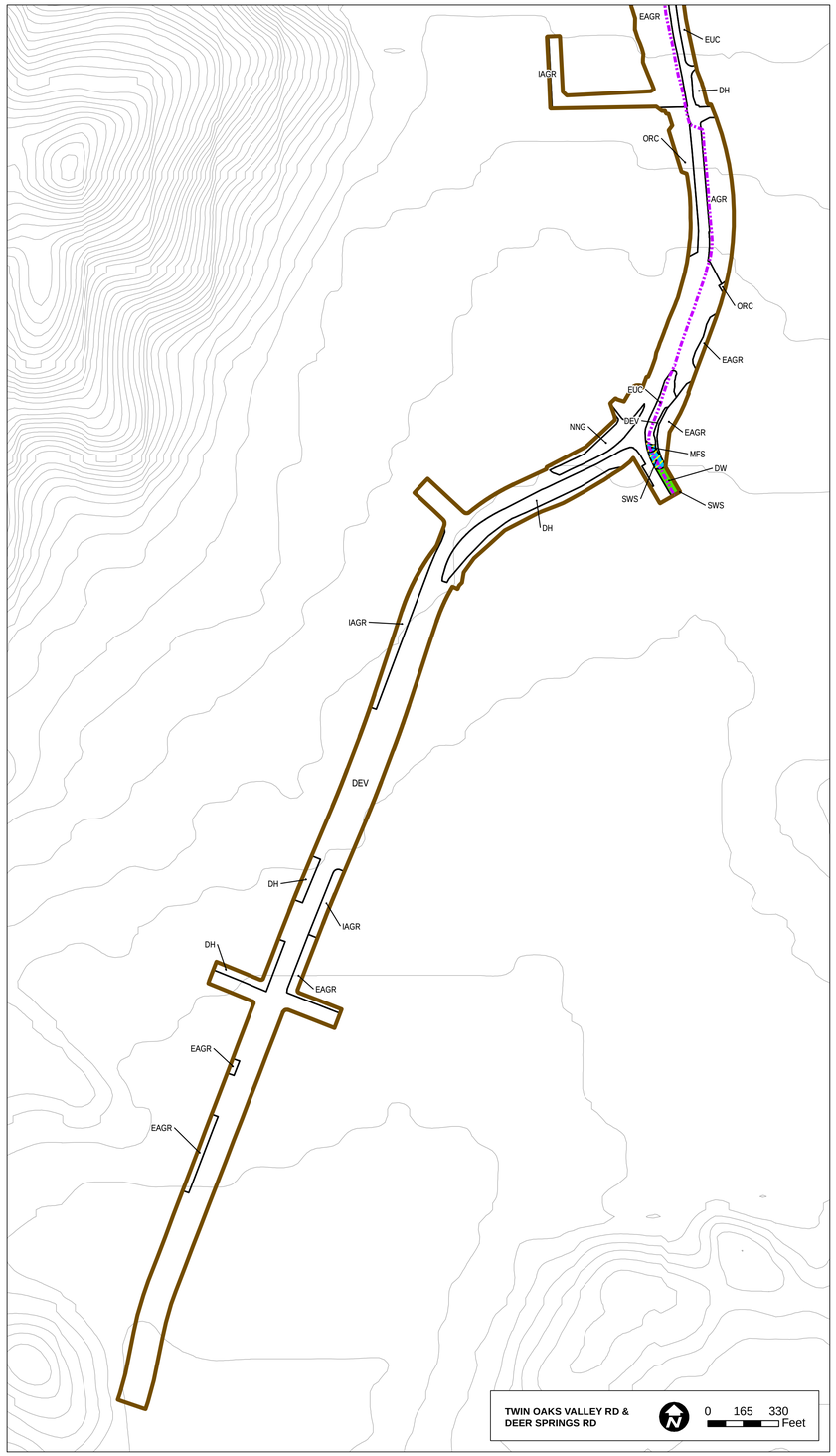

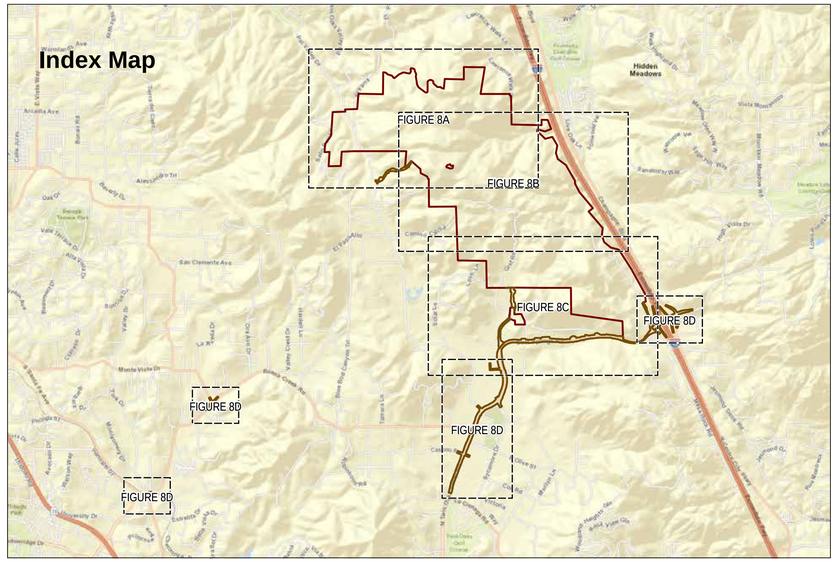

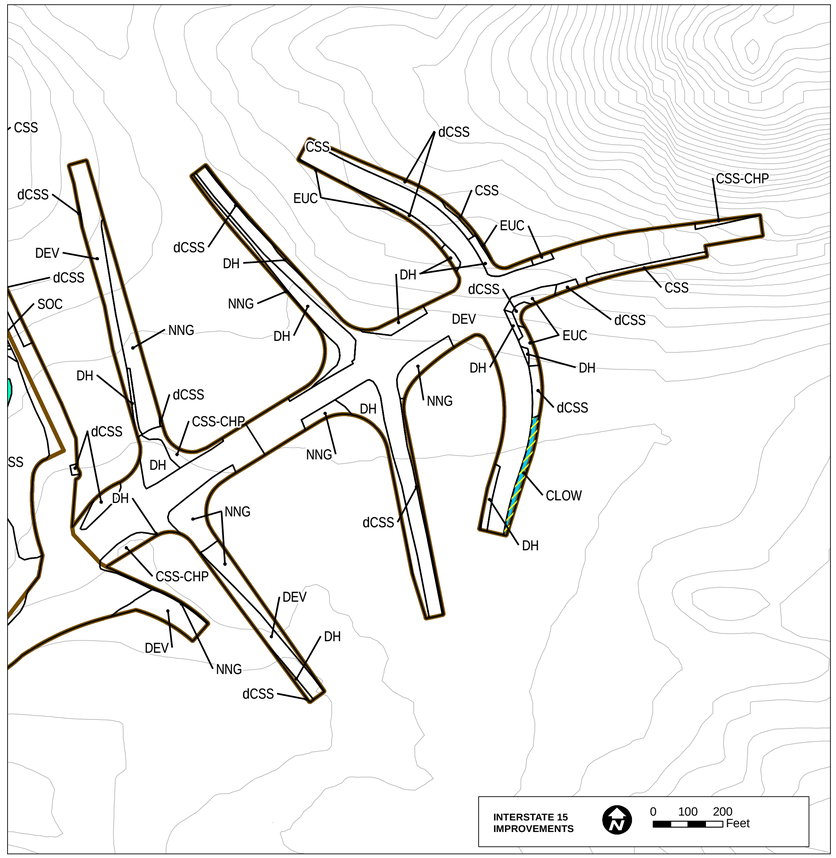

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7608-01

SOURCE: SANDAG IMAGERY 2014; FUSCOE ENGINEERING 2016

FIGURE 8D
Jurisdictionall Resources

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100-Ft Buffer Of 30-Ft Sewer Easement

Proposed Sewer Line

Vegetation Mapping

Jurisdictional Wetlands

ACOE/CDFW/RWQCB/RPO COUNTY WETLANDS

Vegetation Communities/Land Covers

ARU, Arundo Dominated Riparian

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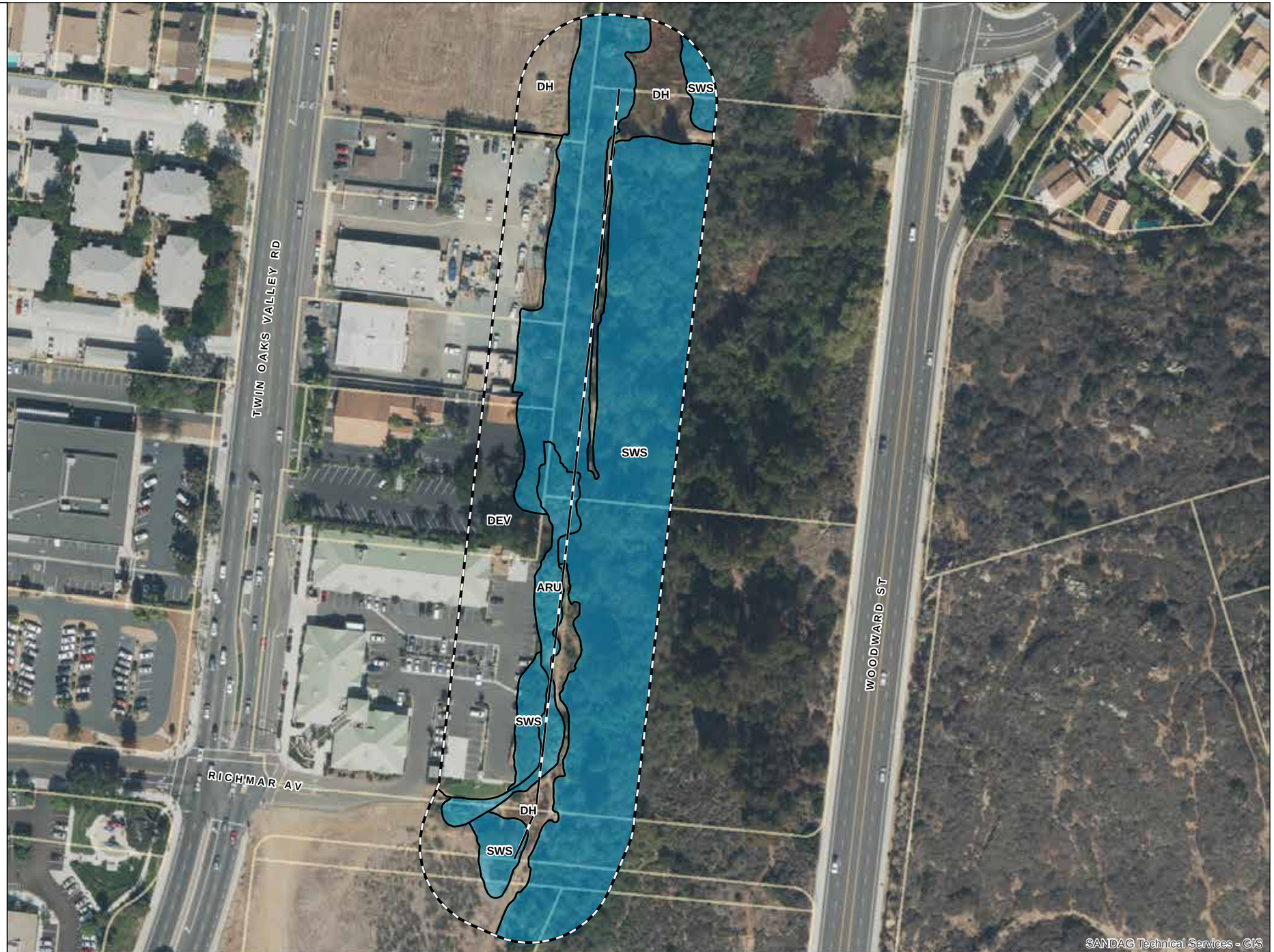
SWS, Southern Willow Scrub



