BIOLOGICAL TECHNICAL REPORT
for the
Otay 250 SPA Project
PDS2015-SPA15-001

Prepared by:

R·E·C
Consultants, Inc.

2442 Second Avenue
San Diego, California 92101
(619) 232-9200

Project Proponent:

Andrea Rosati
Sunroad Enterprises
4445 Eastgate Mall, Suite 400
San Diego, CA 92121

Elyssa Robertson
Principal, County QCL Biologist

Catherine MacGregor
Senior Biologist

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GLOSSARY OF TERMS AND ACRONYMS

AMSL	Above Mean Sea Level
AOU	American Ornithologists' Union
APN	Assessor Parcel Number
BMO	Biological Mitigation Ordinance
BOS	Biological Open Space
BRCA	Biological Resources Core Area
BTR	Biological Technical Report
BUOW	Burrowing Owl
CDFG	California Department of Fish and Game (old name of CDFW)
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNAH	Center for North American Herpetology
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSS	Coastal Sage Scrub
DPLU	Department of Planning and Land Use, County of San Diego; now PDS
DPR	Department of Parks and Recreation, County of San Diego
EIR	Environmental Impact Report
EOMSP(A)	East Otay Mesa Specific Plan (Amendment)
ESA	Endangered Species Act
F	Fahrenheit
FMZ	Fuel Modification Zone
FSEIR	Final Supplemental EIR
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HMP	Habitat Management Plan
I	Interstate
LBZ	Limited Building Zone
MBTA	Migratory Bird Treaty Act
MPH	Miles per Hour
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Plan
PDS	Planning and Development Services, County of San Diego
POE	Point of Entry
QCB	Quino checkerspot butterfly
REC	REC Consultants, Inc.
ROW	Right-of-Way
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SanBIOS	San Diego Biological Information and Observation System
SDNHM	San Diego Natural History Museum

SEIR	Supplemental EIR
SPA	Specific Plan Amendment
SR	State Route
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

SUMMARY

The Otay 250 Specific Plan Amendment project (Project) consists of an amendment to the East Otay Mesa Business Park Specific Plan, an amendment to the Otay Subregional Plan, a Rezone, and Environmental Impact Report, and a Tentative Map. The approximately 253-acre Project site is located within the already approved East Otay Mesa Specific Plan (EOMSP). The Project site, previously called Sunroad Centrum, was approved for development in 2012 to subdivide the site into 55 lots. Tentative Map 5538 (TM 5538) consists of 52 technology business park lots ranging in size from 1.8 acres to 5.3 acres, one lot for a sewer pump station, one storm water detention lot, and a 51.34-acre dedicated open space lot. A 0.41-acre easement within the subdivision is identified as an open space easement established for the protection of biological resources (vernal pools). The current Project proposes a Specific Plan Amendment (SPA) to the EOMSP to establish a new Mixed-Use Village Core area, which would allow for the establishment of a mix of employment, retail, and residential uses. Approval of the Project would allow for the entitlement of a maximum of 3,158 dwelling units, 78,000 square feet of general commercial uses, and 765,000 square feet of employment uses, and approximately 51.34 acres of permanent biological open space (the project dedicated open space lot). The Project would result in grading the same area approved for grading with TM 5538.

An Environmental Impact Report (EIR) was prepared for the EOMSP and was certified in 1994, along with approval of the EOMSP project. Subsequent to this certification and approval, a Biological Technical Report (BTR) for the Sunroad Centrum TM 5538 was completed and approved in 2000 and was included in the December 15, 2000 "Final Supplemental Environmental Impact Report for the East Otay Mesa Specific Plan, Sunroad Centrum" (FSEIR). The 2000 FSEIR superseded portions of the 1994 EIR and all relevant mitigation measures from the 1994 EIR were incorporated into the 2000 FSEIR; therefore, with certification of the 2000 FSEIR, most of the 1994 EIR is no longer relevant to the Project site. This 2016 BTR report update incorporates additional data gathered since the 2000 FSEIR was approved, including changes in site vegetation and results of additional focused surveys.

The Project site supports seven vegetation/land cover types: San Diego mesa claypan vernal pools, disturbed wetland, non-native riparian habitat, native grassland, non-native grassland, disturbed land, and developed land.

Six special-status plant species have been documented on the Project site: San Diego sunflower (*Bahiopsis laciniata*), small-flower bindweed (*Convolvulus simulans*), coast barrel cactus (*Ferocactus viridescens*), variegated dudleya (*Dudleya variegata*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), and prostrate navarretia (*Navarretia fossalis*). It should be noted that San Diego sunflower (*Bahiopsis laciniata*), variegated dudleya (*Dudleya variegata*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), and prostrate navarretia (*Navarretia fossalis*) were not found onsite during the 2015-2016 surveys. However, they have been reported onsite in previous studies. Some special-status plants may have been undetectable in 2015-2016 due to drought

conditions. Therefore, in accordance with County guidelines, potential impacts and mitigation were evaluated based on the earlier reports.

Fourteen special-status animal species have been documented on or over the site: San Diego fairy shrimp (*Branchinecta sandiegensis*), San Diego ring-neck snake (*Diadophis punctatus similis*), Cooper's hawk (*Accipiter cooperii*), grasshopper sparrow (*Ammodramus savannarum*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), ferruginous hawk (*Buteo regalis*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), barn owl (*Tyto alba*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and burrowing owl (*Athene cunicularia*).

Approximately 201.39 acres will be impacted on the site, and another 2.69 acres will be impacted offsite to the north and east. Approximately 51.75 acres will be preserved within a 51.34-acre biological open space lot and a 0.41-acre open space easement. Development of the Project site will result in significant impacts to non-native grassland and disturbed wetland habitats, and to variegated dudleya, San Diego button-celery, coast barrel cactus, fairy shrimp, turkey vulture, northern harrier, white-tailed kite, loggerhead shrike, San Diego black-tailed jackrabbit, burrowing owl, and raptors. Significant impacts include impacts based on older reports even if a species was not observed onsite in 2015-2016. Habitat impact acreage changes and new significant impacts based on analysis according to current County guidelines are clearly described in this report.

Mitigation for impacts to biological resources was proposed and approved through the December 2000 FSEIR, which included a Resource Conservation Plan (RCP). An updated final RCP was prepared and approved for the Sunroad Centrum TM 5538 project in December 2003. The December 2003 RCP included revisions and additions to the approved FSEIR mitigation measures. A conditional concurrence for a Minor Amendment was completed in 2003, making the Applicant a Third-Party beneficiary to the County's Incidental Take Permit. In 2012, the County issued a "Resolution of San Diego County Conditionally Approving Tentative Map No. 31000 5538 (TM)" with mitigation-related Conditions of Approval. The mitigation measures from the 2003 RCP, the 2003 Minor Amendment, and the 2012 Conditions of Approval are discussed in this report, and are carried forward to mitigate the impacts of this Project. The mitigation measures include onsite habitat preservation within established biological open space easements (vernal pools, native grassland, non-native grassland, riparian habitat); onsite preservation of vernal pools; onsite fairy shrimp preservation, habitat creation/restoration, and fairy shrimp translocation; onsite variegated dudleya preservation; onsite barrel cactus preservation and translocation; onsite wetland creation; and purchase of offsite mitigation land for non-native grassland and variegated dudleya. Applicability of the approved mitigation measures to new determinations of significant impacts based on current County guidelines is also described in this report. All Project mitigation measures are summarized in Section 8 of this report.

1.0 INTRODUCTION

1.1 Purpose of the Report

The purpose of this report is to update documentation on the biological resources identified as present or potentially present on the Otay 250 project (Project) site; identify potential biological resource impacts resulting from the Project and compare to previously documented impacts; and confirm or update measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, State and local rules and regulations including the federal and State Endangered Species Acts; California Environmental Quality Act; County of San Diego Resource Protection Ordinance, Multiple Species Conservation Program, and Biological Mitigation Ordinance; and East Otay Mesa Specific Plan. Significance determinations for this report are based on County of San Diego "Guidelines for Determining Significance and Report Format and Content Requirements, Biological Resources" ("Guidelines") (County of San Diego 2010a).

1.2 Project Location and Description

Project Location

The 253.14-acre Otay 250 Project site is located on nine parcels (APNs 646-080-26, -27, -28, -29, -31, -32, -33, 646-240-30, and 646-310-17) in eastern Otay Mesa, north of Otay Mesa Road and on the east and west sides of Harvest Road (**Figures 1** and **2**). Associated offsite improvements would impact 2.69 acres on portions of an additional seven parcels (646-070-07, -23, -24, 646-080-11, and -21). Johnson Canyon and undeveloped land border the site to the north, Otay Mesa Road forms the southern boundary, residential and undeveloped parcels are located to the east, and undeveloped land and State Route (SR) 125 abut the site to the west. The planned Lone Star Road alignment crosses the northeastern section of the site. Satellite imagery of the site and vicinity is provided in **Figure 3**.

Project Background

The Project site was part of July 1994 County of San Diego East Otay Mesa Specific Plan (EOMSP) EIR, which included a Biological Technical Report and mitigation measures for projected impacts. A Supplemental Environmental Impact Report (SEIR) was prepared specifically for the Project site (called Sunroad Centrum at the time), and was certified in December 2000. The 2000 FSEIR superseded portions of the 1994 EIR and all relevant mitigation measures from the 1994 EIR were incorporated into the 2000 FSEIR; therefore, with certification of the 2000 FSEIR, most of the 1994 EIR is no longer relevant to the Project site. Additional or revised mitigation measures were included in the subsequent December 2003 Resource Conservation Plan (RCP) for the Project. A conditional concurrence for a Minor Amendment was completed in 2003. This project was never developed.

