Ocean Breeze Ranch Project

Conceptual Resource Management Plan – Biological Resources

PDS2016-TM-5615
PDS2016-MUP-16-02
PDS2016-MUP-16-013

August 7, 2019 | OBR-01

Prepared for:

County of San Diego
Planning and Development Services
5510 Overland Avenue, Suite 310
San Diego, CA 92123

Project Proponent:

Ocean Breeze Ranch, LLC
1550 South Coast Highway, Suite 201
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HELIX Environmental Planning, Inc.
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Ocean Breeze Ranch

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ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
APN	Assessor's Parcel Number
Cal-IPC	California Invasive Plant Council
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CISR	Center for Invasive Species Research
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
ft	feet
GIS	Geographic Information System
HELIX	HELIX Environmental Planning, Inc.
HOA	Homeowners Association
I-	Interstate
MOU	Memorandum of Understanding
MSCP	Multiple Species Conservation Program
NC	North County
NRCS	Natural Resource Conservation Service
PAMA	Pre-Approved Mitigation Area
PDS	Planning and Development Services
PMP	Pasture Management Plan
RMP	Resource Management Plan
RMWD	Rainbow Municipal Water District
RWQCB	Regional Water Quality Control
SDCWA	San Diego County Water Authority
SDMMP	San Diego Management and Monitoring Program
UC	University of California
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

This Conceptual Resource Management Plan (RMP) has been prepared for the proposed 832.7-acre Ocean Breeze Ranch Biological Open Space Preserve (preserve) in accordance with mitigation requirements identified in the project's biological technical report (HELIX Environmental Planning, Inc. [HELIX] 2019a). This RMP provides direction for the permanent preservation and management of the preserve in accordance with County of San Diego (County) regulations.

1.1 PURPOSE OF BIOLOGICAL RESOURCE MANAGEMENT PLAN

The purpose of this RMP is to provide guidance in which to ensure preservation of native habitats and long-term management of the preserve. This RMP:

1. Guides management of vegetation communities and habitats, plant and animal species, and programs described herein to protect and, where appropriate, enhance biological resources;

2. Serves as a descriptive inventory of vegetation communities and plant and animal species that occur within the preserve;

3. Establishes the baseline conditions from which adaptive management will be determined and success will be measured; and

4. Provides an overview of the operation, maintenance, administrative, and personnel requirements to implement management goals, and serves as a budget planning aid.

The details of this conceptual plan may be modified when the Final RMP is prepared and submitted to the County for final approval. The County will review the Final RMP to ensure that it meets the specified Purpose and Objectives.

1.1.1 Project Summary

The Ocean Breeze project site consists of an approximately 1,402.5-acre property (project site or site) in the unincorporated community of Bonsall, San Diego County, California. The proposed project consists of a 396-lot single-family residential community, related roadway and utility infrastructure improvements, associated park and recreational uses, open space, and a separate, privately-owned and operated equestrian facility. The residential development is divided into three distinct planning areas, with conventional lot sizes in Planning Areas 1 and 2 located in the western portion of the site, and larger lots in Planning Area 3 located in the eastern site area. Per County Guidelines, the project's total on-site disturbance area is approximately 326.4 acres, including 19.4 acres of existing equestrian improved areas (i.e., barns, stables, exercise and veterinary facilities, and a small office), in addition to 2.2 acres of off-site impacts.

Project impacts total 72.1 acres of sensitive vegetation communities, composed of 71.6 acres on site and 0.5 acre off site. Combined on- and off-site impacts to sensitive vegetation communities include 0.01 acre of southern willow scrub, 0.17 acre of mule fat scrub, less than 0.01 acre of tamarisk scrub, 0.4 acre of coast live oak woodland, 32.5 acres of Diegan coastal sage scrub (including disturbed), 1.4 acres of flat-topped buckwheat scrub, and 37.6 acres of non-native grassland.

The project would result in impacts to a single special status plant species: graceful tarplant (*Holocarpha virgata* spp. *elongata*). This impact is less than significant; furthermore, this species is present within the preserve.

Project implementation would directly impact breeding, roosting, and/or foraging habitat for several special status animal species, including coastal California gnatcatcher (*Polioptila californica californica*), northern harrier (*Circus cyaneus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Cooper's hawk (*Accipiter cooperii*), California horned lark (*Eremophila alpestris actia*), red-shouldered hawk (*Buteo lineatus*), vermilion flycatcher (*Pyrocephalus rubinus*), western bluebird (*Sialia mexicana*), least Bell's vireo (*Vireo bellii pusillus*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), white-faced ibis (*Plegadis chihi*), turkey vulture (*Cathartes aura*), barn owl (*Tyto alba*), snow goose (*Chen caerulescens*), Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), and western spadefoot (*Spea hammondii*).

Nearly 60 percent of the property (832.7 acres) will be preserved in a biological open space easement, which will protect these lands in perpetuity and will restrict future uses to preserve their biological value. The 832.7-acre biological open space preserve will include approximately 0.48 acre of riparian restoration and 58.3 acres of upland habitat restoration and enhancement. Conceptual upland restoration and enhancement areas were determined in consultation with the Wildlife Agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife [CDFW]) and County Planning Development Services (PDS) staff. Final wetland restoration and enhancement areas will be determined in consultation with the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW during the wetland permitting process. In addition, up to 308.9 acres of biological open space in the easternmost portion of the preserve (herein referred to as eastern hills excess biological open space) may be sold as preservation lands to another entity, provided approval is granted by the County and Wildlife Agencies. This excess biological open space may also be incorporated into a mitigation bank through the formal mitigation bank approval process with the USFWS and CDFW. Refer to Section 1.2.6 for additional information. The 832.7-acre biological open space contains a 6.4-acre future potential easement to the San Diego County Water Authority (SDCWA), discussed further in Section 2.6.

The northern portion of the property contains a 203.6-acre existing equestrian facility. This privately-owned and operated facility is not part of the biological open space preserve and is not subject to this RMP. However, the facility does contain pastures that provide biological value to certain species (e.g., foraging habitat for birds). As such, equestrian pastures that are outside the residential development footprint will continue in use as pastures as part of the ongoing equestrian operations, and project approval will require a limited use easement be recorded over these areas specifying restrictions on future usage to retain the current biological value of the pastures. The equestrian facility will be managed pursuant to a separate Pasture Management Plan (PMP; HELIX 2019b) that is reviewed and approved by County PDS and the Wildlife Agencies, for which the manager of the equestrian facility (i.e., Ranch Manager) and property owner are responsible for implementing. As part of their duties, the Resource Manager for the biological open space would help ensure that the PMP is being adhered to and would coordinate with the Ranch Manager, County, and the Wildlife Agencies in this oversight capacity (see Section 4.2.10 of this document).

Preservation of 832.7 acres in onsite biological open space described in this RMP will permanently protect high quality habitat suitable for numerous sensitive species, as well as providing for preservation

of land determined to be of importance to regional habitat planning efforts under the Draft North County Multiple Species Conservation Program Plan (Draft NC MSCP Plan).

1.1.2 Conditions and/or Mitigation Measures that Require an RMP

This RMP satisfies County requirements for public review of the project pursuant to the California Environmental Quality Act (CEQA) and conditions that will be part of the Resolution of Approval. Project conditions requiring an RMP include mitigation for impacts to southern willow scrub, mule fat scrub, tamarisk scrub, coast live oak woodland, Diegan coastal sage scrub (including disturbed), flat-topped buckwheat scrub, and non-native grassland, as well as impacts to breeding, roosting, and/or foraging habitat for several sensitive animal species.

1.2 IMPLEMENTATION

1.2.1 Resource Manager Qualifications and Responsible Parties

A biological open space easement must be recorded over the project's biological open space prior to initiation of project impacts. Fee title of preserve could be transferred to the Resource Manager prior to the Resource Manager initiating long-term management responsibilities.

Resource Manager Qualifications

Proposed Resource Manager: The project applicant will contract with a qualified entity to serve as Resource Manager, such as the San Diego Habitat Conservancy.

The County Planning & Development Services (PDS) and project applicant will jointly approve the selection of a Resource Manager, who must be an established conservancy group or land manager, County Department of Parks and Recreation, County Department of Public Works, a federal or state wildlife agency, or a federal land manager.

Additionally, the Resource Manager must possess the following qualifications:

- Ability to carry out habitat monitoring or mitigation activities;
- Fiscal stability, including preparation of an operational budget (using an appropriate analysis technique) for the management of this RMP;
- Have at least one staff member with a biology, ecology, or wildlife management degree, or have a Memorandum of Understanding (MOU) with a qualified person with such a degree; and
- Experience with habitat management in southern California.

Other Responsible Parties

Proposed Land Owner: Resource Manager/Conservancy (to be determined)

Proposed Easement Holder: County of San Diego

Restoration Entity: HELIX Environmental Planning, Inc. (or other restoration entity as may be proposed by Applicant and approved by County)

Management responsibilities for upland revegetation areas implemented as part of the proposed project (refer to Section 3.5) shall remain with the restoration entity until the revegetation has been completed. Completion of the various upland revegetation areas will be defined by the project's upland revegetation plan; it is noted that these areas are not subject to success criteria or bonding, as they do not comprise the required habitat mitigation component for the project, which is accomplished entirely through on-site habitat preservation. For revegetation areas that require County/Agency approval (i.e., wetland revegetation areas), upon County/Agency acceptance of the revegetated area, management responsibility for the wetland revegetation area will be transferred to the Resource Manager.

1.2.2 Financial Responsibility/Mechanism

The project applicant is responsible for funding restoration requirements, including direct funds to support the RMP start-up tasks.

The proposed long-term funding mechanism for management of the preserve is establishment of a maintenance-only community facilities district, which would fund management activities within the preserve through annual assessments on the property owners.

1.2.3 Cost Estimate/Budget

A cost estimate/Property Analysis Record (PAR) will be prepared for the 832.7-acre preserve once a Resource Manager has been identified.

1.2.4 Reporting Requirements

An RMP annual report will be submitted to the County, USFWS, and CDFW, along with the submittal fee to cover County staff review time. The report will summarize the previous year's management and monitoring, as well as a work plan for the upcoming year. The report will provide a summary of methods employed, identify new management issues, and address the success or failure of previous management approaches based on monitoring. It shall include a summary of the overall condition of vegetation communities and sensitive species in the preserve, assess any changes from the baseline or from the previous year's conditions, and address any monitoring and management limitations. The report shall list the expenses from the year, the proposed budget for the upcoming year, and the status of the endowment. Adaptive management (changes) resulting from previous monitoring results and methods for measuring the success for such adaptive management will be discussed.

The results of updated vegetation mapping and sensitive plant and animal surveys will be included in the annual reports. For new sensitive species observations or significant changes to previously reported species, the annual report shall include copies of completed California Natural Diversity Database (CNDDB) forms with evidence that they have been submitted to the State. The report shall also include copies of invasive plant species forms submitted to the State or County.

A fee for staff's review time will be collected by PDS upon submittal of the annual report. The RMP may also be subject to an ongoing deposit account for staff to address management challenges as they arise. Deposit accounts, if applicable, must be replenished to a defined level as necessary.

1.2.5 Open Space Maintenance Agreement

The County requires an Agreement with the project applicant and Resource Manager when an RMP is required. The Agreement will be executed following County acceptance of this RMP. The Agreement will obligate the applicant to implement the RMP and provide a source of funding to pay the cost to implement the RMP in perpetuity. The Agreement shall also provide a mechanism for the funds to be transferred to the County in the event of failure of the Resource Manager to meet the goals outlined in this RMP. The Agreement shall also provide that all RMP funding has been provided or that the funding mechanism has been established prior to the approval of grading or improvement plans, or prior to approval of the Parcel/Final Map, whichever occurs earlier.

1.2.6 Sale of Excess Acreage for Mitigation

Up to 308.9 acres of biological open space in the easternmost portion of the preserve (i.e., eastern hills excess biological open space) may be sold as preservation lands to another entity to mitigate for the impacts of their projects, which would be unrelated to the proposed Ocean Breeze Ranch project, or incorporated into a mitigation bank through the formal mitigation bank approval process with the USFWS and CDFW. Any sale of lands to another entity would require County and Wildlife Agency approval. If sold lands are not to be managed under this RMP, preparation of a separate RMP would be required, along with approval of the RMP by the County and Wildlife Agencies for any land sold.

Preservation of habitat within the project's 832.7-acre biological open space greatly exceeds the project's upland mitigation requirement for impacted sensitive upland habitats (Table 1). Even with the potential sale of up to 308.9 acres of biological open space in the eastern hills to another entity or establishment of this area as a formal habitat mitigation bank, the remaining 523.8 acres of onsite biological open space would still exceed the project's upland mitigation requirement for all impacts to sensitive upland habitats (Table 1).

Table 1
SENSITIVE UPLAND HABITAT IN BIOLOGICAL OPEN SPACE (BOS)
IN EXCESS OF REQUIRED MITIGATION AND OUTSIDE OF EASTERN HILLS EXCESS BOS AREA[1]

Habitat Type	Required Mitigation Acreage	Acreage in 832.7-acre BOS	Acreage in 523.8-acre BOS[1]	Excess Preserved Acreage in 523.8-acre BOS[2]
Coast Live Oak Woodland	7.8[3]	28.1	8.1	0.3
Coastal Sage Scrub and Flat-top Buckwheat Scrub	101.7	467.8	240.6	138.9
Non-native Grassland	18.8	42.7	42.7	23.9[4]

[1] Table includes only those sensitive upland habitats with project impacts; it does not include sensitive habitats avoided by the project. See Table 3 for a summary of all habitats within the preserve.
[2] This would be the acreage of BOS following sale of 308.9 acres in the eastern hills excess BOS.
[3] Composed of 1.2 acres of mitigation for impacts to 0.4 acre of coast live oak woodland, and 6.6 acres of mitigation for impacts to 2.2 acres of oak root zone (per County guidelines).
[4] To be used toward mitigation for impacts to pasture.

2.0 PROPERTY DESCRIPTION

This section includes data from the project's biological technical report, dated August 7, 2019 (HELIX 2019a).

2.1 PROPERTY LOCATION

The approximately 1,402.5-acre project site (site) is located west of Interstate (I-) 15, south of State Route (SR) 76, in the unincorporated community of Bonsall in north San Diego County, California (Figure 1). More specifically, the site occurs immediately north of portions of West Lilac Road and south of the San Luis Rey River, at 5820 West Lilac Rd., Bonsall, California (Figure 2). The site is depicted within Sections 13, 14, 15, 20, 21, 22, and 23 of Township 10 South, Range 3 West of the Bonsall, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 3). Primary access to the site is provided by West Lilac Road. The project site occurs within the following twelve Assessor Parcel Numbers (APNs) 124-150-3400, 124-150-3500, 124-150-2800, 125-131-4800, 125-131-4900, 125-131-5400, 125-080-2100, 126-060-7800, 127-191-2000, 127-230-590, 127-271-0100, and 127-271-0200. The site occurs within the boundaries of the Draft NC MSCP Plan, of which 1,176.9 acres (84 percent) occur within areas identified in the draft plan as Pre-Approved Mitigation Area (PAMA; Figure 4). The biological open space preserve and equestrian facility are depicted on Figure 5. This figure also depicts the area that may be sold as preservation lands to another entity, or established as a formal mitigation bank, provided approval is granted by the County and Wildlife Agencies.

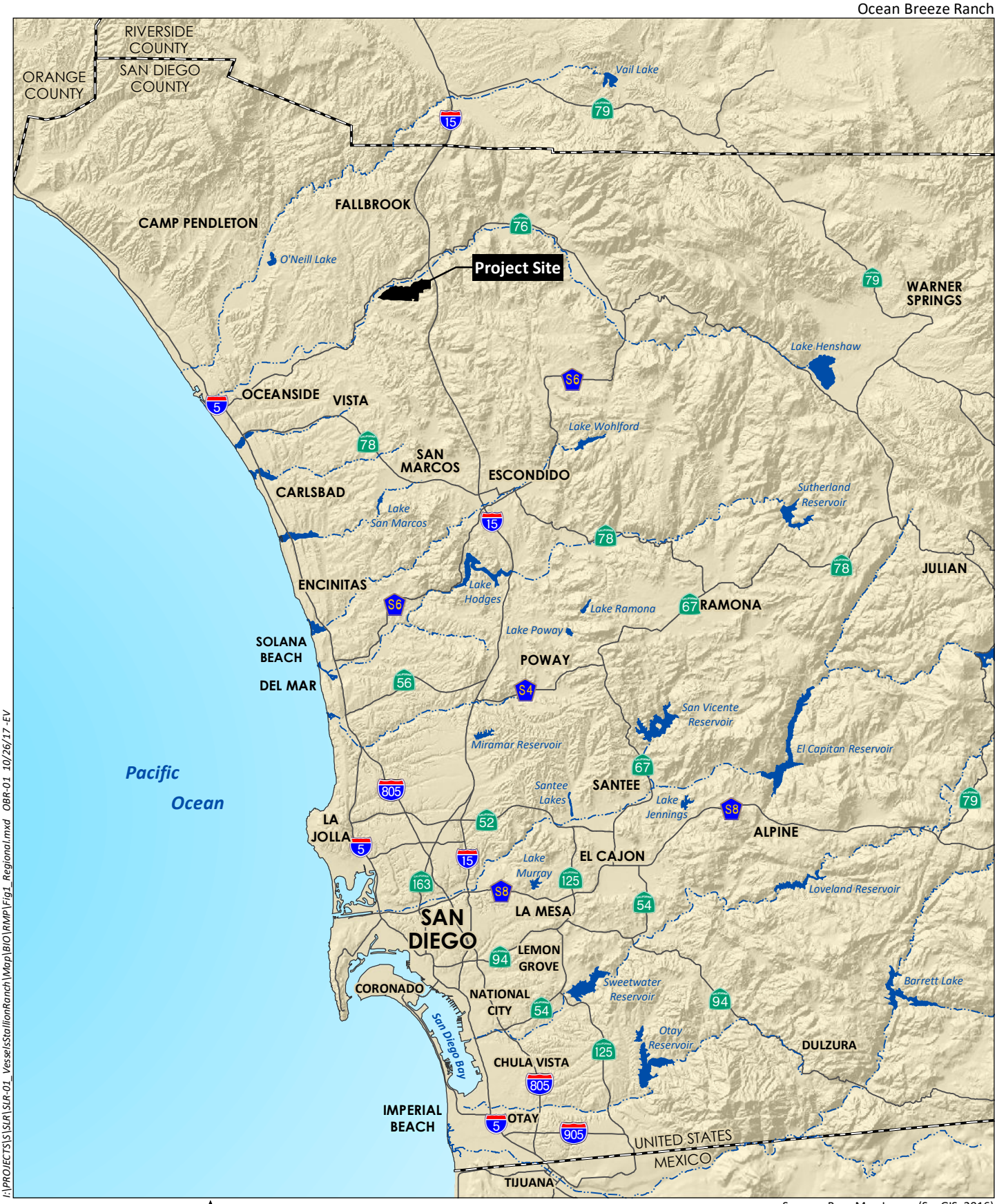
2.2 GEOGRAPHICAL SETTING

The site is generally located within the coastal foothills ecoregion of north San Diego County. The property includes a variety of terrain, from relatively flat alluvial plain near the river along the northern site boundary to ridges and hillsides near the property's southern boundaries. Elevations on the project site range from approximately 190 feet (ft) above mean sea level (amsl) to 960 ft amsl. Elevation generally increases from north to south across the site, with the lowest elevations occurring in the westernmost pastures, and the highest elevations in the easternmost hills. The site is part of the San Luis Rey River valley, which generally trends northeast to southwest across the site, surrounded by hills to the east and south, as well as off-site to the north on the opposite side of SR 76.

In the context of the Draft NC MSCP Plan, most of the project site (1,176.9 of 1,402.5 acres, or 84 percent) occurs within areas identified as PAMA within the Lower San Luis Rey River Linkage. The dominant habitat type present on site is Diegan coastal sage scrub, which covers approximately 507.9 acres (36 percent) of the site. Approximately 659.0 acres (47 percent) of the site is in active agricultural or equestrian use, or is otherwise disturbed by past land uses, including 265.9 acres of row crops, 102.8 acres of avocado orchard, 32.1 acres of fallow orchard, 178.3 acres of horse pasture, and 79.9 acres of disturbed habitat and developed lands containing a combination of horse corrals, barns and other outbuildings, farm worker housing, staging areas, roads, and sparsely vegetated areas that retain a soil substrate.

2.3 LAND USE

General land uses on site include agriculture and equestrian uses, and undeveloped land. Cattle-ranching began on the property in the late 1800s, and the site has been an active horse ranch



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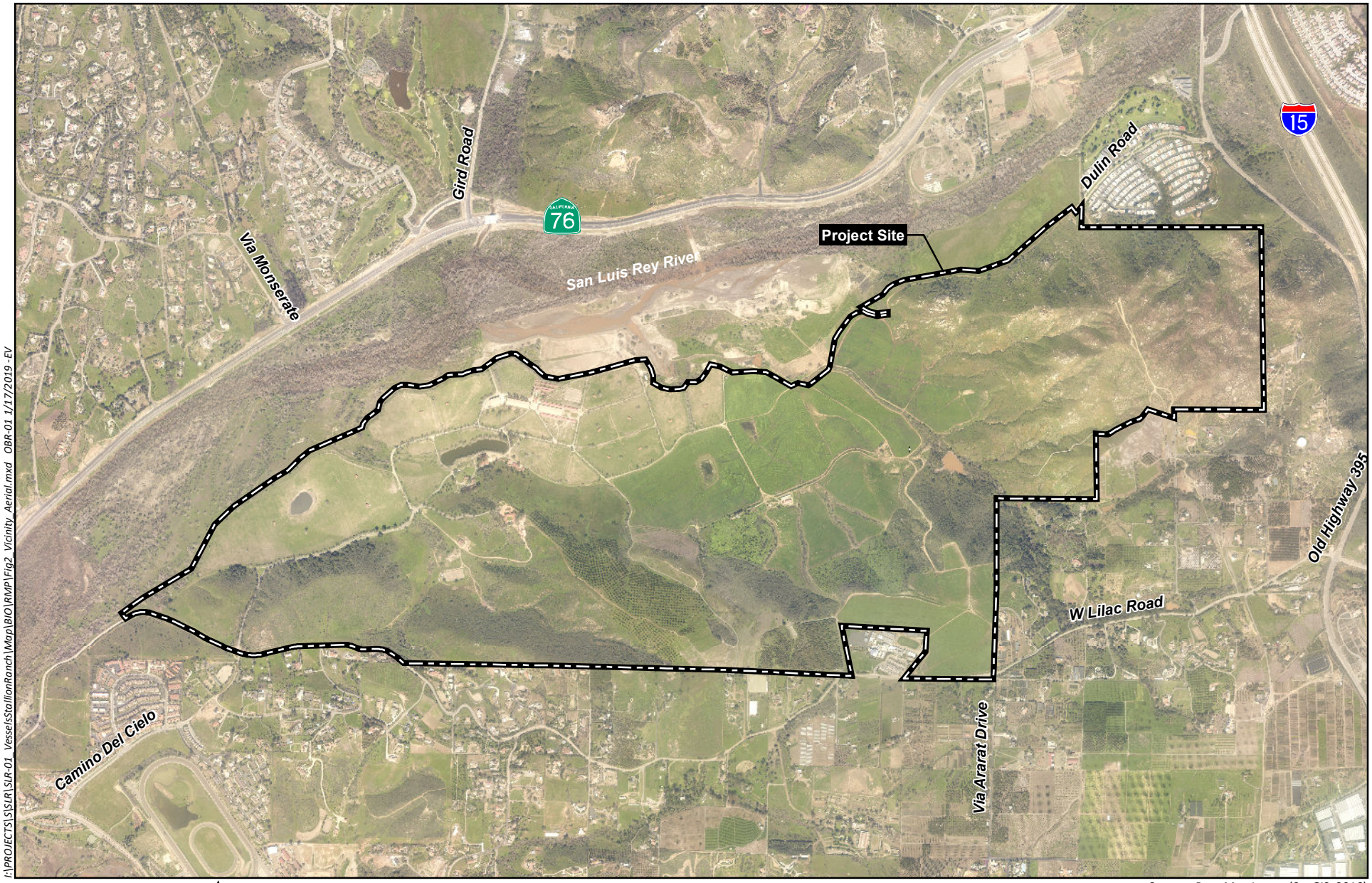
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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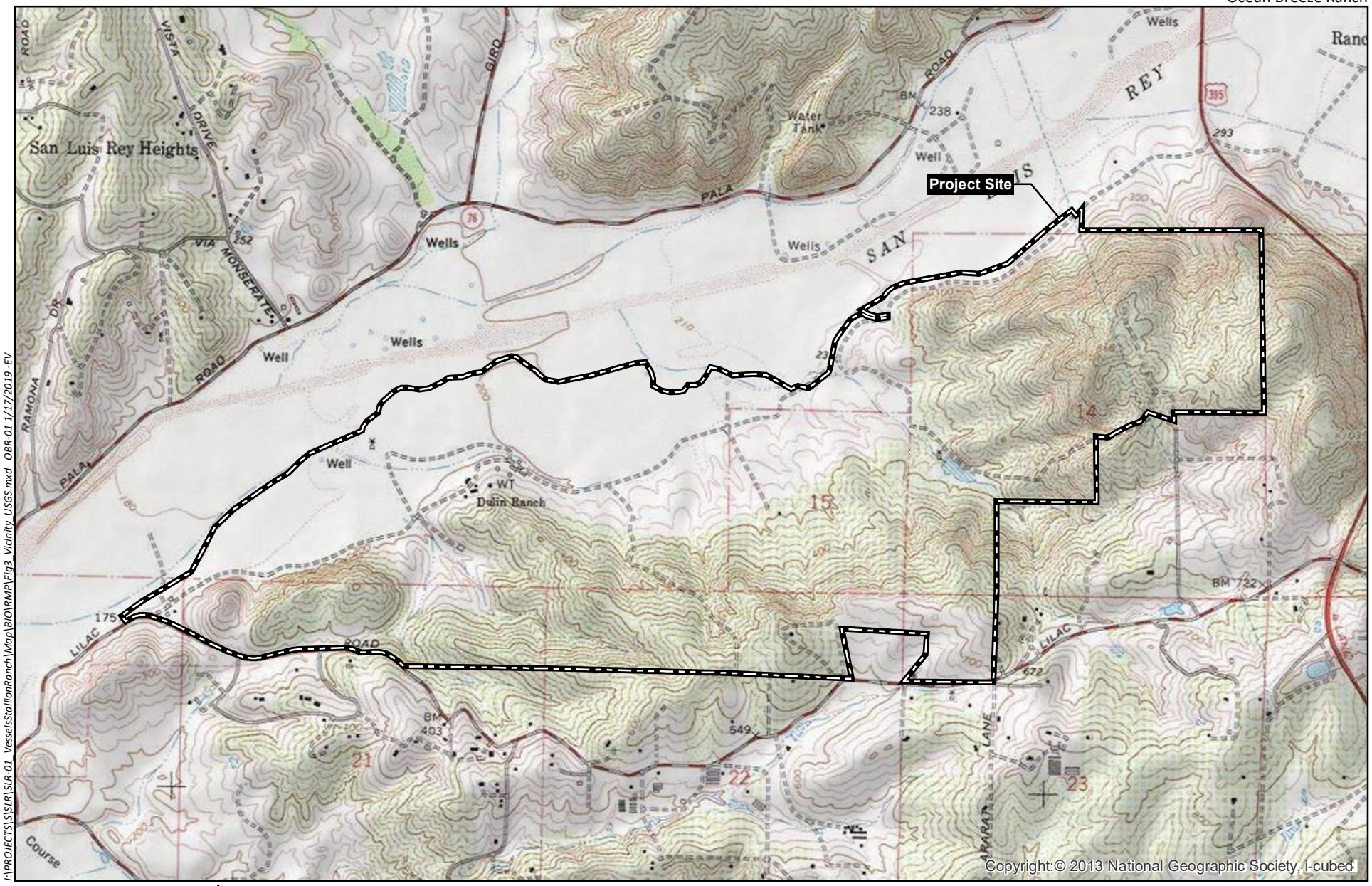
0 2,000 Feet