N 0 60 120 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014

FIGURE 8E

Jurisdictional Resources for Off-Site Wastewater Upgrade East of Twin Oaks Valley Road

Biological Resources Technical Report for the Newland Sierra Project

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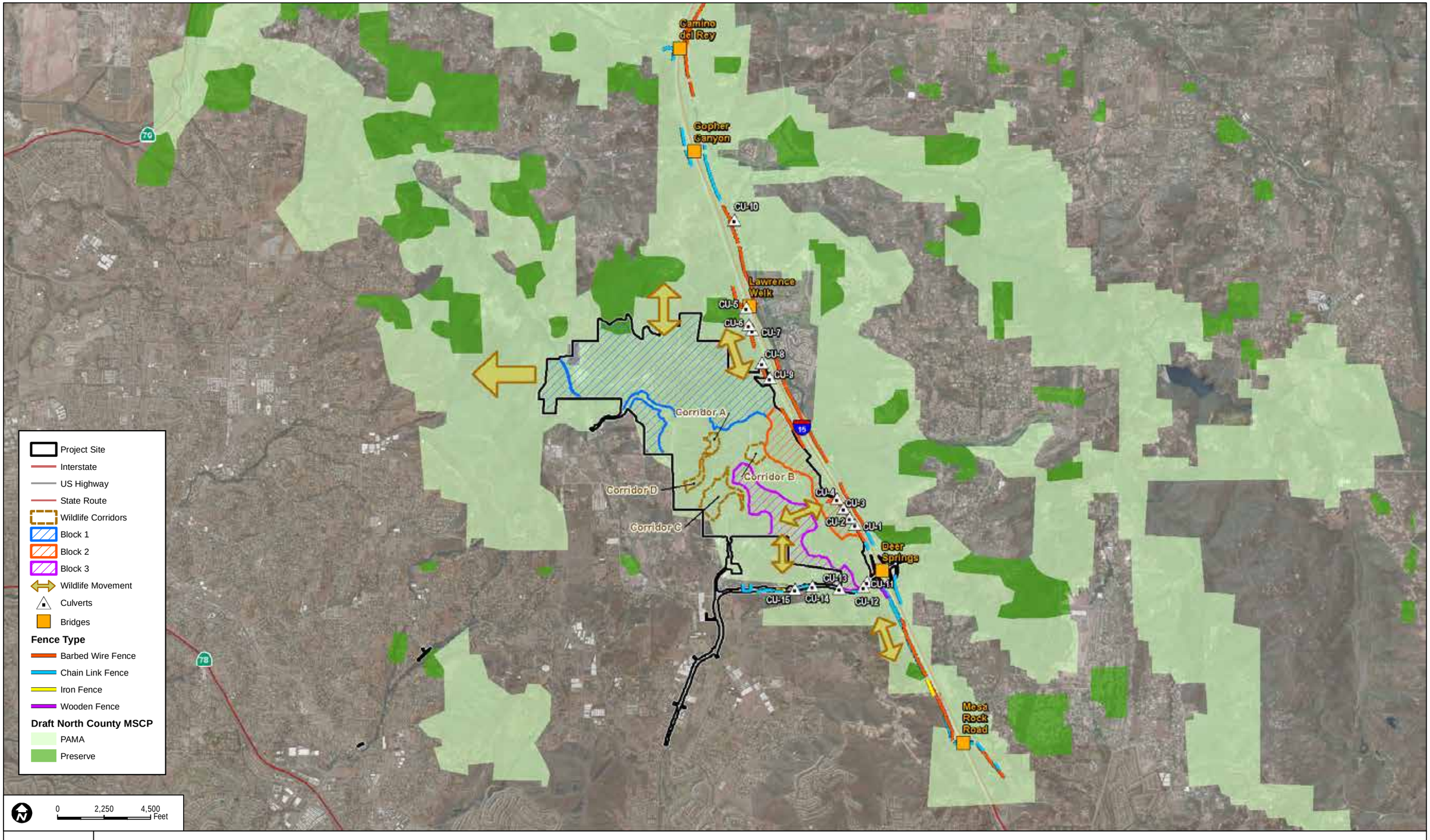

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SOURCE: Bing 2016; County of San Diego 2014

FIGURE 9

Wildlife Connectivity

Biological Resources Report for the Newland Sierra Project

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2 PROJECT EFFECTS

2.1 Definition of Impacts

This section defines the types of impacts considered in this report to analyze the potential effects of the proposed project on biological resources. The proposed project is shown in Figure 10, Proposed Uses. These impacts are discussed in more detail as follows.

Direct impacts were quantified by overlaying the anticipated limits of grading on the biological resources and quantifying impacts. For purposes of this report, direct permanent impacts refer to the areas where the development, roads, and FMZs are proposed. Direct temporary impacts refer to the areas where grading and temporary construction areas are proposed within the open space; these areas would be restored and thus are considered temporary. Direct impacts were quantified by overlaying the proposed impacts on GIS-located biological resources.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the proposed development, roads, and FMZ. Indirect impacts may affect areas within the defined project Site but outside the limits of grading, non-impacted areas, and areas outside the project Site, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to trail use and development of the project Site. In most cases, indirect effects are not quantified, but in some cases quantification might be included, such as using a noise contour to quantify indirect impacts to nesting birds.

Cumulative impacts refer to the combined environmental effects of the proposed project and other relevant projects. In some cases, the impact from a single project may not be significant, but when combined with other projects, the cumulative impact may be significant.

2.2 Vegetation Communities/Land Covers

2.2.1 Direct Impacts to Vegetation Communities/Land Covers

2.2.1.1 Temporary Direct Impacts

Impact V-1: Temporary Direct Impacts to Special-Status Vegetation Communities

Short-term, construction-related, or temporary direct impacts to vegetation communities would primarily result from construction activities, including temporary grading and temporary construction areas within the open space areas (Figures 11A–11E, Impacts to Biological Resources). These areas would be restored according the revegetation plan and would not be subject to repeated disturbance (see Appendix J). On-site temporary impacts are quantified in Table 2-1. As described in Section 1.2.2, the Deer Springs Road improvements includes an Option A and an Option B; Table 2-2 includes the off-site temporary impacts for the Deer Springs Road Option A and Option B; and Table 2-3 includes the additional off-site road improvements.

Table 2-1
On-Site Temporary Direct Impacts to Vegetation Communities and Land Cover Types

General Vegetation Community/Land Cover Type	Temporary Impacts (Acres)
Coastal Scrub	
Diegan coastal sage scrub*	2.6
Coastal sage – chaparral transition*	0.1
Subtotal	*2.7*
Chaparral	
Granitic southern mixed chaparral*	5.8-6.3[1]
Scrub oak chaparral*	<0.1
Subtotal	*5.8-6.3*
Non-native Communities and Land Covers	
Disturbed habitat	0.2
Total[2]	**8.7-9.2[1]**
Other	
RPO wetland buffers[3, 4]	<0.1

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 A portion of these temporary impacts are associated with the off-site Deer Springs Road Improvement and include 1.7 acres (Option A) or 2.2 acres (Option B).
2 Totals may not add due to rounding.
3 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.
4 This is an RPO resource and is described further in the RPP.

Table 2-2
Off-Site Temporary Direct Impacts to Vegetation Communities and Land Cover Types (Deer Springs Road)

General Vegetation Community/Land Cover Type	Temporary Impacts (Ac.)	
	Option A	*Option B*
Coastal Scrub		
Coastal sage – chaparral transition*	0.4	0.6
Chaparral		
Granitic southern mixed chaparral* (including disturbed)	0.5	0.7
Woodland		
Coast live oak woodland* (including disturbed)	1.0	1.1
Riparian		
Southern coast live oak riparian forest*	0.5	0.5
Disturbed wetland	0.1	0.1
Mulefat scrub	<0.01	<0.01
Southern willow scrub	0.04	0.04
Subtotal	*0.7*	*0.7*
Non-native Communities and Land Covers		
Agriculture	0.6	0.6
Disturbed habitat	0.6	0.7

Table 2-2
Off-Site Temporary Direct Impacts to Vegetation Communities and Land Cover Types (Deer Springs Road)

General Vegetation Community/Land Cover Type	Temporary Impacts (Ac.)	
	Option A	*Option B*
Eucalyptus	0.4	0.4
Non-native grassland*	0.4	0.5
Orchard and vineyards	0.7	0.8
Urban/developed	5.0	5.1
Intensive agriculture	0.6	0.6
Extensive agriculture	1.7	1.7
Subtotal	*10.1*	*10.5*
Total[1]	**12.8**	**13.6**
Other[2]		
RPO wetland buffers[2, 3]	1.4	1.4

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 Totals may not add due to rounding.
2 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.
3 This is an RPO resource and is described further in the RPP.