A subsequent project was approved for development on the site in 2012 to subdivide the site into 55 lots. Tentative Map 5538 (TM 5538) consisted of 52 technology business

park lots ranging in size from 1.8 acres to 5.3 acres, one lot for a sewer pump station, one storm water detention lot, and a 51.34-acre dedicated open space lot. A 0.41-acre easement within the subdivision is identified as an open space easement established for the protection of biological resources (vernal pools). This project was never developed.

Project Description

The current Project proposes a Specific Plan Amendment (SPA) to the EOMSP and a new tentative map to establish a new Mixed-Use Village Core area, which would allow for the establishment of a mix of employment, retail, and residential uses. Approval of the project would allow for the entitlement of a maximum of 3,158 dwelling units, 78,000 square feet of general commercial uses, and 765,000 square feet of employment uses, and conserve approximately 51.75 acres of permanent biological open space. The Project would result in grading the same area approved for grading with TM 5538.

1.3 Survey Methods

REC and its subcontractors performed numerous general and focused site surveys between 1998 and 2001 for the 2000 BTR and associated RCP (including RCP revisions completed in 2003). Additional mitigation-related surveys were conducted onsite in 2004, 2005, and 2006. General and focused surveys were undertaken in 2015 and 2016 to confirm or update documentation of biological resources onsite since the 2000 FSEIR. Focused surveys were conducted for rare plants, vernal pools, fairy shrimp, wetlands, Quino checkerspot butterfly, and burrowing owl. Table 1-1 summarizes all site surveys for the Project, with survey type and conditions during each survey.

General and Special-status Species Survey Methodology

Existing biological resources that occur on the Project site were investigated through field reconnaissance and literature review by REC biologists. Literature review included California Native Plant Society (CNPS) Rare Plant Inventory, California Natural Diversity Database (CNDDB), *San Diego Bird Atlas*, *The Jepson Manual* 2nd edition, *Jepson eFlora*, *Rare Plants of San Diego*, and the "Biological Technical Report for the East Otay Mesa Specific Plan Area" (County of San Diego 1993). The Project site was surveyed for plants and animals via intensive surveys between 1998 and 2016. Wildlife species were identified directly by sight or vocalizations and indirectly by scat, tracks, pellets, feathers, or burrows. Plant species were identified by REC biologists in the field and/or collected for later identification. Field notes were maintained by throughout the surveys. Species of interest were mapped by hand on printed satellite imagery and/or mapped with a hand-held Garmin GPS unit. Although the surveys focused on sensitive plant and wildlife species, all species observed were noted by biologists. Additionally, all onsite habitats were mapped and the presence or absence of suitable habitat for sensitive (special-status) species was documented. Mapping of vegetation and habitats on the Project site was conducted on printed Google Earth satellite images scaled at approximately 1 inch = 200 feet based on field observations, and confirmed or refined using additional Google Earth satellite imagery.

Additionally, focused surveys and population checks were conducted for special-status (sensitive) plant species (1998, 2001, 2004, 2005, 2006, and 2015), fairy shrimp (1998-1999 and 2016), burrowing owl (2016), and Quino checkerspot butterfly (1999 and 2016). Special-status species observed during the focused surveys were included in the site plant and animals lists.

Burrowing Owl Methodology

Burrowing owl (*Athene cunicularia*) surveys were conducted according to the California Department of Fish and Wildlife (CDFW) March 2012 Staff Report on Burrowing Owl Mitigation, Appendix D, and County of San Diego survey guidelines (2010a), as required by the County of San Diego. In 2016, a breeding season protocol survey for all potentially suitable habitat was conducted throughout the site. In addition to the field transects, this survey used Google Earth to identify burrows onsite in 2012 and 2014 and then check those specific locations in the field. A preliminary breeding season survey was conducted in 2015 in conjunction with spring plant surveys.

Quino Checkerspot Butterfly Survey Methodology

In 1999, Quino checkerspot butterfly (*Euphydryas editha quino*) (QCB) surveys were conducted by Royce B. Riggan (federal permit PRT-780195) of RBRiggan & Associates, over an area corresponding to the northern portion of mima-mound topography. The methods outlined in the "Survey Protocol for the Endangered Quino Checkerspot Butterfly *(Euphydryas editha quino)* for the 1999 Field Season (USFWS 1999) were used during these surveys. The results of this survey were negative and no primary host plant dot-seed plantain (*Plantago erecta*) was observed onsite. However, in 2001, QCB surveys were again conducted by RBRiggan & Associates over the mima mound area and an "extremely limited, low density, localized population" of dot-seed plantain was found on the Project site. The 2001 survey was conducted according to the Year 2000 survey protocols. No QCB were detected and the report concluded that the Project site was not occupied by QCB. In 2016, a third protocol survey was conducted by Gretchen Cummings (federal permit TE-031850-4). The 2016 survey series was conducted according to the Proposed 2016 Quino Checkerspot Survey Protocol (USFWS 2016), which combined elements of past USFWS protocols (2002, early 2014, and late 2014) to use for the 2016 season, with reporting and required survey areas unchanged from the late 2014 protocol. As was the case in 2001, small areas of dot-seed plantain were found but no QCB were detected. Results of all surveys are discussed in greater detail in Section 1.4.6.5.

Fairy Shrimp Survey Methodology

Protocol dry season surveys were conducted by Charles Black in 1998, and an additional wet season sample was collected by him in early 1999. In February 2016, protocol wet season sampling was attempted by Greg Mason (federal permit TE-58862A) of Alden Environmental, Inc. in order to update survey results; however, the pools did not receive adequate rainfall to pond, and the 2016 wet season sampling was not possible.

Special-status Plants Survey Methodology

Focused special-status plant surveys conducted in 1998 and 2001, with a special emphasis on those species historically documented onsite. In 2004, 2005, and 2006, additional surveys were conducted to evaluate the variegated dudleya (*Dudleya variegata*) population onsite and search for other previously documented special-status species. In 2015, focused surveys were conducted in early spring, mid-spring, and early summer. However, conditions were poor due to drought. In 2016, the site was reassessed for a focused special-status plant survey, but due to ongoing drought, plant germination and growth were still below average and a focused survey series was not conducted. However, locations of known occurrences were checked during other site visits and all observed plants were documented.

All Otay 250 surveys are summarized in Table 1-1, below.

Table 1-1. Surveys Conducted on the Otay 250 Project Site

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
GENERAL SURVEYS						
04/24/1998	Begin: 0900 End: 1200	Begin: 70° End: 75°	Partly cloudy	Slight breeze	General, Burrowing Owl	Elyssa Robertson, Holly Boessow
07/10/2001	Begin: 0900 End: 1000				Offsite Impact Survey, Vernal Pool Status Check	Catherine MacGregor
02/24/2015	Begin: 0955 End: 1730	Begin: 60° End: 62°	Clear	Begin: 6-9 End: 6-11	General, Early Plant Survey	Lee BenVau
06/23/2015	Begin: 0700 End: 1000	Begin: 67° End: 79°	Clear	Begin: 1-3 End: 0-5	General, Summer Plant Survey	Lee BenVau
FOCUSED SPECIAL-STATUS PLANT SURVEYS						
06/12/1998	Begin: 1200 End: 1600				Summer-blooming Species Survey	Holly Boessow, Elyssa Robertson, Robin Church
08/20/1998	Begin: 0800 End: 1200				Late Summer-blooming Species Survey	Holly Boessow, Elyssa Robertson, Robin Church
05/03/2001	Begin: 0920 End: 1200				Spring Rare Plant and Dudleya Survey	Catherine MacGregor
05/10/2001	Begin: 0800 End: 1430				Spring Rare Plant and Dudleya Survey	Catherine MacGregor
05/11/2001	Begin: 1530 End: 1730				Spring Rare Plant and Dudleya Survey	Catherine MacGregor