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Project Vicinity (Aerial Photograph)

Figure 2



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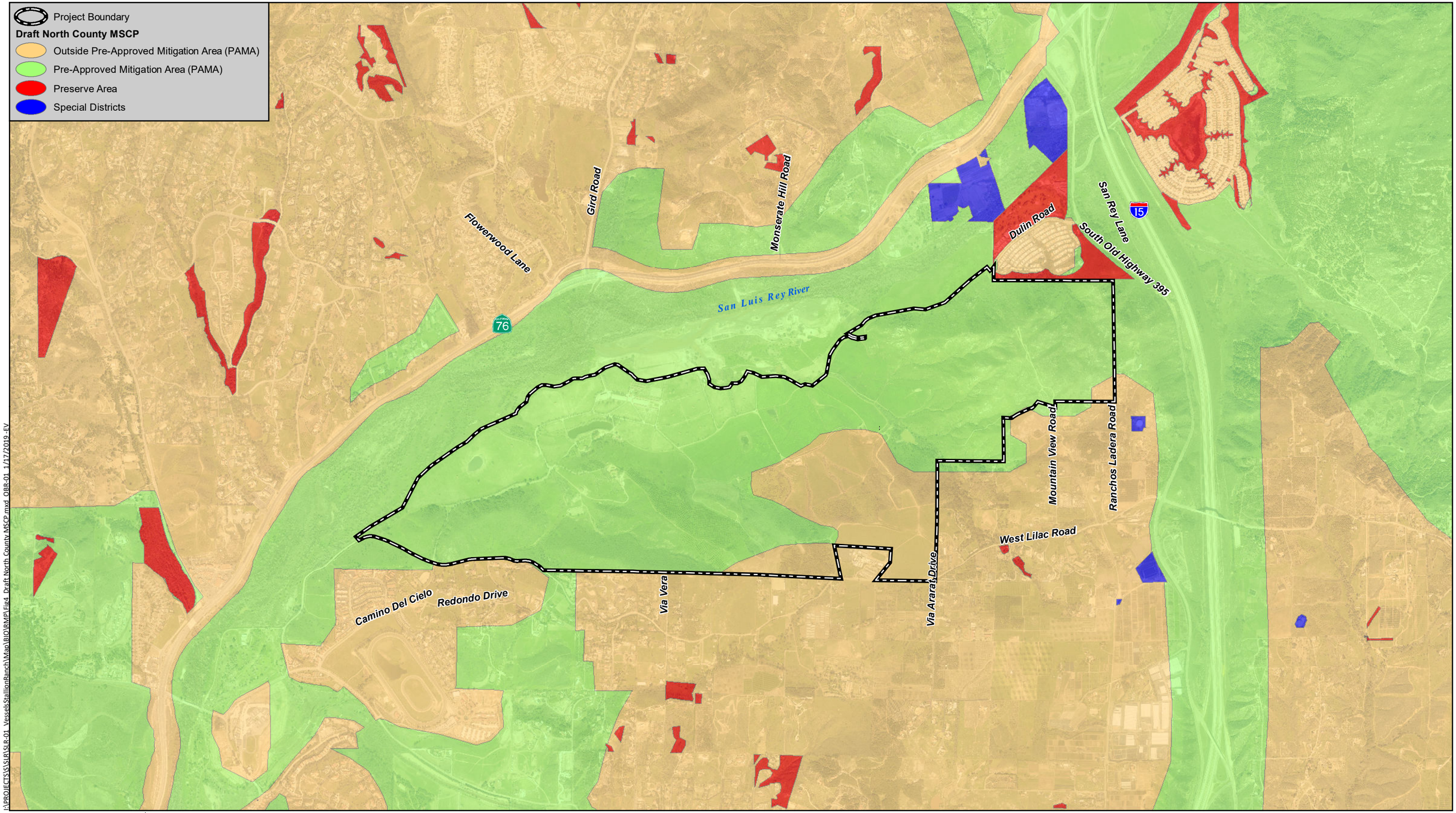
HELIX Environmental Planning

Project Vicinity (USGS Topography)

Figure 3



Source: Aerial (SanGIS, 2017)

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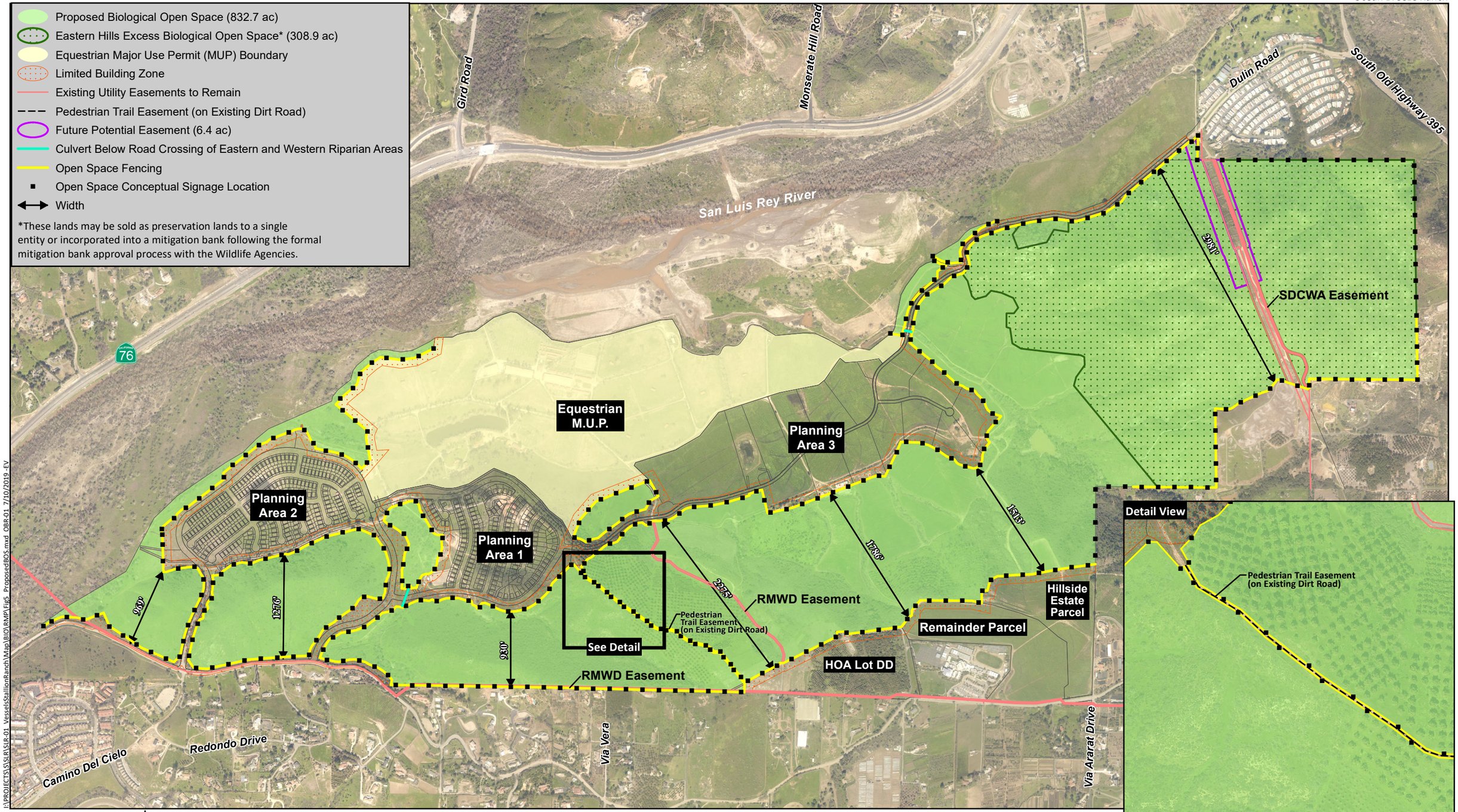
HELIX Environmental Planning

Draft North County MSCP Designations

Figure 4

- Proposed Biological Open Space (832.7 ac)
- Eastern Hills Excess Biological Open Space* (308.9 ac)
- Equestrian Major Use Permit (MUP) Boundary
- Limited Building Zone
- Existing Utility Easements to Remain
- Pedestrian Trail Easement (on Existing Dirt Road)
- Future Potential Easement (6.4 ac)
- Culvert Below Road Crossing of Eastern and Western Riparian Areas
- Open Space Fencing
- Open Space Conceptual Signage Location
- Width

*These lands may be sold as preservation lands to a single entity or incorporated into a mitigation bank following the formal mitigation bank approval process with the Wildlife Agencies.



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HELIX Environmental Planning

Proposed Biological Open Space

Figure 5

since the 1980s, in addition to orchards, row crops, and other agricultural uses going back several decades. Undeveloped areas are concentrated in the eastern and southwestern portions of the site, consisting of hills primarily supporting native scrub communities. Except for the easternmost hills, most of the site has been subjected to some level of recent or ongoing disturbance associated with agricultural, ranching, or equestrian uses on site. Large portions of the property's lower elevations have been used over many decades, first as grazing area for cattle dating back to the Gird Ranch beginning in the late 1800s, and subsequently as pastures for horses. The site has been in use as a stallion breeding farm for several decades, dating to the purchase of the property by the Vessels Family in 1981. Portions of the property have also been utilized for agriculture, with avocado orchard and nursery stock (ornamental shrubs/flowers) occupying extensive slope areas on the south-central hillsides and row crops in portions of the lower valley.

Several roads traverse the project site, associated primarily with the ongoing equestrian and agricultural uses. A large estate home sits on a hilltop in the west-central portion of the site, and a handful of smaller residences occupied by ranch employees are present near the base of the hill. The southwestern hills, which are primarily Diegan coastal sage scrub and non-native grassland, were grazed by cattle until 2010. Dulin Road extends east-west along the northern base of the eastern hills. The road is gated at the eastern end of the site next to an existing mobile home park.

Surrounding land uses generally include the San Luis Rey River to the north, with SR 76 and rural residential development occurring to the north side of the river, I-15 and rural residential development to the east, and rural residential development to the south and west. A California Department of Transportation (Caltrans) mitigation site for the SR 76 East – South Mission Road to Interstate 15 project is located along the northern property boundary, extending to the San Luis Rey River. County-owned conserved lands along the San Luis Rey River abut the northwestern boundary of the project site to the west of the Caltrans mitigation site. Sullivan Middle School abuts the southern boundary of the site, adjacent to West Lilac Road.

2.4 GEOLOGY, SOILS, CLIMATE, AND HYDROLOGY

Twelve soil series, which comprise 28 soil types, have been mapped on site (NRCS 2016; Table 2; Figure 6), with the majority classified as sandy loams. Those soils types covering the most area on site include those in the Cieneba series (437.6 acres), Vista series (201.1 acres), and Fallbrook series (229.1 acres).

Table 2
SOIL TYPES MAPPED ON SITE[1]

Map Symbol	Map Unit Name	Acreage[2]
BlC	Bonsall sandy loam, 2 to 9 percent slopes	24.6
BlD2	Bonsall sandy loam, 9 to 15 percent slopes, eroded	7.3
ClD2	Cieneba coarse sandy loam, 5 to 15 percent slopes, eroded	6.5
ClG2	Cieneba coarse sandy loam, 30 to 65 percent slopes, eroded	143.0
CmE2	Cieneba rocky coarse sandy loam, 9 to 30 percent slopes, eroded	31.0
CmrG	Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes	257.1
FaC	Fallbrook sandy loam, 5 to 9 percent slopes	34.5
FaD2	Fallbrook sandy loam, 9 to 15 percent slopes, eroded	18.6
FaE2	Fallbrook sandy loam, 15 to 30 percent slopes, eroded	91.3
FaE3	Fallbrook sandy loam, 9 to 30 percent slopes, severely eroded	6.7

Table 2 (cont.)
SOIL TYPES MAPPED ON SITE[1]

Map Symbol	Map Unit Name	Acreage[2]
FvD	Fallbrook-Vista sandy loams, 9 to 15 percent slopes	30.8
FvE	Fallbrook-Vista sandy loams, 15 to 30 percent slopes	47.2
GoA	Grangeville fine sandy loam, 0 to 2 percent slopes	14.0
PeA	Placentia sandy loam, 0 to 2 percent slopes	17.0
PeC	Placentia sandy loam, 2 to 9 percent slopes	110.4
PeD2	Placentia sandy loam, 9 to 15 percent slopes, eroded	6.6
RaC	Ramona sandy loam, 5 to 9 percent slopes	14.0
RaD2	Ramona sandy loam, 9 to 15 percent slopes, eroded	28.1
RcD	Ramona gravelly sandy loam, 9 to 15 percent slopes	2.8
Rm	Riverwash	33.1
StG	Steep gullied land	31.2
TuB	Tujunga sand, 0 to 5 percent slopes	135.8
VaA	Visalia sandy loam, 0 to 2 percent slopes	96.0
VaB	Visalia sandy loam, 2 to 5 percent slopes	13.9
VsD	Vista coarse sandy loam, 9 to 15 percent slopes	10.7
VsE	Vista coarse sandy loam, 15 to 30 percent slopes	142.0
VsE2	Vista coarse sandy loam, 15 to 30 percent slopes, eroded	13.9
VsG	Vista coarse sandy loam, 30 to 65 percent slopes	34.5
	TOTAL	**1,402.5**

[1] Pursuant to the NRCS Web Soil Survey (2016).
[2] Rounded to the nearest tenth acre.

The climate in San Diego County is generally mild and arid. Temperatures in Bonsall are generally highest in August (average high temperature of 82˚F) and lowest in December (average low temperature of 45˚F). Average annual precipitation in Bonsall is approximately 13.2 inches, with the highest average rainfall totals occurring in January, February, and March (2.7 inches, 3.1 inches, and 2.2 inches, respectively). The driest months are June, July, and August with approximately 0.1 inch of rainfall in June and less than 0.1 inch in July and August (Weather.com 2017).

The site is in the Bonsall Hydrologic Subarea (HSA; HSA No. 903.12), which lies in the Lower San Luis Hydrologic Area and San Luis Rey Hydrologic Unit, as identified in the San Diego RWQCB's Basin Plan (Region 9). On-site ephemeral and intermittent tributaries convey runoff in a generally northern direction toward the San Luis Rey River, which is off site, although these tributaries terminate prior to reaching the river. The San Luis Rey River extends from its headwaters above Warner Springs (east of the site) to the Pacific Ocean, approximately 13 miles downstream of the site.

2.5 TRAILS

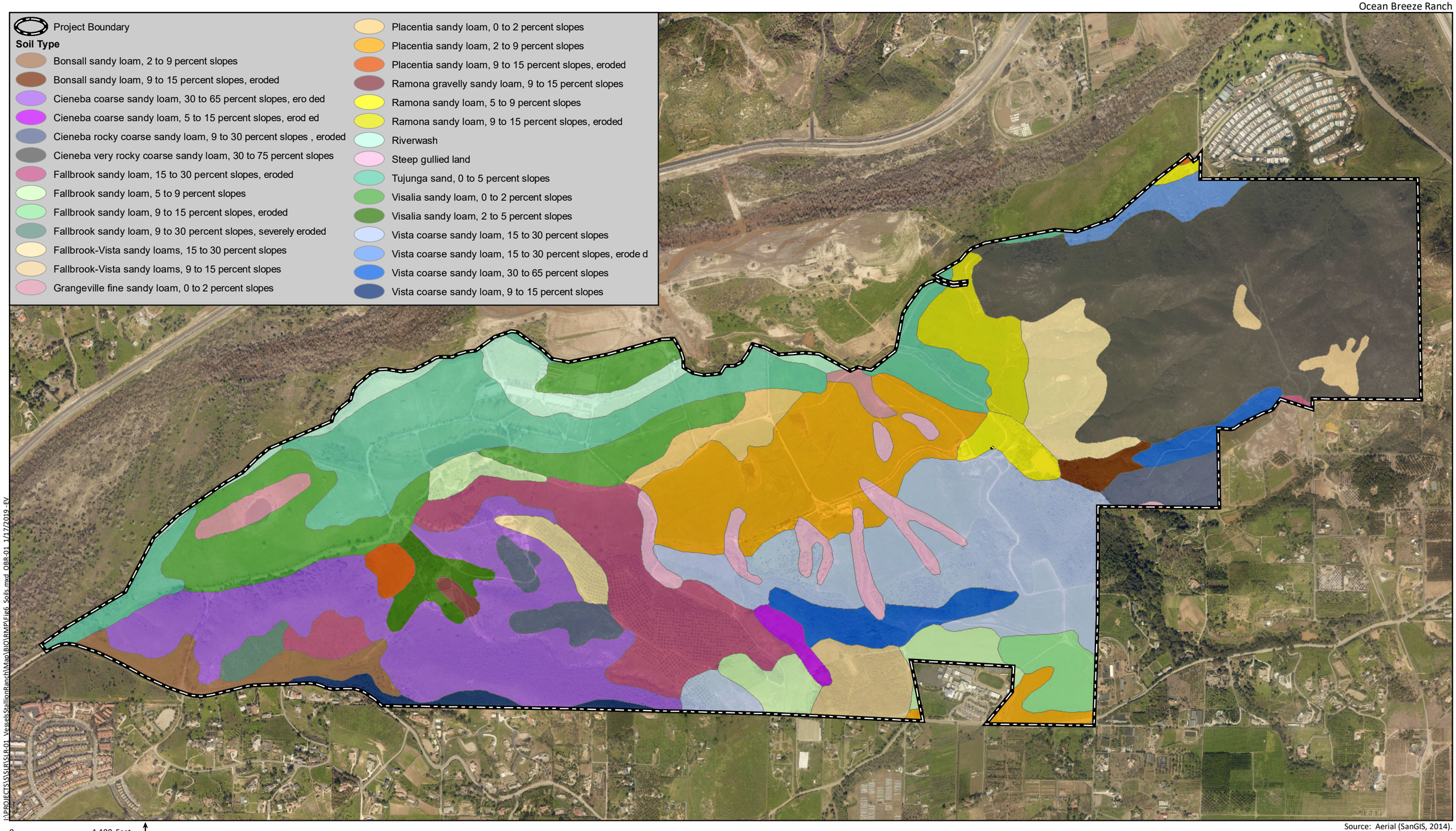
A 15-foot wide trail easement will be established over an existing dirt road connecting the east end of Planning Area 1 southeast to Homeowners Association (HOA) Lot DD (Figure 5), and then eastward along the southern edge of HOA Lot DD toward Sullivan Middle School. The trail easement crosses biological open space and would be fenced on either side, consisting of 3-strand wire or similar fencing allowing for wildlife passage. Signs prohibiting access would be posted along the fencing. The easement would incorporate a 6-foot wide decomposed granite trail and would be gated at either end to prevent unauthorized vehicle access into biological open space. No other trails are proposed in the preserve.

Ocean Breeze Ranch

Project Boundary

Soil Type

- Bonsall sandy loam, 2 to 9 percent slopes
- Bonsall sandy loam, 9 to 15 percent slopes, eroded
- Cieneba coarse sandy loam, 30 to 65 percent slopes, ero ded
- Cieneba coarse sandy loam, 5 to 15 percent slopes, erod ed
- Cieneba rocky coarse sandy loam, 9 to 30 percent slopes , eroded
- Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes
- Fallbrook sandy loam, 15 to 30 percent slopes, eroded
- Fallbrook sandy loam, 5 to 9 percent slopes
- Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- Fallbrook sandy loam, 9 to 30 percent slopes, severely eroded
- Fallbrook-Vista sandy loams, 15 to 30 percent slopes
- Fallbrook-Vista sandy loams, 9 to 15 percent slopes
- Grangeville fine sandy loam, 0 to 2 percent slopes
- Placentia sandy loam, 0 to 2 percent slopes
- Placentia sandy loam, 2 to 9 percent slopes
- Placentia sandy loam, 9 to 15 percent slopes, eroded
- Ramona gravelly sandy loam, 9 to 15 percent slopes
- Ramona sandy loam, 5 to 9 percent slopes
- Ramona sandy loam, 9 to 15 percent slopes, eroded
- Riverwash
- Steep gullied land
- Tujunga sand, 0 to 5 percent slopes
- Visalia sandy loam, 0 to 2 percent slopes
- Visalia sandy loam, 2 to 5 percent slopes
- Vista coarse sandy loam, 15 to 30 percent slopes
- Vista coarse sandy loam, 15 to 30 percent slopes, erode d
- Vista coarse sandy loam, 30 to 65 percent slopes
- Vista coarse sandy loam, 9 to 15 percent slopes



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Source: Aerial (SanGIS, 2014).

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HELIX Environmental Planning

Soils

Figure 6

Existing roads within the biological open space will be gated to preclude public access and may be used by the Resource Manager for access within the preserve, and by utility company personnel using existing easement rights to service utility facilities, as discussed below in Section 2.6.

2.6 EASEMENTS OR RIGHTS

Three existing utility easements that cross biological open space will remain active (Figure 5). One of the easements is granted to the SDCWA and the other two pertain to the Rainbow Municipal Water District (RMWD). These easements will be identified in the biological open space easement recorded over the biological open space. Any other easements crossing the preserve will be vacated or quitclaimed. The easements to remain total 13.3 acres and are considered impact neutral; they are not counted in the overall acreage of biological open space which totals 832.7 acres on site. Refer to Figure 5 for locations of these easements.

The SDCWA easement, which runs north-south through the eastern hills, consists of an access road and appurtenant structures following the highest ridgeline and portions of the slopes. The gated SDCWA access road enters the site at the northern terminus of Mountain View Road. This easement will remain over the property. It is noted that the SDCWA has expressed interest in widening a portion of their existing easement in the eastern hills. The widened easement, if implemented, would increase the overall width of the existing SDCWA easement on the steep north-facing slope of the eastern hills by approximately 200 feet, comprising approximately 6.4 acres. The expanded easement would allow SDCWA to address erosion resulting from the 2014 and 2017 wildfires that could affect buried pipes, as well as allowing for continued pipe maintenance and slope stabilization over the long term. This area is noted as "Future Potential Easement" on Figure 5. The 6.4-acre future potential easement is identified in this management plan as part of the biological open space, however, if the SDCWA acquires the easement, an exception to the biological open space easement would be made for this area, which is not needed to meet the mitigation requirements of the project. In the event SDCWA proceeds with acquisition of the future potential easement area, SDCWA would be responsible for obtaining any applicable regulatory permits or approvals for any impacts associated with work considered or conducted by SDCWA; any such work is not a part of the Ocean Breeze Ranch project.

RWMD easements occur in two locations: (1) an easement running within a narrow paved road through the central portion of the biological open space, and (2) an easement running east-west through the western tip of the biological open space. These easements will remain over the property.