Table 2-3
Additional Off-Site Temporary Direct Impacts to Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Coastal Scrub								
Diegan coastal sage scrub (including disturbed)*	—	0.2	—	—	—	—	0.6	0.8
Coastal sage – chaparral transition*	—	—	—	—	—	—	0.2	0.2
Chaparral								
Granitic southern mixed chaparral* (including disturbed)	1.0	—	0.6	—	—	—	—	1.6
Woodland								
Coast live oak woodland (including disturbed)*	—	—	0.4	—	<0.01	—	0.1	0.5
Riparian								
Southern willow scrub*	<0.01	—	—	—	—	—	—	<0.01
Grassland								
Non-native grassland*	—	—	<0.01	—	—	—	0.8	0.8
Non-native Communities and Land Covers								
Intensive agriculture	—	—	0.3	—	—	—	—	0.3
Extensive agriculture	—	—	<0.1	—	—	—	—	<0.01

Table 2-3
Additional Off-Site Temporary Direct Impacts to Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Eucalyptus woodland	—	—	—	—	0.3		0.1	0.4
Orchard and vineyards	0.1	—	—	—	—	—	—	0.1
Urban/developed	0.2	0.3	0.4	—	0.3	<0.1	1.7	2.9
Disturbed habitat	0.2	—	0.1	—	0.1	—	0.6	1.1
Non-native woodland	—	—	0.1	—	—	—	—	0.1
Subtotal	0.5	0.3	1.0	—	—	—	2.4	4.9
Total [1]	1.5	0.5	2.0	—	0.7	<0.1	4.1	8.8
Other								
RPO wetland buffers[2, 3]	0.2	—	<0.01	—	0.3	—	0.3	0.7

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 Totals may not add due to rounding.
2 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.
3 This is an RPO resource and is described further in the RPP.

In addition, clearing, trampling, or grading of vegetation outside designated construction zones could occur and be significant. These potential effects could damage vegetation communities and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.2.1.2 Permanent Direct Impacts

Impact V-2: Permanent Direct Impacts to Special-Status Vegetation Communities

Long-term or permanent direct impacts to vegetation communities were quantified by comparing the impact footprint with the boundaries of the vegetation communities mapped in the project Site. Direct impacts to vegetation communities would occur as a result of grading activities, construction of the proposed project (including roads, residential units, commercial space, school, and parks), and FMZs (Figures 11A–11E). Table 2-4 shows the acreage of permanent direct impacts to vegetation communities in the project Site as a result of these activities. Table 2-5 includes the off-site permanent direct impacts for the Deer Springs Road Option A and Option B. Table 2-6 includes the additional off-site permanent direct impacts. The significance determination for these impacts is determined through application of the County Significance Guidelines described in Section 4.

Table 2-4
On-Site Permanent Direct Impacts to Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Existing Acres	Development/ Access Roads	FMZs	Total Impacts
Coastal Scrub				
Diegan coastal sage scrub (including disturbed) *	68.2	18.1	27.5	45.6
Coastal sage scrub – Baccharis dominated (including disturbed)	2.0	0.2	1.4	1.5
Flat-topped buckwheat – disturbed*	1.7	—	—	0
Coastal sage – chaparral transition*	7.8	5.0	2.4	7.4
Subtotal	*79.7*	*23.2*	*31.4*	*54.5*
Chaparral				
Granitic southern mixed chaparral* (including disturbed)	1,700.7	307.3	319.6	626.9
Mafic southern mixed chaparral*	58.8	0.8	—	0.8
Scrub oak chaparral*	44.3	33.4	5.8	39.2
Subtotal	*1,803.8*	*341.5*	*325.4*	*666.9*
Woodland				
Coast live oak woodland *	9.1	5.9	0.6	6.5
Riparian[1]				
Freshwater marsh*	0.1	—	—	—
Southern coast live oak riparian forest*	5.2	—	1.9	1.9
Mulefat scrub*	0.2	<0.1	0.1	0.1
Southern willow scrub*	2.5	0.1	—	0.1
Southern willow scrub/tamarisk scrub*	0.3	—	—	—
Subtotal	*8.3*	*0.1*	*2.0*	*2.1*
Grassland				
Non-native grassland*	16.1	12.5	2.8	15.3
Non-native Communities and Land Covers				
Eucalyptus woodland	0.5	—	—	—
Intensive agriculture	<0.0	—	<0.1	<0.0
Orchard and vineyards	2.0	<0.1	0.9	1.0
Urban/developed	9.2	9.1	0.1	9.2
Disturbed habitat	57.0	14.2	6.8	21.0
Subtotal	*68.7*	*23.3*	*7.8*	*31.1*
Total[2]	**1,985.6**	**406.6**	**369.9**	**776.6**
Other				
RPO wetland buffers[3]	30.2	4.4	4.3	8.7

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 These are an RPO resource and are described further in the RPP.
2 Totals may not add due to rounding.
3 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.

Table 2-5
Off-Site Permanent Direct Impacts to
Vegetation Communities and Land Cover Types (Deer Springs Road)

General Vegetation Community/Land Cover Type	Option A	Option B
Coastal Scrub		
Coastal sage – chaparral transition*	1.3	1.6
Chaparral		
Granitic southern mixed chaparral* (including disturbed)	1.2	1.8
Woodland		
Coast live oak woodland *	2.1	2.2
Riparian		
Southern coast live oak riparian forest*	0.8	0.8
Mulefat scrub	0.03	0.03
Southern willow scrub	0.1	0.1
Subtotal	*0.9*	*0.9*
Grassland		
Non-native grassland*	1.1	1.5
Non-native Communities and Land Covers		
Agriculture	1.9	2.0
Disturbed habitat	2.9	3.2
Eucalyptus woodland	1.3	1.6
Orchard and vineyards	1.3	1.3
Urban/developed	28.2	28.8
Intensive agriculture	0.9	0.9
Extensive agriculture	4.4	4.4
Subtotal	*40.9*	*42.2*
Total [1]	**47.5**	**50.2**
Other		
RPO wetland buffers[2, 3]	3.7	3.7

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 Totals may not add due to rounding.
2 This is an RPO resource and is described further in Section 4.2.5 and the RPP.
3 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.

Table 2-6
Additional Off-Site Permanent Direct Impacts to
Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Coastal Scrub								
Diegan coastal sage scrub (including disturbed)*	—	0.3	—	—	—	—	0.2	0.5

Table 2-6
Additional Off-Site Permanent Direct Impacts to
Vegetation Communities and Land Cover Types

General Vegetation Community/ Land Cover Type	Camino Mayor	Mesa Rock Road	Sarver Lane	Sewer Improvements	Mar Vista	South Santa Fe	I-15 Interchange	Total Additional Off-Site
Coastal sage – chaparral transition*	—	—	—	—	—	—	0.1	0.1
Chaparral								
Granitic southern mixed chaparral* (including disturbed)	1.9	—	2.6	—	—	—	—	4.5
Woodland								
Coast live oak woodland (including disturbed)*	—	—	0.6	—	—	—	<0.1	0.6
Riparian								
Southern willow scrub*	0.1	—	—	0.3	—	—	—	0.4
Arundo-dominated riparian	—	—	—	0.1	—	—	—	0.1
Grassland								
Non-native grassland*	—	—	<0.1	—	—	—	1.0	1.1
Non-native Communities and Land Covers								
Intensive agriculture	—	—	0.5	—	—	—	—	0.5
Extensive agriculture	—	—	0.1	—	—	—	—	0.1
Eucalyptus woodland	—	—	—	—	0.3	—	0.1	0.4
Orchard and vineyards	0.6	—	—	—	—	—	—	0.6
Urban/developed	0.2	1.6	1.8		0.8	0.3	7.2	12.0
Disturbed habitat	0.6	—	0.3	0.2	<0.1		1.0	1.9
Non-native woodland	—	—	0.2	—	—	—	—	0.2
Subtotal	1.4	1.6	2.9	0.2	1.1	0.3	8.4	15.7
Total [1]	3.4	1.9	6.0	0.6	1.1	0.3	9.8	23
Other								
RPO wetland buffers[2, 3]	0.3	--	--	--	0.2	--	0.6	1.1

* Vegetation community is considered special-status by the County and requires mitigation (County of San Diego 2010a).
1 Totals may not add due to rounding.
2 This is an RPO resource and is described further in Section 4.2.5 and the RPP.
3 The RPO wetland buffers (75-foot buffer) are an overlay and not counted toward the overall acreage.

2.2.2 Indirect Impacts to Vegetation Communities

2.2.2.1 Temporary Indirect Impacts

Impact V-5: Temporary Indirect Impacts to Special-Status Vegetation Communities

Potential short-term or temporary indirect impacts to special-status vegetation communities in the project Site would primarily result from construction activities and include impacts related to

or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all the special-status vegetation communities that occur within the project Site are described in detail below.

Generation of Fugitive Dust. Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

Changes in Hydrology. Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. Hydrologic alterations include changes in flow rates and patterns in streams, which may affect adjacent and downstream vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Direct impacts, as described previously, can also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants. No herbicides would be used during construction.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.2.2.2 Permanent Indirect Impacts

Impact V-6: Permanent Indirect Impacts to Special-Status Vegetation Communities

Long-term or permanent indirect impacts could result from the proximity of the proposed project to special-status vegetation communities after construction (e.g., maintenance of roads, residential units, commercial space, school, and parks). Permanent indirect impacts that could affect special-status vegetation communities include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime. Each of these potential indirect impacts is discussed as follows.

Generation of Fugitive Dust. The effects of fugitive dust on special-status vegetation communities would be the same as the temporary indirect impacts described in Section 2.2.2.1.

Habitat Fragmentation. Habitat fragmentation and isolation of plant populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes; and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986). Although these effects are more readily observable in wildlife, there are potential ecological effects, such as changes in pollinator populations, which can result in altered plant community composition and thus adversely affect special-status vegetation communities.

Chemical Pollutants. The effects of chemical pollutants on special-status vegetation communities would be the same as the temporary indirect impacts described in Section 2.2.2.1. Landscaping activities may use herbicides to prevent vegetation from reoccurring around roads, residential units, commercial space, school, and parks. However, weed control treatments shall include all legally permitted chemical, manual, and mechanical methods applied with the authorization of the San Diego County agriculture commissioner. Additionally, the herbicides used during landscaping activities would be contained within the proposed impact footprint.