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
05/25/2001	Begin: 1300 End: 1530				Spring Rare Plant and Dudleya Survey	Catherine MacGregor
06/13/2001	Begin: 0850 End: 1245				Summer Rare Plant and Dudleya Survey	Catherine MacGregor
06/14/2001	Begin: 1050 End: 1510				Summer Rare Plant and Dudleya Survey	Catherine MacGregor
06/15/2001	Begin: 0915 End: 1015				Summer Rare Plant and Dudleya Survey	Catherine MacGregor
04/02/2004	Begin: 1115 End: 1145				Spring Rare Plant Check-up	Catherine MacGregor
07/07/2005	Begin: 0910 End: ~0945				Summer Rare Plant Check-up	Catherine MacGregor
05/30/2006	Begin: 0945 End: 1015				Spring Rare Plant Check-up	Catherine MacGregor
02/24/2015	Begin: 0955 End: 1730				Early Rare Plant Survey	Catherine MacGregor, Lee BenVau
04/23/2015	Begin: 1000 End: 1235				Spring Rare Plant and Dudleya Survey	Catherine MacGregor
06/03/2015	Begin: 0945 End: 1135				Summer Rare Plant and Dudleya Survey	Catherine MacGregor
2016	Checked	During	Other	Surveys	Spring Rare Plant	Catherine MacGregor
BURROWING OWL SURVEYS						
02/24/2015	Begin: 0955 End: 1730	Begin: 60° End: 62°	Clear	Begin: 6-9 End: 6-11	BUOW Winter Season Check	Catherine MacGregor
04/23/2015	Begin: 1000 End: 1235	Begin: 63° End: 63°	Overcast	Begin: 2-5 End: 4-8	BUOW	Catherine MacGregor
06/03/2015	Begin: 0945 End: 1135	Begin: 74° End: 74°	Hazy	Begin: 2-3 End: 3-9	BUOW	Catherine MacGregor
06/23/2015	Begin: 0700 End: 1000	Begin: 67° End: 79°	Clear	Begin: 1-3 End: 0-5	BUOW	Catherine MacGregor,
02/04/2016	Begin: 0945 End: 1415	Begin: 61° End: 66°	Sunny, hazy	Begin: 0-1 End: 0-2	BUOW Habitat Assessment	Catherine MacGregor
04/01/2016	Begin: 0705 End: 1000	Begin: 53° End: 63°	Partly cloudy to sunny, hazy	Begin: 1-2 End: 0-2	BUOW 1a	Catherine MacGregor, Lee BenVau
04/05/2016	Begin: 0700 End: 1010	Begin: 57° End: 64°	Hazy with light clouds	Begin: 0 End: 1-2	BUOW 1b	Catherine MacGregor, Lee BenVau
04/28/2016	Begin: 1735 End: 1955	Begin: 66° End: 57°	Sunny with clouds, to partly cloudy	Begin: 5-8 End: 2-5	BUOW 2a	Catherine MacGregor, Lee BenVau

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
04/29/2016	Begin: 1730 End: 1955	Begin: 64° End: 57°	Light clouds to partly cloudy	Begin: 3.5-6 End: 2-5	BUOW 2b	Catherine MacGregor, Lee BenVau
05/03/2016	Begin: 1800 End: 1910	Begin: 71° End: 64°	Clear with light clouds	Begin: 5-10 End: 1-3	BUOW 2c	Catherine MacGregor
05-26-2016	Begin: 0600 End: 1005	Begin: 57° End: 67°	Overcast	Begin: 0-3 End: 2-6	BUOW 3b	Catherine MacGregor, Lee BenVau
05/27/2016	Begin: 0600 End: 0950	Begin: 60.5° End: 64°	Overcast	Begin: 3-5 End: 2.5-7	BUOW 3b	Catherine MacGregor, Lee BenVau
06/21/2016	Begin: 0615 End: 1015	Begin: 69° End: 77°	Partly cloudy to overcast	Begin: 0 End: 3-7	BUOW 4a	Catherine MacGregor, Lee BenVau
06/22/2016	Begin: 0625 End: 1035	Begin: 68° End: 84°	Sunny with light clouds	Begin: 0-2 End: 0-3	BUOW 4b	Catherine MacGregor, Lee BenVau
QUINO CHECKERSPOT BUTTERFLY SURVEYS						
03/03/1999	Begin: 1130 End: 1315	Begin: 64.6° End: ±70°	Clear	Begin: 4.4-10.3 End: 3-8	Habitat Assessment/ Adult Survey	Royce B. Riggan, Denise Dixon, Danielle Flynn
03/2/1999	Begin: 1230 End: 1400	Begin: 70.4° End: ±70°	Clear	Begin: 2.7-7.9 End: 3-7	Habitat Assessment/ Adult Survey	Royce B. Riggan, Elyssa Robertson
03/19/1999	Begin: 1400 End: 1630	Begin: 74.6° End: <70°	Clear / 2%	Begin: 5.1-10.4 End: 4-8	Habitat Assessment/ Adult Survey	Royce B. Riggan
03/28/1999	Begin: 1230 End: 1400	Begin: 74.6° End: ±78°	Clear	Begin: 3.2-9.7 End: 3-8	Habitat Assessment/ Adult Survey	Royce B. Riggan
04/04/1999	Begin: 1345 End: 1515	Begin: 69.9° End: 66.1°	Clear	Begin: 1.7-4.7 End: 3-7	Habitat Assessment/ Adult Survey	Royce B. Riggan
04/10/1999	Begin: 1230 End: 1345	Begin: 71.5° End: ±75°	Clear	Begin: 3.5-7.8 End: 3-7	Habitat Assessment/ Adult Survey	Royce B. Riggan
04/17/1999	Begin: 1330 End: 1500	Begin: 87.2° End: ±86°	Clear	Begin: 4.8-10.4 End: 4-8	Habitat Assessment/ Adult Survey	Royce B. Riggan
03/14/2001	Begin: 0845 End: 1315	Begin: warm End: 70.7°	Clear	Begin: 0 End: 1.6-3.9	Adult Survey	Royce B. Riggan
03/27/2001	Begin: 1245 End: 1515	Begin: 77.8° End: 70.5°	[Sunny]	Begin: 2.2-4.6 End:4.2-8.7	Adult Survey	Royce B. Riggan
04/16/2001	Begin: 1300 End: 1545	Begin: 76.8° End: 77.2°	[Sunny]	Begin: 3.7-9.0 End:3.2-8.7	Adult Survey	Royce B. Riggan
04/21/2001	Begin: 1130 End: 1430	Begin: 78.9° End: 80.3°	[Sunny]	Begin: 0.0-5.7 End:2.3-8.6	Adult Survey	Royce B. Riggan
04/26/2001	Begin: 1445 End: 1700	Begin: 83.6° End: 69.7°	[Sunny]	Begin: 1.5-6.3 End:0.3-3.8	Adult Survey	Royce B. Riggan
02/04/2016	Begin: 0930 End: 1340	Begin: 61.3° End: 73.8°	Clear	Begin: End:	Habitat assessment, initial host plant mapping	Gretchen Cummings

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
03/01/2016	Begin: 0900 End: 1015	Begin: 67.5° End: 73.1°	30% cloud cover	Begin: End:	Completion of host plant mapping	Gretchen Cummings
03/01/2016	Begin: 1015 End: 1400	Begin: 73.1 End: 73.8	30% cloud cover	Begin: End:	QCB Survey 1	Gretchen Cummings
03/08/2016	Begin: 1000 End: 1330	Begin: 60.1° End: 65.1°	Clear	Begin: End:	QCB Survey 2	Gretchen Cummings
03/18/2016	Begin: 1355 End: 1555	Begin: 71.9° End: 73.4°	Clear	Begin: End:	QCB Survey 3	Gretchen Cummings
03/24/2016	Begin: 1330 End: 1530	Begin: 79.7° End: 79.5°	Clear	Begin: End:	QCB Survey 4	Gretchen Cummings
03/04/2015	Begin: 1430 End: 1630	Begin: 73.5° End: 74.2°	20% cloud cover	Begin: End:	QCB Survey 5	Gretchen Cummings
FAIRY SHRIMP SURVEYS						
08/20/1998					Dry Season Sampling	Charles Black
02/08/1999					Wet Season Sampling	Charles Black
Spring 2016	Attempted	After	Rain	Events	Wet Season Sampling	Greg Mason

Survey Limitations

It is assumed that the results of these surveys under-represent animal species that are nocturnal, strictly crepuscular, or especially difficult to detect. Annuals and herbaceous perennials that bloom unusually early could have been undetected. Although these surveys were conducted in January, February, March, April, May, June, July, and August, survey results are still influenced by timing and seasonal variations that affect detection of species. The 2015 and 2016 surveys were conducted during severe drought and are assumed to under-represent annual and deciduous herbaceous perennial plants, as well as wildlife that depend on those species.

Naming Conventions

Scientific nomenclature and common names for animal species in this report follow American Ornithological Union (AOU 2012) for birds, Stebbins (2003) and Center for North American Herpetology (CNAH 2013) for reptiles and amphibians, Baker et al. (2003) for mammals, and Powell (1979) and Butterflies and Moths of North America (BMNA 2013) for insects, as well as the San Diego Natural History Museum butterfly, spider, amphibian, reptile, bird, and mammal checklists for subspecies (SDNHM 2002, 2005, and undated). Scientific nomenclature for plants follows *The Jepson Manual* 2nd edition (Baldwin et al. 2012), with common names from Rebman and Simpson (2006) and the CNPS Rare Plant Inventory (CNPS 2013, 2014).

1.4 Environmental Setting

The Project site includes nine undeveloped parcels located approximately 1.25 miles north of the US-Mexican border. Harvest Road (unpaved) bisects the site north-south. Portions of the site have been altered by historical agricultural activity, but are not currently farmed.

The site is highest in the central area and slopes downward in all directions. The northwestern area slopes steeply down into Johnson Canyon, along the northern property boundary. Site elevation ranges from approximately 445 feet above mean sea level (AMSL) in Johnson Canyon at the northeastern corner of the site, to approximately 600 feet AMSL in the central portion of the property.

Otay Mesa is an ancient marine terrace, and, with the exception of Johnson Canyon, site geology is mapped as Otay Formation (Oligocene to Miocene) of sandstone, siltstone, and claystone, interbedded with bentonite lenses (USGS 2002). The Otay Formation consists of alluvial fan deposits along the western slope of the San Ysidro Mountains, and includes dacite/andecite rocks from eroded volcanic plugs in those Mountains (Brown, undated). Johnson Canyon slopes are Otay Formation alluvial fan conglomerate, while the canyon bottom is much older Pleistocene alluvium (USGS 2002).