2.7 FIRE HISTORY

The rate of fires in San Diego County coastal shrublands generally increased over the last half of the 20th century. Over 600 fires have occurred in the foothills and mountains of San Diego County between 1910 and 1999, and several major fires in excess of 50,000 acres have occurred in recent years. The most recent fire affecting the project site was the December 2017 Lilac Fire which burned a large portion of the project site. The Lilac Fire burned habitat in the eastern hills and traveled westward across the site, affecting native habitats, grassland, and agricultural lands, including orchard. Offsite habitat along the San Luis Rey River also burned in the fire. On-site pastures, which are irrigated, did not burn in the fire. Prior to the 2017 Lilac Fire, the most recent fires recorded for the site were the May 2014 Highway Fire that burned the eastern hills, an unnamed fire in 1975 that burned the south-facing slopes of the southwestern hills, and an unnamed fire in 1938 that burned the central hills and

the southern half of the eastern hills (California Department of Forestry and Fire Protection [CAL FIRE] 2016).

3.0 BIOLOGICAL RESOURCES DESCRIPTION

3.1 VEGETATION COMMUNITIES

A total of 20 vegetation communities/land use types occur within the preserve (Figure 7; Table 3).

The numeric codes in parentheses following each community/land use type name are from the Holland classification system (Holland 1986) and as added to by Oberbauer (2008) as presented in the County's Biology Guidelines (County 2010).

Table 3
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES IN THE PRESERVE

Vegetation Community[1]	Acreage[2]	
	Before Restoration	After Restoration[3]
Southern Cottonwood-willow Riparian Forest (61330)	18.01	18.01
Southern Willow Scrub (63320)	2.76	2.76
Mule Fat Scrub (63310)	1.12	1.60
Freshwater Marsh (52400)	0.98	0.98
Herbaceous Wetland (52510)	0.24	0.24
Freshwater Pond/Open Water (64140)	1.16	1.16
Tamarisk Scrub (63810)	0.08	0.08
Coast Live Oak Woodland (71160)	28.1	28.1
Diegan Coastal Sage Scrub[4] (32500)	467.8	521.7
Coastal Sage-chaparral Scrub (37G00)	31.5	31.5
Southern Mixed Chaparral (37120)	31.8	31.8
Non-Native Grassland (42200)	42.7	42.7
Extensive Agriculture: Pasture (18310)	6.1	6.1[5]
Extensive Agriculture: Row Crops (18320)	92.5	54.6[6]
Eucalyptus Woodland (79100)	1.2	1.2
Orchard (18100)	68.5	52.4[6]
Fallow Orchard (18100)	31.8	31.8
Non-native Vegetation (79100)	1.2	1.2
Disturbed Habitat (11300)	4.4	4.2
Developed Land (12000)	0.6	0.6
TOTAL	**832.7**	**832.7**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008). Data is from the project's biological technical report, dated August 7, 2019 (HELIX 2019a).

[2] Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.

[3] Acreage after restoration refers to the conceptual acreage that is anticipated following completion of the project's upland and wetland revegetation plans, which are currently being prepared, thus, acreages provided in Table 3 are estimates and may change.

[4] Including disturbed.

[5] Pasture contained in biological open space would no longer be maintained as pasture and is expected to revert naturally to grassland.

[6] Row crops and orchard land uses would not continue as active land uses within biological open space. These habitats would naturalize to other habitats and/or be available for future enhancement and restoration activities.

Ocean Breeze Ranch

- Biological Open Space
- Equestrian MUP
- Impacts
- Impact Neutral
- Limited Building Zone
- Pedestrian Trail Easement (on Existing Dirt Road)

Vegetation Communities/Land Use Types**

- Southern Cottonwood-willow Riparian Forest (61330)*
- Southern Willow Scrub (63320)*
- Mule Fat Scrub (63310)*
- Freshwater Marsh (52400)
- Herbaceous Wetland (52510)*
- Open Water/Freshwater Pond (64140)
- Tamarisk Scrub (63810)*
- Coast Live Oak Woodland (71160)*
- Diegan Coastal Sage Scrub (32500)*
- Diegan Coastal Sage Scrub - Disturbed (32500)*
- Coastal Sage-Chaparral Scrub (37G00)*
- Flat-topped Buckwheat Scrub (32800)*
- Southern Mixed Chaparral (37120)*
- Non-native Grassland (42200)*
- Pasture (18310)
- Row Crops (18320)*
- Orchard (18100)*
- Fallow Orchard (18100)*
- Open Water/AG Pond (64100)
- Eucalyptus Woodland (11000)
- Non-native Vegetation (79100)*
- Disturbed Habitat (11300)
- Urban/Developed (12000)

Other

- Rock Outcrop

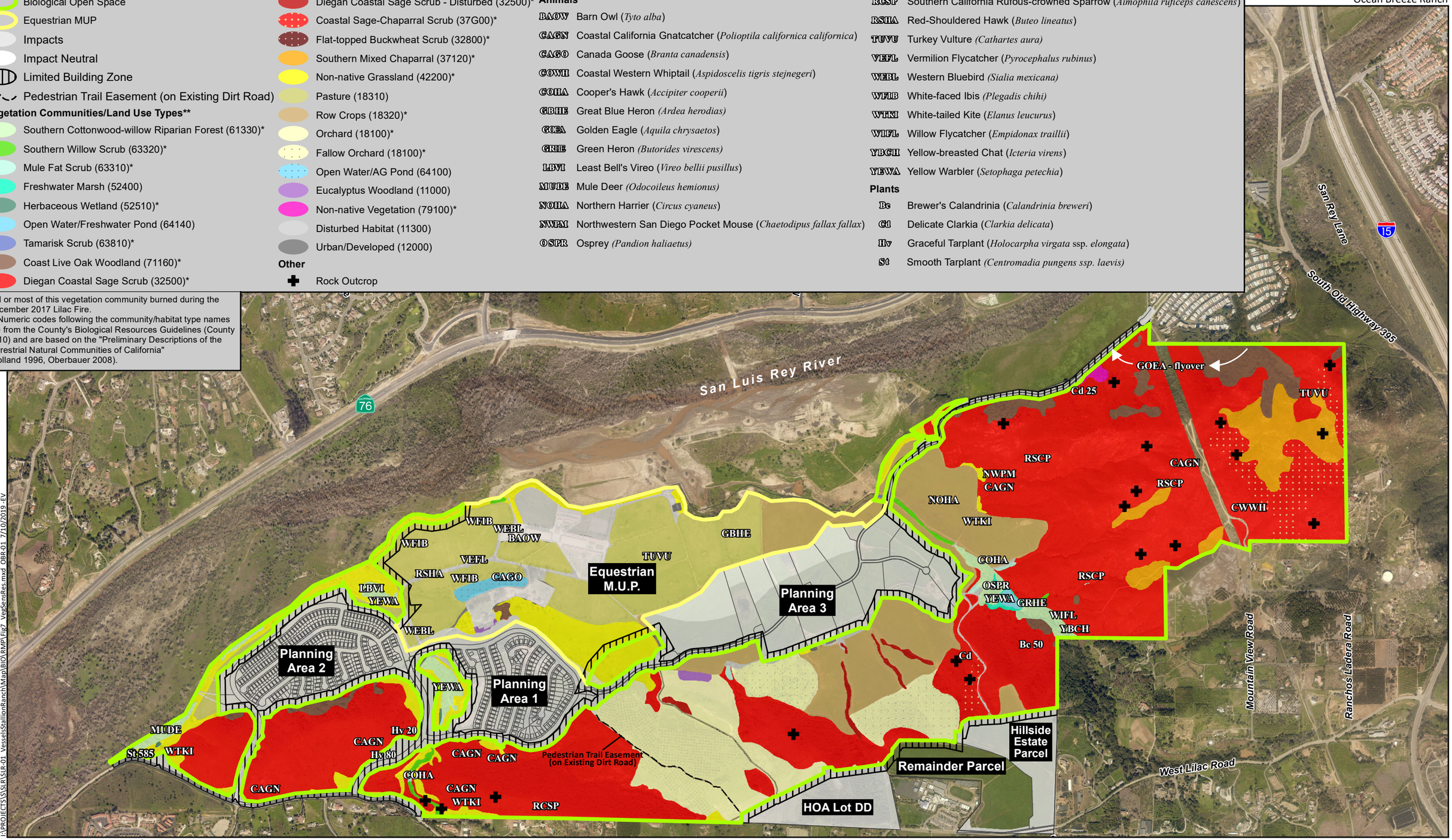
*All or most of this vegetation community burned during the December 2017 Lilac Fire.
** Numeric codes following the community/habitat type names are from the County's Biological Resources Guidelines (County 2010) and are based on the "Preliminary Descriptions of the Terrestrial Natural Communities of California" (Holland 1996, Oberbauer 2008).

Animals

- BAOW Barn Owl (*Tyto alba*)
- CAGN Coastal California Gnatcatcher (*Polioptila californica californica*)
- CAGO Canada Goose (*Branta canadensis*)
- COWH Coastal Western Whiptail (*Aspidoscelis tigris stejnegeri*)
- COHA Cooper's Hawk (*Accipiter cooperii*)
- GBHE Great Blue Heron *(Ardea herodias)*
- GOEA Golden Eagle (*Aquila chrysaetos*)
- GRHE Green Heron *(Butorides virescens)*
- LBVI Least Bell's Vireo (*Vireo bellii pusillus*)
- MUDE Mule Deer *(Odocoileus hemionus)*
- NOHA Northern Harrier (*Circus cyaneus*)
- NWPM Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)
- OSPR Osprey *(Pandion haliaetus)*
- RCSP Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
- RSHA Red-Shouldered Hawk (*Buteo lineatus*)
- TUVU Turkey Vulture *(Cathartes aura)*
- VEFL Vermilion Flycatcher (*Pyrocephalus rubinus*)
- WEBL Western Bluebird *(Sialia mexicana)*
- WFIB White-faced Ibis *(Plegadis chihi)*
- WTKI White-tailed Kite (*Elanus leucurus*)
- WIFL Willow Flycatcher (*Empidonax traillii*)
- YBCH Yellow-breasted Chat (*Icteria virens*)
- YEWA Yellow Warbler (*Setophaga petechia*)

Plants

- Bc Brewer's Calandrinia (*Calandrinia breweri*)
- Cd Delicate Clarkia (*Clarkia delicata*)
- Hv Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*)
- St Smooth Tarplant *(Centromadia pungens ssp. laevis)*



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Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Vegetation and Sensitive Biological Resources in the Biological Open Space and Equestrian MUP

Figure 7

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest consists of tall, open, broad-leaved, winter-deciduous riparian species and is dominated by cottonwood species (e.g., *Populus fremontii* and *Populus trichocarpa*), with willow species (*Salix* spp.) composing the main understory. This vegetation community is dense, structurally diverse, and similar to southern arroyo willow riparian forest, although it contains a greater number of cottonwoods and western sycamores (*Platanus racemosa*; Holland 1986).

This habitat occurs along two riparian corridors in the western and central portions of the site, as well as scattered isolated stands near and along the northern property boundary. Typical species occurring within southern cottonwood-willow riparian forest on site include western cottonwood (*P. fremontii*) and arroyo willow (*Salix lasiolepis*), with an understory composed primarily of annual grasses. This vegetation community was affected by the 2017 Lilac Fire. Approximately 18.01 acres of southern cottonwood-willow riparian forest occur in the preserve.

Southern Willow Scrub

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat (*Baccharis salicifolia*), and with scattered emergent cottonwood and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986). In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest.

This habitat occurs within three on-site drainages in the western and central portions of the site, as well as an isolated stand along the northern property boundary. Arroyo willow is the dominant species present. This vegetation community was affected by the 2017 Lilac Fire. A total of 2.76 acres of southern willow scrub occur in the preserve.

Mule Fat Scrub

Mule fat scrub is a shrubby riparian scrub community dominated by mule fat and interspersed with small willows (*Salix* spp.). This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This community may be maintained by frequent flooding, the absence of which would lead to a cottonwood or sycamore dominated riparian woodland or forest (Holland 1986). In other places, the limited hydrology may be unsuitable for anything more mesic than mule fat scrub.

This habitat occurs within four on-site drainages in the western and central portions of the site. Mule fat is the dominant species present, with an understory of annual grasses. This vegetation community was affected by the 2017 Lilac Fire. A total of 1.12 acres of mule fat scrub occur in the preserve. The acreage of mule fat or other riparian scrub within the preserve is expected to increase to approximately 1.60 acres following implementation of the project's wetland restoration plan, further discussed in Section 3.5 of this report.

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, five to 13 ft tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.), along with umbrella sedges (*Cyperus* sp.), rushes (*Juncus* sp.), and spike-sedge (*Eleocharis* sp.).

Freshwater occurs in a single location on site: near and adjacent to the pond in the eastern riparian corridor. Cattail is the dominant species present. A total of 0.98 acre of freshwater marsh occurs in the preserve.

Herbaceous Wetland

Herbaceous wetland is a low-growing, herbaceous community that is dominated by a variety of native wetland species. It typically occurs in seasonally wet areas. Dominant species usually include wrinkled rush (*Juncus rugulosus*), toad rush (*Juncus bufonius*), and wetland grasses.

Herbaceous wetland occurs as small patches of habitat in two locations on site (1) in the extreme southwestern corner and (2) along the western riparian corridor. Both stands are adjacent to southern cottonwood-willow riparian forest. Common species of this habitat observed on site include yerba mansa (*Anemopsis californica*), Mexican rush (*Juncus mexicanus*), and curly dock (*Rumex crispus*). A total of 0.24 acre of herbaceous wetland occurs in the preserve.

Tamarisk Scrub

Tamarisk scrub typically comprises shrubs and/or small trees of non-native, invasive tamarisk species (*Tamarix* spp.) but may also contain willows, salt bushes (*Atriplex* spp.), and salt grass (*Distichlis spicata)*. This habitat occurs along intermittent streams in areas where high evaporation rates increase the salinity level of the soil. Tamarisk is a phreatophyte, a plant that can obtain water from an underground water table. Because of its deep root system and high transpiration rates, tamarisk can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. As a prolific seeder, it may rapidly displace native species within a drainage (Holland 1986).

A single small stand of tamarisk scrub (0.08 acre) occurs along a short reach of drainage in the northeastern portion of the preserve. Salt cedar (*Tamarix ramosissima*) is the dominant species present. This vegetation community was affected by the 2017 Lilac Fire.

Freshwater Pond/Open Water

Freshwater pond on site consists of an impoundment of a natural stream channel in the eastern portion of the site. This open water feature is surrounded by native riparian habitat. A total of 1.16 acres of freshwater pond occurs in the preserve.

Coast Live Oak Woodland

Coast live oak woodland is an open to dense evergreen woodland or forest community, dominated by coast live oak (*Quercus agrifolia*), that may reach a height of 35 to 80 ft. The shrub layer consists of

toyon (*Heteromeles arbutifolia*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), laurel sumac (*Malosma laurina*), fuchsia-flowered gooseberry (*Ribes speciosum*), monkeyflower (*Mimulus aurantiacus*), and poison oak (*Toxicodendron diversilobum*). A dense herbaceous understory is often dominated by miner's lettuce (*Claytonia perfoliata* var. *perfoliata*), chickweed (*Stellaria media*), and annual grasses. This community occurs along the coastal foothills of the Peninsular Ranges, typically on north-facing slopes and shaded ravines (Holland 1986).

This habitat occurs as several scattered stands in the hills in the eastern and western portions of the site, mostly near the bases of north-facing slopes. Coast live oak, poison oak, and miner's lettuce are the dominant species present. This vegetation community was affected by the 2014 Highway Fire and 2017 Lilac Fire. A total of 28.1 acres of coast live oak woodland occur in the preserve.

Diegan Coastal Sage Scrub (including Disturbed and Burned)

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within Diegan coastal sage scrub include California sagebrush (*Artemisia californica*), California buckwheat, laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*; Holland 1986). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native, annual species.

This habitat occurs in large swaths in the eastern and southern portions of the site. California sagebrush, laurel sumac, and California buckwheat are the dominant species present. The southwestern hills also support coast prickly pear (*Opuntia littoralis*) as a subdominant species. Disturbed coastal sage scrub on site occurs as narrow bands of habitat along the slopes of three incised drainages within lands used for row crops. These areas consist of scattered California buckwheat and laurel sumac growing among cut tree limbs and woody debris deposited on the slopes. Sage scrub in the eastern hills burned in the May 2014 Highway Fire, and nearly all sage scrub on site burned in the December 2017 Lilac Fire. A total of 467.8 acres of Diegan coastal sage scrub (including disturbed) occurs in the preserve. The acreage of coastal sage scrub in the preserve is anticipated to increase to 521.7 acres following completion of the project's upland revegetation plan, as further discussed in Section 3.5 of this report.

Coastal Sage-Chaparral Scrub

Coastal sage-chaparral scrub is a mixture of sclerophyllous chaparral shrubs and drought-deciduous sage scrub species regarded as an ecotone (transition) between two vegetation communities. This singular community contains floristic elements of both communities, typically including California buckwheat, black sage, California sagebrush, San Diego honeysuckle (*Lonicera subspicata* var. *denudata*), and chamise (*Adenostoma fasciculatum*).

This community occupies a portion of a slope in the east-central portion of the site, as well a portion of the easternmost hills. Characteristic species present include California sagebrush, California buckwheat, chamise, laurel sumac, and rock rose (*Helianthemum scoparium*). Coastal sage-chaparral scrub occurring in the eastern hills was affected by the May 2014 Highway Fire and 2017 Lilac Fire. A total of 31.5 acres of coastal sage-chaparral scrub occurs in the preserve.

Southern Mixed Chaparral

Southern mixed chaparral is typically found on granitic soils and is composed of broad-leaved, sclerophyllous shrubs that can reach six to 10 ft in height and form dense, often nearly impenetrable stands with poorly developed understories. Depending upon relative proximity to the coast, characteristic species may include, for example, chamise, ceanothus (*Ceanothus* spp.), scrub oak (*Quercus dumosa* or *Q. berberidifolia*), toyon (*Heteromeles arbutifolia*), mission manzanita (*Xylococcus bicolor*), sugar bush (*Rhus ovata*), spiny redberry (*Rhamnus crocea*), bushrue (*Cneoridum dumosum*), and San Diego honeysuckle (Holland 1986).

This habitat occurs within portions of the eastern hills. Characteristic species present include chamise, mission manzanita, rock rose, and scrub oak (*Q. berberidifolia*). Southern mixed chaparral occurring in the eastern hills was affected by the May 2014 Highway Fire and 2017 Lilac Fire. A total of 31.8 acres of southern mixed chaparral occurs in the preserve.

Non-native Grassland

Non-native grassland is a mixture of annual grasses and broad-leaved, herbaceous species. Annual species comprise from 50 percent to more than 90 percent of the vegetative cover, and most annuals are non-native species. Non-native grasses typically comprise at least 30 percent of the vegetative cover, although this percentage can be much higher in some years and lower in others, depending on land use and climatic conditions. Usually, the grasses are less than three ft in height and form a continuous or open cover. Emergent shrubs and trees may be present but do not comprise more than 15 percent of the total cover (County 2010). Most of the non-native grasses originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California.

Non-native grassland occurs in a scattered distribution on site, with the largest areas occurring in the western/central portions of the site on slopes just south of the pastures. Typical species observed in this habitat on site include ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordaceus*), barley (*Hordeum murinum*), and oats (*Avena* sp.). A variety of other non-native grasses and forbs are also present. This vegetation community was affected by the 2017 Lilac Fire. A total of 42.7 acres of non-native grassland occur in the preserve.

Pasture/Extensive Agriculture

Pasture is considered a subtype of extensive agriculture. These areas are typically used by grazing farm animals such as horses and cattle. Fields and pastures may or may not be irrigated and are often made up primarily of non-native grasses and forbs. Several irrigated horse pastures occur within the northwestern portion of the property, surrounded by split-rail fences. They support a variety of non-native annual grasses and forbs, including soft chess, ripgut grass, barley, and cheeseweed (*Malva parviflora*). A total of 6.1 acres of lands currently mapped as pasture occurs in the proposed preserve. These areas occur along portions of the edges of the proposed residential development and would be incorporated into the biological open space (i.e., fenced off and managed by the Resource Manager). These areas are adjacent to existing grassland and riparian forest habitats that also will be incorporated into the preserve. Equestrian use of the 6.1 acres of pasture lands to be incorporated into the preserve will end prior to recordation of the open space easement over the biological open space. Habitat conversion from pasture to non-native grassland is anticipated to occur naturally in these areas once active use as maintained pasture ceases.

Row Crops/Extensive Agriculture

Row crops are considered a subtype of extensive agriculture, consisting of densely planted rows of agricultural crops such as tomatoes, strawberries, melons, etc., that are harvested seasonally. Soil in row crop areas is typically re-worked with each crop.

Row crops occupy the central portion of the site, both in the valley and on hillsides, as well as adjacent to Sullivan Middle School along West Lilac Road. Tomatoes and oats are the primary crops grown on the project site. This vegetation community was affected by the 2017 Lilac Fire. A total of 92.5 acres of row crops occur in the preserve. However, as part of the project's habitat restoration and enhancement efforts, 37.9 acres of row crops within the preserve will be restored to native habitat, further described in Section 3.5 of this report. Habitat restoration will include restoration of coastal sage scrub and riparian/mule fat scrub. Row crops would not continue as active land uses within biological open space. The remaining portions of these lands that are not being actively restored or enhanced by the project are anticipated to naturalize to other habitats and/or be available for future enhancement and restoration activities by the Resource Manager or other entities.

Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* sp.), an introduced genus that produces a large amount of leaf and bark litter. The chemical and physical characteristics of this litter, combined with the shading effects of the trees, limit the ability of other species to grow in the understory, thereby decreasing floristic diversity. If sufficient moisture is available, eucalyptus becomes naturalized and can reproduce and expand its cover.

Eucalyptus woodland occurs as two small stands of trees in the central portion of the site, adjacent to row crops and grassland. Scattered eucalyptus trees also occur within some developed areas of the site. A total of 1.2 acres of eucalyptus woodland occur in the preserve.

Orchard

Orchards are active, intensive agricultural uses, typically consisting of fruit or nut trees densely planted, irrigated, and maintained. The majority of orchard planted on site consists of avocado trees (*Persea americana*), with occasional citrus (*Citrus* sp.) also present. Small areas of nursery stock shrubs are also grown in these areas, including protea (*Protea* sp.). Orchards are planted on the hillsides in the south-central portion of the site, totaling 69.4 acres within the preserve. This vegetation community was affected by the 2017 Lilac Fire and the majority of avocado trees formerly occupying this land have been cut down and removed from the area. Orchard operations have ceased and are no longer occurring within or proposed to continue within this area. A total of 16.1 acres of orchard are proposed to be enhanced as part of the project's habitat restoration and enhancement efforts, further described in Section 3.5 of this report. Habitat enhancement efforts will focus on expanding coastal sage scrub in this area.

Fallow Orchard

Fallow orchards are previously active orchards that are no longer being irrigated. The trees become stressed and die; they may either be left in place or stumped (tops cut off, but stumps remain). Fallow orchard on site consists of a combination of cut avocado trees and areas where irrigation has ceased,

with dead trees left standing or fallen over. Fallow orchard occurs on a hillside in the southern portion of the site, totaling 31.8 acres within the preserve. This vegetation community was affected by the 2017 Lilac Fire.

Non-native Vegetation

Non-native vegetation is a category describing stands of naturalized trees and shrubs (e.g., acacia [*Acacia* sp.], peppertree [*Schinus* sp.]), many of which are also used in landscaping. On site, this habitat consists of a small stand of olive trees (*Olea europaea*) growing at the base of a slope in the eastern portion of the property, totaling 1.2 acres within the preserve.

Disturbed Habitat

Disturbed habitat includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance. Disturbed habitat supports a predominance of non-native and/or weedy species that are indicators of such surface disturbance (County 2010).

Disturbed habitat in the preserve consists of dirt roads and areas made up of non-native, weedy vegetation such as shortpod mustard (*Hirschfeldia incana*), redstem filaree (*Erodium cicutarium*), Russian thistle (*Salsola tragus*), and pineapple weed (*Matricaria discoidea*). A total of 4.4 acres of disturbed habitat occurs in the preserve, of which 0.2 acre will be enhanced with the goal of expanding sage scrub habitat.

Urban/Developed

Urban/developed land includes areas that have been constructed upon or otherwise covered with a permanent, unnatural surface and may include, for example, structures, pavement, irrigated landscaping, or hardscape to the extent that no natural land is evident. These areas no longer support native or naturalized vegetation (County 2010). Developed land within the preserve consists of ranch worker housing that will be removed as part of the project development. A total of 0.6 acre of urban/ developed land occurs in the preserve.

3.2 PLANT SPECIES

3.2.1 Plant Species Present and Correlation with Habitat on Site

HELIX identified a total of 302 plant species on the project site, of which 207 (69 percent) are native species and 95 (31 percent) are non-native species (Appendix A). Habitats within which these species were observed are listed in Appendix A.

3.2.2 Rare, Threatened, or Endangered Plant Species Present or Likely to Occur

Four special status plant species were observed within the overall project boundary and each of these species occur within the preserve, as listed below in alphabetical order by common name. Each is also described below and shown on Figure 7. The California Rare Plant Rank (CRPR) for each species is

pursuant to the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2018).

Brewer's Calandrinia (*Calandrinia breweri*)
Listing: --/--; CRPR 4.2; County List D
Distribution: Widely scattered throughout coastal California but otherwise uncommon
Habitat: Chaparral and coastal scrub; burned areas
Presence on Site: A total of 50 individuals were observed in the southeastern portion of the site upslope of the eastern riparian corridor, all of which would be conserved in biological open space.