Altered Hydrology. As described in Section 1.2, the proposed project includes well-designed stormwater facilities. For purposes of analyzing potential indirect impacts associated with hydrology, urban run-off associated with landscaping and irrigation are described here. Water would be used for landscaping purposes within residential units and maintained shared spaces (e.g., parks). These sources may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status vegetation communities. Altered hydrology can allow for the establishment of non-native plants and/or invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators (see Non-Native, Invasive Plant and Animal Species.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and unique vegetation communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within special-status vegetation communities.

As stated under Altered Hydrology, human-mediated increases in soil moisture is one of the primary causes of Argentine ant invasions into natural habitats that border development and agricultural uses. Invasive ants, including Argentine ants, may significantly disrupt the natural ecosystems within their introduced range. Argentine ants may become abundant within their introduced range and may drive out or kill native ants of a newly invaded territory (Holway et al. 2002; Suarez et al. 1998). This displacement of native ants is the most obvious and widely reported effect of non-native ants and may cause as high as 90 percent or more reduction of native ant abundance (Holway et al. 2002). The displaced ants often are ecologically similar to the invasive ants (e.g., occupy similar ecological niches, use same food resources), but displaced ants may also be ecologically different (e.g., use different food sources), such as harvester ant species that are displaced by Argentine ants in California (Holway et al. 2002a).

Argentine ant encroachments and invasions of natural upland vegetation such as sage scrub, chaparral and non-native grassland are dynamic and influenced by various abiotic and biotic variables, including moisture, plants, soil conditions, and patch size. However, the Staubus et al. (2015), Menke and Holway (2006), Bolger (2007), and Bodeman (2014) studies all suggest that maintaining xeric conditions in natural upland habitats can effectively control serious encroachments and invasions by Argentine ants. As recommended in several of the studies (Bolger 2007; Bodeman 2014; Menke and Holway 2006; Staubus et al. 2015), management efforts should address source populations at urban edges, and regulate water and moisture conditions at edges with natural areas.

Potential impacts would be reduced by design features, including bioretention swales and bioretention basins that have been integrated into the proposed project design, along with additional LID features such as roadside swales. To eliminate potential flooding impacts during peak storm events, stormwater detention would be provided prior to runoff exiting the project Site. Drainage improvements would also be constructed for the off-site road improvements. In addition, the structure of the FMZ for the proposed project, which includes an extra 150 feet of fuel modification above and beyond the typical 100 feet, would provide for buffers from development and the proposed biological open space preserve. Within Zone 1 of the FMZ, which extends 100 feet from structures, all flammable native vegetation shall be removed except for species approved by the Deer Springs Fire Protection District (see Appendix N of EIR). This zone would be planted with drought-tolerant, fire-resistive plants from San Diego County Fire Chief's Association Fuel Modification Zone Plant Reference List, and an automatic irrigation system would be installed in this area to maintain hydrated plants without over-watering and creating run-off. However, overwatering of landscaping within development could extend into this zone. Therefore, the additional 150 feet of FMZ, which would not include any irrigation, would be a "xeric zone" between development and preserve.

Increased Human Activity. The Site is currently subject to illegal/unauthorized activity, including hiking, biking, off-road vehicle activity, parties, trash dumping, homeless activities, and camping. With the development and associated open space preserve, all of these activities except the biking and hiking would cease and the hiking/biking would be managed and kept to select trails. The other trails would be closed and new trail creation (which currently occurs) would stop. Therefore, the proposed development is expected to lead to a decrease in human activity on the project Site.

Alteration of the Natural Fire Regime. The proposed project could potentially increase the risk of fire, including but not limited to fire associated with electrical shorts or electrical equipment malfunction within developed neighborhoods or inadvertent/intentional ignitions within or adjacent to open space. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and in some cases, result in permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Malanson and O'Leary 1982; Keeley 1987; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.3 Special-Status Plant Species

2.3.1 Direct Impacts to Special-Status Plant Species

2.3.1.1 Temporary Direct Impacts

Impact SP-1: Temporary Direct Impacts to Special-Status Plant Species

Short-term, construction-related, or temporary direct impacts to special-status plants would primarily result from construction activities. Clearing, trampling, or grading of special-status plants outside designated construction zones could occur and be significant. These potential effects could damage individual plants and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion. There would also be temporary direct impacts to special-status plant species at the edge of the development/open space interface (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3). Special-status plant species on Site at the edge of the development/open space interface could be impacted by potential temporary direct impacts such as those previously listed. These areas

would be restored according the revegetation plan and would not be subject to repeated disturbance (see Appendix J).

The significance determination for these potential impacts is determined through application of the County Significance Guidelines as described in Section 3.1.

2.3.1.2 Permanent Direct Impacts

Impact SP-2: Permanent Direct Impacts to Special-Status Plant Species

Long-term or permanent direct impacts to special-status plant species were quantified by comparing the impact footprint with the occurrence data for each special-status plant species. Table 2-7 includes each species' County status, CRPR, estimates of the number of individuals on Site, and an assessment of permanent direct impacts based on the number of individual plants located within the impact footprint, and the estimated percentage of occurrences impacted on Site.

Table 2-7
Summary of Direct Impacts to Special-Status Plant Species

Species	CRPR	Approximate Number of Individuals within Project Site	Approximate Number of Individuals within On-Site Development Footprint	Estimated Percentage of Occurrences Impacted On Site
County List A				
Brodiaea orcuttii Orcutt's brodiaea	1B.1	50	0	0%
Comarostaphylis diversifolia ssp. *diversifolia* Summer holly	1B.2	1,356	196[1]	14%
Horkelia truncata Ramona horkelia	1B.3	62	62	100%
County List B				
Salvia munzii Munz's Sage	2.3	4	0	0%
County List D				
Piperia cooperi Chaparral rein orchid	4.2	5	5	100%
Quercus engelmannii Engelmann oak	4.2	28	18	64%
Selaginella cinerascens Ashy spike-moss	4.1	3	1	33%

[1] This total includes one individual plant which are located within a temporary 15-foot construction area. Although vegetation within this area would be restored and therefore impacts are considered temporary, impacts to special-status plants within the area are considered permanent.

2.3.2 Indirect Impacts to Special-Status Plant Species

2.3.2.1 Temporary Indirect Impacts

Impact SP-3: Temporary Indirect Impacts to Special-Status Plant Species

Potential short-term or temporary indirect impacts to special-status plant species in the project Site would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all special-status plant species that occur on the project Site are described in detail as follows.

Generation of Fugitive Dust. Excessive dust can decrease the vigor and productivity of special-status plants through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

Changes in Hydrology. Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. Hydrologic alterations include changes in flow rates and patterns in streams and rivers and dewatering, which may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Direct impacts, as described previously, can also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into special-status plant occurrences. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status plant species. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants. No herbicides would be used during construction.

All special-status plant species on Site, but especially those at the edge of the preserve/ development interface, could be impacted by potential temporary indirect impacts such as those previously listed. The significance determination for these impacts is determined through application of the County Significance Guidelines described in Section 3.

2.3.2.2 Permanent Indirect Impacts

Impact SP-4: Permanent Indirect Impacts to Special-Status Plant Species

Permanent indirect impacts could result from the proximity of the proposed project to special-status plants after construction. Permanent indirect impacts that could affect special-status plant species include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime. Each of these potential indirect impacts is discussed as follows.

Generation of Fugitive Dust. The effects of fugitive dust on special-status plants are described in Section 2.3.2.1.

Habitat Fragmentation. Habitat fragmentation and isolation of plant populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes; and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986).

Chemical Pollutants. The effects of chemical pollutants on special-status plants are described in Section 2.3.2.1.

Altered Hydrology. As described in Section 1.2, the proposed project includes well-designed stormwater facilities. For purposes of analyzing potential indirect impacts associated with hydrology, urban run-off associated with landscaping and irrigation are described here. Water would be used for landscaping purposes within residential units and maintained shared spaces (e.g., parks). These sources may alter the on-site hydrologic regime. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators (see Section 2.2.2.2). Potential impacts would be reduced by design features, including bioretention swales and bioretention basins that have been integrated into the project design, along with additional LID features such as roadside swales. To eliminate potential flooding impacts during peak storm events, stormwater detention would be provided prior to runoff exiting the project Site. Drainage improvements would also be constructed for the off-site road improvements.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients, and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species

may alter habitats and displace native species over time, leading to extirpation of native plant species. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for special-status plant species.

Increased Human Activity. The proposed project includes the development of seven neighborhoods, recreational facilities (e.g., parks), and designated open space. The Site is currently subject to illegal/unauthorized activity, including hiking, biking, off-road vehicle activity, parties, trash dumping, homeless activities, and camping. With the development and associated open space preserve, all of these activities except the biking and hiking would cease and the hiking/biking would be managed and kept to select trails. The other trails would be closed and new trail creation (which currently occurs) would stop. Therefore, the proposed development is expected to lead to a decrease in human activity on the project Site.

Alteration of the Natural Fire Regime. The proposed project could potentially increase the risk of fire, including but not limited to fire associated with electrical shorts or electrical equipment malfunction within developed neighborhoods or inadvertent/intentional ignitions within or adjacent to open space. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and result, in some cases, in permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Malanson and O'Leary 1982; Keeley 1987; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation.

Special-status plant species on Site, but especially those at the edge of the preserve/development interface, could be impacted by permanent direct impacts such as those previously listed. The significance determination for these potential impacts is determined through application of the County Significance Guidelines as described in Section 3.