Six soil types in four soil series are mapped onsite (USDA 1973, 2015), as shown in **Figure 4**: Diablo clay 2-9% slopes (DaC), Diablo clay 9-15% slopes (DaD), and Diablo clay 15-30% slopes, eroded (DaE2); Linne clay loam 9-30% slopes (LsE); Salinas clay 0-2% slopes (ScA); and Stockpen gravelly clay loam 2-5% slopes (SuB). These soils are described below (USGS 1973).

- The **Diablo** series consists of well-drained, moderately deep to deep clays derived from soft, calcareous sandstone and shale. These soils are on uplands and have slopes of 2-50%. In a representative profile, the upper approximately 27 inches are clay, overlying approximately 5 inches of calcareous heavy sandy loam, over a substratum of soft, calcareous decomposed sandstone. DaC is gently sloping to moderately sloping and is 34-40 inches deep over rock. DaD is strongly sloping and is 26-37 inches deep over rock. DaE2 is 20-32 inches deep over rock. The Diablo series is the most common soil series onsite and is mapped in all areas of the site except for small areas in the center, extreme south and extreme north of the site.
- The **Linne** series consists of well-drained, moderately deep clay loams derived from soft calcareous sandstone and shale. In a representative profile the surface layer is approximately 15 inches of calcareous heavy clay, over approximately 13 inches of heavy clay loam, over calcareous clay loam, with a substratum of soft, white, calcareous shale at a depth of approximately 37 inches. LsE occurs on uplands and is a rolling to hilly soil with an average slope of 16%. It is only mapped in the northeastern portion of the site.
- The **Salinas** series consists of well drained and moderately well drained clay loams that formed in sediments washed from Diablo, Linne, Las Flores, Huerhuero, and Olivenhain soils. These soils are on flood plains and alluvial fans and have slopes of

0-9%. In a representative profile the surface layer is clay loam about 22 inches thick, over approximately 24 inches of calcareous clay loam, over a substratum of calcareous clay loam and loam. In some areas the surface layer is clay. ScA is nearly level with a surface layer of clay and a substratum of clay to clay loam. It is only present onsite in a small pocket running southwest to northeast at the southern central edge of the site.

- The **Stockpen** series consists of moderately well drained, moderately deep gravelly clay loams. These soils are on marine terraces and have slopes of 0-5%. In a representative profile, the surface layer is gravelly clay loam about 3 inches thick, over subsoil of calcareous gravely clay and clay about 31 inches thick. The substratum is clay. The gently sloping SuB is the second most common soil series onsite and occurs in the central region of the site, corresponding to mima mound topography.

1.4.1 Regional Context

The Project is located on eastern Otay Mesa in southern San Diego County. The Otay Mesa area consists of a relatively level mesa top that meets the foothills of the San Ysidro Mountains at the eastern end of the mesa, and slopes down to the coastal terrace at the western end. The northern limit is formed by the Otay River Valley, and tributary canyons cut through the mesa down to the river valley below. The southern limit of the area within the United States is the US-Mexican border. Historically, the flat land in eastern Otay Mesa was used for agriculture. In the 1960s, land use began to shift from agriculture, with its relatively high water and labor costs, to industrial and commercial development. In the 1980s, the Mexican maquiladora program further increased the demand for industrial distribution and warehousing just north of the border.

The Project site falls within the South County segment of the Multiple Species Conservation Program (MSCP). The site lies within the northwestern area of the EOMSP, which provides comprehensive development guidelines for the area. Most of the southern and western section of the site, south of the Lone Star Road alignment, is classified in the EOMSP Amendment (2015) as a Minor Amendment Area; the entire property to the north of Lone Star Road is classified as a Major Amendment Area with G-Designator; and a small area in the center of the site is classified as a Minor Amendment Area Subject to Special Consideration and with G-Designator (see **Figure 5** and Section 1.5).

1.4.2 Vegetation/Land Cover Categories

Seven vegetation categories or land cover types, classified according to Oberbauer et al. (2008), were observed within the Project area in 2015-2016, and are shown in **Figure 6**. Vegetation/land cover categories and acreages are summarized in Table 1-2, below, and described in the following paragraphs. Changes in vegetation since the 2000 FSEIR are also noted in the paragraphs below. Some small changes in acreage are attributable to the refinement of mapping based on use of satellite imagery and GIS-based digital mapping.

Table 1-2. Vegetation/Land Cover Categories and Acreages

Category (County Habitat Code)	Acres Onsite
Wetlands	
Disturbed Wetland (11200)	0.11
Non-Native Riparian (65000)	0.39
San Diego Mesa Claypan Vernal Pool (44322)	0.21
Uplands	
Developed Land (12000)	2.97
Disturbed Land (11300)	7.26
Native Grassland (42100)	1.96
Non-Native Grassland (42200)	240.24
Totals	**253.14**

1.4.2.1 Wetland Vegetation Categories

Disturbed Wetland (County Habitat Code 11200), 0.11 Acre

Disturbed wetlands are areas permanently or periodically inundated by water, which have been significantly modified by human activity. These wetlands are often unvegetated, but may contain scattered native or non-native vegetation. This habitat type includes portions of wetlands with obvious artificial structures and lined channels, Arizona crossings, detention basins, culverts, and ditches. (Oberbauer et al. 2008)

One of the two areas of disturbed wetland onsite is a shallow swale along the western edge of the site, in which water intermittently ponds after rain. The swale does not appear to drain to another location, and may have formed when an agriculture-related berm was created along the western side. During the 2015 surveys, the only hydrophytic vegetation observed was a very small patch of pale spike-rush (*Eleocharis macrostachya*). The 1998 and 1991 surveys also reported spike-rush (*Eleocharis* sp.). This swale was classified as a vernal pool in the 1993 EOMSP Biological Technical Report (BTR); however, no obligate vernal pool indicator plants were observed in the swale in 2015-2016, and it was reclassified as disturbed wetland in 1998. The size of "wetland" within the swale varies depending on rainfall, but based on review of historical satellite imagery and 1998 habitat mapping it appears to occupy approximately 0.09 acre.

The second area of disturbed wetland is within an abandoned excavated agriculture-related pond in the central area of the site. The upper banks of the former pond consist of minimally vegetated soil and upland vegetation. Much of the bottom also supports only upland vegetation, such as filarees (*Erodium* spp.), red brome (*Bromus madritensis* subsp. *rubens*), telegraph weed (*Heterotheca grandiflora*), and oats (*Avena* spp.) The basin has relatively low cover that includes many of the non-native grasses that occur in the surrounding non-native grassland described below. Along the lower banks are dead and drought-damaged hydrophytic shrubs and trees such as a red willow (*Salix*

laevigata), a black willow (*S. gooddingii*), small amounts of mule-fat (*Baccharis salicifolia* subsp. *salicifolia*), and tamarisk (*Tamarix ramosissima*) among upland plants. Within the lowest part of the basin bottom is a small area of disturbed wetland where water ponds after rain, and patches of herbaceous hydrophytes such as spike-rush grow. This small disturbed wetland covers approximately 0.02 acre.

Disturbed wetland habitat covers 0.11 acre total.

Non-Native Riparian (County Habitat Code 65000), 0.39 Acre

Non-native riparian habitat consists of densely vegetated riparian thickets dominated by non-native, invasive species. This habitat is common along major river channels, often where disturbance has occurred. This designation is used only where non-native, invasive species account for greater than 50% of the total vegetative cover within a mapping unit. Characteristic plants include non-native species such as giant reed (*Arundo donax*), pampas grass (*Cortaderia* spp.), Bermuda grass (*Cynodon dactylon*), eucalyptus (*Eucalyptus* spp.), non-native palms (*Phoenix* spp. and *Washingtonia* sp.), and tamarisk (*Tamarix* spp.), as well as native species such as arrow weed (*Pluchea sericea*), western cottonwood (*Populus fremontii*), and willows (*Salix* spp.). (Oberbauer et al. 2008)

Onsite non-native riparian habitat is a thicket of tamarisk with a sparse understory composed almost entirely of non-natives such as dwarf nettle (*Urtica urens*) and scarlet pimpernel (*Anagallis arvensis*). Other invasives along the disturbed edges included stinkwort (*Dittrichia graveolens*) and milk thistle (*Silybum marianum*). Scattered natives species saltgrass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum* var. *oculatum*), and Coulter's fleabane (*Laennecia coulteri*) were also observed along the edges of the riparian vegetation. In 1998, this area was mapped as 0.35 acre of disturbed southern willow scrub, but no willows were observed in 2015. Since the original 1998 mapping, the area of riparian vegetation has increased slightly. The non-native riparian habitat now covers approximately 0.39 acre.