Delicate Clarkia (*Clarkia delicata*)
Listing: --/--; CRPR 1B.2; County List A
Distribution: San Diego County; Baja California, Mexico
Habitat: Shaded areas or the periphery of oak woodlands and cismontane chaparral
Presence on Site: A total of 26 individuals were observed on site, all of which would be conserved in biological open space. This species was recorded in the eastern hills near the northern property boundary, and on a slope in the southeastern portion of the site.

Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*)
Listing: --/--; CRPR 4.2; CA Endemic; County List D
Distribution: San Diego, Orange, and Riverside counties
Habitat: Coastal mesas and foothills with grassland habitats
Presence on Site: Approximately 100 individuals were observed in openings in coastal sage scrub in the western portion of the site. Approximately 50 of these individuals would be conserved in biological open space.

Smooth Tarplant (*Centromadia pungens* ssp. *laevis*)
Listing: --/--; CRPR 1B.1; CA Endemic; County List A
Distribution: San Diego, Orange, Riverside, Los Angeles, Kern, and San Bernardino counties below approximately 1,500 ft in elevation
Habitat: Valley and foothill grasslands, particularly near alkaline locales
Presence on Site: Approximately 585 individuals were observed in grassland habitat adjacent to southern willow riparian forest in the extreme westerly tip of the site. This population would be conserved in biological open space.

3.2.3 Rare, Threatened, or Endangered Plant Species Not Observed but with Potential to Occur

A list of sensitive plant species with potential to occur within the preserve is provided in Appendix B. Five sensitive plant species not observed on site have a moderate or high potential to occur. These include Payson's jewelflower (*Caulanthus simulans*), paniculate tarplant (*Deinandra paniculata*), California spineflower (*Mucronea californica*), golden-rayed pentachaeta (*Pentachaeta aurea*), and Coulter's matilija poppy (*Romneya coulteri*).

3.2.4 Non-native and/or Invasive Plant Species

Native habitats within the preserve are dominated by native plant species; however, numerous non-native plants have been observed on site. In particular, non-native grasses are prevalent in the following

vegetation communities: non-native grassland, fallow orchard, and orchard. Numerous non-native plant species have been observed on sites that are rated as moderately or highly invasive by the California Invasive Plant Council's (Cal-IPC's) inventory (2016). A total of 25 species with ratings of high or moderate have been observed in the preserve (Table 4). No San Diego Management and Monitoring Program (SDMMP) management level 1 or 2 species have been observed in the preserve (https://sdmmp.com/files/Invasive%20Framework%20Plan/CBI_Strategic%20Plan9-10-12s.pdf).

Table 4
INVASIVE PLANTS OBSERVED WITHIN THE OCEAN BREEZE RANCH PRESERVE[1]

Scientific Name	Common Name	Vegetation Community[2]	Cal-IPC Rating	SDMMP Rating
Acacia dealbata	silver wattle	DCSS	moderate	-
Arundo donax	giant reed	SCWRF	high	3
Atriplex semibaccata	Australian saltbush	DH, HW, NNG	moderate	-
Avena barbata	slender oat	HW, NNG	moderate	-
Brachypodium distachyon	Purple false brome	NNG	moderate	4
Brassica nigra	black mustard	DH, MFS, NNG, ORCH	moderate	-
Bromus diandrus	ripgut brome	CLOW, DCSS, HW, MFS, NNG, ORCH, SCWRF	moderate	-
Bromus madritensis	red brome	DCSS, NNG	high	-
Carduus pycnocephalus	Italian thistle	CLOW, MFS	moderate	-
Centaurea melitensis	tocalote	DCSS, DH, NNG	moderate	-
Cirsium vulgare	bull thistle	DCSS, NNG	moderate	-
Conium maculatum	poison-hemlock	DCSS, SWS	moderate	-
Cynodon dactylon	Bermuda grass	DH, NNG	moderate	-
Festuca arundinacea	coarse fescue	NNG	moderate	-
Festuca myuros	fescue	NNG	moderate	-
Festuca perennis	Italian ryegrass	NNG	moderate	-
Foeniculum vulgare	fennel	DCSS, NNG, ORCH, SCWRF	high	4
Gazania linearis	gazania	DCSS, NNG	moderate	-
Hordeum murinum	Mediterranean barley	DH, NNG, SCWRF	moderate	-
Hirschfeldia incana	short-pod mustard	DCSS, NNG	moderate	-
Lepidium latifolium	perennial pepperweed	MFS	high	3
Nicotiana glauca	tree tobacco	DCSS, NNG, SCWRF, SMC	moderate	-
Pennisetum setaceum	fountain grass	DCSS	moderate	-
Tamarix ramosissima	tamarisk	MFS	high	-
Washingtonia robusta	Mexican fan palm	SWS	moderate	-

[1] In this context, invasive refers to species given a rating of Moderate or High by Cal-IPC.

[2] CLOW=coast live oak woodland; DCSS=Diegan coastal sage scrub; DH=disturbed habitat; HW=herbaceous wetland; MFS=mule fat scrub; NNG=non-native grassland; NNV=non-native vegetation; ORCH=orchard; SCWRF=southern cottonwood-willow riparian forest; SMC=southern mixed chaparral; SWS=southern willow scrub

3.3 WILDLIFE SPECIES

3.3.1 Wildlife Species Present and Correlation with Habitat on Site

A total of 163 animal species were observed or otherwise detected on the project site during the biological surveys, including 30 invertebrate, four amphibian, six reptile, 107 bird, and 16 mammal species (Appendix C).

3.3.2 Rare, Threatened, or Endangered Wildlife Species Present

Twenty-seven special status animal species have been observed or detected on or directly adjacent to the project site or flying over the project site, during biological surveys conducted for the project. Nine of these species are proposed for coverage under the Draft NC MSCP Plan. However, species-specific management guidelines for species proposed for coverage were not included in the 2009 Draft NC MSCP Plan, and as such are not included herein. If draft guidelines are issued prior to finalization of this document, they will be incorporated at that time.

Each species is listed below in alphabetical order by common name, described, and shown on Figure 7. Status codes are defined in Appendix E.

Barn Owl (*Tyto alba*)
Status: --/--; County Group 2
Distribution: Occurs throughout much of San Diego County
Habitat: Woodland habitats and open areas with trees or other structures that can offer shelter
Presence on Site: One individual was observed roosting in a farm building in the northwestern portion of the property. Suitable nesting habitat occurs on site for this species.

California Horned Lark (*Eremophila alpestris actia*)
Status: --/WL; County Group 2
Distribution: Observed year-round scattered throughout San Diego County
Habitat: Coastal strand, arid grasslands, and sandy desert floors
Presence on Site: Four individuals observed foraging in tilled row crop areas and associated dirt roads. Suitable nesting habitat occurs on site for this species.

Canada Goose (*Branta canadensis*)
Status: --/--; County Group 2 (winter)
Distribution: Observed in winter in San Diego County near wetland habitats, often in flocks
Habitat: Mixed fresh and brackish water habitats with low grass or succulent leaves
Presence on Site: Flocks of up to approximately 200 individuals were observed in scattered locations within the pastures and near the agricultural ponds. This species was observed multiple times during surveys. Long-term ranch staff has observed several hundred Canada geese overwintering on site. A few individuals are reported to stay year-round.

Coastal California Gnatcatcher (*Polioptila californica californica*)
Status: FT/SSC; County Group 1; Draft NC MSCP Covered
Distribution: In San Diego County, occurs throughout coastal lowlands.
Habitat: Coastal sage scrub, coastal bluff scrub, and coastal sage-chaparral scrub
Presence on Site: Gnatcatcher pairs were observed in four locations in the southwestern portion of the site during the 2015 protocol survey, though not all pairs were detected during each of the three surveys. Two fledglings also were observed in one location in the southwestern hills during the 2015 survey. A pair of gnatcatchers also was observed in the eastern hills in early July 2016, and a single male individual was noted in two locations in the eastern hills in March 2017. This species breeds on site.

Coastal Western Whiptail (*Aspidoscelis tigris stejnegeri*)
Status: --/--, County Group 2
Distribution: Ventura County south, in cismontane California, to south-central Baja California
Habitat: Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.
Presence on Site: One individual was observed in sage scrub in the eastern hills.

Cooper's Hawk (*Accipiter cooperii*)
Status: --/WL; County Group 1
Distribution: Occurs year-round throughout San Diego County's coastal slope where stands of trees are present
Habitat: Oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests
Presence on Site: One individual was observed on multiple days in the western riparian corridor and heard calling near eucalyptus woodland, as well as flying over the eastern riparian corridor. Suitable nesting habitat occurs on site for this species.

Golden Eagle (*Aquila chrysaetos*)
Status: BCC, BGEPA/WL, Fully Protected; County Group 1; Draft NC MSCP Covered
Distribution: In San Diego County, has the largest territory and lowest population density of any bird (Unitt 2004). Scattered throughout undeveloped San Diego County year-round.
Habitat: Nesting occurs on cliff ledges or in trees on steep slopes, with foraging occurring primarily in grassland and sage scrub. Not typically observed near development.
Presence on Site: Two juvenile eagles were observed flying over the extreme northeastern portion of the site on a single occasion in April 2016. The individuals were observed coming from the northeast, flew over a small portion of the eastern hills, and continued off site to the northwest. No suitable nesting habitat occurs on site. Nearest known nest location is 3.5 miles northeast of the project site on Gregory Mountain; species has been recorded on Gregory Mountain as recently as February 2016 (Tracey et al. 2016).

Great Blue Heron (*Ardea herodias*)
Status: County Group 2
Distribution: Occurs throughout San Diego County
Habitat: Wetland habitats, but can be observed foraging away from water
Presence on Site: Four great blue herons have been observed foraging in on-site pastures, with two pairs observed nesting in trees adjacent to the middle agricultural pond near the farm manager's residence.

Green Heron (*Butorides virescens*)
Status: County Group 2
Distribution: In San Diego County, most widespread in the northern part of coastal lowlands
Habitat: Small ponds in the northern part of the County or major rivers and lakes in the southern part (Unitt 2004).
Presence on Site: One green heron was observed in the eastern riparian area near the freshwater pond. This species could potentially nest in marsh habitat surrounding the eastern pond; no other suitable nesting habitat occurs on site.

Least Bell's Vireo (*Vireo bellii pusillus*)
Status: FE/SE; County Group 1; Draft NC MSCP Covered
Distribution: Observed throughout coastal southern California in the breeding season, south of Santa Barbara, but in smaller numbers in foothills and mountains
Habitat: Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Two solitary males were detected in isolated stands of riparian forest along the northern property boundary in late June and July 2015. One solitary male was detected on two occasions in riparian forest in the southwestern portion of the site during 2016 surveys (one in late April and one in early May), and two other individuals were detected off site to the north, along the San Luis Rey river corridor. No breeding individuals were detected on site.

Loggerhead Shrike (*Lanius ludovicianus*)
Status: BCC/SSC; County Group 1
Distribution: An uncommon year-round resident observed throughout San Diego County but absent from pinyon woodlands in higher elevations of the Santa Rosa and Vallecito mountains
Habitat: Grassland, open sage scrub, chaparral, and desert scrub
Presence on Site: One individual observed perched near pasture along the northern site boundary.

Northern Harrier (*Circus cyaneus*)
Status: --/SSC; Draft NC MSCP Covered; County Group 1
Distribution: In San Diego County, distribution primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert
Habitat: Open grassland and marsh
Presence on site: One individual observed foraging over fallow row crops in the eastern portion of the site.

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)
Listing: --/SSC; County Group 2
Distribution: Los Angeles County and southern San Bernardino County south into west-central Baja California, Mexico
Habitat: Open areas of coastal sage scrub and weedy growth, often on sandy substrates
Presence on Site: Observed in sage scrub in the eastern portion of the property during kangaroo rat surveys.

Osprey (*Pandion haliaetus*)
Status: --/WL; County Group 1; Draft NC MSCP Covered
Distribution: Occurs throughout San Diego County in small numbers year-round but more common during winter. Nesting occurs near water
Habitat: Coasts and inland lakes

Presence on Site: One individual observed flying overhead of the eastern riparian area near the freshwater pond. There is potential for this species to nest in riparian forest near the eastern pond.

Red-shouldered Hawk (*Buteo lineatus*)
Status: --/--; County Group 1
Distribution: In San Diego County, observed throughout coastal slope
Habitat: Riparian woodland, oak woodland, orchards, eucalyptus groves, or other areas with tall trees
Presence on Site: Two red-shouldered hawks were observed in and near the northwestern portion of the site. One individual was perched in a tree just off site, and a second individual was observed perched in a tree on site, between the pastures. This species could breed on site.

Snow Goose (*Chen caerulescens*)
Status: --/--; County Group 2 (winter)
Distribution: Rare winter visitor to San Diego County
Habitat: Lakes, reservoirs, coastal wetlands, rivers, and wetland habitats
Presence on Site: Four individuals observed in a mixed flock with Canada geese in the westernmost pasture. This species is a winter visitor and does not breed on site.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
Status: --/WL; Draft NC MSCP Covered; County Group 1
Distribution: Observed throughout coastal lowlands and foothills of San Diego County
Habitat: Coastal sage scrub and open chaparral as well as shrubby grasslands
Status on site: One individual was detected in sage scrub in the southwestern portion of the site, in addition to several observations in the eastern hills during gnatcatcher surveys conducted in 2017. This species is presumed to breed on site.

Southern Mule Deer (*Odocoileus hemionus fuliginata*)
Listing: --/--; County Group 2
Distribution: Southern Riverside County (Tahquitz Valley), south on the coastal slope to the vicinity of San Quintin, Baja California, Mexico
Habitat: Coastal sage scrub, riparian and montane forests, chaparral, grasslands, croplands, and open areas if there is at least some scrub cover present. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.
Presence on Site: Dried scat observed in the far western tip of the site on a single occasion in 2013. No other detections of this species occurred during multiple field surveys conducted between 2013 and 2016.

Turkey Vulture (*Cathartes aura*)
Status: --/--; County Group 1
Distribution: Observed throughout San Diego County except for extreme coastal San Diego where development is heaviest.
Habitat: Foraging habitat includes most open habitats with breeding occurring in crevices among boulders.
Presence on Site: Multiple sightings of this species soaring overhead in the various portions of the property, with up to two vultures observed at any one time. Two vultures also were observed perched on top of a rock outcrop in the easternmost hills. This species could potentially breed on site, in the higher portions of the eastern hills where rock outcrops are present. No other potentially suitable breeding habitat is present on site.

Vermilion Flycatcher (*Pyrocephalus rubinus*)
Status: --/SSC; County Group 1
Distribution: Rare and scattered in San Diego County year-round
Habitat: Open riparian woodland and mesquite bosques in desert
Presence on Site: Multiple observations of this species perched in trees and along fences adjacent to the pastures, as well as foraging in these areas. One pair with two fledglings was observed in 2015 in the northwestern portion of the site adjacent to a pasture.

Western Bluebird (*Sialia mexicana*)
Status: --/--; County Group 2
Distribution: Occurs throughout much of San Diego County but concentrated in foothills and mountains.
Habitat: Open woodlands and areas where meadows or grasslands occur among groves of oak or pine
Presence on Site: Multiple observations of this species perched in trees and along fences adjacent to the pastures, as well as foraging in these areas. This species is presumed to breed on site.

Western Spadefoot (*Spea hammondii*)
Status: --/SSC; County Group 2; Draft NC MSCP Covered
Distribution: Endemic to California and northern Baja California. Ranges from near Redding south throughout the Great Valley and its associated foothills, through the South Coast Ranges into coastal southern California south of the Transverse mountains and west of the Peninsular mountains, into northwest Baja California.
Habitat: Occurs in open coastal sage scrub, chaparral and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing. Species prefers areas of open vegetation and short grasses, where the soil is sandy or gravelly. Grasslands with shallow temporary pools are optimal habitat (CDFW 2000).
Presence on Site: A total of seven adult western spadefoot were documented adjacent to the north-central project site boundary. No breeding was documented on site.

White-faced Ibis (*Plegadis chihi*)
Status: --/WL; County Group 1; Draft NC MSCP Covered
Distribution: Primarily observed in northwestern San Diego County but also observed elsewhere in the County in winter
Habitat: Nests in freshwater marshes and forages in shallow waters and wet, grassy habitats
Presence on Site: Flocks of up to approximately 50 individuals observed foraging in maintained pasture in the northwestern portion of the site. Species was observed multiple times on site, always foraging within pastures or occasionally in the feed barn near the pastures. This species was not observed breeding on site and is unlikely to do so given the limited area of freshwater marsh present.

White-tailed Kite (*Elanus leucurus*)
Status: --/Fully Protected; County Group 1
Distribution: Primarily occurs throughout coastal slopes of San Diego County
Habitat: Riparian woodlands and oak or sycamore groves adjacent to grassland
Presence on Site: White-tailed kites were observed foraging in three locations on site: the far western corner, the southwest portion of the site near the western riparian corridor, and over agricultural lands abutting the eastern hills. Observations were of single individuals except in the southwestern portion of the site, where a family group of three individuals were observed foraging. No nests or breeding activity were observed on site.

Willow Flycatcher (*Empidonax traillii*)
Status: --/SE;
Distribution: Three subspecies of willow flycatcher occur in California, with *extimus* (southwestern willow flycatcher) being the only subspecies that breeds in southern California. Subspecies *brewsteri* (little willow flycatcher) and *adastus* breed in northern and central California but may pass through southern California during migration.
Habitat: Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. Migrants may be found among other shrubs in wetter areas.
Presence on Site: One individual of an undetermined subspecies of willow flycatcher (*brewsterii* or *adastus*) was detected on a single survey day (May 24) in the eastern riparian corridor during 2015 protocol flycatcher surveys. Neither of these subspecies breed in southern California. No southwestern willow flycatchers (subspecies *extimus*) were detected on site.

Yellow-breasted Chat (*Icteria virens*)
Status: --/SSC; County Group 1; Draft NC MSCP Covered
Distribution: Occurs throughout San Diego County's coastal lowlands in the breeding season.
Habitat: Mature riparian woodland
Presence on Site: Two individuals were detected in riparian forest in the eastern riparian corridor. This species is presumed to breed on site.

Yellow Warbler (*Setophaga petechia*)
Status: BCC/SSC; County Group 2
Distribution: Observed throughout California during the breeding season with rare sightings in winter.
Habitat: Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Yellow warbler was detected in riparian forest in four locations on site, in both the eastern and western riparian corridors and within a small stand of trees along the northern property boundary. This species is presumed to breed on site.

3.3.3 Rare, Threatened, or Endangered Wildlife Species with Potential to Occur

Special status animal species with potential to occur on site (and those present on site) are included in Appendix D. The species are grouped into invertebrates and vertebrates (fish, amphibians, reptiles, birds, and mammals) and alphabetized by scientific name. Refer to Appendix E for an explanation of status codes. A total of 10 special status animal species that were not observed, but still are considered to have a high potential to occur on site, are coastal rosy boa (*Charina trivirgata roseofusca*), orange-throated whiptail (*Cnemidophorus hyperythrus*), red diamond rattlesnake (*Crotalus ruber ruber*), Coronado skink (*Eumeces skitonianus interparietalis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), south coast garter snake (*Thamnophis sirtalis novum*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blosservillii*), small-footed myotis (*Myotis cilolabrum*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).

Finally, while the preserve does not currently support coastal cactus wren (*Camphylorhynchus brunnicapillus couesi*), suitable habitat is present in the preserve. The most recent CNNDB occurrence records for this species on site are from 1989 and 1990, when it was observed in the southwestern hills. There is potential for this species to reoccupy the site, and as such, cactus planting will be included in the upland restoration plan to increase the amount of suitable habitat for cactus wren in the preserve.

3.3.4 Non-native Wildlife and Nuisance Species

Non-native wildlife and/or nuisance wildlife species detected on the project site were the European honey bee (*Apis mellifera*), Argentine ant (*Linepithema humile*), red swamp crayfish (*Procambarus clarkii*), American bullfrog (*Rana catesbiana*), Chinese goose (*Anser cygnoides*), Eurasian collared dove (*Streptopelia decaocto*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), brown-headed cowbird (*Molothrus ater*), domestic chicken (*Gallus gallus domesticus*), wild turkey (*Meleagris gallopavo*), and domestic horse (*Equus ferus*).

Many of these species are associated with the existing ranch residences and ongoing equestrian operations and do not pose a significant management risk for the preserve. However, the following four species do have potential to adversely affect native wildlife in the preserve: Argentine ant, red swamp crayfish, bullfrog, and brown-headed cowbird. These species are further discussed below.

The Argentine ant was first recorded in California in 1907 and is known to displace native ant species and disrupt natural food webs (University of California [UC] Riverside 2017). They tend to replace native ants by outcompeting them for resources and can alter the composition and abundance of native arthropod communities; prey upon baby birds and mammals; and eliminate native ant resources for the horned lizard, ground foraging birds, and other species (SDMMP 2013).

Red swamp crayfish is native to the southeastern U.S. and is thought to have been introduced into other locations through releases from aquaculture, the aquarium trade, or following classroom or laboratory use (USFWS 2015). It is an omnivorous freshwater crayfish that has been shown to reduce populations of native macrophytes, amphibians, mollusks, macroinvertebrates, and fish (USFWS 2015). This species could prey on native insects and amphibians occurring within aquatic areas in the preserve. Its occurrence is expected to be restricted to the riparian corridor in the eastern portion of the preserve, which is fed by upstream agriculture, urban runoff, rainfall, and an onsite pond.

Although native to the eastern U.S., American bullfrogs are now widespread throughout much of California, where they occupy both natural and manmade aquatic habitats. They were introduced into the western U.S. as a food source and for biological control of insects, and accidental introductions may have occurred from fish stocking, frog farming, and release by pet owners (CDFW 2018a). The American bullfrog is the largest frog in California and it may prey on or compete with food and habitat with native amphibians (Zeiner et al. 1988). Like the red swamp crayfish, this species could prey on native insects and amphibians occurring within aquatic areas in the preserve. Its occurrence is expected to be restricted to the riparian corridor in the eastern portion of the preserve, which is fed by upstream agriculture, urban runoff, rainfall, and an onsite pond.

The brown-headed cowbird is a brood parasite, laying its eggs in nests of other birds. This species is native to the Great Plains, but expanded its range westward, arriving in San Diego in noticeable numbers around 1915 (Unitt 2004). Brood parasitism by this species lowers the reproductive success of many passerine birds, particularly warblers, vireos, flycatchers, phoebes, sparrows, and finches (Zeiner et al. 1990). In California, the listing as endangered of the riparian songbirds least Bell's vireo and willow flycatcher is in part due to nest parasitism by brown-headed cowbirds (CDFW 2018b). Trapping efforts to control brown-headed cowbirds and nest monitoring of affected species are two ways in which cowbird parasitism have been evaluated and addressed. This species was detected in riparian habitat on site, and near and along the northern site boundary in the equestrian facility. It is also known to occur in riparian habitat associated with the San Luis Rey River, directly north of the site.

3.4 OVERALL BIOLOGICAL AND CONSERVATION VALUE

The preserve supports large areas of land that are identified as very high or high habitat value on the County's Habitat Evaluation Model (County 2008a), as well as being identified as PAMA in the Draft NC MSCP Plan. The preserve consists of 832.7 acres of lands stretching over 3 miles across the site from the rugged eastern hills westward to the southwestern hills, forming a valuable piece of biological open space ranging in width from over 900 ft to approximately 3,000 ft, connecting to conserved lands along the San Luis Rey River in both the western and eastern portions of the site. This nearly continuous 3-mile east-west length is interrupted only by two roadway entrances into the project site (one existing road that will be improved as part of the project, and one new road); both roads are outside of the biological open space. In addition to conserving large areas of native and naturalized habitat on site and maintaining connectivity across the site, the preserve also maintains connectivity to offsite conserved lands along the San Luis Rey River, as well as to other lands to the east and south that are identified as PAMA in the Draft NC MSCP Plan.

One of the key targets for the Draft NC MSCP Plan and preserve assemblage for PAMA is the gnatcatcher. Of the 467.8 acres of Diegan coastal sage scrub within the onsite preserve, a total of 426.7 acres are within proposed PAMA, large portions of which are rated by the Draft MSCP North County Plan California Gnatcatcher Habitat Evaluation Model (County 2008b) as having high and very high value for this species. Proposed preservation of these areas within the biological open space would conserve gnatcatcher habitat and dispersal routes from the eastern hills across the site to the southwestern corner. Further, alternative dispersal routes for gnatcatcher also occur along the San Luis Rey River to the north of the site and connect to on-site biological open space at the eastern and western ends of the site. Thus, the preserve provides not only for live-in habitat for gnatcatcher, but also facilitates dispersal of this species.

The preserve also protects live-in and foraging habitat for numerous other sensitive species that have been documented on or near the site, including barn owl (*Tyto alba*), California horned lark (*Eremophila alpestris actia*),), coastal western whiptail (*Aspidoscelis tigris stejnegeri*), Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), osprey (*Pandion haliaetus*), red-shouldered hawk (*Buteo lineatus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), southern mule deer (*Odocoileus hemionus fuliginata*), turkey vulture (*Cathartes aura*), vermilion flycatcher (*Pyrocephalus rubinus*), western bluebird (*Sialia mexicana*), western spadefoot (*Spea hammondii*), white-faced ibis (*Plegadis chihi*), white-tailed kite (*Elanus leucurus*), willow flycatcher (*Empidonax traillii*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*).