2.4 Sensitive Wildlife Species

2.4.1 Direct Impacts to Special-Status Wildlife Species

2.4.1.1 Temporary Direct Impacts

Impact W-1: Temporary Direct Impacts to Special-Status Wildlife

Short-term, construction-related, or temporary direct impacts to special-status wildlife species would primarily result from construction activities, including temporary grading and temporary construction areas within the open space areas (Figures 11A–11E). These areas would be restored

according the revegetation plan and would not be subject to repeated disturbance (see Appendix J). Clearing, trampling, or grading of vegetation communities outside designated construction zones could occur and be significant. These potential effects could reduce suitable habitat for wildlife species and alter their ecosystem, thus creating gaps in vegetation that allow exotic, non-native plant species to become established. Potential temporary direct impacts to suitable habitat for special-status wildlife species on Site would be significant (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

2.4.1.2 Permanent Direct Impacts

Impact W-2: Permanent Direct Impacts to Special-Status Wildlife

Long-term or permanent direct impacts to special-status wildlife species were quantified by comparing the impact footprint with suitable habitat for wildlife species. The significance determination for these potential impacts is described in Section 3. These impacts are quantified in Table 2-8. Table 2-9 includes the off-site permanent direct impacts to suitable wildlife habitat for the Deer Springs Road Option A and Option B and other off-site roads.

Table 2-8
On-Site Direct Permanent Impacts to Observed County Group 1 Species and/or State SSC Species (acres)

	Species	Existing Suitable Habitat (acres)	Permanent Impacts to Suitable Habitat (acres)	Percent of Suitable Habitat Impacted
Reptiles	Coastal whiptail	1,965.7	764.2	39%
	Red-diamond rattlesnake	1,965.7	764.2	39%
	Blainville's horned lizard	1,965.7	764.2	39%
	Coast patch-nosed snake	1,953.3	763.3	39%
	Bell's sage sparrow	1,869.3	720.6	39%
Birds	Coastal California gnatcatcher	79.7	54.5	68%
	Cooper's hawk – nesting	59.0	47.5	81%
	Cooper's hawk – foraging	1,976.4	767.3	39%
	Red shouldered hawk – nesting	59.0	47.5	81%
	Red shouldered hawk – foraging	1,976.4	767.3	39%
	Sharp-shinned hawk – foraging	1,976.4	767.3	39%
	Turkey vulture – foraging	1,976.4	767.3	39%
	Northern harrier – foraging	76.1	36.5	48%
	Yellow warbler	8.2	2.1	26%
	Northwestern San Diego pocket mouse	1,944.2	756.9	39%
Mammals	San Diego desert woodrat	1,937.2	748.1	39%

Table 2-9
Off-Site Direct Permanent Impacts to Observed County Group 1 Species and/or State SSC Species (acres)

	Species	Deer Springs Road– Option A (acres)	Deer Springs Road– Option B (acres)	Camino Mayor (acres)	Mesa Rock Road (acres)	Sarver Lane (acres)	Sewer (acres)	I-15 Interchange (acres)	Mar Vista (acres)
Reptiles	Coastal whiptail	8.6	10.0	2.5	0.3	2.9	0.2	2.5	0.01
	Blainville's horned lizard	8.6	10.0	2.5	0.3	2.9	0.2	2.5	0.01
	Coast patch-nosed snake	7.6	8.6	2.5	0.3	2.9	0.2	2.5	0.01
	Red-diamond rattlesnake	8.6	10.0	2.5	0.3	2.9	0.2	2.5	0.01
Birds	Bell's sage sparrow	1.5	1.9	1.9	0.3	2.6	--	0.4	--
	Coastal California gnatcatcher	1.3	1.6	--	0.3	--	--	0.4	--
	Cooper's hawk – nesting	4.3	4.6	--	--	0.1	--	0.1	0.3
	Cooper's hawk – foraging	12.1	14.0	3.2	0.3	2.9	0.5	2.6	0.3
	Red shouldered hawk – nesting	4.3	4.6	--	--	0.1	--	0.1	0.3
	Red shouldered hawk – foraging	12.1	14.0	3.2	0.3	2.9	0.5	2.6	0.3
	Sharp-shinned hawk – foraging	12.1	14.0	3.2	0.3	2.9	0.5	2.6	0.3
	Turkey vulture – foraging	12.1	14.0	3.2	0.3	2.9	0.5	2.6	0.3
	Northern harrier – foraging	4.1	4.6	0.6	--	0.3	0.5	2.0	0.01
	Yellow warbler	0.9	0.9	0.1	--	--	0.3	--	--
Mammals	Northwestern San Diego pocket mouse	5.5	6.4	2.5	0.3	2.8	0.2	2.4	0.01
	San Diego desert woodrat	6.5	7.3	2.5	0.3	2.9	0.2	1.4	0.01

2.4.1.2.1 County Group I and/or SSC Species

The information provided in this section discusses the potential effects for County Group 1 and/or SSC species observed within the project Site. More detailed information about

observation of the species or its potential to occur within the proposed project Site, suitable habitat, and range is provided in Section 1.4.6.2.

Reptiles

Coastal Whiptail (*Aspidoscelis tigris stejnegeri*) – SSC/ Group II

Coastal whiptail was only observed at only location; however, the majority of the Site is considered suitable habitat for this species. There would be direct impacts to suitable habitat for this species (Tables 2-8 and 2-9). Reptiles are low-mobility or sedentary species, and direct impacts to these species could occur as a result of the grading activities and activities within the FMZ. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Blainville's Horned Lizard (*Phrynosoma blainvillei*) – SSC/ Group II

Blainville's horned lizard was detected through direct observation and through species signs within the project Site. The majority of the Site is considered suitable habitat for this species. There would be direct impacts to suitable habitat for this species (Tables 2-8 and 2-9). Reptiles are low-mobility or sedentary species, and direct impacts to these species could occur as a result of the grading activities and activities within the FMZ. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*) – SSC/ Group II

Coast patch-nosed snake was only observed at one location; however, the majority of the Site is considered suitable habitat for this species. There would be direct impacts to suitable habitat for this species (Tables 2-8 and 2-9). Reptiles are low-mobility or sedentary species, and direct impacts to these species could occur as a result of the grading activities and activities within the FMZ. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Red-Diamond Rattlesnake (*Crotalus ruber*) – SSC/ Group II

Red-diamond rattlesnake was only observed on one occasion in 2007; however, the majority of the Site is considered suitable habitat for this species. There would be direct impacts to suitable habitat for this species (Tables 2-8 and 2-9). Reptiles are low-mobility or sedentary species, and direct impacts to these species could occur as a result of the grading activities and activities within the FMZ. This would be a significant impact absent mitigation (the significance of the

impact is determined through application of the County Significance Guidelines described in Section 3).

Birds

Bell's Sparrow (*Artemisiospiza bellii*) – BCC/CDFW WL/Group I

Bell's sparrow was observed on Site during biological surveys and has the potential to use the project Site for foraging. There would direct impacts to both suitable nesting and foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young if present during vegetation clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Cooper's Hawk (*Accipiter cooperii*) – CDFW WL/Group I

Cooper's hawk was observed on Site during biological surveys and has the potential to use the project Site for both nesting and foraging. There would direct impacts to both suitable nesting and foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Sharp-Shinned Hawk (*Accipiter striatus*) – CDFW WL/Group I

Sharp-shinned hawk was observed on Site during biological surveys and has the potential to use the project Site for foraging. There would direct impacts to suitable foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Impacts to foraging habitat would be significant absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Since sharp-shinned hawks do not breed within Southern California, there would be no loss of individual birds as a result of construction-related impacts.

Red-Shouldered Hawk (*Buteo lineatus*) – Group I

Red-shouldered hawk was observed on Site during biological surveys and has the potential to use the project Site for both nesting and foraging. There would direct impacts to both suitable nesting and foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities.

This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Turkey Vulture (*Cathartes aura*) – Group I

Turkey vulture was observed on Site during biological surveys and has the potential to use the project Site for foraging. There would be direct impacts to suitable foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Northern Harrier (*Circus cyaneus*) – SSC/ Group 1

Northern harrier has the potential to use the Site for foraging purposes only. There would be direct impacts to suitable foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Coastal California Gnatcatcher (*Polioptila californica californica*) – Federally Threatened/ SSC/ Group I

The coastal California gnatcatcher was detected on Site during biological surveys and has the potential to use the project Site for both nesting and foraging. There would direct impacts to both suitable nesting and foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Yellow Warbler (*Setophaga [Dendroica] petechia brewsteri*) – BCC/SSC/ Group II

Yellow warbler was observed within riparian habitat during focused surveys. There would direct impacts to both suitable nesting and foraging habitat as a result of the proposed project (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Mammals

San Diego Desert Woodrat (*Neotoma lepida intermedia*) – SSC/ Group II

Sign of this species (i.e., middens) were detected throughout the Site in 2007 (PSBS 2007) and in 2013, but the majority of the middens were not mapped. There would be direct impacts to suitable habitat for this species (Tables 2-8 and 2-9). Construction-related impacts could result in the loss of active middens and/or young during vegetation-clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*) – SSC/ Group II

Although northwestern San Diego pocket mouse was not observed, this species has a high potential to occur within the project Site due to the presence of suitable habitat. Construction-related impacts could result in the loss of active breeding areas and/or young during vegetation-clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

2.4.1.2.2 County Group II Species

County Group II species that have been observed in the project Site, or have high potential to occur, are described as follows.

Special-Status Amphibians and Reptiles

San Diego ringneck snake, Belding's orange-throated whiptail, and Coronado skink were observed in the project Site. Coastal whiptail, red-diamond rattlesnake, coast patch-nosed snake, and Blainville's horned lizard are County Group II species which were observed on Site or have a high potential to occur; however, since they are also SSC species, they are discussed in the Section 2.4.1.2.1. Amphibians and reptiles are low-mobility or sedentary species, and direct impacts to these species could occur as a result of the grading activities and activities within the fire buffer. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Special-Status Birds

Two County Group II species, western bluebird and yellow warbler were observed within the project Site. A third Group II species, the barn owl, was not observed but has a high potential to occur within the project Site due to the presence of suitable habitat. There would be direct impacts to suitable habitat for these species. Construction-related impacts could result in the loss

of active nests and/or young during vegetation-clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Special-Status Mammals

San Diego desert woodrat and mule deer are County Group II species and both were observed within the project Site. A third Group II species, the northwestern San Diego pocket mouse, was not observed but has a high potential to occur within the project Site due to the presence of suitable habitat. Since both San Diego desert woodrat and northwestern San Diego pocket mouse are both SSC species, they are discussed in Section 2.4.1.2.1. There would be direct impacts to suitable habitat for mule deer. Construction-related impacts could impact breeding activities or result in the loss of young during vegetation-clearing activities. This would be a significant impact absent mitigation (the significance of the impact is determined through application of the County Significance Guidelines described in Section 3).