San Diego Mesa Claypan Vernal Pool (County Habitat Code 44322), 0.21 Acre

Seven vernal pools have been documented onsite. Vernal pools are seasonally flooded depressions that support a distinctive living community adapted to extreme variability in hydrologic conditions (seasonally very dry and very wet conditions). In San Diego, vernal pools often retain pooled water for about two weeks after significant rain events. Vernal pools are differentiated from other temporary wetlands by the following criteria: (1) the basin is at least partially vegetated during the normal growing season or is unvegetated due to the heavy clay (or hardpan) soils that do not support plant growth; and (2) the basin contains at least one vernal pool indicator species (e.g. *Psilocarphus* spp., *Downingia cuspidata*, *Eryngium aristulatum* var. *parishii*, or crustaceans such as *Branchinecta* spp., and *Streptocephalus* spp.). Two types of vernal pools are found in San Diego County: San Diego mesa hardpan vernal pools and San Diego mesa claypan vernal pools. The pools on Otay Mesa are of the claypan type, occurring on fine-textured soils where water ponds due to a clay impermeable layer rather than a hardpan layer.

These claypan pools are almost entirely restricted to marine terraces between San Diego and Ensenada, Mexico, and have been much reduced by agriculture and development. (Oberbauer et al. 2008).

The claypan vernal pools are typically associated with a small-scale topography of low hummocks, called mima mounds, clustered on the mesa top. The vernal pools form in the depressions between the mima mounds. In drier years, the pools are typically isolated with very small watersheds of surrounding mima mound slopes. During wet years, pools between mima mounds may join if water levels are high enough. The area of mima mound topography onsite is clearly visible in satellite imagery, and occurs over the Stockpen soil unit. This soil type has a surface layer of gravelly clay loam to 3 inches deep over a subsoil of calcareous gravelly clay and clay from 3 to 31 inches, and is often associated with mima mounds.

Seven vernal pools were mapped onsite by REC in 1998. The group of pools onsite is known as the J22 complex and has been documented since at least 1978, when it was mapped in the "San Diego Vernal Pool Study, 1978" prepared for CDFW (Beauchamp 1979). Although only three J22 pools were documented in the 1979 publication and in Bauder's 1986 "San Diego Vernal Pools" report for CDFW (Bauder 1986), the 1993 EOMSP BTR indicated seven pools were present (County of San Diego 1993). One of the seven vernal pools in the 1993 EOMSP BTR was a swale parallel to a man-made berm, which has since been reclassified as a disturbed wetland (see above). One more vernal pool was identified by REC in 1998, so the total number of pools remains seven.

Vernal pool plants documented in the J22 pools in the 1993 EOMSP BTR include dwarf woolly-marbles (*Psilocarphus brevissimus*), annual hairgrass (*Deschampsia danthonioides*), water pygmyweed (*Crassula aquatica*), American pillwort (*Pilularia americana*), flowering quill wort (*Triglochin* [*Lilaea*] *scilloides*), waterwort (*Elatine* sp.), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), and prostrate navarretia (*Navarretia fossalis*). One pool (presumably the manmade swale) contained only pale spike-sedge and no obligate vernal pool plants. The 1979 report, which mentioned only special-status vernal pool plants, reported San Diego button-celery and prostrate navarretia.

Due to the severe drought beginning in 2011, no evidence of vernal pool ponding or vernal pool indicator species was observed in 2015-2016. The vernal pool locations provided in REC's 2000 BTR and incorporated in the 2000 FSEIR are used in this BTR update, with minor mapping refinements through use of Google Earth satellite imagery between 1994 and present. Locations of the seven vernal pool locations, as of 1998, are shown in **Figure 6**. All seven pools occupy approximately 0.21 acre.

1.4.2.2 Upland Vegetation Categories

Native Grassland (Habitat Code 42100) 1.96 Acres

Native grassland, and more specifically valley needle grass grassland, is described as "A midheight (to 2 ft) grassland dominated by perennial, tussock-forming *Stipa* (*Nasella*) *pulchra*. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as *Sanicula*, *Sidalcea*, *Sisyrinchium*, *Eschscholzia,* or *Lasthenia* are present. The percentage cover of native species at any one time may be quite low, but is considered native grassland if 20% aerial cover of native species is present." Native grassland usually occurs on fine-texture (often clay) soils, moist or even waterlogged during winter, but very dry in summer. (Oberbauer et al. 2006)

Although patches with varying concentrations of needle grass occur within the non-native grassland in the mima mound area, the patches currently lack the plant density that would qualify them as native grassland. Larger and denser patches occur on the north-facing slope of Johnson Canyon. These larger patches, apparently limited to the Diablo clay soil 15-30% percent slope, are overwhelming dominated by native needle grass (*Stipa cernua* and *pulchra*). Individual bunchgrasses are well spaced, to the degree that the pattern of the large individual bunches is visible in satellite imagery. Native herbs such as red-skin onion (*Allium haematochiton*) and morning-glory (*Calystegia macrostegia*) grow among the bunchgrasses. The native grassland patches had visibly lower cover of invasive species than any other habitat onsite. The areas of native grassland did not have distinct boundaries, but were mapped over approximately 1.96 acres based on site observations and Google Earth satellite imagery.

It should be noted that the 7.29 acres of native grassland mapped within the coastal sage scrub-grassland matrix in the mima-mound area in 2000 are no longer present. The entire mima mound area is now vegetated with non-native grassland heavily infested with Russian-thistle. As mentioned above, needle grass individuals occur in the mima mound area but are too diffuse to qualify as native grassland habitat. The loss of native grassland (and coastal sage scrub) in this area since 2000 may be related to fire(s) that burned across the site at an unknown date between 2004 and 2015. The 7.29 acres of former native grassland are now included in the non-native grassland acreage described below.

Non-Native Grassland (County Habitat Code 42200), 240.24 Acres

According to the County of San Diego, non-native grassland is described as "A dense to sparse cover of annual grasses with flowering culms 0.2-0.5 (1.0) m high. Often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. In San Diego County the presence of *Avena, Bromus, Erodium,* and *Brassica* are common indicators. In some areas, depending on past disturbance and annual rainfall, annual forbs may be the dominant species; however, it is presumed that grasses will soon dominate. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from

winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds. Remnant native species are variable. This can include grazed and even dry-farmed (i.e., disked) areas where irrigation is not present." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) specifies that "Non-native grasses typically comprise at least 30 percent of the vegetation […]. Usually, the annual grasses are less than 1 m (3 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 vegetative cover. Characteristic non-native grassland species include foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), red-stem filaree (*Erodium cicutarium*), mustards (*Brassica* spp.), lupines (*Lupinus* spp.) and goldfields (*Lasthenia* spp.), among others. (Oberbauer et al. 2008)

The onsite non-native grassland community is characterized by annual non-native grasses such as oats, brome grasses (*Bromus* spp.), and glaucous barley (*Hordeum murinum* subsp. *glaucum*); and forbs such as black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), filarees, and Russian-thistle (*Salsola* sp.). Plant density and dominance vary throughout the site. Some areas are strongly dominated by Russian-thistle, other areas are characterized by thick, tall stands of black mustard, and some areas are dominated by London rocket. Within the mima mound area, vegetation is characterized by shorter and more open grasses and abundant prickly Russian-thistle (*Salsola tragus*), with scattered native herbs such as needle grass, splendid mariposa lily (*Calochortus splendens*), common goldenstar (*Bloomeria crocea* var. *crocea*), and fascicled tarweed (*Deinandra fasciculata*). The Lone Star Road alignment, formerly a dirt road, supports greater numbers of native herbs and wildflowers such as small-flower soap plant (*Chlorogalum parviflorum*), fascicled tarweed, rayless gumplant (*Grindelia camporum*), and common goldfields (*Lasthenia gracilis*). The 7.29 acres of former native grassland in the mima mound area that apparently did not recover after the fire(s) onsite are now included in non-native grassland. Non-native grassland occupies approximately 240.24 acres onsite.

1.4.2.3 Other Upland Land Cover Categories

Developed Land (County Habitat Code 12000), 2.97 Acres

Urban and/or developed land consists of "Areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that require irrigation. Areas where no natural land is evident due to a large amount of debris or other materials being placed upon it may also be considered urban/developed (e.g. car recycling plant, quarry)." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) includes "Land that has been constructed upon or otherwise covered with a permanent unnatural surface shall be considered Developed…"

The portion of the parcel overlapping Otay Mesa Road is developed land lacking native vegetation. Developed areas cover 2.97 acres along the southern edge of the site.

Disturbed Land (County Habitat Code 11300), 7.26 Acres

The County of San Diego describes disturbed land as "Areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, but continue to retain a soil substrate. Typically vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed land include areas that have been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e. dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) specifies that "Disturbed land 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 and compaction from previously legal human activity; or where the vegetative cover is greater than 10 percent, there is soil surface disturbance and compaction, and the presence of building foundations and debris…resulting from legal activities (as opposed to illegal dumping). Examples include recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." (Oberbauer et al. 2008)

Harvest Road and the larger unpaved roads and trails throughout the site are considered disturbed land. These roads and trails have small amounts of herbaceous vegetation at the edges, but are almost entirely bare highly compacted soil. Most trails in the southern and central areas are likely associated with historical agricultural activity. Disturbed land in the more sloping northern section of the site includes off-road recreational vehicle trails used by trespassers, and a trail across the creek in Johnson Canyon. Disturbed land covers approximately 7.26 acres onsite.