3.5 ENHANCEMENT AND RESTORATION FOR PROJECT MITIGATION

Although the project has sufficient upland preservation onsite to meet the required habitat mitigation ratios for impacts to sensitive uplands (coast live oak woodland, Diegan coastal sage scrub, flat-topped buckwheat scrub, and non-native grassland) and raptor foraging habitat (non-native grassland and pasture), the Wildlife Agencies and County have requested that upland restoration and enhancement efforts be conducted on site to further offset project impacts.

Wetland and upland revegetation plans are being prepared for the proposed restoration and enhancement areas. The preserve would include approximately 0.48 acre of proposed riparian habitat restoration and 58.3 acres of upland habitat restoration and enhancement conducted as part of the project. Final acreages will be determined during project processing and approvals. Conceptual upland restoration and enhancement areas depicted herein were determined in consultation with the Wildlife Agencies and County PDS staff (Figure 8).

4.0 BIOLOGICAL RESOURCES MANAGEMENT

4.1 MANAGEMENT GOALS

The purpose of this RMP is to detail the methods to preserve and maintain the long-term viability and the functions and values of native habitats within the preserve along with the listed and sensitive species they support. This RMP establishes the following goals with regard to biological resources:

- To preserve and manage habitat within the preserve in perpetuity for the benefit of sensitive species, NC MSCP covered species, and existing natural communities;
- To ensure the continued existence of sensitive plant and animal species in the preserve and/or to facilitate their expansion within the preserve;
- To reduce, control, and where feasible eradicate non-native, invasive flora known to be detrimental to native species and/or the local ecosystem.
- To help ensure the continued existence of equestrian pastures within the 185.2-acre equestrian facility that abuts portions of the preserve.

4.2 BIOLOGICAL MANAGEMENT TASKS

Biological monitoring will be conducted in the preserve to gather information necessary to assist the Resource Manager in making land management decisions and meeting the goals of this RMP. Biological management tasks include a baseline biological inventory, biological mapping updates, botanical inventories, sensitive species monitoring, coastal California gnatcatcher surveys, least Bell's vireo surveys, exotic plant control, nuisance animal control, fire/flood management, equestrian facility coordination, and restoration. These tasks are further described below (Sections 4.2.1 through 4.2.11).

The preserve will be visually inspected for changes during annual maintenance and monitoring visits, and all observations will be documented. Any substantial changes will be monitored more closely to determine the necessity of additional measures. Ongoing maintenance and administration, as further discussed in Section 4.4, is the responsibility of the Resource Manager, and will be conducted to ensure no loss of resource quality within the preserve.

4.2.1 Baseline Biological Inventory

The quantity and quality of vegetation communities within the preserve will be documented during the first year of active management. This inventory will incorporate data from the project's biological technical report (HELIX 2019a) with the findings of an initial baseline inventory field survey. To optimize

the probability of detecting sensitive species reported or expected to occur within the preserve, this survey should be conducted between March and May, when the majority of sensitive plant and animal species are most detectable. These data will allow the Resource Manager to measure habitat changes caused by natural and human effects and to evaluate management efforts during subsequent years.

Upon implementation of this RMP, the Resource Manager will be provided digital files containing the existing vegetation and sensitive resources data, which will be updated following the baseline inventory field survey in the first year of active management. The intent of this update is to document current conditions in the open space areas (including graphic and tabular depictions of habitat acreages), document all species observed (either directly or indirectly by sign such as scat, tracks, etc.) within each identified habitat type, and document the locations of any sensitive plant and animal species.

4.2.2 Update Vegetation Mapping

Vegetation mapping will be updated every five years following implementation of this RMP. A site visit will be conducted using updated aerial imagery to determine vegetation communities present at the time of the survey. The biological resources maps of the preserve will be updated accordingly.

4.2.3 Botanical Inventory

An inventory of plant species observed in the preserve will be compiled every five years during the vegetation mapping update. The inventory will include a visual assessment of each population of sensitive plant species observed in the preserve in order to help track overall population trends, and specific attention will be given to any factors that may be negatively affecting those species (i.e., vandalism, mortality, etc.). Any new plant species observed incidentally during maintenance events or other site visits would be listed in that year's annual report, with particular focus on new occurrences rare plants and of invasive species. Any SDMMP management level 1 or 2 species (https://sdmmp.com/files/Invasive%20Framework%20Plan/CBI_Strategic%20Plan9-10-12s.pdf) will be reported to SDMMP. Locations of sensitive plant species will be added to the biological resources maps of the preserve.

4.2.4 Sensitive Species Monitoring

It is the responsibility of the Resource Manager to evaluate the status of sensitive species within the preserve and to institute protective measures if any individual species becomes threatened. Both preservation and monitoring of sensitive plant and animal populations within the preserve are necessary in order to achieve the overall long-term conservation of these species. Sensitive species monitoring will help the Resource Manager identify long- and short-term threats and recommend any necessary protective measures.

Sensitive plant and animal monitoring will occur during annual management activities. In each assessment, the Resource Manager will observe and document sensitive species locations and conditions, and the locations of any observed/detected sensitive species will be documented and added to the biological resources maps. Monitoring/reporting efforts will include sensitive species previously documented within the preserve. In addition, any new plant or animal species observed incidentally during maintenance events or other site visits would be listed in that year's annual report.

- Proposed Biological Open Space (832.7 ac)
- Eastern Hills Excess Biological Open Space* (308.9 ac)
- Equestrian Major Use Permit (MUP) Boundary
- Limited Building Zone
- Existing Utility Easements to Remain
- Future Potential Easement (6.4 ac)
- Pedestrian Trail Easement (on Existing Dirt Road)
- Culvert Below Road Crossing of Eastern and Western Riparian Areas
- Open Space Fencing
- Open Space Conceptual Signage Location

Restoration and Enhancement**

- Conceptual Riparian and/or Streambed Mitigation Area
- Diegan Coastal Sage Scrub Restoration
- Diegan Coastal Sage Scrub Active Enhancement

*These lands may be sold as preservation lands to a single entity or incorporated into a mitigation bank following the formal mitigation bank approval process with the Wildlife Agencies.
**Conceptual boundaries, may change during project approval process.

Gird Road
Monserate Hill Road
San Luis Rey River
Dulin Road
South Old Highway 395
SDCWA Easement
Equestrian M.U.P.
Planning Area 3
Planning Area 2
Planning Area 1
RMWD Easement
Pedestrian Trail Easement (on Existing Dirt Road)
See Detail
Hillside Estate Parcel
Remainder Parcel
HOA Lot DD
RMWD Easement
Camino Del Cielo
Redondo Drive
Via Vera
Via Ararat Drive

Detail View
Pedestrian Trail Easement (on Existing Dirt Road)

0 1,100 Feet

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HELIX Environmental Planning

Biological Open Space and Conceptual Restoration/Enhancement Areas

Figure 8

Focused surveys are planned every five years for coastal California gnatcatcher and least Bell's vireo, as detailed below. Surveys and monitoring for other sensitive wildlife species with regional monitoring objectives, such as the San Diego cactus wren, will occur concurrent with annual assessments and focused surveys for gnatcatcher and vireo.

4.2.5 Coastal California Gnatcatcher Surveys

Focused surveys for coastal California gnatcatcher, consisting of three site visits spaced at least one week apart, will be conducted within appropriate habitat in the preserve every five years during the gnatcatcher breeding season (February 15 through August 31), with a preference to conducting surveys at the height of the breeding season (March through May). Any gnatcatchers and other sensitive species observed incidentally during maintenance events or other site visits would also be documented.

4.2.6 Least Bell's Vireo Surveys

Focused surveys for least Bell's vireo, consisting of three site visits spaced at least 10 days apart, will be conducted within appropriate habitat in the preserve every five years during the survey period (April 10 to July 31). Any vireos and other sensitive species observed incidentally during maintenance events or other site visits would also be documented.

4.2.7 Exotic Plant Control

The Resource Manager will coordinate with landowners adjacent to the preserve to provide information regarding exotic plant species and to increase the efficiency of exotic plant control programs. The information would provide recommendations for restricting the use of exotic plant species with a Cal-IPC rating of High or Moderate in landscaping efforts. Fuel modification zones adjacent to the preserve will be planted with native species or non-invasive native cultivars appropriate to the surrounding areas.

Invasive non-native plants shall be monitored for and treated twice a year in January/February and April/May, when non-native plant species are most prevalent. Treatment of non-native species shall occur concurrent with the monthly site visits performed by the Resource Manager if feasible. The Resource Manager is responsible for removal of perennial species rated as High by the Cal-IPC within the same year that they are discovered. Invasive plant removal efforts will be spatially targeted to prioritize the areas of the property with the highest biological value or potential value, and species-targeted to prioritize the exotic species posing the greatest threat across the property, based on monitoring results. The budget for invasive plant control will be sufficient to perform ongoing work on an annual basis in order to continually improve the property.

If the use of herbicide is deemed necessary, application should be minimal, and may only occur in compliance with all federal and state laws. All herbicide use will be monitored by a biologist, be applied by backpack sprayers or stump painting directly on target weeds, and will involve short duration, biodegradable chemicals.

Non-native plant species treatment and removal activities such as use of gas-powered chainsaws and weed whippers that may disturb raptors and migratory birds should avoid the general bird breeding season (February 1 through September 15). If these activities must occur during the breeding season, they shall be limited to areas where the Resource Manager has confirmed the absence of active bird

nests. Appropriate buffer distances shall be provided for active nests, including a 300-foot avoidance area for Cooper's hawk nests and a 900-foot avoidance area for northern harrier.

4.2.8 Nuisance Animal Species Control

A moderate tolerance for pest species will be permitted, but if the Resource Manager determines that pest eradication measures (e.g., pesticide application) are required, the County will be contacted to determine the need and appropriate methods, including potentially hiring a licensed pest control advisor. Exotic species control/eradication programs should be implemented at the appropriate time of year depending on the pest species and field conditions and should be coordinated with efforts on adjacent properties.

Four species known to occur in the project vicinity have potential to adversely affect native wildlife in the preserve: Argentine ant, red swamp crayfish, bullfrog, and brown-headed cowbird. The Resource Manager will monitor the preserve for presence of these species, and if determined necessary will implement control/eradication programs.

It is noted that brown-headed cowbird trapping programs have been implemented along portions of the San Luis Rey River to assist in recovery efforts for least Bell's vireo. These programs have been implemented by other projects (e.g., San Luis Rey Flood Control Project) in coordination with various federal agencies (e.g., USFWS and U.S. Army Corps of Engineers), and traps have been set adjacent to and along the northern boundary of the Ocean Breeze Ranch project site at various times over the past several years.

4.2.9 Fire and Flood Management

Fire is an important element in the ecology of southern California but can also present potential hazards to habitat within the preserve. If a fire should occur in the preserve, vegetation within the preserve will be allowed to recover naturally; however, seeding and/or planting of container stock may be required at the discretion of the Resource Manager. Special attention to weed establishment following fire will be assessed by the Resource Manager.

Drainages within the preserve may flood during heavy rains. Such flooding could damage habitat within the preserve through scour, erosion, sedimentation, and spread of weeds. The Resource Manager will monitor habitat areas disturbed by flooding and implement remedial efforts as needed. Flood-damaged areas should be allowed to recover naturally; however, remedial measures, including erosion control, seeding, and/or planting of container stock, may be required if natural recovery is inadequate or if unstable conditions (e.g., slope undercutting) are created. The Resource Manager will remove any exotic species introduced during flooding events. All of the aforementioned activities will be in compliance with applicable flood regulations and all other applicable County, state, and federal requirements.

4.2.10 Equestrian Facility Coordination and Oversight

The existing equestrian facility is not part of the Ocean Breeze Ranch preserve/biological open space; however, it does contain irrigated, maintained pastures (Figure 7) that provide biological value to certain species (e.g., foraging habitat for birds). As part of their duties, the Resource Manager for the biological open space would help ensure that the Pasture Management Plan (PMP; [HELIX 2019b]) for the equestrian facility is being followed.

The Resource Manager will conduct minimum twice-yearly site visits to the equestrian facility to verify that no development has occurred within the pastures and will notify the Ranch Manager, County, and the Wildlife Agencies of any changes in use that conflict with the PMP. The Resource Manager will notify the Ranch Manager prior to conducting site visits within the equestrian facility. Ongoing management of the pastures, such as seeding, irrigation, and mowing, is allowed, as is conversion of disturbed habitat and row crops to pasture. The PMP also would allow for restoration of pasture to other habitat types for the benefit of native plant and animal species. However, any such restoration is to be accomplished in coordination with the County and Wildlife Agencies, and subject to their review and approval. Development of the pastures within the equestrian facility is not allowed.

The Resource Manager will incorporate the results of equestrian facility coordination and oversight results in the annual report for the RMP.

4.2.11 Passive or Active Restoration

The preserve contains several areas of non-native habitat that could be passively or actively restored by the Resource Manager, as funding allows. Target areas include former agricultural lands, including row crops, and nursery stock/flower production, and orchards.

4.3 ADAPTIVE MANAGEMENT

Adaptive management is intended to ensure that, through the monitoring and reporting process, results of management are evaluated and management is adjusted appropriately to meet the RMP goals and the County and Wildlife Agencies' commitment to the conservation goals of the NC MSCP. The Resource Manager is responsible for interpreting the results of site monitoring to determine the ongoing success of the RMP. If it is necessary to modify the plan between regularly scheduled updates, plan changes shall be submitted to the County for approval as required.

The term adaptive management was adopted for resource management by Holling (1978), who described adaptive management as an interactive process that not only reduces but also benefits from uncertainty. Adaptive management includes steps that may be involved in a long-term adaptive implementation program, including opportunistic learning, management, monitoring, and directing the results of analysis and assessment back into the program through decision makers. It is important that the RMP incorporate the flexibility to change implementation strategies after initial start-up. The RMP is intended to be flexible enough to develop adaptive management strategies that will facilitate and improve the decision-making process for operating the conservation program of the RMP, as well as provide for informative decision-making. The RMP is also intended to be flexible enough to incorporate management and monitoring methods that may change over time that would be appropriate for the biological open space.

Monitoring and adaptive management of the BOS will be a cooperative effort between the Resource Manager, County, Wildlife Agencies, and regional entities such as the SDMMP. Adaptive management is built into preserve management through the use of phased monitoring and evaluation to modify management actions based on monitoring results.

According to the SDMMP Management Strategic Plan, important regional threats/stressors on species and vegetation communities include: (1) fire (altered fire regime); (2) invasive species (exotic and native) and predation and herbivory by native species; (3) urban edge effects on preserves; (4) habitat

fragmentation (roads, urban development); and (5) human use of preserves (both authorized and unauthorized). Other threats/stressors region-wide include nitrogen deposition, altered hydrology, potential exposure of species to rodenticides and insecticides, disease, and climate change.

This RMP addresses the threat of fire in Section 4.6. The Resource Manager will assess the need for post-fire recovery efforts, which may include invasive plant and animal control, habitat enhancement and restoration, and species monitoring. Fire recovery will be allowed to occur naturally unless monitoring shows that weeding, seeding, and/or planting are required.

The threat of invasive plants is addressed in Sections 3.2.4 and 4.2.7. Based on surveys to date, there are no SDMMP Management Level 1 or 2 plants within the preserve and only two Level 3 and two Level 4 plants, respectively: giant reed (*Arundo donax*), perennial pepperweed (*Lepidium latifolium*), purple falsebrome (*Brachypodium distachyon*), and fennel (*Foeniculum vulgare*). Except for purple false brome, these three species are also given a Cal-IPC rating of High. None of these species were noted as being particularly prevalent during surveys to date. However, a baseline plant inventory (which will include both native and non-native species) will be conducted in the first year of management, and invasive plants will be noted during regular monitoring visits. Weed control will be conducted per Section 4.2.7. Weed control efforts will be specifically targeted to the areas of greatest threat as identified by monitoring. Using adaptive management, species that are targeted will be based on Cal-IPC and SDMMP lists as well as species that emerge as threats in the future based on monitoring within the preserve and regionally.

The threat of invasive/nuisance animal species is addressed in Sections 3.3.4 and 4.2.8. Based on surveys to date, four species known to occur in the project vicinity have potential to adversely affect native wildlife in the preserve: Argentine ant, red swamp crayfish, bullfrog, and brown-headed cowbird. The Resource Manager will monitor the preserve for presence of these species, and if determined necessary will implement control/eradication programs.

Although much of the preserve consists of contiguous lands unbroken by roads or other development, there are roadways into the residential development that cross through the preserve and fragment the habitat. As addressed in Section 4.4.3, the Resource Manager will monitor the fencing and signage along these roadways as part of RMP implementation, in addition to monitoring for edge effects, as discussed below.

Because the preserve abuts residential development and roads, as well as the proposed trail connecting Planning Area 1 with HOA Lot DD, it could be subject to urban edge effects such as noise, lighting, dumping of trash, intrusion by dogs and cats, invasion by exotic plant species, altered hydrology/ contaminated runoff, and human trespass. Implementation of a 100-foot limited building zone around the preserve will help reduce edge effects by buffering the preserve from the more intense human uses. As discussed in Sections 4.4.3, 4.4.4, and 4.4.5, the preserve will be fenced and permanent signage posted to discourage trespass and the Resource Manager would maintain the fencing and signage, in addition to surveying the site for illegal occupancy and trespass and removing trash. The HOA would include rules against off-leash dogs on the trail easement and in public areas, and a homeowner education program will be established that will notify residents of the dangers that free-roaming cats and off-leash dogs pose to wildlife. The project's landscape plan will not include any invasive plant species, and the project's lighting plan would shield project lighting and direct it away from the preserve, and lighting would not be installed for the trail easement through biological open space. Runoff generated by the proposed development would be captured and treated in accordance with

storm water regulations. Despite these efforts, edge effects could still adversely affect the preserve. As such, the Resource Manager will monitor the preserve for edge effects and will incorporate other management strategies as needed.

This RMP does not include specific tasks for potential threats such as nitrogen deposition and climate change; however, the monitoring proposed by the RMP will provide the information needed to recognize changes occurring within the preserve, make hypotheses regarding their causes, and propose adjustments in management approach, along with additional targeted monitoring as needed.

Adaptive management relies on monitoring efforts such as those outlined above to detect changes in species, habitats, and/or threats. Linking the monitoring program with adaptive management actions will inform the Resource Manager of the status of target species, natural communities, and essential ecological processes, as well as the effectiveness of management actions in a manner that provides data to allow informed management actions and decisions. When change is detected, the Resource Manager assesses the information and responds by initiating, modifying, or even ending a particular management strategy, if necessary. An important component of implementing the management measures described above will include evaluating data from monitoring activities to determine whether trends in threats are part of a natural cycle of fluctuation or are anthropogenic. If there is a substantial decline in native species compared to the baseline (e.g., greater presence of invasive, non-native plants species) or other apparent threats to habitat conditions are observed, remedial measures will be evaluated with the County and Wildlife Agencies and implemented on an as-needed basis. Remedial measures will be presented to the USFWS, CDFW, and County in the work plan portion of the annual report (Task 4.4.1) and/or in the five-year updates to the RMP (Task 4.4.2). Adaptive management measures shall be limited to funds available for adaptive management through the proposed management and monitoring tasks.

4.4 OPERATIONS, MAINTENANCE, AND ADMINISTRATION TASKS

Ongoing maintenance and administration, which is the responsibility of the Resource Manager, will be conducted to ensure no loss of resource quality within the preserve. The general operations, maintenance, and administrative tasks to be conducted by the Resource Manager will include those discussed below.

4.4.1 Annual Monitoring Reports

An annual report will be submitted to the County that will summarize the overall condition of vegetation communities and sensitive species in the preserve, propose management tasks for the following year, and discuss results of management activities proposed in the previous report. Submitted annually by the end of January, this report will compare the most recent data with those collected in previous years, evaluate sensitive species status, and outline appropriate remedial measures. Funds for County review will also be included with submittal of the annual report.

The results of updated vegetation mapping, botanical inventory, coastal California gnatcatcher surveys, and least Bell's vireo surveys (all every fifth year) should be included in the appropriate annual letter reports.

The report shall include a summary of expenses during the past year and projected expenses for the next year, as well as the status of funding for the maintenance assessment district.

The report (or attached digital files) will also include photos taken each year from representative photo points within the open space, for qualitative comparison of habitat health.

4.4.2 Management Plan Review

This RMP will be reviewed by the Resource Manager every five years to determine the need for revisions or updates. If conditions change within the preserve, it may be necessary to revise the tasks outlined in this plan to ensure continued success of the stated goals.

4.4.3 Access Control, Fencing, and Signage

To help prevent human-induced degradation of the preserve due to illegal occupancy, trespassing, removal of resources, or dumping of trash or debris, the Resource Manager will restrict access to the preserve. The project applicant will install fencing along roads and residential pad edges abutting the preserve (Figure 5). Fencing will be installed where it abuts existing or proposed development, in addition to either side of the proposed trail easement between Planning Area 1 and HOA Open Space Lot DD, as well as in locations where human intrusion would not be precluded by physical factors such as steep topography or dense vegetation (see Figure 5). Fencing will be maintained by the Resource Manager as needed during monthly visits. Permanent signage will be posted every 200 feet along the perimeter of the preserve (Figure 5). Signs will be maintained by the Resource Manager as needed during monthly visits. Signs should be corrosion-resistant (e.g., steel), measure at minimum 6-by-9-inches in size, be posted on a metal post at least 3 feet above ground level, and provide notice in both Spanish and English that the area is an ecological preserve with trespassing prohibited.

The signs will state the following:

> Sensitive Environmental Resources
> Disturbance Beyond this Point is Restricted by Easement
> Contact Information:
> County of San Diego Department of Planning & Development Services
> Ref. PDS2016-TM-5615, PDS2016-MUP-16-012, PDS2016-MUP-16-013
> Recursos Ambientalmente Sensibles
> Prohibida Su Entrada

Pedestrians and leashed dogs will be allowed on the proposed trail easement between Planning Area 1 and HOA Lot DD. The Resource Manager will have vehicle access to the trail easement for management purposes, and vehicle access will also be granted to personnel conducting restoration activities adjacent to the trail (Figure 8), as described in the project's Conceptual Upland Restoration Plan (HELIX 2019c).

The SDCWA will continue to have access to their easement in the eastern hills, and the RMWD will continue to have access to their two easements located (1) within a narrow paved road through the central portion of the biological open space, and (2) within the western tip of the biological open space.

4.4.4 Illegal Occupancy

Illegal occupancy has not been an issue on the site. However, the Resource Manager will survey the preserve for evidence of illegal occupancy/trespass concurrently with other site management activities and file a report with the Sheriff and the County PDS, if necessary.

4.4.5 Removal of Resources

Removal of any plants, animals, rocks, minerals, or other natural resources from the preserve is prohibited. The Resource Manager will maintain a log of illegal collecting and will report individuals caught removing natural resources from the preserve to the USFWS, CDFW, County, and/or Sheriff's Office as needed. The Resource Manager may allow and supervise seed collection and plant cuttings as part of revegetation efforts within the preserve and/or in nearby areas. Any such collected plant materials should be limited to that necessary to ensure successful revegetation while not adversely affecting local plant populations.

4.4.6 Trash Removal and Vandalism Repair

The Resource Manager will conduct general trash removal within the preserve during regular monthly management site visits. Additionally, damage caused by vandalism will be repaired. Trash removal and vandalism repair will occur as needed during regular monthly site visits.

4.4.7 Hazardous Materials Monitoring

The release of hazardous materials such as fuels, oil, vegetation clippings, trash, and landscaping related chemicals (e.g., pesticides and herbicides) has potential to affect the preserve negatively. Although no specific survey will be conducted, if such hazardous materials are observed within the preserve during regular monthly site visits, remedial measures to remove the material will occur.

4.4.8 Homeowner Education

The Resource Manager will hold an annual meeting each year with the HOA to educate residents regarding the preserve, including threats to the preserve, and will have educational brochures available for distribution at these meetings.

4.5 PUBLIC USE ELEMENT

The preserve will have a fenced trail connecting Planning Area 1 with HOA Lot DD but will not have other recreational facilities. The SDCWA and RMWD easements discussed in Section 2.6 will remain in place (Figure 8).

The preserve is intended to serve as a habitat preserve and as such is not compatible with many activities. Activities that will be specifically prohibited include:

- Use of herbicides or pesticides (except to remove non-native species as necessary and as determined by the Resource Manager), fertilizers (except as approved by the restoration specialist within the restoration areas), or other agricultural chemicals;
- Weed abatement activities for fuel management or other incompatible fire protection activities;
- Use of Off Highway Vehicles (OHVs) and any other motorized vehicles except in the execution of management duties;

- Grazing[1] or other agricultural activity of any kind;
- Recreational activities including, but not limited to, hiking in locations outside of the trail easement, horseback riding, biking, hunting, or fishing;
- Commercial or industrial uses;
- Construction, reconstruction, or placement of any building or other improvement, billboard, or sign, except for open space signs along the edge of the preserve;
- Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other material;
- Planting, introduction or dispersal of non-native or exotic plant or animal species;
- Altering the general topography of the preserve, including but not limited to building of roads and flood control work;
- Removing, destroying, or cutting of trees, shrubs or other vegetation, except as deemed necessary by the Resource Manager for sensitive species management; or as required by federal, state or local law or by governmental order for (1) emergency fire breaks; (2) maintenance of existing roads; (3) prevention or treatment of disease; or (4) required mitigation programs; and
- Manipulating, impounding, or altering any natural watercourse, body of water or water circulation on the open space, and activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.