Invertebrates

The monarch butterfly was observed in the project Site during biological surveys. There would be no impacts to eucalyptus woodland on Site, and minor impacts to eucalyptus woodlands associated with off-site road improvements. However, neither of these location would be considered potential wintering roosts, therefore no impacts to this species are expected to occur.

2.4.2 Indirect Impacts to Special-Status Wildlife Species

2.4.2.1 Temporary Indirect Impacts

Impact W-3: Temporary Indirect Impacts to Special-Status Wildlife

Short-term, construction-related, or temporary indirect impacts to avian foraging and wildlife access to foraging, nesting, or water resources would primarily result from construction activities. Potential temporary indirect impacts could occur as a result of generation of fugitive dust, noise during construction, chemical pollutants, increased human activity, and the introduction of invasive predators and non-native animal species.

Generation of Fugitive Dust. Dust and applications for fugitive dust control can impact vegetation surrounding the limits of grading, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species.

Noise. Construction-related noise could occur from equipment used during vegetation clearing and construction of the proposed project. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, as cited in Lovich and Ennen 2011).

Chemical Pollutants. Accidental spills of hazardous chemicals could contaminate nearby surface waters and groundwater and indirectly impact wildlife species through poisoning or altering suitable habitat.

Increased Human Activity. Construction activities can deter wildlife from using habitat areas near the proposed project footprint and increase the potential for vehicle collisions.

Invasive Predators and Non-native Animal Species. Trash from construction-related activities could attract invasive predators such as ravens and coyotes that could impact the wildlife species in the project Site. Landscaping stock could bring in Argentinean ants or other pests that could compete with native wildlife.

All special-status wildlife species on Site could be impacted by potential temporary indirect impacts such as those previously listed. The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.4.2.2 Permanent Indirect Impacts

Impact W-4: Permanent Indirect Impacts to Special-Status Wildlife

Potential long-term or permanent indirect impacts to special-status wildlife species include generation of fugitive dust; off-road vehicle use; non-native, invasive plant and animal species; habitat fragmentation; increased human activity; alteration of the natural fire regime; and altered hydrology.

Generation of Fugitive Dust. The effects of fugitive dust on special-status wildlife are described in Section 2.4.2.1.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open

areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for special-status wildlife species. In addition, trash can attract invasive predators such as ravens and coyotes that could impact the wildlife species in the project Site. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that are known to could be seed dispersers and plant pollinators (see Section 2.2.2.2).

Habitat Fragmentation. The proposed project would impact approximately 776.6 acres of vegetation communities and land covers, resulting in potential habitat fragmentation within the Site. Habitat fragmentation can reduce diversity of species, spread invasive species, and reduce access to important habitats (Lovich and Ennen 2011). In addition, habitat fragmentation and isolation of wildlife populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes, and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986). Although the project proposes impacts related to both Twin Oaks Valley Road and Deer Springs Road, these road improvements are not expected to result in habitat fragmentation. Wildlife are expected to cross Deer Springs Road and Twin Oaks Valley Road similar to current conditions because the open space configuration allows for continued movement to the south and west. Access to waters sources within the creek along Twin Oaks Valley Road would not be constrained by the development.

Increased Human Activity. The proposed project includes the development of seven neighborhoods, recreational facilities (e.g., parks), and designated open space. The Site is currently subject to illegal/unauthorized activity, including hiking, biking, off-road vehicle activity, parties, trash dumping, homeless activities, and camping. With the development and associated open space preserve, all of these activities except the biking and hiking would cease and the hiking/biking would be managed and kept to select trails. The other trails would be closed and new trail creation (which currently occurs) would stop. Therefore, the proposed development is expected to lead to a decrease in human activity on the project Site.

Alteration of the Natural Fire Regime. The proposed project could potentially increase the risk of fire, including but not limited to fire associated with electrical shorts or electrical equipment malfunction within developed neighborhoods or inadvertent/intentional ignitions within or adjacent to open space. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and result, in some cases, in permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Malanson and O'Leary 1982; Keeley 1987; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural

fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation. Alterations of plant communities could affect wildlife that relies on those habitat types.

Altered Hydrology. As described in Section 1.2, the proposed project includes well-designed stormwater facilities. For purposes of analyzing potential indirect impacts associated with hydrology, urban run-off associated with landscaping and irrigation are described here. Water would be used for landscaping purposes within residential units and maintained shared spaces (e.g., parks). These sources may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status wildlife species. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that are known to could be seed dispersers and plant pollinators. Changes in plant composition could affect the native vegetation communities and wildlife habitat. Potential impacts would be reduced by design features, including bioretention swales and bioretention basins that have been integrated into the project design, along with additional LID features such as roadside swales. To eliminate potential flooding impacts during peak storm events, stormwater detention would be provided prior to runoff exiting the project Site. Drainage improvements would also be constructed for the off-site road improvements.

Lighting. Urban development, recreational facilities, and general human activity (e.g., night-time light from vehicles, home security systems) would result in light pollution and possibly disrupt dark skies. Long-term lighting may deter nocturnal wildlife from traversing through developed areas and restrict movements to the northern open space facilities.

Noise. Increased human activity in the proposed project Site is expected to result in long-term noise effects in the area. Noise is expected to be greatest during daylight hours and therefore would be more of a disturbance to those species that are active during the daytime, as the noise levels are less at night. Nocturnal wildlife would not be significantly impacted while foraging, and moving in open space areas, particularly because there is a 250-foot FMZ area between development and open space areas. Noise pollution is not anticipated to decrease breeding of any special-status species.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.5 Wetlands/Jurisdictional Waters

2.5.1 Direct Impacts to Wetlands/Jurisdictional Waters

2.5.1.1 Temporary Direct Impacts

Impact V-3: Temporary Direct Impacts to Jurisdictional Resources

Short-term, construction-related, or temporary direct impacts to jurisdictional riparian habitat, County RPO wetlands, and non-wetland waterways (i.e., jurisdictional resources) would primarily result from construction activities. Clearing, trampling, or grading of riparian vegetation or non-wetland waters outside designated construction zones could occur and be significant. These potential effects could damage individual plants and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion. Potential temporary direct impacts to all jurisdictional resources on Site would be significant. There are no temporary impacts associated with on-site grading within the ACOE/RWQCB/CDFW/County wetlands, CDFW riparian habitat, or County RPO wetlands; there is 0.06 acre of impacts to ACOE/ RWQCB/CDFW non-wetland waters associated with temporary grading. This impact would be restored (see Appendix J). There are temporary impacts associated with the 15-foot work area for the off-site improvement areas. These impacts are summarized in Table 2-10. Due to access constraints along Deer Springs Road, it is anticipated that all construction and staging would be contained within the 15-foot work area. In addition, tailboard meetings, orange construction fencing, and monitoring would occur to ensure that adjacent areas are not impacted.

Table 2-10
Temporary Off-Site Impacts to Wetlands, Riparian Habitat, and Non-Wetland Waters

Jurisdictional Resource	Deer Springs Road–Option A (acres)	Deer Springs Road–Option B (acres)	Camino Mayor (acres)	Sarver Lane (acres)	Mar Vista (acres)	I-15 Interchange (acres)
ACOE/RWQCB/CDFW						
Non-wetland waters (ephemeral and intermittent)	0.01	<0.01	0.01	0.04	—	—
Disturbed wetland	0.14	0.14	—	—	—	—
ACOE/RWQCB/CDFW/County						
Southern willow scrub	0.04	0.04	—	—	—	—
Mulefat scrub	<0.01	<0.01	—	—	—	—
Coast live oak woodland	—	—	—	—	<0.01	0.12

Table 2-10
Temporary Off-Site Impacts to Wetlands, Riparian Habitat, and Non-Wetland Waters

Jurisdictional Resource	Deer Springs Road–Option A (acres)	Deer Springs Road–Option B (acres)	Camino Mayor (acres)	Sarver Lane (acres)	Mar Vista (acres)	I-15 Interchange (acres)
CDFW Only						
Coast live oak woodland (including disturbed)	—	—	—	0.39	—	—
Southern coast live oak riparian forest	0.52	0.52	—	—	—	—
CDFW/County						
Southern willow scrub	—	—	<0.01	—	—	
Total Jurisdictional Resources	**0.72**	**0.72**	**0.01**	**0.43**	**<0.01**	**0.12**

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.5.1.2 Permanent Direct Impacts

Impact V-3: Permanent Direct Impacts to Jurisdictional Resources

Development of the proposed project would impact CDFW riparian habitat and County RPO wetlands, as well as jurisdictional non-wetland waterways (Figures 12A–12E, Impacts to Jurisdictional Resources). As shown in Table 2-11, the proposed project would have impacts to 2.13 acres of CDFW and County jurisdictional resources and 3.30 acres of impacts to CDFW only resources. In addition, the proposed project would result in impacts to 1.41 acres of non-wetland waters. Table 2-12 includes the off-site permanent direct impacts to jurisdictional resources for the Deer Springs Road Option A and Option B and the other off-site areas. There are off-site impacts to ACOE/RWQCB/CDFW/County wetlands totaling 0.49 acre.