1.4.2.4 Vegetation Categories Included in the 2000 FSEIR but No Longer Present on the Site

Coastal sage scrub - At the time of REC's 2000 BTR, the site supported disturbed coastal sage scrub vegetation, including patches of native grassland, within the mima mound area. Although this area was already dominated by non-native species such as brome grasses, oats, and black mustard, several coastal sage scrub species such as coastal sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and prickly-pear (*Opuntia* sp.) were scattered throughout. Since that time, the disturbed coastal sage scrub vegetation has become non-native grassland. Only a very low number of coastal sage scrub plants remain in this area. Blackened shrub stumps and burned

barrel cacti and needle grass bunches indicate that a fire (date unknown) removed woody vegetation. In 2015-2016, regrowth of the coastal sage shrubs was almost non-existent. For this 2017 BTR update, disturbed coastal sage scrub habitat (including native grassland patches) was updated to non-native grassland.

Southern willow scrub - At the time of REC's 2000 BTR, the site supported 0.20 acre of southern willow scrub in the abandoned agricultural pond and 0.35 acre in the Johnson Creek drainage in the northeastern corner of the site. During the 2015 survey, too few willows remained to map this area as southern willow scrub. Only three non-contiguous willows occur on the northwest side and the southeast side. Dead trees without new living shoots, including fire blackened stumps, were observed on the banks. It appears that willow scrub habitat in the agricultural pond was changed by drought and/or fire. The 0.35 acre of willow scrub originally mapped in Johnson Canyon has been replaced by 0.39 acre non-native riparian vegetation – almost entirely tamarisk.

1.4.3 Flora

Based on compilation of plant observations from REC's 1998, 1999, 2001, 2015, and 2016 site surveys, and 1998 and 1999 biological subcontractor surveys, 101 plant taxa have been observed onsite by the Project team. Of these, 50 were native, 50 non-native, and one (identified to genus only) undetermined. Characteristic species of each habitat are included in the habitat descriptions above. Non-native grassland had the greatest observed species diversity, with 90 taxa. The taxa observed in the greatest number of vegetation categories were the non-native annual grasses (brome grasses in particular), black mustard, fascicled tarweed, nodding needle grass, and purple needle grass. Plant taxa and vegetation in which they were observed are listed in **Appendix A**.

1.4.4 Fauna

Based on compilation of wildlife observations from REC's 1998, 1999, 2001, 2015, and early 2016 site surveys; and 1998 and 1999 biological subcontractor surveys, 104 animal taxa were documented on or over the site: 45 invertebrate taxa, 1 amphibian, 6 reptile taxa, 42 bird taxa, and 10 mammal taxa. Of these, all but eight are native species. The most common wildlife species included funnel weaver spider (Family Agelenidae), orthopterans (crickets and grasshoppers), checkered white butterfly (*Pontia protodice*), western white-throated swift (*Aeronautes saxatalis*), horned lark (*Eremophila alpestris actia*), song sparrow (*Melospiza melodia*), meadowlark (*Sturnella vulgaris*), and Botta's pocket gophers (*Thomomys bottae*). Animal taxa, estimated number of individuals, and habitats in which they were observed are listed in **Appendix B**.

1.4.5 Special-status Plant Species

For the purposes of this report, a sensitive or special-status plant is any plant taxon (species, subspecies, or variety) that is officially listed by the State of California or the federal government as Endangered, Threatened, or Rare; a candidate for one of those listings; included in California Rare Plant Ranks (CRPR) 1 through 4; or included in the

County of San Diego Sensitive Plant Lists A through D. A list of special-status plants with the potential to occur on the Project site was generated from the CNDDB RareFind5 database and a list provided by the County of San Diego. The resulting list includes any special-status plant documented within the Project site's USGS 7.5' quadrangle (Otay Mesa) as well as any taxa specifically identified by the County for this project. **Appendix C** provides information on these species, as well as an evaluation of the potential for each species to occur onsite, based on CNDDB and SanBIOS search results, the CNPS Inventory of Rare and Endangered Plants (on-line version, 2013), Reiser's "Rare Plants of San Diego County" (2001), historical Otay Mesa vernal pool complex documentation, professional experience in Otay Mesa, and field observations.

1.4.5.1 Special-status Plant Species Documented Onsite

Six special-status plant species have been documented onsite since 1993: San Diego sunflower, small-flower bindweed, coast barrel cactus, variegated dudleya, San Diego button-celery, and prostrate navarretia. Information on each of these is provided below, and locations are shown in **Figure 6.**

San Diego sunflower (*Bahiopsis laciniata*, Asteraceae) is CRPR 4.2 and County Group D shrub with small, rough, dark green leaves and bright yellow daisy-like flowers; it typically grows in drier and hotter parts of coastal sage scrub (and sometimes chaparral), often on south- and west-facing slopes. This species was observed onsite in the mima mound area among the coastal sage scrub plants in 1999, but has not been observed onsite since the site burned (burn date unknown).

Small-flower bindweed (*Convolvulus simulans*, Convolvulaceae) is a CRPR 4.2 and County Group D species that prefers clay soils in open habitat such as grasslands or openings in chaparral and coastal scrub. This species was not detected onsite in surveys prior to 2015, but in February 2015, a patch was observed growing on sloping cracked-clay soil immediately upslope of the creek in Johnson Canyon and below native grassland. In 2016, a single plant was observed on the apron of an abandoned burrowing owl burrow in the southeastern corner of the site. These locations are shown in **Figure 6**.

Coast barrel cactus (*Ferocactus viridescens,* Cactaceae) is a CRPR 2B.1, County Group B, and MSCP-covered species that is limited to San Diego County and Baja California. In San Diego County this species occurs occasionally on dry slopes below 1500 meters AMSL and is found along the coastal slope from Oceanside south to Boundary Monument. Coast barrel cactus is threatened by urbanization, off-road vehicles and commercial exploitation. This species was found in non-native grassland onsite, especially within the mima mound area. Approximately 110 individuals were documented onsite during the 1998-1999 and 2001 surveys. In 2015-2016, presence of coast barrel cactus in the biological open space was confirmed.

Variegated dudleya (*Dudleya variegata*, Crassulaceae) is a CRPR 1B.2, County Group A, Narrow Endemic, MSCP-covered species that is restricted in distribution to southern San Diego County and northwestern Baja California. It occurs in clayey or loamy soils in

sage scrub, grassland, and chaparral habitat, including isolated rocky substrates in open grasslands, and in proximity to vernal pools in mima mound topography. Typically, this dudleya grows in small areas devoid of shrub cover.

Variegated dudleya has been documented onsite in several locations in the past. According to the 1993 EOMSP BTR, 361 individuals were previously documented in the J22 vernal complex (WESTEC 1985 in County of San Diego 1993), of which 73 were south of Lone Star Road and 288 north of Lone Star Road. The 1998-1999 surveys found a total population size of 100-200 individuals in three locations. In 2001, those three locations were not detected, but a different group of several hundred plants was found on the western side of the site, north of the Lone Star Road alignment and approximately 10 more individuals were observed east of that group. In May 2006, 11 individuals were observed near the northern 1998 location, north of Lone Star Road. The 1998-2006 observation locations are shown in **Figure 6**. No variegated dudleya was detected in 2015 or 2016. A focused survey in a year of adequate rainfall would be necessary to estimate the size of any remaining population onsite.

San Diego button-celery (*Eryngium aristulatum* var. *parishii*, Apiaceae) is a federal and State Endangered, CRPR 1B.1, County Group A and MSCP-covered species. It is a prostrate, herbaceous, deciduous, biennial or perennial species that occurs in or near vernal pools in Riverside and San Diego Counties and in northern Baja California, and typically blooms between March and May. The 1979 San Diego vernal pool survey reported this species in the J22 vernal pool complex. The 1993 EOMSP BTR documented approximately 65 individuals in three of the J22 vernal pools. It was documented in five of the vernal pools onsite in 1998 (see **Figure 6**), but not counted at that time. In 2001, it was not observed in any of the seven mapped pools, but was found in a mima mound depression to the southeast of the vernal pool that is south of Lone Star Road (see **Figure 6**), and in 2004, approximately 30 individuals were observed in this same depression. The location of the 2001 and 2004 observations is within the area of mima mound topography closer to the southeastern boundary of the mima mound area, near where ground level begins to slope downhill toward the southeast. These plants were growing in the concave area between mima mounds. Based on review of prior vernal pool and sensitive species mapping, including the EOMSP BTR, San Diego button-celery was not previously documented at this location. No San Diego button-celery was detected in 2015 or 2016. A focused survey in a year of adequate rainfall and vernal pool ponding would be necessary to estimate the size of any remaining population onsite.

Spreading navarretia (*Navarretia fossalis*, Polemoniaceae) is a federal Threatened, CRPR 1B.1, County Group A, MSCP-covered species. This white-flowered annual occurs in western Riverside and southwestern San Diego Counties, as well as in northwestern Baja California. It generally occurs in vernal pools or roadside depressions below 450 meters AMSL, and can be locally common despite its rarity. Historically, prostrate navarretia occurred in relatively few of the San Diego County vernal pools. The species is known from just three areas within the County including San Marcos, National City, and Otay Mesa. During the 1991 County of San Diego surveys (in the 1993

EOMSP BTR), approximately 12 individuals were detected in the J22 vernal pool complex north of Lone Star Road. It has not been documented onsite since that time.

Copies of the CNDDB forms for these special-status plant occurrences are provided at the end of **Appendix C**.

1.4.5.2 Special-status Plant Species with Moderate to High Potential to Occur Onsite

Based on results of decades of surveying the Project area, the only special-status species with high potential to occur onsite are those that were historically found onsite but not detected in recent years: San Diego sunflower, variegated dudleya, and San Diego button-celery. Each of these is described in Section 1.4.5.1, above. (Because prostrate navarretia has not been reported onsite since the 1979 vernal pools survey, it is unlikely to have high potential to occur onsite.)