4.6 FIRE MANAGEMENT ELEMENT

No fire management activities (clearing, thinning, mowing, discing, blading, etc.) are allowed within the preserve. All such measures to reduce wildfire risk are to occur entirely outside of the preserve. As previously discussed, an LBZ has been established between the proposed development and the preserve so that all required fuel modification for the development would occur outside the preserve.

If a wildfire occurs in the preserve, vegetation will be allowed to recover naturally; however, seeding and/or planting of container stock may be required at the discretion of the Resource Manager. The Resource Manager will pay special attention to weed establishment and the potential for type conversion of native shrublands to non-native grassland following fire, particularly in relation to their potential effect on sensitive species such as coastal California gnatcatcher. Post-fire recovery efforts could include, but are not limited to, invasive plant and animal control, habitat enhancement and restoration, and species monitoring.

[1] A total of 6.1 acres of lands currently mapped as pasture occurs in the proposed preserve. These areas occur along portions of the edges of the proposed residential development and would be incorporated into the biological open space (i.e., fenced off and managed by the Resource Manager). Equestrian use of the 6.1 acres of pasture lands to be incorporated into the preserve will end prior to recordation of the open space easement over the biological open space. Habitat conversion from pasture to non-native grassland is anticipated to occur naturally in these areas once active use as maintained pasture ceases. No grazing would occur in former pasture lands that are incorporated into the biological open space easement.

4.7 MANAGEMENT CONSTRAINTS

This RMP follows County requirements. Although it anticipates measures for most foreseeable contingencies, several external constraints remain. For example, illegal trespassing could negatively impact sensitive plant and animal species, and environmental factors, such as prolonged drought, increased incidence of fire, and erosion, could have detrimental effects on habitat composition and populations of sensitive plant and animal species within the preserve. A 100-foot-wide LBZ will be established between the preserve and the proposed residential development. The LBZ will act as a buffer to protect the preserve from clearing for fire management, as well potential edge effects such as noise and dumping of trash and debris. However, portions of the preserve extend to the property boundary and these areas have greater susceptibility to edge effects from adjacent land uses.

5.0 RESOURCE MANAGEMENT PLAN SUMMARY AND BUDGET

5.1 OPERATIONS AND BUDGET SUMMARY

Table 5 provides a summary of all management tasks described above and the frequency of each task. The budget for these tasks will be provided in a PAR as an appendix to the final RMP after a Resource Manager is identified.

5.2 EXISTING STAFF AND ADDITIONAL PERSONNEL NEEDS SUMMARY

Staff and personnel requirements will be provided in the final RMP after a Resource Manager is identified.

Table 5
MANAGEMENT TASKS

RMP Report Section	Task	Frequency
Biological Resources Tasks		
4.2.1	Baseline Inventory	One time
4.2.2	Update Biological Mapping	Every 5 years
4.2.3	Botanical Inventory	Every 5 years
4.2.4	General Sensitive Species Monitoring	Annually
4.2.5	Coastal California Gnatcatcher Surveys	Every 5 years
4.2.6	Least Bell's Vireo Surveys	Every 5 years
4.2.7	Exotic Plant Control	As needed; at least twice annually
4.2.8	Nuisance Animal Control	As needed
4.2.9	Fire and Flood Management	As needed
4.2.10	Equestrian Facility Coordination and Oversight	Twice yearly
4.2.11	Passive or Active Restoration	As funding allows
Adaptive Management Tasks		
4.3	To be developed and implemented as needed by the Resource Manager	As needed
Operations, Maintenance, and Administrative Tasks		
4.4.1	Monitoring Reports	Annually
4.4.2	Management Plan Review	Every 5 years
4.4.3	Access Control, Fencing, and Signage	Monthly
4.4.4	Illegal Occupancy	Monthly
4.4.5	Removal of Resources Monitoring	Monthly
4.4.6	Trash Removal and Vandalism Repair	Monthly
4.4.7	Hazardous Materials Monitoring	Monthly
4.4.8	Homeowner Education	Annually

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Appendix A

Plant Species Observed

Appendix A
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species			
Adoxaceae	*Sambucus nigra* ssp. *canadensis*	blue elderberry	CLOW, MFS, NNG, PAS, SCWRF
Agavaceae	*Chlorogalum parviflorum*	small-flower soap-plant	DCSS, FBS
	Hesperoyucca whipplei	chaparral yucca	DCSS, SMC
	Yucca schidigera	Mohave yucca	DCSS
Alliaceae	*Allium* sp.	wild onion	DCSS
Anacardiaceae	*Malosma laurina*	laurel sumac	CLOW, CSCS, DCSS, NNG, SMC
	Rhus aromatica	basketbush	DCSS
	Rhus integrifolia	lemonadeberry	DCSS
	Rhus ovata	sugar bush	DCSS, SMC
	Toxicodendron diversilobum	poison oak	CLOW, DCSS, SCWRF
Apiaceae	*Bowlesia incana*	bowlesia	CLOW
	Daucus pusillus	wild carrot	DCSS
	Lomatium dasycarpum	wooly-fruit lomatium	DCSS
	Lomatium utriculatum	common lomatium	DCSS, NNG
	Sanicula arguta	sharp-tooth sanicle	DCSS
	Sanicula crassicaulis	pacific sanicle	DCSS
Apocynaceae	*Asclepias fascicularis*	narrow-leaf milkweed	DCSS
Asteraceae	*Acourtia microcephala*	sacapellote	DCSS
	Ambrosia acanthicarpa	annual bur-sage	NNG
	Ambrosia psilostachya	western ragweed	NNG, HW, SCWRF
	Artemisia californica	California sagebrush	CLOW, CSCS, DCSS. FBS
	Artemisia dracunculus	tarragon	SCWRF
	Baccharis pilularis	coyote brush	DCSS
	Baccharis salicifolia	mule fat	DCSS, MFS, SCWRF, SWS
	Baccharis sarothroides	broom baccharis	DCSS
	Brickellia californica	brickell brush	DCSS, SMC
	Centromadia pungens ssp. *laevis*†	smooth tarplant†	NNG
	Chaenactis artemisiifolia	artemisia pincushion	DCSS, SMC
	Chaenactis glabriuscula var. *glabriuscula*	yellow pincushion	DCSS, SMC
	Cirsium occidentale var. *californicum*	California thistle	DCSS
	Corethrogyne filaginifolia var. *filaginifolia*	common sandaster	DCSS, FBS, NNG
	Deinandra fasciculata	fascicled tarplant	NNG
	Erigeron canadensis	horseweed	DCSS, NNG, SMC

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Asteraceae (cont.)	*Erigeron foliosus* var. *foliosus*	fleabane daisy	DCSS
	Eriophyllum confertiflorum	golden-yarrow	DCSS, SMC
	Euthamia occidentalis	western goldenrod	SCWRF
	Grindelia camporum	gum plant	DCSS
	Hazardia squarrosa	saw-toothed goldenbush	CLOW, DCSS, SMC
	Helianthus annuus	western sunflower	NNG
	Heterotheca grandiflora	telegraph weed	DH, NNG, ORCH
	Holocarpha virgata ssp. *elongata*†	graceful tarplant†	DCSS
	Isocoma menziesii	goldenbush	DCSS, HW, NNG, SCWRF
	Lasthenia coronaria	southern goldfields	DCSS
	Pseudognaphalium biolettii	bicolor cudweed	DCSS
	Pseudognaphalium californicum	California everlasting	CLOW, CSCS, DCSS, SMC
	Pseudognaphalium canescens	everlasting	DCSS
	Rafinesquia californica	California chicory	DCSS
	Stephanomeria diegensis	San Diego wreath-plant	DCSS
	Stephanomeria virgata	virgate wreath-plant	NNG
	Stylocline gnaphaloides	everlasting nest-straw	DCSS
	Uropappus lindleyi	silver puffs	DCSS
	Xanthium strumarium	cocklebur	HW, PAS
Boraginaceae	*Amsinckia menziesii*	rancher's fiddleneck	NNG
	Cryptantha intermedia	nievitas	DCSS
	Cryptantha maritima	white-hair cryptantha	DCSS
	Cryptantha sp.	cryptantha	DCSS, NNG, SMC
	Emmenanthe penduliflora	whispering bells	DCSS
	Eucrypta chrysanthemifolia var. *chrysanthemifolia*	common eucrypta	DCSS, SCWRF
	Heliotropum curassavicum	salt heliotrope	HW, NNG
	Nemophila menziesii	baby blue eyes	DCSS
	Pectocarya linearis ssp. *ferocula*	slender pectocarya	DCSS
	Phacelia cicutaria var. *hispida*	caterpillar phacelia	DCSS
	Phacelia distans	wild heliotrope	DCSS, MFS, NNG
	Phacelia parryi	Parry's phacelia	DCSS
	Pholistoma auritum	fiesta flower	CLOW, DCSS
	Pholistoma racemosum	San Diego fiesta flower	CSCS, CLOW, NNG
	Plagiobothrys nothofulvus	rusty popcorn flower	DCSS
	Plagiobothrys sp.	popcorn flower	DCSS, FBS, NNG

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Brassicaceae	*Caulanthus lasiophyllus*	California mustard	DCSS
	Lepidium nitidum	shining peppergrass	DCSS, DH, NNG
	Nasturtium officinale	water cress	SWS
	Thysanocarpus curvipes	lacepod	DCSS
Cactaceae	*Cylindropuntia californica* var. *parkeri*	cane cholla	DCSS
	Opuntia littoralis	coastal prickly pear	DCSS, NNG
	Opuntia oricola	tall coastal prickly pear	DCSS
Capparaceae	*Peritoma arborea*	bladderpod	DCSS, NNG
Caprifoliaceae	*Lonicera subspicata* var. *denudata*	San Diego honeysuckle	DCSS, SMC
Caryophyllaceae	*Silene laciniata* ssp. *laciniata*	southern pink	DCSS
Chenopodiaceae	*Amaranthus blitoides*	prostrate pigweed	DH
	Chenopodium californicum	California pigweed	DCSS
	Chenopodium rubrum	red goosefoot	NNG
Cistaceae	*Helianthemum scoparium*	rock rose	CSCS, DCSS, SMC
Convolvulaceae	*Calystegia macrostegia*	morning-glory	CSCS, DCSS, ORCH, SMC
	Cuscuta californica	dodder	DCSS
Crassulaceae	*Crassula connata*	pygmy-weed	DCSS, DH
	Dudleya pulverulenta	chalk-lettuce	CLOW, DCSS
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla	NNG
	Marah macrocarpa	wild cucumber	CSCS, DCSS
Cyperaceae	*Cyperus erythrorhizos*	red-rooted cyperus	PAS
	Schoenoplectus californicus	California bulrush	FWM
Dryopteridaceae	*Dryopteris arguta*	wood fern	CLOW
Ericaceae	*Xylococcus bicolor*	mission manzanita	CSCS, SMC
Euphorbiaceae	*Chamaesyce polycarpa*	small-seed sandmat	DCSS
	Croton setigerus	dove weed	NNG
Fabaceae	*Acmispon americanus*	Spanish-clover	DCSS
	Acmispon glaber	deerweed	CSCS, DCSS, FBS, NNG, SMC
	Acmispon micranthus	grab lotus	DCSS
	Astragalus pomonensis	Pomona locoweed	NNG
	Astragalus trichopodus var. *lonchus*	Southern California milkvetch	DCSS
	Hoita macrostachya	leather root	CLOW
	Lathyrus vestitus	chaparral pea	DCSS
	Lupinus albifrons	silver bush lupine	DCSS
	Lupinus bicolor	miniature lupine	NNG

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Fabaceae (cont.)	*Lupinus concinnus*	elegant lupine	DCSS
	Lupinus hirsutissimus	stinging lupine	DCSS
	Lupinus succulentus	arroyo lupine	DCSS
	Trifolium willdenovii	valley clover	DCSS
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak	CLOW, DCSS, NNG, SCRWF, SWS
	Quercus berberidifolia	scrub oak	CSCS, DCSS, SMC
Frankeniaceae	*Frankenia salina*	alkali-heath	PAS
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	DCSS, FBS, ORCH
Juncaceae	*Juncus bufonius*	toad rush	SCWRF
	Juncus mexicanus	Mexican rush	HW, SCWRF
Lamiaceae	*Salvia apiana*	white sage	CLOW, DCSS, NNG, SMC
	Salvia columbariae	chia	CSCS, DCSS, SMC
	Salvia mellifera	black sage	DCSS
	Stachys bergii	hedge-nettle	CLOW
	Trichostema lanceolatum	vinegar weed	NNG
Liliaceae	*Calochortus splendens*	splendid mariposa lily	DCSS
	Toxicoscordion fremontii	star-lily	DCSS
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow	DCSS, SMC
	Sidalcea malviflora	checker-bloom	CLOW, DCSS
Montiaceae	*Calandrinia breweri*†	Brewer's calandrinia†	DCSS
Nyctaginaceae	*Mirabilis laevis* ssp. *crassifolia*	wishbone bush	CSCS, DCSS
Onagraceae	*Camissoniopsis bistorta*	California sun cup	DCSS, NNG
	Clarkia delicata†	delicate clarkia†	DCSS
	Clarkia epilobioides	canyon godetia	DCSS
	Clarkia purpurea	purple clarkia	DCSS
	Epilobium canum ssp. *canum*	California fuchsia	DCSS
Orchidaceae	*Piperia unalascensis*	slenderspire piperia	DCSS
Orobanchaceae	*Castilleja affinis* ssp. *affinis*	coast paint-brush	DCSS
	Castilleja exserta	purple owl's clover	DCSS
	Castilleja foliolosa	woolly Indian paintbrush	DCSS
Oxalidaceae	*Oxalis californica*	California wood-sorrel	CLOW, DCSS
Paeoniaceae	*Paeonia californica*	California peony	DCSS
Papaveraceae	*Eschscholzia californica*	California poppy	CSCS, DCSS
	Papaver californicum	fire poppy	DCSS
	Platystemon californicus	cream-cups	DCSS

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Phrymaceae	*Mimulus aurantiacus*	bush monkey-flower	CLOW, CSCS, DCSS, NNG, SMC
	Mimulus brevipes	wide-throat monkeyflower	DCSS
Plantaginaceae	*Antirrhinum nuttallianum*	Nuttall's snapdragon	DCSS
	Collinsia heterophylla	Chinese houses	DCSS
	Keckiella antirrhinoides	chaparral beard-tongue	DCSS, SMC
	Nuttallanthus texanus	blue toadflax	DCSS
	Penstemon centranthifolius	scarlet bugler	DCSS
	Penstemon spectabilis	showy penstemon	CSCS, DCSS
	Plantago erecta	dwarf plantain	DCSS
	Plantago ovata	island plantain	DCSS
Plantaginaceae	*Veronica peregrina* ssp. *xalapensis*	speedwell	NNG
Platanaceae	*Platanus racemosa*	western sycamore	DEV, NNG, SCWRF
Poaceae	*Distichlis spicata*	saltgrass	NNG
	Elymus condensatus	giant wild rye	CLOW, SCWRF
	Elymus triticoides	beardless wild ryegrass	HW, NNG, SCWRF
	Festuca octoflora	tufted fescue	DCSS
	Melica imperfecta	melic	CLOW
	Muhlenbergia microsperma	little-seed muhly	DCSS
	Muhlenbergia rigens	deergrass	DCSS
	Stipa lepida	foothill needlegrass	DCSS
	Stipa pulchra	purple needlegrass	DCSS
Polemoniaceae	*Allophyllum gilioides*	straggling false gilia	DCSS
	Eriastrum sapphirinum	wool-star	DCSS
	Gilia capillaris	minature gilia	DCSS
	Gilia capitata	ball gilia	DCSS
Polygonaceae	*Chorizanthe fimbriata*	fringed spineflower	DCSS
	Chorizanthe procumbens	prostrate spineflower	DCSS
	Eriogonum fasciculatum	buckwheat	CSCS, DCSS, FBS, NNG, NNV, SMC
	Polygonum aviculare ssp. *depressum*	common knotweed	PAS
	Pterostegia drymarioides	granny's hairnet	DCSS, SMC
Polypodiaceae	*Polypodium californicum*	California polypody	CLOW
Portulacaceae	*Calyptridium monandrum*	sand-cress	DCSS
	Claytonia perfoliata ssp. *perfoliata*	miner's lettuce	DCSS

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Pteridaceae	*Adiantum jordanii*	California maidenhair	CLOW
	Pellaea mucronata var. *mucronata*	bird's-foot fern	DCSS
	Pentagramma triangularis	silverback fern	CLOW, DCSS
Ranunculaceae	*Clematis ligusticifolia*	Virgin's bower	DCSS
	Clematis pauciflora	ropevine	DCSS
	Delphinium parryi ssp. *parryi*	Parry's larkspur	DCSS
	Thalictrum fendleri	meadowrue	SMC
Rhamnaceae	*Rhamnus crocea*	spiny redberry	CLOW, CSCS, DCSS, SMC, SWS
	Rhamnus ilicifolia	holly-leaf redberry	CSCS, DCSS, SMC
Rosaceae	*Adenostoma fasciculatum*	chamise	CSCS, DCSS, SMC
	Cercocarpus betuloides	mountain mahogany	DCSS
	Drymocallis glandulosa	cinquefoil	CLOW, DCSS
	Heteromeles arbutifolia	toyon	CLOW, DCSS
	Prunus ilicifolia ssp. *ilicifolia*	holly-leaved cherry	DCSS, SMC
	Rosa californica	California rose	CLOW
	Rubus ursinus	California blackberry	CLOW
Rubiaceae	*Galium angustifolium* ssp. *angustifolium*	narrow-leaved bedstraw	CLOW, DCSS
Salicaceae	*Populus fremontii* ssp. *fremontii*	western cottonwood	DEV, DH, NNG, PAS, SCWRF, SWS
	Salix exigua	narrow-leaved willow	SCWRF
	Salix gooddingii	black willow	SCWRF, SWS
	Salix laevigata	red willow	SCWRF, SWS
	Salix lasiolepis	arroyo willow	MFS, SCWRF, SWS
Saururaceae	*Anemopsis californica*	yerba mansa	HW
Scrophulariaceae	*Scrophularia californica*	California bee plant	DCSS
Solanaceae	*Datura wrightii*	jimson weed	NNG
	Physalis crassifolia	ground-cherry	DCSS
	Solanum parishii	Parish's nightshade	DCSS
Themidaceae	*Bloomeria crocea*	common goldenstar	DCSS
	Dichelostemma capitatum	blue dicks	NNG, SCWRF
Typhaceae	*Typha* sp.	cattail	FWM
Urticaceae	*Hesperocnide tenella*	native dwarf nettle	DCSS
	Urtica dioica ssp. *holosericea*	stinging nettle	SCWRF, SWS
Verbenaceae	*Verbena lasiostachys*	verbena	DCSS
Violaceae	*Viola pedunculata*	Johnny jump-up	DCSS
Viscaceae	*Phoradendron* sp.	mistletoe	SWS

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Native Species (cont.)			
Vitaceae	*Vitis girdiana*	desert wild grape	DCSS, SCWRF, SWS
Non-native Species			
Altingiaceae	*Liquidambar styraciflua*	sweet gum	DEV
Anacardiaceae	*Schinus molle*	Peruvian pepper tree	DH, NNG
	Schinus terebinthifolius	Brazilian pepper tree	SCWRF, SWS
Apiaceae	*Anthriscus caucalis*	bur chervil	CLOW, DCSS
	Conium maculatum	poison-hemlock	DCSS, SWS
	Foeniculum vulgare	fennel	DCSS, NNG, ORCH, SCWRF
Arecaceae	*Washingtonia robusta*	Mexican fan palm	SWS
Asteraceae	*Anthemis cotula*	mayweed	PAS
	Carduus pycnocephalus	Italian thistle	CLOW, MFS
	Centaurea benedicta	blessed thistle	NNG
	Centaurea melitensis	tocalote	DCSS, DH, NNG
	Cirsium vulgare	bull thistle	DCSS, NNG
	Gazania linearis	gazania	DCSS, NNG
	Glebionis coronaria	garland daisy	NNG
	Hedypnois cretica	Crete hedypnois	NNG, ORCH
	Helminthotheca echioides	bristly ox-tongue	ORCH
	Hypochaeris glabra	smooth cat's ear	DCSS
	Lactuca serriola	prickly lettuce	CLOW, NNG
	Logfia gallica	narrow-leaf filago	DCSS
	Matricaria discoidea	pineapple weed	DH
	Senecio vulgaris	common groundsel	DH, NNG
	Silybum marianum	milk thistle	NNG, SCWRF
	Sonchus oleraceus	common sow-thistle	NNG
Brassicaceae	*Brassica nigra*	black mustard	DH, FBS, MFS, NNG, ORCH
	Hirschfeldia incana	shortpod mustard	DCSS, NNG
	Lepidium didymum	wart cress	NNG
	Lepidium latifolium	perennial pepperweed	MFS
	Lepidium perfoliatum	peppergrass	NNG
	Raphanus sativus	wild radish	NNG, ORCH
	Sisymbrium altissimum	tumble mustard	NNG
	Sisymbrium sp.	mustard	NNG
Caryophyllaceae	*Cerastium glomeratum*	mouse-ear chickweed	DCSS
	Polycarpon tetraphyllum ssp. *tetraphyllum*	four-leaf allseed	DCSS
	Silene gallica	windmill pink	DCSS

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Non-native Species (cont.)			
Caryophyllaceae (cont.)	*Spergularia* sp.	sand-spurry	NNG, PAS
	Stellaria sp.	starwort	CLOW, DCSS
Chenopodiaceae	*Amaranthus albus*	white tumbleweed	DCSS
	Atriplex semibaccata	Australian saltbush	DH, HW, NNG
	Chenopodium album	pigweed	NNG
	Salsola tragus	Russian thistle	DH, NNG
Convolvulaceae	*Convolvulus arvensis*	bindweed	NNG
Euphorbiaceae	*Chamaesyce albomarginata*	rattlesnake weed	DCSS
	Chamaesyce sp.	spurge	ORCH
Fabaceae	*Acacia dealbata*	silver wattle	DCSS
	Lotus corniculatus	birdfoot trefoil	NNG, PAS
	Medicago polymorpha	burclover	NNG
	Melilotus indicus	Indian sweet clover	HW
	Trifolium sp.	clover	CLOW
Geraniaceae	*Erodium botrys*	long-beak filaree	NNG
	Erodium cicutarium	redstem filaree	DH, NNG, ORCH
	Erodium moschatum	green-stem filaree	NNG
	Erodium sp.	filaree	NNG
	Geranium dissectum	cutleaf geraniium	CLOW
Iridaceae	*Iris pseudacorus*	pale yellow iris	SCWRF
Lamiaceae	*Lamium amplexicaule*	henbit	DH, NNG
	Marrubium vulgare	horehound	NNG
Lauraceae	*Persea americana*	avocado	ORCH
Malvaceae	*Malva parviflora*	cheeseweed	CLOW, DH, NNG, PAS
Myrsinaceae	*Anagallis arvensis*	scarlet pimpernel	DCSS, NNG
Myrtaceae	*Chamelaucium* sp.	waxflower	ORCH
	Eucalyptus sp.	eucalyptus	DEV, EUCW, NNG
Oleaceae	*Olea europaea*	olive	CLOW, DCSS, NNV
Onagraceae	*Oenothera speciosa*	pink ladies	NNG
Oxalidaceae	*Oxalis pes-caprae*	Bermuda buttercup	PAS
Phytolaccaceae	*Phytolacca americana*	common pokeweed	DH
Plantaginaceae	*Plantago lanceolata*	English plantain	NNG
Poaceae	*Agrostis stolonifera*	carpet bent	NNG
	Arundo donax	giant reed	SCWRF
	Avena barbata	slender oat	HW, NNG
	Avena sativa	cultivated oat	NNG, PAS

Appendix A (cont.)
Plant Species Observed

Family	Species Name	Common Name	Habitat*
Non-native Species (cont.)			
Poaceae (cont.)	*Avena* sp.	oats	NNG, NNV, ORCH, SCWRF
	Brachypodium distachyon	purple false brome	NNG
	Bromus diandrus	common ripgut grass	CLOW, DCSS, EUCW, FBS, HW, MFS, NNG, ORCH, PAS, SCWRF,
	Bromus hordeaceus	soft brome	DH, FBS, NNG, PAS, SCWRF
	Bromus madritensis	foxtail chess	DCSS, FBS, NNG, NNV
	Cynodon dactylon	Bermuda grass	DH, NNG
	Echinochloa crus-galli	common barnyard-grass	PAS
	Festuca arundinacea	coarse fescue	NNG
	Festuca myuros	fescue	NNG, PAS
	Festuca perennis	Italian ryegrass	NNG
	Hordeum murinum	Mediterranean barley	DH, FBS, NNG, PAS, ROWC, SCWRF
	Lamarckia aurea	goldentop	DH, NNG
	Paspalum dilatatum	dallis grass	PAS
	Pennisetum setaceum	purple fountain grass	DCSS
	Schismus barbatus	Mediterranean grass	DCSS, DH, NNG
	Stipa miliacea	smilo grass	DCSS
Polygonaceae	*Rumex crispus*	curly dock	HW, NNG, SCWRF
Proteaceae	*Protea* sp.	protea	ORCH
Rutaceae	*Citrus* sp.	citrus	ORCH
Solanaceae	*Nicotiana glauca*	tree tobacco	DCSS, NNG, SCWRF, SMC
	Solanum elaeagnifolium	white horse-nettle	NNG
	Solanum lycopersicum	tomato	ROWC
Tamaricaceae	*Tamarix ramosissima*	salt cedar	MFS
Ulmaceae	*Ulmus* sp.	elm	NNG
Urticaceae	*Urtica urens*	dwarf nettle	DCSS, NNG

†Sensitive species
*CLOW=coast live oak woodland; CSCS=coastal sage-chaparral scrub; DCSS=Diegan coastal sage scrub; DH=disturbed habitat; EUCW=eucalyptus woodland; FBS=flat-topped buckwheat scrub; FWM=freshwater marsh; HW=herbaceous wetland; MFS=mule fat scrub; NNG=non-native grassland; NNV=non-native vegetation; ORCH=orchard; PAS=pasture; ROWC=row crops; SCWRF=southern cottonwood-willow riparian forest; SMC=southern mixed chaparral; SWS=southern willow scrub

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Appendix B

Sensitive Plant Species with Potential to Occur

Appendix B
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE CRPR 1B.1 County List A Draft NC MSCP Covered	Small annual herb. Occurs on clay soils near vernal pools and in grassy openings in coastal sage scrub and chaparral. Flowering period: April–June. Elevation: 100–3,150 feet (30–960 meters).	**None.** Suitable soils and habitat do not occur on site.
Adolphia californica	San Diego adolphia	--/-- CRPR 2B.1 County List B Draft NC MSCP Covered	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks. Flowering period: December–April. Elevation: 20–655 feet (6–200 meters).	**Low.** Suitable habitat is present on portions of the project site; however, this species was not observed during biological surveys.
Ambrosia pumila	San Diego ambrosia	FE/-- CRPR 1B.1 County List A Draft NC MSCP Covered	Small perennial herb. Occurs primarily on upper terraces of rivers and drainages. Within these areas it is typically found in grassland and within openings in coastal sage scrub, on sandy loam or clay soils. Flowering period: April–October. Elevation: 100–2,001 feet (30–610 meters).	**Low.** Suitable soils and habitat area present on portions of the site but species was not observed during focused rare plant surveys or other biological surveys, and would have been observable if present.
Artemisia palmeri	San Diego sagewort	--/-- CRPR 4.2 County List D	Shrub. Typically found along stream courses, often within coastal sage scrub and southern mixed chaparral. Flowering period: May–September. Elevation: 16–3,540 feet (5–1,080 meters).	**Low.** Suitable habitat is present on portions of the project site; however, this species was not observed during biological surveys.
Brodiaea filifolia	Thread-leaved brodeaia	FE/SE CRPR 1B.1 County List A Draft NC MSCP Covered	Perennial herb blooming March–June. Occurs on clay soils near chaparral openings, cismontane woodlands, coastal scrub, playas, grasslands, and vernal pools. Elevation: 130–3,700 feet (40–1,130 meters).	**None.** Suitable soils are not present on site. The nearest recorded occurrence is over nine miles to the southwest (Calflora 2016).
Brodiaea orcuttii	Orcutt's brodiaea	--/-- CRPR 1B.1 County List A Draft NC MSCP Covered	Small perennial herb. Occurs only on clay and serpentine soils in vernally moist environments, usually near vernal pools, meadows, and seeps. Flowering period: May–July. Elevation: 330–5,740 feet (100–1,750 meters).	**None.** Suitable soils and habitat do not occur on the project site. The nearest recorded occurrence is over 11 miles to the south (Calflora 2016).