Table 2-11
On-Site Permanent Impacts to Wetlands, Riparian Habitat, and Non-Wetland Waters

Vegetation Community	Permanent Impacts (acres)			Total Impacts (acres)
	ACOE/RWQCB/ CDFW	*CDFW/ County*	*CDFW Only*	
Wetlands and Riparian Habitat				
Coast live oak woodland	—	—	3.30	**3.30**
Freshwater marsh	—	—	—	**—**
Mulefat scrub	—	0.09	—	**0.09**
Southern coast live oak riparian forest	—	1.91	—	**1.91**

Table 2-11
On-Site Permanent Impacts to Wetlands, Riparian Habitat, and Non-Wetland Waters

Vegetation Community	Permanent Impacts (acres)			Total Impacts (acres)
	ACOE/RWQCB/ CDFW	*CDFW/ County*	*CDFW Only*	
Southern willow scrub	—	0.13	—	**0.13**
Southern willow scrub/tamarisk	—	--	—	**—**
Total	**—**	**2.13**	**3.30**	**5.43**
Non-wetland waters (ephemeral and intermittent)	*1.41*	*n/a*	*n/a*	*1.41*

Table 2-12
Off-Site Permanent Impacts to Wetlands, Riparian Habitat, and Non-Wetland Waters

Jurisdictional Resource	Deer Springs Road		Camino Mayor (acres)	Sarver Lane (acres)	Sewer Improvements (acres)	I-15 Interchange (acres)	Total
	Option A (acres)	*Option B (acres)*					
ACOE/RWQCB/CDFW							
Non-wetland waters (ephemeral and intermittent)	0.08	0.08	0.06	<0.01	—	—	0.14
ACOE/RWQCB/CDFW/County							
Southern willow scrub	0.06	0.06	—	—	0.35	—	0.41
Arundo dominated riparian	—	—	—	—	0.14	—	0.14
Mulefat scrub	0.03	0.03	—	—	—	—	0.03
Coast live oak woodland	—	—	—	—	—	0.02	0.02
CDFW Only							
Coast live oak woodland (including disturbed)	—	—	—	0.56	—	—	0.56
CDFW/County							
Southern coast live oak riparian forest	0.83	0.83	—	—	—	—	0.83
Southern willow scrub	—	—	0.06	—	—	—	0.06
Total Jurisdictional Resources	**0.83**	**0.83**	**0.12**	**0.56**	**0.49**	**0.02**	**2.02**
RPO Buffer[1]	**2.75**	**2.75**	**0.29**	**—**	**—**	**0.57**	**3.85**
Total Off-Site Impacts (Option A)	**2.02**						
Total Off-Site Impacts (Option B)	**2.02**						

[1] Additional impacts to RPO buffer would result from improvements at Mar Vista (0.24 acre)

2.5.2 Indirect Impacts to Wetlands/Jurisdictional Waters

2.5.2.1 Temporary Indirect Impacts

Impact V-5: Temporary Indirect Impacts to Special-Status Vegetation Communities

Potential short-term or temporary indirect impacts to jurisdictional resources in the project Site would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all the jurisdictional resources waterways that occur on the project Site are described in detail as follows.

Generation of Fugitive Dust. The effects of fugitive dust on jurisdictional non-wetland waterways are similar to those described for vegetation communities in Section 2.2.2.

Changes in Hydrology. Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. Hydrologic alterations include changes in flow rates and patterns in streams, which may affect adjacent and downstream vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Direct impacts, as described previously, can also remove native vegetation, resulting in increased erosion and transport of surface matter into jurisdictional waterways. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect jurisdictional non-wetland waterways. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

All jurisdictional non-wetland waterways on Site could be impacted by potential temporary indirect impacts such as those previously listed. The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.5.2.2 Permanent Indirect Impacts

Impact V-6: Permanent Indirect Impacts to Special-Status Vegetation Communities

Long-term or permanent indirect impacts could result from the proximity of the proposed project to jurisdictional resources after construction. Permanent indirect impacts that could affect jurisdictional resources include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, alteration of the natural fire regime, and shading. Each of these potential indirect impacts is discussed as follows.

Generation of Fugitive Dust. The effects of fugitive dust on jurisdictional resources are similar to those described for vegetation communities in Section 2.2.2.

Habitat Fragmentation. Habitat fragmentation and isolation of plant populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes, and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986). Although these effects are more readily observable in wildlife, there are potential ecological effects, such as changes in pollinator populations, which can result in altered plant community composition and thus adversely affect jurisdictional resources.

Chemical Pollutants. The effects of chemical pollutants on jurisdictional resources are described in Section 2.2.2.

Altered Hydrology. As described in Section 2.2.2, for purposes of analyzing potential indirect impacts associated with hydrology, urban run-off associated with landscaping and irrigation are described here. Water would be used for landscaping purposes within residential units and maintained shared spaces (e.g., parks). These sources may alter the on-site hydrologic regime. However, potential impacts would be reduced by design features (bioretention swales and bioretention basins, roadside swales, stormwater detention, and drainage improvements for off-site road improvements), and long-term indirect impacts to jurisdictional waters associated with altered hydrology are not expected.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic

plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and alteration of wetland plant communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within jurisdictional resources.

Increased Human Activity. The effects of increased human activity on jurisdictional resources are similar to those described for vegetation communities in Section 2.2.2.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.6 Habitat Connectivity and Wildlife Corridors

2.6.1 Direct Impacts to Habitat Connectivity and Wildlife Corridors

2.6.1.1 Temporary Direct Impacts

Impact CWA-1: Temporary Direct Impacts to Existing Core Wildlife Area

Short-term, construction-related, or temporary direct impacts to habitat connectivity and wildlife corridors would primarily result from construction activities. There are 8.4 acres of temporary impacts associated with grading (see Table 2-1, earlier in this report). In addition, clearing, trampling, or grading of vegetation outside designated construction zones could occur and be significant. These potential effects could impact wildlife movement through these areas by reducing cover and food sources. The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 6.

2.6.1.2 Permanent Direct Impacts

Impact CWA-2: Permanent Direct Impacts to Existing Core Wildlife Area

Implementation of the proposed project is not expected to result in long-term or permanent direct impacts to habitat connectivity and wildlife corridors for large mammals. See Section 1.4.8 for a detailed discussion regarding habitat connectivity and wildlife corridors. For the most part, the area in and around the project Site is very similar with regard to undeveloped landscapes with limited human disturbance, similar topographic relief, and similar vegetation communities. The project Site is considered part of a regional corridor based on regional planning, topography, connectivity to adjacent regional open space, and resources on Site; it would remain as such even after development.

Although large sections of this landscape would be developed, the project includes proposed biological open space that would form a centroid of habitat connectivity to the north, south, east,

and west, thereby retaining connectivity of undeveloped landscapes throughout and surrounding proposed development. In addition, the proposed open space design includes a diverse array of environmental features including ridgetops, hill tops, and rocky outcrops. See Section 1.4.8 for a detailed description of the proposed open space design.

Wildlife movement within the proposed open space design would occur within three large blocks of open space and four corridors located between development (Figure 9). Although small mammals may regularly use the dense chaparral occurring on Site, larger mammals such as mule deer, mountain lion, and coyote are expected to use dirt trails and any riparian corridors occurring throughout the open space as their primary means of travel. Similarly, small wildlife species (e.g., lizards and small mammals) would continue to use the dense chaparral and dirt trails within the proposed open space.

The project Site is currently undeveloped with a network of trails and connectivity to surrounding undeveloped landscapes. Although wildlife movement would be restricted within developed areas, the proposed open space design would allow for habitat connectivity and wildlife movement within on-site open space and surrounding preserves (Figure 9).

The culverts, fences, and bridges mapped along I-15 and Deer Springs Road demonstrate that wildlife can move in some areas in an east/west direction and north/south. Because the open space is designed to preserve open space in the east, south, and north, smaller wildlife species would be able to continue using this area.

Off-site improvements to Deer Springs Road have the potential to impact wildlife crossing the road. Road widening would occur to the north side of Deer Springs Road as opposed to impacting the adjacent creek itself. These impacts would increase impacts to upland habitats. The increase in road width and increase in traffic numbers and speed would likely cause additional road mortality of wildlife; particularly where the road occurs adjacent to natural lands.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.6.2 Indirect Impacts to Habitat Connectivity and Wildlife Corridors

2.6.2.1 Temporary Indirect Impacts

Impact CWA-3: Temporary Indirect Impacts to Existing Core Wildlife Area

Potential short-term indirect impacts to habitat connectivity and wildlife corridors could result from increased human activity, lighting, and noise, and during construction.

Increased Human Activity. Project construction would likely take place during the daytime and would not affect wildlife species such as mammals that are most active in evenings and

nighttime. Wildlife species such as birds, rabbits, and lizards are active in the daytime, but use a variety of habitats and could continue using other areas within and adjacent to the project Site for wildlife movement.

Lighting. Some localized security-related lighting may be required during construction and/or operations; lighting would conform to County of San Diego outdoor lighting requirements. These impacts would be short-term, and therefore proposed project is not expected to result in significant impacts to wildlife movement.

Noise. Project construction would result in the production of noise and ground vibrations through the use of mechanized equipment and increased traffic within the area. Noise would most likely only be a disturbance to those species that are active during the daytime, as the noise levels are less at night. Most wildlife that would use the area as a habitat corridor are nocturnal, and therefore would not be impacted while foraging and moving. Noise pollution is not anticipated to hamper breeding of any special-status species.

2.6.2.2 Permanent Indirect Impacts

Impact CWA-4: Permanent Indirect Impacts to Existing Core Wildlife Area

Long-term indirect impacts to habitat connectivity and wildlife corridors include habitat fragmentation, human activity (including an increase in intrusions by both humans and domestic pets), lighting, and noise from the proposed urban development, recreational facilities, and human activity.

Habitat Fragmentation. The proposed project would impact approximately 776.6 acres of vegetation communities and land covers, resulting in potential habitat fragmentation. Habitat fragmentation can reduce diversity of species, spread invasive species, and reduce access to important habitats (Lovich and Ennen 2011). In addition, habitat fragmentation and isolation of wildlife populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes, and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986).