Three species may have moderate potential to occur onsite: San Diego goldenstar (*Bloomeria clevelandii*), Palmer's grappling-hook, (*Harpagonella palmeri*), and golden-ray pentachaeta (*Pentachaeta aurea* subsp. *aurea*). Evaluations of each of these are provided in **Appendix C**.

1.4.6 Special-status Animal Species

For the purposes of this report, sensitive or special-status wildlife is any animal taxon (species or subspecies) that is officially listed by the State of California or the federal government as Endangered, Threatened, or Rare; a candidate for one of those listings; classified as Fully Protected, Species of Special Concern, or Watch List by CDFW; or included in the County of San Diego Sensitive Animals Lists.

A list of special-status animal species with the potential to occur on the Project site was generated from the CNDDB RareFind5 database, SanBIOS database, and a list provided by the County of San Diego. The resulting list includes any special-status animals documented within the Project site's USGS 7.5' quadrangle and surrounding quadrangles, within an applicable elevation range, as well as any taxa specifically identified by the County for this project. **Appendix D** provides information on these species, as well as an evaluation of the potential for each to occur onsite, based on species requirements, CNDDB and SanBIOS search results, other biological reports conducted in this area, professional experience, and field observations.

1.4.6.1 Special-status Animal Species Observed on or over the Site

Fourteen special-status wildlife species have been documented on or over the site since 1993: San Diego fairy shrimp, San Diego ring-neck snake, Cooper's hawk, grasshopper sparrow, Southern California rufous-crowned sparrow, ferruginous hawk, turkey vulture, northern harrier, white-tailed kite, burrowing owl, California horned lark, loggerhead

shrike, barn owl, and San Diego black-tailed jackrabbit. Information on each of these is provided below.

San Diego fairy shrimp (*Branchinecta sandiegensis*) is a federal Endangered and County Narrow Endemic and Group 1 MSCP-covered branchiopod that inhabits vernal pools and other unvegetated ephemeral basins in Orange and San Diego Counties and Baja California. Suitable pools are typically more than 30 centimeters deep, within 64 kilometers of the Pacific Ocean, and less than 701 meters AMSL. USFWS critical habitat for San Diego fairy shrimp includes approximately 72.5 acres onsite that was designated in 2007 (although the majority if this is currently non-native grassland; the remaining critical habitat [vernal pools] is located within the open space easements). Protocol dry season surveys were conducted on August 20, 1998, and an additional wet season sample was collected from the abandoned agricultural pond basin in January 1999 after fairy shrimp were observed in ponded water in the bottom of the basin. San Diego fairy shrimp cysts were found in all vernal pools and the small disturbed wetland northeast of the abandoned agricultural pond, and adults were found in the disturbed wetland within the agricultural pond (see locations in **Figure 6**). The 1998-1999 fairy shrimp survey report is provided in **Appendix E**. In February 2016, wet season sampling was attempted in order to update survey results; however, the pools did not receive adequate rainfall to pond, and wet season sampling was not possible. The consultant's letter summarizing this attempt is also provided in **Appendix E**. All vernal pools and both disturbed wetlands are considered occupied by San Diego fairy shrimp

San Diego ring-neck snake (*Diadophis punctatus similis*) has no State or federal special-status, but is a County Group 2 taxon. It typically occurs in moist habitats such as wet meadows, farmland, grassland, and woodlands along the coast into the Peninsular Ranges, but is generally hidden during the day. One individual was observed onsite during the 1999 QCB surveys, in the northern part of the mima mound area. None were observed in 2015-2016.

Cooper's hawk (*Accipiter cooperii*) is a CDFW Watch List, and County Group 1 MSCP-covered raptor that inhabits riparian woodlands with cottonwoods and sycamores, oak woodlands, eucalyptus groves and other forested areas at 500-3000 feet AMSL. Nesting occurs in second-growth conifer stands or deciduous riparian woodland areas. Cooper's hawk forages in open areas near forests, and in winter, open woodlands and fields may also be used. One Cooper's hawk was observed flying over the site in 2015. It may have been drawn to the power plant on the south side of Otay Mesa Road by a recorded Cooper's hawk call played at the power plant (to deter bird nesting). After flying from north of the site to the power plant, it turned and flew back to the north. None were observed in 2016.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a CDFW Watch List and County Group 1 MSCP-covered taxon. This bird favors moderately vegetated slopes of coastal sage scrub dominated by coastal sagebrush, and coastal bluff scrub and chaparral with grass and forb patches, 0-3000 feet AMSL. It nests on the ground at the base of rocks, grass tufts, or saplings, or slightly above ground in the

branches of shrubs or trees. This species was observed within the non-native grassland and former coastal sage scrub during 1999 Quino checkerspot butterfly surveys. None were observed in 2015-2016.

Grasshopper sparrow (Ammodramus savannarum) is a State Species of Special Concern, County Narrow Endemic, MSCP-covered and County Group 1 taxon. It is San Diego County's bird most restricted to native grassland, which is one of southern California's most threatened habitats. Native grassland is dominated by *Stipa* (*Nassella*) bunchgrasses, and, where used by grasshopper sparrows, usually contains some shrubs characteristic of coastal sage scrub. Native grassland has been removed and degraded by development, invasive plant species, and conversion to agriculture, and grasshopper sparrows are now uncommon and localized. Nests are hidden on the ground under clumps of grass and very difficult to find. (Unitt 2004). During the 2001 QCB survey, grasshopper sparrows were noted in the mima mound area, calling in territorial behavior. Although the mima mound area supported better quality habitat at that time, in a matrix of grassland and coastal sage scrub shrubs, native grassland and limited shrubs remain onsite and habitat is still suitable for grasshopper sparrow. Based on habitat descriptions and mapping in the 2001 QCB report, the grasshopper sparrows were detected north of the Lone Star Road alignment within the northern biological open space, where mima mound topography has not been altered by agricultural activity. No grasshopper sparrows were detected during 2015 and 2016 surveys.

Burrowing owl (*Athene cunicularia*) is a State Species of Special Concern, USFWS Bird of Conservation Concern, and County Narrow Endemic and Group 1 MSCP-covered raptor that hunts for small rodents in open grassland and agricultural land. This owl is unusual in that it enlarges and then lives and nests in burrows of small mammals, particularly California ground squirrel (*Spermophilus beecheyi*). Burrowing owls have drastically declined in San Diego County since the 1970s, from approximately 250-300 pairs to approximately 46 pairs in 2007 (County of San Diego 2010). They appear to have suffered, like other grassland birds, from loss of habitat, sensitivity to habitat fragmentation, proliferation of terrestrial predators, and high mortality from collision with cars (Unitt 2004). East Otay Mesa is the area with largest number of remaining breeding burrowing owls; migratory burrowing owls are also present in the area during winter months (Unitt 2004).

Records of burrowing owls in the Project area can be found in the CNDDB, including four within a mile to the south and southeast, two a short distance to the southwest, and another two within a mile to the west. The four records to the south and southeast are from 2006 and 2009, but appear to be located in areas that are now developed. The locations of the two nearby records to the southwest are from 2006, within the footprint of the SR-125 extension. The two records to the west are also from 2006 and 2009; one appears to be on Brown Field Municipal Airport land, and the other is close to SR-125. No newer records were found in CNDDB, but the Lone Star mitigation conservation area to the northwest of the site has reportedly had success with introduction of breeding burrowing owls in manmade burrows.

No burrowing owls, burrows, or sign were detected onsite during the 1998, 1999, or 2001 site surveys. During the 2015 burrowing owl survey, a group of approximately 7 abandoned burrows was found onsite just east of Harvest Road and south of the east-west dirt road (see **Figure 6**). The burrow holes were filling with soil, spider webs, and plant debris, and no burrowing owl sign (or evidence of use by any other animals) was observed on the aprons. In early 2016, the burrows were further degraded, and appeared to have been eroded and filled with silt by rainstorms early in the year. Remains of another two to three even older burrows were found in 2015 down-slope and slightly east of these, immediately north of Otay Mesa Road, east of Harvest Road (see **Figure 6**); these burrows were degraded to the point that they were only marginally identifiable, and one could not be identified as a burrowing owl burrow with certainty.

During the 2016 breeding season protocol surveys, additional inactive burrows were found. The survey field work was supplemented by use of Google Earth satellite imagery. That imagery shows burrows in 2012 and 2014. All burrows found during the survey are shown in **Figure 6**. In total, 15 burrows were found within the Project footprint, and 24 were found in the northern biological open space. No burrowing owls were observed on or near the site, and no burrows were currently or recently active. Most burrow holes were filled, and very few had prey remains on the aprons. Only one burrow had detectable remains of pellets, and those were degraded into small piles of shell and fossorial mammal bones and fur. Because burrows were not active, the habitat is considered non-native grassland, per County guidelines. A copy of REC's 2016 burrowing owl report is provided in **Appendix F**.

Ferruginous hawk (*Buteo regalis*) is a USFWS Bird of Conservation Concern, CDFW Watch List, and County Narrow Endemic and Group 1 MSCP-covered species that is an uncommon winter visitor to San Diego County. This raptor forages over larger tracts of grassland, especially those less than 12 miles inland, as well as desert and sparsely brushy land. It tends to avoid areas near human activity and areas without large open spaces. One ferruginous hawk was observed soaring high over the site in December 1998. None were observed in 2015-2016.