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Calandrinia breweri	Brewer's calandrinia	--/-- CRPR 4.2 County List D	Annual herb blooming January–June. Occurs in sandy or loamy disturbed soils within chaparral and coastal scrub habitats. Elevation: 165–3,770 feet (50–1150 meters).	**Present.** Population of 50 individuals observed in coastal sage scrub in the eastern portion of the project site.
Camissoniopsis lewisii	Lewis' evening primrose	--/-- CRPR 3 County List C	Annual herb blooming March–June. Occurs in sandy or clay soils within coastal bluff scrub, cismontane woodland, coastal dune, and grassland habitats. Elevation: 0–1,740 feet (0–530 meters).	**Low.** Suitable soils and habitat are present on portions of the project site; however, this species was not observed during rare plant or other biological surveys. The nearest recorded occurrence is over 9 miles to the west (Calflora 2016).
Caulanthus simulans	Payson's jewelflower	--/-- CRPR 4.2 County List D	Annual herb blooming March–May. Occurs in sandy chaparral and coastal scrub habitats. Elevation: 620–7,185 feet (190–2,190 meters).	**Moderate.** Suitable habitat occurs on site; however, this species would have been observable during rare plant surveys, if present.
Ceanothus verrucosus	Wart-stemmed ceanothus	--/-- CRPR 2.B2 County List B Draft NC MSCP Covered	Perennial evergreen shrub occurring in xeric chamise or southern maritime chaparral. Blooms January through April. Elevation: 23–2,165 feet (7–660 meters).	**Low.** Potentially suitable habitat is present in the eastern portion of the project site; however, this species was not observed during rare plant or other biological surveys.
Centromadia pungens ssp. laevis	Smooth tarplant	--/-- CRPR 1B.1 County List A	Annual herb blooming April–September. Occurs in chenopod scrub, meadows, seeps, playas, riparian woodlands, and grasslands. Usually found in alkaline soils. Elevation: 165–2,890 feet (50–880 meters).	**Present.** Population of 585 individuals observed in grassland habitat in the far western corner of the project site.
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	--/-- CRPR 1B.1 County List A	Annual herb blooming January through August. Occurs in sandy coastal bluff scrub and coastal dunes. Elevation: 0–230 feet (0–70 meters).	**Low.** Site is at the upper limit of the known Elevation: range of this species, and the vast majority of occurrences are closer to the coast. Species not observed during rare plant or other biological surveys.

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Clarkia delicata	Delicate clarkia	--/-- CRPR 1B.2 County List B	Annual herb blooming April through June. Occurs in shaded areas or the periphery of oak woodlands and cismontane chaparral. Elevation: 360–3,510 feet (110–1,070 meters).	**Present.** A total of 26 individuals were observed on site. This species was recorded in the eastern hills near the northern property boundary, and on a slope in the southeastern portion of the site.
Comarostaphylis diversifolia ssp. diversifolia	Summer-holly	--/-- CRPR 1B.2 County List A Draft NC MSCP Covered	Mesic north-facing slopes in southern mixed chaparral are the preferred habitat of this large, showy shrub. Blooms April-June. Elevation: 100–2,690 feet (30–820 meters).	**Low.** Suitable habitat is present in the eastern portion of the project site; however, this species was not observed during rare plant or other biological surveys.
Convolvulus simulans	Small-flowered morning glory	--/-- CRPR 4.2 County List D	Annual herb blooming March–July. Occurs on clay soils and in serpentine seeps within chaparral, coastal scrub, and grassland habitats. Elevation: 30–2,755 feet (10–840 meters).	**None.** Suitable soils do not occur on site.
Deinandra paniculata	Paniculate tarplant	--/-- CRPR 4.2 County List D	Annual herb blooming April through November. Occurs in sparsely vegetated grasslands or open sage scrub in arid cismontane regions. Elevation: 55–4,068 feet (17–1,240 meters).	**Moderate.** Suitable habitat occurs on site; however, this species would have been observable during rare plant surveys, if present.
Dichondra occidentalis	Western dichondra	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb blooming January–July. Occurs in chaparral, cismontane woodland, coastal scrub, and grassland habitats. Elevation: 10–2,100 feet (4–630 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys. The nearest recorded occurrence is over 12 miles to the northwest (Calflora 2016).
Dudleya multicaulis	Many-stemmed dudleya	--/-- CRPR 1B.2 County List A	Perennial herb blooming April through July. Occurs on clay soils in coastal sage scrub, chaparral, and valley grasslands. Elevation: 65–3,280 feet (20–1,000 meters).	**None.** Suitable soils not present on site.

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Dudleya viscida	Sticky dudleya	--/-- CRPR 1B.2 County List A Draft NC MSCP Covered	Perennial herb blooming May–June. Occurs in rocky soil within coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub habitats. Elevation: 30–2,590 feet (10–790 meters).	**Low.** Potentially suitable habitat is present onsite in portions of the eastern hills. This species was not observed during rare plant or other biological surveys. The nearest recorded occurrence is over 13 miles to the northwest (Calflora 2016).
Ericameria palmeri var. palmeri	Palmer's goldenbush	--/-- CRPR 1B.1 Draft NC MSCP Covered	Large evergreen shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Flowering period: July–November. Elevation: 165–1,700 feet (50–520 meters).	**Low.** Suitable habitat is present on site; however, this species would have been detectable during rare plant and other biological surveys, but was not observed.
Harpagonella palmeri	Palmer's grappling hook	--/-- CRPR 4.2 County List B	Annual herb blooming March-May. Occurs on clay soils in annual grasslands and coastal sage scrub. Elevation: 42–3,970 feet (13–1,210 meters).	**None.** Suitable soils not present on site.
Holocarpha virgata spp. elongata	Graceful tarplant	--/-- CRPR 4.2 County List D	Annual herb occurring in chaparral, cismontane woodland, coastal scrub, and grassland habitats. Blooms May–November. Elevation: 260–3,280 feet (80–1,000 meters).	**Present.** Approximately 100 individuals observed in sage scrub in the western portion of the site.
Horkelia cuneata ssp. puberla	Mesa horkelia	--/-- CRPR 1B.1 County List A	Perennial herb blooming February-July. Occurs in sandy or gravelly areas in maritime chaparral, cismontane woodland, and coastal scrub. Elevation: 130–3,640 feet (40–1,110 meters).	**Low.** Suitable soils and habitat are present on portions of the project site; however, this species was not observed during rare plant or other biological surveys.
Juglans californica var. californica	California black walnut	--/-- CRPR 4.2 County List D	Perennial deciduous tree occurring in alluvial habitats. Elevation: 16–5,870 feet (5–1,790 meters).	**Low.** Suitable soils and habitat are present on portions of the project site; however, this species was not observed during rare plant or other biological surveys.

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Juncus acutus ssp. leopoldii	Southwestern spiny rush	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Occurs in alkaline meadows and seeps, coastal salt marshes, and coastal dunes. Flowering period: March–June. Elevation: 0–3,117 feet (0–950 meters).	**Low.** Small areas of potentially suitable alkaline habitat are present on site; however, this large perennial herb was not observed during surveys and would likely have been observed if present.
Lepidium virginicum var. robinsonii	Robinson's peppergrass	--/-- CRPR 4.3 County List A	Annual herb. Grows in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Flowering period: is January–July. Elevation: 65–4,400 feet (20–1340 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.
Microseris douglasii spp. platycarpha	Small flowered microseris	--/-- CRPR 4.2 County List D	Annual herb blooming March–May. Occurs in clay soils within cismontane woodland, coastal scrub, grassland, and vernal pool habitats. Elevation: 30–2,690 feet (10–820 meters).	**None.** Suitable soils do not occur on site.
Monardella hypoleuca ssp. lanata	Felt-leaved monardella	--/-- CRPR 1B.2 County List A Draft NC MSCP Covered	Perennial rhizomatous herb blooming June-August. Occurs in chaparral and cismontane woodland. Elevation: 1,540–4,429 feet (470–1,350 meters).	**None.** Site is outside the known Elevation: range of this species.
Mucronea californica	California spineflower	--/-- CRPR 4.2 County List D	Annual herb blooming March-July. Grows in very sandy microhabitats in coastal sage scrub, chaparral, and dunes. It has also been reported from grasslands and cismontane woodlands. Elevation: 32–5,118 feet (10–1,560 meters).	**Moderate.** Suitable habitat occurs on site; however, this species would have been observable during rare plant surveys, if present.
Navarretia fossalis	Prostrate spreading navarretia	FT/-- CRPR 1B.1 County List A Draft NC MSCP Covered	Small annual herb. Occurs in vernal pools, chenopod scrub, marshes, swamps, and playas. Flowering period: April–June. Elevation: 295–3,510 feet (90–1070 meters).	**None.** Vernal pools do not occur on site and suitable habitat is not present for this species.

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Nolina cismontana	Chaparral nolina	--/-- CRPR 1B.2 County List A Draft NC MSCP Covered	Perennial evergreen shrub blooming March-July. Occurs on sandstone or gabbro soils in chaparral and coastal scrub. Elevation: 425–4,167 feet (130–1,270 meters).	**None.** Suitable soils not present on site.
Pentachaeta aurea	Golden-rayed pentachaeta	--/-- CRPR 4.2 County List D	Annual herb blooming March-June. Occurs in a variety of habitats, including sage scrub, chaparral, valley grassland, and coastal scrub. Elevation: 196–6,692 feet (60–2,040 meters).	**Moderate.** Suitable habitat occurs on site; however, this species would have been observable during rare plant surveys, if present.
Piperia cooperi	Cooper's rein orchid	--/-- CRPR 4.2 County List D	Perennial herb blooming March–June. Occurs in chaparral, cismontane woodland, and grassland habitats. Elevation: 55–3,540 feet (17–1,080 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.
Polygala cornuta var. fishiae	Fish's milkwort	--/-- CRPR 4.3 County List D	Shrub blooming May-August. Occurs in shaded, rocky places in canyons in association with oak woodland or chaparral. Elevation: 295–4,396 feet (90–1,340 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.
Quercus engelmannii	Engelmann oak	--/-- CRPR 4.2 County List D Draft NC MSCP Covered	Tree occurring in cismontane foothills in oak woodland, mixed chaparral, and grasslands. Elevation: 229–4,757 feet (70–1,450 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.
Romneya coulteri	Coulter's matalija poppy	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb blooming March-July. Occurs in dry washes and canyons in chaparral and coastal sage scrub communities, often in areas that have burned. Elevation: 65–3,346 feet (20–1,020 meters).	**Moderate.** Suitable habitat is present on site, particularly in the eastern hills. However, this robust perennial herb would likely have been observed if present.
Selaginella cinerascens	Ashy spike-moss	--/-- CRPR 4.1 County List D	Perennial rhizomatous herb occurring in chaparral and coastal scrub habitats. Elevation: 25–2,035 feet (8–620 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.

Appendix B (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Stipa diegoensis	San Diego needlegrass	--/-- CRPR 4.2 County List D	Perennial grass blooming February-June. Occurs in rocky coastal sage scrub and chaparral and is closely associated with metavolcanic soils. Peaks and upper ridgelines are preferred microhabitat. Elevation: 98–3,380 feet (30–1,030 meters).	**Low.** Suitable habitat is present in the eastern hills; however, this species was not observed during rare plant or other biological surveys.
Tetracoccus dioicus	Parry's tetracoccus	--/-- CRPR 1B.2 County List A Draft NC MSCP Covered	Perennial shrub blooming April–May. Occurs in chaparral and coastal scrub. Elevation: 360–2,755 feet (110–840 meters).	**Low.** Suitable habitat is present on site; however, this species was not observed during rare plant or other biological surveys.

[1]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CRPR = California Rare Plant Rank: 1A–presumed extinct; 1B–rare, threatened, or endangered in California and elsewhere; 2A–presumed extirpated in California but more common elsewhere; 2B–rare, threatened, or endangered in California but more common elsewhere; 3–more information needed; 4–watch list for species of limited distribution. Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very endangered

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Appendix C

Animal Species Observed or Detected

Appendix C
Animal Species Observed or Detected

Family	Scientific Name	Common Name
INVERTEBRATES		
Acrididae	*Trimeroptropis pallidipennis*	pallid-winged grasshopper
Apidae	*Apis* sp.	honey bee
Cambaridae	*Procambarus clarkii*	red swamp crayfish
Coccinellidae	*Hippodamia convergens*	convergent ladybug beetle
Formicidae	*Linepithema humile*	Argentine ant
Hesperiidae	*Erynnis funeralis*	funereal duskywing
	Hylephila phyleus	fiery skipper
	Pyrgus communis	checkered skipper
Lycaenidae	*Callophrys augustinus*	brown elfin
	Glaucopsyche lygdamus	silvery blue
	Leptotes marina	marine blue
	Plebejus acmon	Acmon blue
	Strymon melinus	gray hairstreak
Nymphalidae	*Adelpha californica*	California sister
	Junonia coenia	common buckeye
	Limenitis lorquini	Lorquin's admiral
	Nymphalis antiopa	mourning cloak
	Phyciodes mylitta	Mylitta crescent
	Vanessa annabella	west coast lady
	Vanessa cardui	painted lady
	Vanessa virginiensis	American lady
Papilionidae	*Papilio eurymedon*	pale swallowtail
	Papilio rutulus	western tiger swallowtail
	Papilio zelicaon	anise swallowtail
Pieridae	*Anthocharis sara*	Sara orangetip
	Nathalis iole	dainty sulphur
	Pieris rapae	cabbage white
	Pontia protodice	checkered white
Pompilidae	*Pepsis* sp.	tarantula hawk
Riodinidae	*Apodemia mormo virgulti*	Behr's metalmark
VERTEBRATES		
Amphibians and Reptiles		
Bufonidae	*Anaxyrus boreas*	western toad
Colubridae	*Lampropeltis getula*	common kingsnake
	Pituophis catenifer	Pacific gopher snake
Hylidae	*Pseudacris regilla*	Pacific tree frog
Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
	Uta stansburiana	side-blotched lizard
Ranidae	*Rana catesbeiana*	bullfrog

Appendix C (cont.)
Animal Species Observed or Detected

Family	Scientific Name	Common Name
VERTEBRATES (cont.)		
Amphibians and Reptiles (cont.)		
Scaphiopodidae	*Spea hammondii*†	western spadefoot†
Teiidae	*Aspidoscelis tigris* ssp. *stejnegeri*†	coastal western whiptail†
Viperidae	*Crotalus oreganus*	western rattlesnake
Birds		
Accipitridae	*Accipiter cooperii*†	Cooper's hawk†
	Aquila chrysaetos†	golden eagle†
	Buteo jamaicensis	red-tailed hawk
	Buteo lineatus†	red-shouldered hawk†
	Circus cyaneus†	northern harrier†
	Elanus leucurus†	white-tailed kite†
Aegithalidae	*Psaltriparus minimus*	bushtit
Alaudidae	*Eremophila alpestris actia*†	California horned lark†
Anatidae	*Anas americana*	American wigeon
	Anas clypeata	northern shoveler
	Anas cyanoptera	cinnamon teal
	Anas platyrhynchos	mallard
	Anser cygnoides	Chinese goose
	Aythya affinis	lesser scaup
	Branta canadensis†	Canada goose†
	Chen caerulescens†	snow goose†
	Oxyura jamaicensis	ruddy duck
Apodidae	*Aeronautes saxatalis*	white-throated swift
Ardeidae	*Ardea alba*	great egret
	Ardea herodias†	great blue heron†
	Bubulcus ibis	cattle egret
	Butorides virescens†	green heron†
	Egretta thula	snowy egret
Cardinalidae	*Passerina amoena*	lazuli bunting
	Passerina caerulea	blue grosbeak
	Pheucticus melanocephalus	black-headed grosbeak
	Piranga ludoviciana	western tanager
Cathartidae	*Cathartes aura*†	turkey vulture†
Charadriidae	*Charadrius vociferous*	killdeer
Columbidae	*Columba livia*	rock pigeon
	Columbina passerina	common ground dove
	Streptopelia decaocto	Eurasian collared dove
	Zenaida macroura	mourning dove

Appendix C (cont.)
Animal Species Observed or Detected

Family	Scientific Name	Common Name
VERTEBRATES (cont.)		
Birds (cont.)		
Corvidae	*Aphelocoma californica*	western scrub-jay
	Corvus brachyrhynchos	American crow
	Corvus corax	common raven
Cuculidae	*Geococcyx californianus*	greater roadrunner
Emberizidae	*Aimophila ruficeps canescens*†	southern California rufous-crowned sparrow†
	Chondestes grammacus	lark sparrow
	Melospiza melodia	song sparrow
	Melozone crissalis	California towhee
	Pipilo maculatus	spotted towhee
	Spizella atrogularis	black-chinned sparrow
	Zonotrichia leucophrys	white-crowned sparrow
Falconidae	*Falco sparverius*	American kestrel
Fringillidae	*Haemorhous mexicanus*	house finch
	Spinus psaltria	lesser goldfinch
	Spinus tristis	American goldfinch
Hirundinidae	*Hirundo rustica*	barn swallow
	Petrochelidon pyrrhonota	cliff swallow
	Stelgidopteryx serripennis	northern rough-winged swallow
	Tachycineta bicolor	tree swallow
Icteridae	*Agelaeius phoenicus*	red-winged blackbird
	Euphagus cyanocephalus	Brewer's blackbird
	Icterus bullockii	Bullock's oriole
	Icterus cucullatus	hooded oriole
	Molothrus ater	brown-headed cowbird
	Quiscalus mexicanus	great-tailed grackle
	Sturnella neglecta	western meadowlark
Laniidae	*Lanius ludovicianus*†	loggerhead shrike†
Mimidae	*Mimus polyglottos*	northern mockingbird
	Toxostoma redivivum	California thrasher
Odontophoridae	*Callipepla californica*	California quail
Pandionidae	*Pandion haliaetus*†	osprey†
Paridae	*Baeolophus inornatus*	oak titmouse
Parulidae	*Cardellina pusilla*	Wilson's warbler
	Geothlypis trichas	common yellowthroat
	Icteria virens†	yellow-breasted chat†
	Oreothlypis celata	orange-crowned warbler
	Setophaga coronata	yellow-rumped warbler

Appendix C (cont.)
Animal Species Observed or Detected

Family	Scientific Name	Common Name
VERTEBRATES (cont.)		
Birds (cont.)		
Parulidae (cont.)	*Setophaga petechia*†	yellow warbler†
	Setophaga townsendi	Townsend's warbler
Passeridae	*Passer domesticus*	house sparrow
Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Phasianidae	*Gallus gallus domesticus*	chicken
	Meleagris gallopavo	wild turkey
Picidae	*Colaptes auratus*	northern flicker
	Melanerpes formicivorus	acorn woodpecker
	Picoides nuttallii	Nuttall's woodpecker
	Picoides pubescens	downy woodpecker
Podicipedidae	*Podilymbus podiceps*	pied-billed grebe
Polioptilidae	*Polioptila californica californica*†	coastal California gnatcatcher†
Ptilogonatidae	*Phainopepla nitens*	phainopepla
Rallidae	*Fulica americana*	American coot
Regulidae	*Regulus calendula*	ruby-crowned kinglet
Sittidae	*Sitta carolinensis*	white-breasted nuthatch
Sturnidae	*Sturnus vulgaris*	European starling
Sylviidae	*Chamaea fasciata*	wrentit
Threskiornithidae	*Plegadis chihi*†	white-faced ibis†
Trochilidae	*Calypte anna*	Anna's hummingbird
	Calypte costae	Costa's hummingbird
Troglodytidae	*Thryomanes bewickii*	Bewick's wren
	Troglodytes aedon	house wren
Turdidae	*Catharus guttatus*	hermit thrush
	Sialia mexicana†	western bluebird†
	Turdus migratorius	American robin
Tyrannidae	*Contopus sordidulus*	western wood-pewee
	Empidonax difficilis	Pacific-slope flycatcher
	Empidonax traillii†	willow flycatcher†
	Myiarchus cinerascens	ash-throated flycatcher
	Pyrocephalus rubinus†	vermilion flycatcher†
	Sayornis nigricans	black phoebe
	Sayornis saya	Say's phoebe
	Tyrannus verticalis	western kingbird
	Tyrannus vociferans	Cassin's kingbird
Tytonidae	*Tyto alba*†	barn owl†
Vireonidae	*Vireo bellii pusillus*†	least Bell's vireo†
	Vireo gilvus	warbling vireo

Appendix C (cont.)
Animal Species Observed or Detected

Family	Scientific Name	Common Name
VERTEBRATES (cont.)		
Mammals		
Canidae	*Canis latrans*	coyote
	Canis lupus familiaris	domestic dog
Cervidae	*Odocoileus hemionus*†	mule deer†
Cricetidae	*Peromyscus maniculatus*	deer mouse
	Reithrodontomys megalotis	western harvest mouse
Equidae	*Equus ferus*	domestic horse
Felidae	*Lynx rufus*	bobcat
Geomyidae	*Thomomys bottae*	Botta's pocket gopher
Heteromyidae	*Chaetodipus fallax fallax*†	northwestern San Diego pocket mouse†
	Dipodomys simulans	Dulzura kangaroo rat
Leporidae	*Sylvilagus audubonii*	desert cottontail
Mephitidae	*Mephitis mephitis*	striped skunk
Muridae	*Neotoma* sp.	woodrat
Mustelidae	*Mustela frenata*	long-tailed weasel
Procyonidae	*Procyon lotor*	raccoon
Sciuridae	*Otospermophilus beecheyi*	California ground squirrel

†Special-status Species

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Appendix D

Sensitive Animal Species with Potential to Occur

Appendix D
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
INVERTEBRATES				
Danaus plexippus	Monarch butterfly	--/-- County Group 2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds (*Asclepias* spp.).	**Low.** Suitable roosting habitat is not present on site. However, suitable nectar sources are present, as well as larval host plant (milkweed [*Asclepias* sp.]), which may be used by dispersing individuals.
Lycaena hermes	Hermes copper butterfly	FC/-- County Group 1	Southern mixed chaparral and coastal sage scrub. Requires host plant redberry (*Rhamnus crocea*) in close proximity to California buckwheat (*Eriogonum fasciculatum*), its preferred nectar source.	**Low.** Suitable habitat is present on site; however protocol surveys conducted in 2016 were negative. The vast majority of occurrences for this species are from southwestern San Diego County (Marschalek and Klein 2010) with smaller extant populations occurring only as far north as the Elfin Forest area (Marschalek and Deutschman 2017), which is approximately 15 miles south of the project site. There are historical records of two museum specimens collected in north San Diego County, one from the Bonsall area in 1934 and one from the Pala area in 1932; however, these populations are presumed extirpated (USFWS 2013).