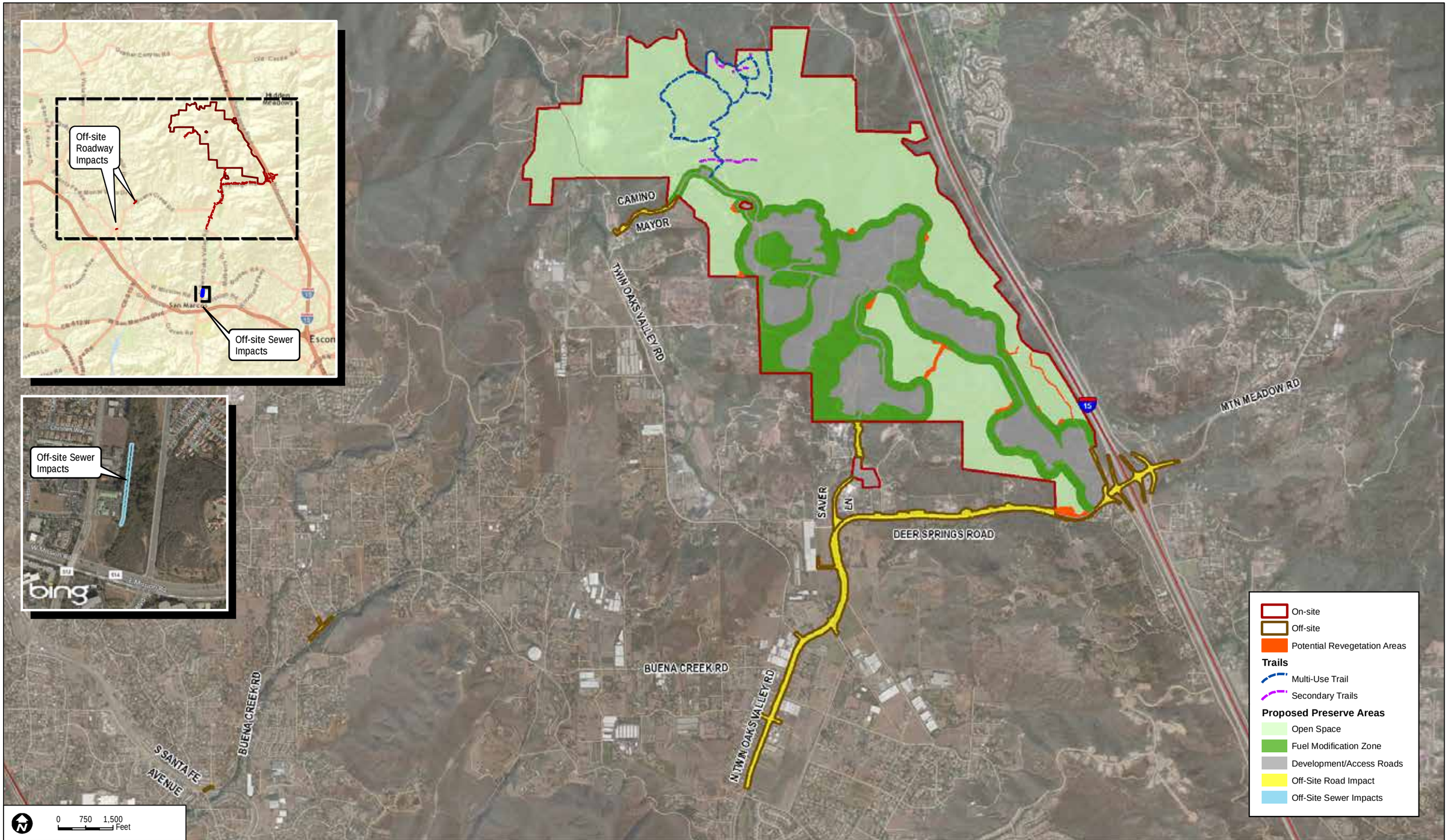
Increased Human Activity. The proposed project includes the development of seven neighborhoods, recreational facilities (e.g., parks), and designated open space. The Site is currently subject to illegal/unauthorized activity, including hiking, biking, off-road vehicle activity, parties, trash dumping, homeless activities, and camping. With the development and associated open space preserve, all of these activities except the biking and hiking would cease and the hiking/biking would be managed and kept to select trails. The other trails would be closed and new trail creation (which currently occurs) would stop. Therefore, the proposed development is expected to lead to a decrease in human activity on the project Site. Increasing the human presence adjacent to development could also increase the amount of

domestic pets within the preserve. All dogs within the open space would be required to be on leash while homeowners would be informed of the impacts that domestic pets can have on native habitat and wildlife.

Lighting. Urban development, recreational facilities, and general human activity (e.g., night-time light from vehicles, home security systems) would result in light pollution and possibly disrupt dark skies. Long-term lighting may deter nocturnal wildlife from traversing through developed areas and restrict movements to the northern open space facilities.

Noise. Increased human activity in the proposed project Site is expected to result in long-term noise effects in the area. Noise is expected to be greatest during daylight hours and therefore would be more of a disturbance to those species that are active during the daytime, as the noise levels are less at night. Nocturnal wildlife would not be significantly impacted while foraging, and moving in open space areas, particularly because there is a 250-foot FMZ area between development and open space areas. Noise pollution is not anticipated to decrease breeding of any special-status species.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 6.



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SOURCE: Bing 2016; Fuscoe Engineering 2017

FIGURE 10

Proposed Uses

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Project Site
- On-site
- Off-site

Vegetation Communities
- AGR, Agriculture
- CLOW, Coast live oak woodland
- CSS, Diegan coastal sage scrub
- CSS-CHP, Coastal sage - chaparral transition
- CSSB, Coastal sage scrub - Baccharis dominated
- DEV, Urban/developed
- DH, Disturbed habitat
- DW, Disturbed Wetland
- EAGR, Agriculture
- EUC, Eucalyptus woodland
- FWM, Freshwater marsh
- IAGR, Intensive agriculture
- MFS, Mulefat scrub
- NNG, Non-native grassland
- NNW, Non-native Woodland
- ORC, Orchard and vineyards
- ORF, Southern coast live oak riparian forest
- SMX, Southern mixed chaparral
- SOC, Scrub oak chaparral
- SWS, Southern willow scrub
- SWS/TS, Southern willow scrub/tamarisk scrub
- dBSC, Flat-topped buckwheat - disturbed
- dCLOW, Coast Live Oak Woodland - disturbed
- dCSS, Diegan coastal sage scrub - disturbed
- dCSSB, Coastal sage scrub - Baccharis dominated - disturbed
- dSMX, Southern mixed chaparral - disturbed

- Oak Root Zones
- Las Posas Soil Series

Wildlife Species
- Coastal California gnatcatcher
- Nuttall's woodpecker
- Oak titmouse
- Red-shouldered hawk
- Sharp-shinned hawk
- Yellow warbler
- Desert woodrat (midden)
- Blainville's horned lizard
- Blainville's horned lizard (scat)
- Coast patch-nosed snake
- Coastal whiptail
- Red diamond rattlesnake

Plant Species
- Engelmann oak
- Munz's sage
- Ramona horkelia
- Summer holly
- ashy spike-moss
- chaparral rein orchid
- Engelmann oak
- Orcutt's brodiaea
- Ramona horkelia
- Summer holly

Project Impacts
- Permanent Impact
- Temporary Impact
- Temporary Construction Easement
- Open Space

Index Map

FIGURE 11A
FIGURE 11B
FIGURE 11C
FIGURE 11D
FIGURE 11D
FIGURE 11D
FIGURE 11D

0 165 330 Feet

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SOURCE: SANDAG Imagery 2014; Fuscoe Engineering 2017

FIGURE 11A
Impacts to Biological Resources

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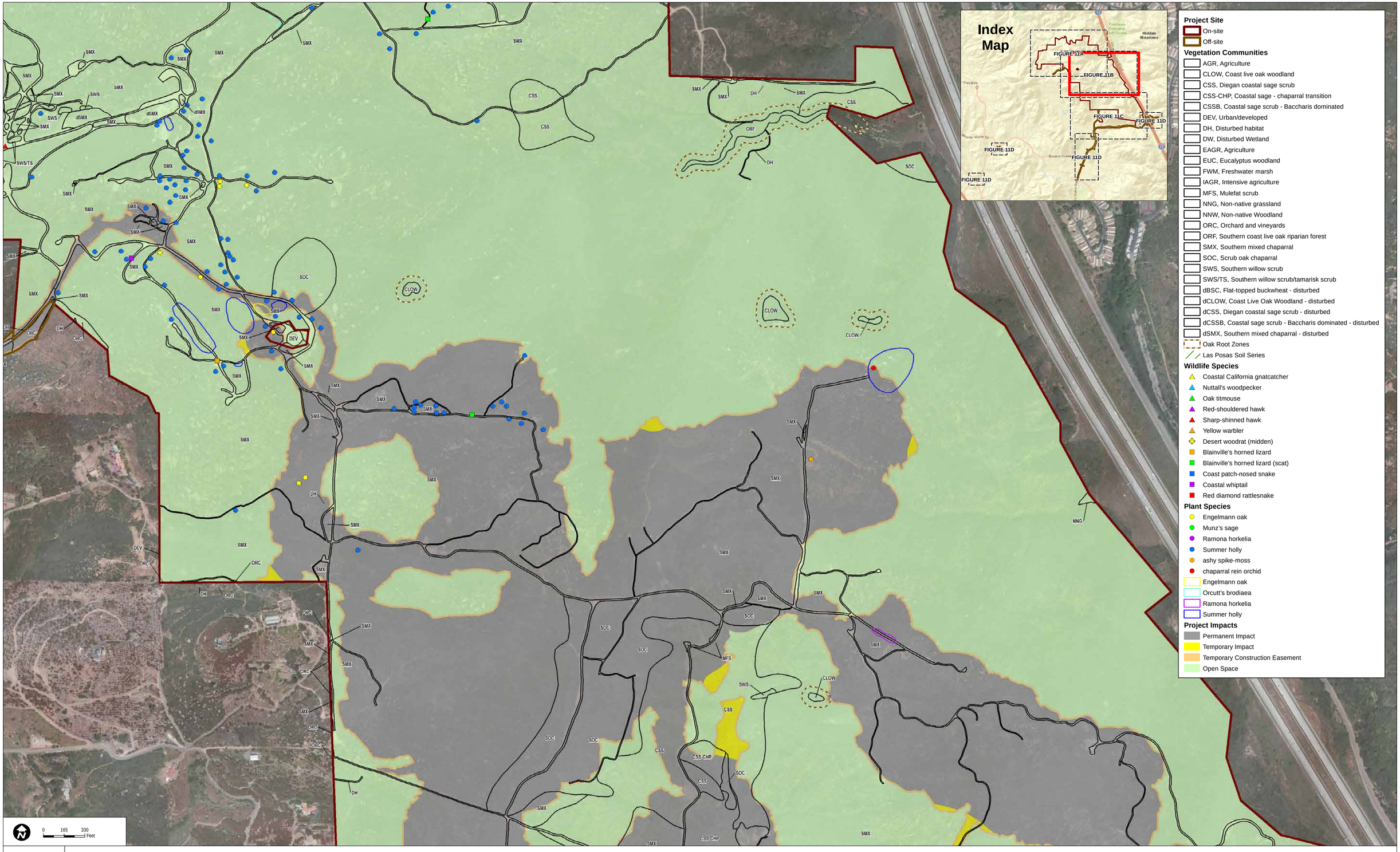

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SOURCE: SANDAG Imagery 2014; Fuscoe Engineering 2017

FIGURE 11B

Impacts to Biological Resources

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