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES				
Amphibians and Reptiles				
Actinemys marmorata	Southwestern pond turtle	--/SSC County Group 1 Draft NC MSCP Covered	Almost entirely aquatic; occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Requires basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low.** Species could potentially occupy the eastern pond but was not observed during biological surveys. Species is not expected to occupy the agricultural ponds due to ongoing anthropogenic disturbance in these areas, lack of cover, and exposure to predators. Records of this species are not known from the project vicinity.
Anaxyrus californicus	Arroyo toad	FE/SSC County Group 1 Draft NC MSCP Covered	Requires rivers with sandy banks, willows, cottonwoods, and sycamores. Breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**Low.** Species has not been documented along the San Luis Rey River west of I-15 since 2011, at which time only two toads were observed. No suitable breeding habitat occurs on site. Two small areas of riparian forest support suitable aestivation habitat; these areas will be conserved in biological open space.
Anniella pulchra pulchra	Silvery legless lizard	--/SSC County Group 2	Areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	**Moderate.** Potentially suitable habitat is present on site, although species was not observed during biological surveys. Species also may occur off site in sandy soils along the San Luis Rey River.
Charina trivirgata roseofusca	Coastal rosy boa	--/-- County Group 2	Occurs among rocky outcrops in coastal sage scrub, chaparral, and desert scrub.	**High.** Suitable rocky habitat is present on site, particularly in the eastern hills.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Amphibians and Reptiles (cont.)				
Cnemidophorus hyperythrus	Orange-throated whiptail	--/SSC County Group 2 Draft NC MSCP Covered	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas, shaded areas, and abundant insect prey base, particularly termites (*Reticulitermes* sp.).	**High.** Suitable habitat is present on site and species is known from the project vicinity.
Cnemidophorus tigris multiscutatus	Coastal western whiptail	--/-- County Group 2	Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	**Present.** Species observed in the eastern portion of the project site, and also may occupy other suitable habitat on site.
Coleonyx variegates abbottii	San Diego banded gecko	--/-- County Group 1	Chaparral and coastal sage scrub in areas with rock outcrops.	**Low.** Potentially suitable habitat is present on site, but species has not been observed in the project vicinity.
Crotalus ruber ruber	Northern red diamond rattlesnake	--/SSC County Group 2 Draft NC MSCP Covered	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**High.** Suitable habitat present on site with ample rodent population.
Diadophis punctatus similis	San Diego ringneck snake	--/-- County Group 2	Generally occurs in moist habitats such as oak woodlands and canyon bottoms, but is also sometimes encountered in grassland, chaparral, and coastal sage scrub; generally restricted to leaf litter and rarely crosses open areas.	**Low.** Suitable habitat is present only in a small area in the eastern portion of the site; species is unlikely to occur.
Eumeces skitonianus interparietalis	Coronado skink	--/SSC County Group 2	Occurs in grasslands, coastal sage scrub, and open chaparral where there is abundant leaf litter or low herbaceous growth.	**High.** Suitable grassland and sage scrub habitats are present on site.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Amphibians and Reptiles (cont.)				
Phrynosoma coronatum blainvillii	San Diego horned lizard	--/SSC County List 2 Draft NC MSCP Covered	Coastal sage scrub, chaparral, grassland, and woodlands up to 6,000 ft. Not common where Argentine ants (*Linepithema humile*) have excluded native harvester ants (*Pogonomyrmex* sp.).	**Low.** Suitable habitat present on site, but species unlikely to occur due to lack of typical prey species. Harvester ant colonies were not observed during biological surveys.
Rana aurora dryatoni	California red-legged frog	FT/SSC County List 1	Found in dense, shrubby riparian vegetation with deep, slow-moving water. Readily displaced by introduced aquatic predators, including bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp).	**Not Expected.** Suitable habitat not present on site and species not known from the project vicinity.
Salvadora hexalepis virgultea	Coast patch-nosed snake	--/SSC County Group 2	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	**High.** Suitable brushy habitat, canyons, and rocky hillsides are present on site.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Amphibians and Reptiles (cont.)				
Spea hammondii	Western spadefoot	--/SSC County Group 2	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	**High.** Species is known to occur offsite to the north along the San Luis Rey River. A total of seven adult toads were observed along the northern project boundary near the Caltrans mitigation site during focused surveys conducted in 2017. Suitable foraging and aestivation habitat is present along the northern project boundary and western tip of the site. Species may occasionally occur in row crop areas adjacent to the eastern riparian corridor during fallow (non-plowed) years. The species could breed in select locations on site, including a single small ephemeral depression at the junction of two dirt roads and row crops, agricultural ponds, and in the eastern riparian corridor stream course.
Thamnophis hammondii	Two-striped garter snake	--/SSC County Group 1	Typical habitat is along permanent and intermittent streams bounded by dense riparian vegetation; also found associated with vernal pools and stock ponds.	**Moderate.** Species could potentially occupy the upper reaches of the eastern riparian corridor, which consists of an intermittent stream bordered by dense riparian vegetation. No other portions of the site are likely to support this species. Species is not expected to occupy the agricultural ponds due to ongoing anthropogenic disturbance in these areas, lack of cover, and exposure to predators.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Amphibians and Reptiles (cont.)				
Thamnophis sirtalis novum	South coast garter snake	--/SSC County Group 2	Typically found in woodlands, grasslands, coniferous forests, and scrublands near water. Found in the coastal plain from Ventura County to San Diego County, from sea level to about 850 m.	**High.** Suitable habitat present onsite; however, species not observed during surveys.
Birds				
Accipiter cooperii	Cooper's hawk	--/WL County Group 1 Draft NC MSCP Covered	Occurs year-round throughout San Diego County's coastal slope where stands of trees are present Found in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	**Present.** Species observed roosting in the eastern and western riparian corridors. No nests observed.
Accipiter striatus	Sharp-shinned hawk	--/WL County Group 1	Usually observed in areas with tall trees or other vegetative cover but can be observed in a variety of habitats. In San Diego County occurs in small numbers and only in winter.	**Low.** Tall eucalyptus, sycamore, and cottonwood trees occur on site; however, this species was not observed or otherwise detected during multiple site surveys.
Agelaius tricolor	Tricolored blackbird	BCC/SSC County Group 1 Draft NC MSCP Covered	Generally found in large freshwater marshes with dense stands of cattails or bulrushes. Forages in open habitats such as farm fields, pastures, and large lawns.	**Low.** Suitable foraging habitat is present on site; however large freshwater marshes are absent from the site. This species was not observed or otherwise detected during multiple site surveys.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	--/WL County Group 1 Draft NC MSCP Covered	Occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons; also found in open sage scrub/grassy areas of successional growth.	**Present.** Species observed in the southern and eastern portions of the project site in Diegan coastal sage scrub.
Ammodramus savannarum	Grasshopper sparrow	--/SSC County Group 1 Draft NC MSCP Covered	Typical habitat is dense grasslands that have little or no shrub cover	**Low.** Suitable grassland habitat is present on site, but species would likely have been detected during site surveys if present.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Amphispiza belli belli	Bell's sage sparrow	BCC/WL County Group 1 Draft NC MSCP Covered	Chaparral and sage scrub with modest leaf-litter on the ground (e.g., after a fire or in gabbro-based soil areas).	**Low.** Coastal sage scrub occurs on site but soils are not gabbroic and habitat in the recently burned eastern hills has regenerated sufficiently to currently support this species.
Aquila chrysaetos	Golden eagle	BCC/FP; WL County Group 1 Draft NC MSCP Covered	(Nesting and Wintering) Rolling foothills and mountain areas, juniper-sage flats, and deserts. Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation.	**Observed.** Two individuals were observed flying over the northeastern portion of the site on a single occasion in April 2016. Suitable nesting habitat does not occur on site. Species may forage on site in the eastern hills or occasionally over the pastures. Observed individuals may be associated with the nesting pair on Gregory Mountain, 3.5 miles northeast of the project site.
Ardea herodias	Great blue heron	--/-- County Group 2	Wetland habitats, but can be observed foraging away from water.	**Present.** Species observed foraging within pastures and near open water in the northern portion of the project site. Two active nests observed in tall trees near the central agricultural pond in April 2016.
Asio otus	Long-eared owl	--/SSC County Group 1	In San Diego County is a rare resident in shady oak woodlands and broad riparian forests. Ideal habitat includes a closed canopy near open habitats for foraging and a supply of abandoned raptor or corvid nests or debris platforms for nesting (Unitt 2004).	**Low**. Oak woodland, riparian forest, and grassland habitats occur on the site, but oak woodland and riparian forest habitats are small in size and unlikely to support this species.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Athene cunicularia hypugea	Burrowing owl	BCC/SSC County Group 1 Draft NC MSCP Covered	Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow. All records of burrowing owl in northwestern San Diego County are prior to 1997 (Unitt 2004).	**Low**. Suitable grassland habitat and abundant small mammal prey occur on the site; however, protocol-level surveys in 2015 were negative and the overall potential for the species to occur in the future is low.
Buteo lineatus	Red-shouldered hawk	--/-- County Group 1	Riparian woodland, oak woodland, orchards, eucalyptus groves, or other areas with tall trees.	**Present.** Species observed in multiple locations in the northwestern portion of the project site. Observations occurred near pastures, disturbed habitat, non-native grassland, and mule fat scrub.
Buteo swainsoni	Swainson's hawk	BCC/ST County Group 1	Nests in riparian woodland and forages over grassland. Once a common species in San Diego County, now a rare migrant, observed primarily in Borrego Valley. Species no longer nests in southern California (Unitt 2004).	**Low.** Suitable habitat present, however, species unlikely to occur on site given its rarity in San Diego County.
Butorides striatus	Green heron	--/-- County Group 2	Found around wooded ponds, marshes, rivers, reservoirs, and estuaries.	**Present.** Species observed in the eastern portion of the project site near the open water pond.
Camphylorhynchus brunnicapillus couesi	Coastal cactus wren	--/SSC County Group 1 Draft NC MSCP Covered	Occurs in coastal sage scrub with large cacti for nesting.	**Low.** Suitable habitat for this species is present on site; however, no evidence of this species was detected during multiple project surveys conducted in potential habitat. The most recent occurrence records for this species on the project site are from 1989 and 1990. Species has low potential to occur on site.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Cathartes aura	Turkey vulture	--/-- County Group 1	Species occurs throughout much of San Diego County with the exception of extreme coastal San Diego where development is heaviest. Foraging habitat includes most open habitats with breeding occurring in crevices among boulders.	**Present.** Multiple sightings of this species soaring overhead in the various portions of the property, with up to two vultures observed at any one time. Two vultures also were observed perched on top of a rock outcrop in the easternmost hills. This species could potentially breed on site, in the higher portions of the eastern hills where rock outcrops are present. No other potentially suitable breeding habitat is present on site.
Circus cyaneus	Northern harrier	--/SSC County Group 1 Draft NC MSCP Covered	Within San Diego County, distribution is primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. Typical habitat consists of open grassland and marsh.	**Present.** Suitable foraging habitat occurs on site as well as small areas of potential breeding habitat. One individual was observed foraging over fallow row crop areas located east of the eastern riparian corridor.
Coccyzus americanus occidentalis	Yellow-billed cuckoo	FT/SE County Group 1	Generally occurs along larger river systems, where it nests in riparian forest dominated by willows and cottonwoods. In California, species is most likely to be found in patches of riparian habitat greater than 200 ac in size, and they rarely use patches less than 49 ac in size (Halterman et al 2015).	**Low.** Sufficient expanses of suitable habitat do not occur on site. This species has been detected north of the site along the San Luis Rey River corridor; however, on-site riparian habitat is not of sufficient extent to meet the typical habitat requirements of this species.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Dendroica petechia brewsteri	Yellow warbler	BCC/SSC County Group 2	Occurs in riparian woodland and swamp edges. Often found near streams.	**Present.** Detected in riparian forest in four locations on site, in both the eastern and western riparian corridors and within a small stand of riparian woodland along the northern property boundary.
Elanus caeruleus	White-tailed kite	--/FP County Group 1	Riparian woodlands and oak or sycamore groves adjacent to grassland.	**Present.** Species observed foraging on site. No nests or breeding activity observed.
Empidonax trailii extimus	Southwestern willow flycatcher	BCC/SE County Group 1 Draft NC MSCP Covered	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. One of the most important characteristics of the habitat appears to be the presence of dense vegetation, usually throughout all vegetation layers present. Almost all breeding habitats are within close proximity of water or very saturated soil.	**Low.** Protocol surveys conducted in 2015 were negative for this species, and there are no CNDDB or USFWS database records for this species on or adjacent to the project site.
Eremophila alpestris actis	Horned lark	--/WL County Group 2	Found on sandy beaches and in agricultural fields, grassland, and open areas.	**Present.** Species observed in the southeastern corner of the project within habitat tilled for row crops.
Falco mexicanus	Prairie falcon	--/WL County Group 1	Nests on cliff or bluff ledges or occasionally in old hawk or raven nests; forages in grassland or desert habitats. Observed year-round in San Diego County but more commonly during winter.	**Low**. Suitable dry, open habitat occurs on the site; however, this species was not observed or otherwise detected during multiple project surveys. This species could forage over the site.
Icteria virens	Yellow-breasted chat	--/SSC County Group 1 Draft NC MSCP Covered	Occurs in mature riparian woodland, typically returning to San Diego County in mid-April to breed.	**Present.** Two individuals were detected in riparian forest in the eastern riparian corridor.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Lanius ludovicianus	Loggerhead shrike	--/SSC County Group 1	Typical habitat includes open habitats including grasslands, shrublands, and ruderal areas with adequate perching locations.	**Present.** One individual observed perched near pasture along the northern site boundary.
Pandion haliaetus	Osprey	--/WL County Group 2	Found near rivers, lakes and the coast with large numbers of fish present. Species is more numerous in San Diego during migration and winter than in the breeding season. Rarely breeds in San Diego County.	**Present.** One individual observed flying overhead of the eastern riparian area near the freshwater pond in October 2013. Species is unlikely to breed on site and foraging habitat is limited to the easternmost pond.
Plegadis chihi	White-faced ibis	--/WL County Group 1 Draft NC MSCP Covered	Occurs in large marshes, with nesting colony hidden in inaccessible reedbed or willow-covered area.	**Present.** Flocks of up to approximately 50 individuals observed foraging in maintained pasture in the northwestern portion of the site. Species was observed multiple times on site, always foraging within pastures or occasionally in the feed barn near the pastures. This species was not observed breeding on site and is unlikely to do given the limited area of freshwater marsh present.
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC County Group 1 Draft NC MSCP Covered	Occurs in coastal sage scrub with California sagebrush (*Artemesia californcia*) as a dominant or co-dominant species, at elevations below 2,500 feet.	**Present.** Species observed in several locations within the southwestern portion of the project site in Diegan coastal sage scrub.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Pyrocephalus rubinus flammeus	Vermilion flycatcher	--/SSC County Group 2	Scarce breeding records occur in southern California with a few individuals wintering regularly along the California coast from Ventura County south to San Diego County. Arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland, usually near water. Wintering individuals can be found in open and semi-open areas with hedges, scattered trees and bushes, and often near water.	**Present.** Multiple observations of this species perched in trees and along fences adjacent to the pastures, as well as foraging in these areas. One pair with two fledglings was observed in 2015 in the northwestern portion of the site adjacent to a pasture.
Sialia mexicana	Western bluebird	--/-- County Group 2	Open coniferous and deciduous woodlands, wooded riparian areas, grasslands, farmlands, and edge of burned areas. Prefers open forest habitats. Nests in cavities in trees and snags, or between bark and trunk. Uses nest boxes.	**Present.** Multiple observations of this species perched in trees and along fences adjacent to the pastures, as well as foraging in these areas. This species is presumed to breed on site.
Tyto alba	Common barn owl	--/-- County Group 2	Require large areas of open land over which to hunt. Marsh, grasslands, or mixed agricultural fields. For nesting and roosting they need cavities in trees or man-made structures such as barns or silos.	**Present.** One individual was observed roosting in a farm building in the northwestern portion of the property. Suitable nesting habitat occurs on site for this species.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Birds (cont.)				
Vireo bellii pusillus	Least Bell's vireo	FE/SE County Group 1 Draft NC MSCP Covered	Occurs in riparian thickets, usually willow and cottonwood. Summer resident of Southern California. Typically arrives in San Diego County during the third week of March (Unitt 2004).	**Present.** Two solitary males were detected in isolated stands of riparian forest along the northern property boundary in late June and July 2015. One solitary male was detected on two occasions in riparian forest in the southwestern portion of the site during 2016 surveys (one in late April and one in early May), and two other individuals were detected off site to the north, along the San Luis Rey river corridor. No breeding individuals were detected on site.
Mammals				
Antrozous pallidus	Pallid bat	--/SSC County Group 2 Draft NC MSCP Covered	Locally common species of low elevations in California. Rocky, mountainous areas and near water; also found over more open, sparsely vegetated grasslands, and prefers foraging in the open. Uses three different roosts: 1) the day roost is in a warm, horizontal opening such as rock cracks; 2) the night roost is in the open, near foliage; and 3) the hibernation roost, which is in caves or cracks in rocks.	**High.** Suitable foraging and roosting habitat present onsite.
Bassariscus astutus	Ringtail	--/-- County Group 2	Various riparian habitats and in brush stands of moist forest and shrub habitats at low to middle elevations. Less common in wooded areas with hollow trees, sometimes around buildings.	**Low.** Species is unlikely to occur onsite due to its restrictive range and high sensitivity to disturbance.
Chaetodipus californicus femoralis	Dulzura pocket mouse	--/SSC County Group 2	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Associated with grass-chaparral edges	**Low.** Suitable grassland habitat present onsite but no sign of this species was observed during surveys.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Mammals (cont.)				
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	--/SSC County Group 2	Occurs in open areas of coastal sage scrub and weedy growth, often on sandy substrates.	**Present.** Species observed in the eastern portion of the project in burned Diegan coastal sage scrub.
Choeronycteris mexicana	Mexican long-tongued bat	--/SSC County Group 2	Found in desert canyons, arid mountain ranges. Roosts by day in caves, mines or buildings. Feeds on nectar and pollen, mainly from cactus and agaves. Often found eating at hummingbird feeders.	**Not Expected.** Suitable habitat does not occur onsite.
Corynorhinus townsendii pallescens	Townsend's big-eared bat	--/SSC County Group 2 Draft NC MSCP Covered	Obligate cave-roosting species whose distribution is strongly associated with the presence of natural caves or cave-like structures such as mines (Sherwin 1998 as cited by Stokes et al 2005).	**Not Expected.** Suitable habitat does not occur onsite.
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST County Group 1 Draft NC MSCP Covered	Found in sparsely vegetated annual grassland and sage scrub communities with loose, friable, well-drained soil.	**Low.** Suitable habitat present onsite, but species not observed during the focused surveys.
Euderma maculatum	Spotted bat	--/SSC County Group 2	Prefers sites with adequate roosting habitat (i.e., steep, rocky cliffs); feeds over water and along washes. Rare in California (Zeiner et al. 1990).	**Low.** Suitable foraging habitat present, but suitable roosting habitat does not occur onsite.
Eumops perotis californicus	Greater western mastiff bat	--/SSC County Group 2	Lower and upper Sonoran desert scrub near cliffs, preferring rugged rocky canyons with abundant crevices. Prefers crowding into tight crevices.	**None**. No suitable cliff or rocky canyon habitat occurs on the site.
Felis concolor	Mountain lion	--/SSC County Group 2	Requires extensive areas of riparian vegetation and brushy stages of various habitats with interspersed irregular terrain, rocky outcrops, and tree/brush edges. Main prey is mule deer.	**Low.** Suitable habitat is present; however preferred prey species is not known to occupy the site.

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Mammals (cont.)				
Lasiurus blosservillii	Western red bat	--/SSC County Group 2	Riparian areas dominated by cottonwoods, oaks, sycamores, and walnuts.	**High.** Suitable foraging habitat present onsite; however species is more likely to roost in offsite riparian habitat along the San Luis Rey River corridor.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	--/SSC County Group 2 Draft NC MSCP Covered	Found primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**High.** Suitable habitat present onsite.
Macrotus californicus	California leaf-nosed bat	--/SSC County Group 2	Prefers rocky, rugged terrain; roosts by day in caves, abandoned mines, and tunnels. Forages over nearby flats and washes.	**Low.** Suitable foraging habitat present, but suitable roosting habitat does not occur onsite.
Myotis cilolabrum	Small-footed myotis	--/-- County Group 2	Occurs in arid, upland habitats near water. Prefers open stands in forests and woodlands as well as brushy habitats. Feeds over and drinks from streams, ponds, springs, and stock tanks.	**High.** Suitable habitat occurs on site.
Myotis yumanensis	Yuma myotis	--/-- County Group 2	Open forests and woodland are optimal habitat. Closely tied to bodies of water for foraging and drinking. Roosts in buildings, mines, crevices, caves, and under bridges.	**Low.** Suitable foraging habitat occurs on site; however, potential roosting habitat is minimal.
Neotoma lepida intermedia	San Diego desert woodrat	--/SSC County Group 2	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	**Moderate.** Suitable habitat is present on site..

Appendix D (cont.)
Sensitive Animal Species Potential to Occur

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
VERTEBRATES (cont.)				
Mammals (cont.)				
Nyctinomops femorosaccus	Pocketed free-tailed bat	--/SSC County Group 2	Colonial species that roosts primarily in caves and crevices of rugged cliffs. May also roost under roof tiles of buildings. It has been found in a variety of habitat associations, including desert shrub and pine-oak forests. Preferred habitat is rocky areas with high cliffs.	**Not Expected.** Suitable habitat does not occur on the project site.
Nyctinomops macrotis	Big free-tailed bat	--/SSC County Group 2	A rare species in California (Zeiner et al. 1990). Prefers rugged, rocky canyons. Often forages over water. Roosts in crevices in high cliffs or rock outcrops.	**Low.** Rock outcrops potentially suitable for roosting are present on site, primarily in the eastern hills, however site does not support rocky canyon habitat.
Odocoileus hemionus	Southern mule deer	--/-- County Group 2	Mule deer occupy to some extent almost all types of habitat within their range but, in general, they seem to prefer the more arid, open situations	**Low.** Although dried scat was observed in the far western tip of the site on a single occasion in 2013, no other detections of this species occurred during multiple field surveys conducted between 2013 and 2016. This species would have been observed if occupying the site.
Onychomys torridus ramona	Southern grasshopper mouse	--/SSC County Group 2	Arid habitats including various types of scrublands, low desert with creosote bush, mesquite, and yucca.	**None**. No suitable desert scrub habitat occurs on the site.
Taxidea taxus	American badger	--/SSC County Group 2 Draft NC MSCP Covered	Open plains and prairies, farmland, and sometimes edges of woods.	**Low**. Suitable open grassland and farmland habitat occurs on the site; however this species was not observed or otherwise detected during multiple site surveys.

[1]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; C=Candidate; R = Rare; FP = Fully Protected; BCC = Bird of Conservation Concern; SSC = State Species of Special Concern; WL = Watch List.

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Appendix E

Explanation of Status Codes for Plant and Animal Species

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FEDERAL, STATE, AND LOCAL CODES

U.S. FISH AND WILDLIFE SERVICE (USFWS)

FE Federally listed endangered

FT Federally listed threatened

FC Federal candidate for listing

BCC Birds of Conservation Concern (discussed in more detail, below)

BGEPA Bald and Golden Eagle Protection Act (discussed in more detail below)

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW)

SE State listed endangered

SR State listed rare

ST State listed threatened

SSC State species of special concern

WL Watch List

Fully Protected — Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

COUNTY OF SAN DIEGO

Plant sensitivity

Group A — Plants rare, threatened, or endangered in California or elsewhere
Group B — Plants rare, threatened, or endangered in California but more common elsewhere
Group C — Plants that may be quite rare, but more information is needed to determine rarity status
Group D — Plants of limited distribution and are uncommon, but not presently rare or endangered

Animal sensitivity

County Sensitive — Animals considered under California Environmental Quality Act (CEQA) review of projects.

MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) COVERED

Multiple Species Conservation Program covered species for which the County has take authorization within the MSCP area.

MSCP NARROW ENDEMIC (NE)

Narrow endemic species are native species that have "restricted geographic distributions, soil affinities, and/or habitats." The MSCP participants' subarea plans have specific conservation measures to ensure impacts to narrow endemics are avoided to the maximum extent practicable.

OTHER CODES AND ABBREVIATIONS

USFWS BALD AND GOLDEN EAGLE PROTECTION ACT (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

USFWS BIRDS OF CONSERVATION CONCERN (BCC)

This report from 2002 aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities and draw attention to species in need of conservation action. USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. The report is available online at http://migratorybirds.fws.gov/reports/bcc2002.pdf.

CALIFORNIA NATIVE PLANT SOCIETY (CNPS) CALIFORNIA RARE PLANT RANKING (CRPR)

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 – Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 – Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

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