Turkey vulture (*Cathartes aura*) is not a State or federal special-status species, but is a County Group 1 and MSCP-covered species. Turkey vultures soar over dry open country such as coastal sage scrub, mixed and chamise chaparral, grassland, mixed conifer and closed cone forest habitats, as well as riparian habitat and roadsides, in search of the carrion upon which they feed. One turkey vulture was observed soaring over the site in 2015. None were observed in 2016.

Northern harrier (*Circus cyaneus*), a State Species of Special Concern and County Group 1 MSCP-covered species, forages over grasslands like many other raptors, but is unusual in building its nest on the ground within grassland, marsh or other dense vegetation. According to the San Diego Bird Atlas, a breeding population of four to six pairs was present on Otay Mesa at the time of that book's publication (2004), and even more birds may be present in winter. Breeding pairs have been observed onsite repeatedly during the REC team surveys, beginning in 1999. In February 2016, a pair and a single

male were observed on and over the site. The female limited her activity to a specific area in grassland north of Lone Star Road and the mima mound area (see location in **Figure 6**). One male foraged over a larger area of grassland, while the other male was observed only over the mima mound area grassland.

White-tailed kite (*Elanus leucurus*) is a CDFW Fully Protected and County Group 1 MSCP-covered raptor. This species is widespread over the coastal slope and prefers riparian woodlands, oak groves, or sycamore groves adjacent to grassland. In California, this species was known to feed almost exclusively on California vole (*Microtus californicus*), but composition of prey varies geographically and California white-tailed kites may be adapting to other locally available rodent prey such as mice. One pair was observed foraging over non-native grassland in the northern part of the site during the 1998-1999 surveys. None were observed in 2015-2016.

California horned lark (*Eremophila alpestris actia*), a CDFW Watch List and County Group 2 species, favors open patches of bare land alternating with low vegetation in grasslands, montane meadows, and sagebrush plains. Horned larks occurred throughout non-native grassland and disturbed areas onsite in 2016. Locations of pairs, flocks, and pinpointed individuals are shown in **Figure 6**.

Loggerhead shrike (*Lanius ludovicianus*), a USFWS Bird of Conservation Concern, State Species of Special Concern, and County Group 1 MSCP-covered species, inhabits open country with scattered trees and shrubs, agricultural land, desert washes and desert-edge scrub, broken chaparral and, occasionally, open woodland. Suitable hunting perches are an important part of the habitat. In 2015, a loggerhead shrike was observed in a snag on the bank of the agricultural pond (see locations in **Figure 6**).None were observed in 2016.

Barn owl (*Tyto alba*) is not a State or federal special-status species, but is a County Group 2 species that forages in dense grassland or agricultural fields. Barn owls nest in cut bank burrows and cliff recesses, as well as bases of palm leaves and a wide variety of artificial cavities. In winter, this species often roosts in dense conifers or in nest boxes if available. Of the owls occurring in San Diego County, this species is most adapted to suburban and urban environments. During the 1998-1999 surveys, one barn owl was observed on/over the site. In 2016, feathers and a pellet were found below a perch in the mima mound portion of non-native grassland at the location shown in **Figure 6**.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), a State Species of Special Concern and County Group 2 mammal, inhabits grasslands, agricultural fields, margins of citrus groves, and sparse shrublands on the coastal side of the southern California mountains from Ventura County south into San Diego County (and continuing into Baja California), and mostly west of the National Forest lands within San Diego County. In 2015 two individuals were observed, and in 2016 approximately five, including two juveniles, were observed in non-native grassland at the locations shown in **Figure 6**.

Copies of the CNDDB forms for these special-status wildlife sightings are provided at the end of **Appendix D**.

1.4.6.2 Special-status Animal Species with High Potential to Occur Onsite

Based on site observations and CNDDB and SanBIOS records, special-status species that were not observed during 2015-2016 surveys but have been documented onsite in the past have high potential to (re-)occur onsite.

1.4.6.3 Special-status Animal Species with Moderate Potential to Occur Onsite

Five species may have moderate potential to occur onsite: Riverside fairy shrimp (*Streptocephalus woottoni*), Coronado skink (*Plestiodon skiltonianus interparietalis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), golden eagle (*Aquila chrysaetos*), and prairie falcon (*Falco mexicanus*). Riverside fairy shrimp has been assumed present and is discussed in Section 1.4.6.4, below. Golden eagle is discussed in this section because of its high sensitivity and relevance to the Project. Evaluations of Coronado skink, coast patch-nosed snake and prairie falcon are provided in **Appendix D**.

Golden eagle (*Aquila chrysaetos*) is a USFWS Bird of Conservation Concern, CDFW Watch List, CDFW Fully Protected, and County Narrow Endemic and Group 1 MSCP-covered raptor that lives in the mountains and foothills, adjacent grassland, and other open areas and canyons in San Diego County. No golden eagles were observed on or over the Project site during any of the REC team surveys between 1998 and 2016. No suitable nesting cliffs or trees are present within the Project site.

1.4.6.4 Special-status Animal Species with Assumed Presence Onsite

Riverside fairy shrimp (*Streptocephalus woottoni*), like the San Diego fairy shrimp, is a federal Endangered and County Narrow Endemic and Group 1 MSCP-covered branchiopod. It occupies vernal pools and other unvegetated ephemeral basins in inland Riverside, Orange and San Diego Counties (Ramona area), and coastal San Diego County and Baja California. Riverside fairy shrimp critical habitat does not occur onsite; the closest is approximately 1,513 ft from the Project boundary. This fairy shrimp does not appear until later in the season compared to San Diego fairy shrimp, as it requires deeper basins and longer inundation. The most likely location for Riverside fairy shrimp onsite is within the abandoned agricultural pond basin, which has the potential to pond more deeply than the vernal pools onsite. It was not detected onsite in the 1998 dry season survey of the vernal pools and northern disturbed wetland, nor in the 1999 wet season survey of the agricultural pond basin. However, because the water level in the agricultural basin was lower than previously observed and ponded water was likely too shallow to support Riverside fairy shrimp in 1999, these negative finds were considered inconclusive. For the purposes of the 2000 BTR, the agricultural pond basin (disturbed wetland) was assumed occupied by Riverside fairy shrimp. Wet season fairy shrimp sampling could not be conducted in 2016 due to lack of adequate rainfall and ponding.

1.4.6.5 Other Special-status Animal Species with Project Significance

Quino checkerspot butterfly (*Euphydryas editha quino*) is federal Endangered, and County Narrow Endemic and Group 1 taxon. This rare butterfly inhabits open grassy areas in the interior foothills, including the slopes of the nearby San Ysidro Mountains. Its primary larval host plant is dot-seed plantain (*Plantago erecta*); desert/woolly plantain (*Plantago patagonica*), purple owl's-clover (*Castilleja exserta*), and possibly also (dark-tip) bird's beak (*Cordylanthus rigidus* [subsp. *setigerus*]) and Coulter's snapdragon (*Antirrhinum coulterianum*) may also be used. No QCB critical habitat occurs onsite; the closest is approximately 1,300 ft north and west of the Project boundary. In 1998, the Project site was evaluated by REC principal biologist Elyssa Robertson (Quino permit TE 0786714-1) for the potential to support QCB. Based on absence of host plants, historical disturbance of site, and density of non-native grassland, it appeared that the potential for QCB to occur onsite was not high. However, a protocol survey was conducted by RBRiggan and Associates in 1999 over the northern mima mound area. In the 1999 survey, no QCB were detected, and no primary host plant dot-seed plantain was found onsite. A "small number of widely scattered individuals" of purple owl's-clover was observed in the survey area. No other potential host plants were reported. The 1999 report concluded "Given the complete lack of *Plantago erecta* on this site (and virtual lack of *Castilleja exserta* or any possible alternative larval food plants for the Quino Checkerspot), and the lack of any Quino sightings on the Sunroad Centrum property, it would appear that the site can be developed without concern for a possible take of the Quino Checkerspot." A copy of the 1999 QCB report is provided in **Appendix G**.

In 2001, QCB surveys were conducted by RBRiggan & Associates over the mima mound area and an "extremely limited, low density, localized population" of dot-seed plantain was found on the Project site. This dot-seed plantain population consisted of two groups of a few scattered individuals each. A limited population of purple owl's-clover was also found in the mima mound area. No QCB were detected. The 2001 report concluded "In that neither larvae nor adults of the QCB were identified during the protocol survey; and, only an extremely limited population of food plants suitable for the Quino Checkerspot were identified within the boundaries of the property, it would appear that development of the Sunroad Centrum Property will have no effect on the endangered Quino checkerspot Butterfly." A copy of the 2001 QCB report is provided in Appendix G.

In 2015 and early 2016, primary host plant dot-seed plantain was found onsite, where vegetation was recolonizing the disturbed Lone Star Road alignment. Nectar plants, including common goldfields (*Lasthenia gracilis*), were also observed. Based on the presence of dot-seed plantain, a third protocol survey was conducted in 2016 by Gretchen Cummings. Results of this survey were negative for QCB. The 2016 report concluded "Although a medium density population of a Quino larval host plant was identified on-site, no larvae nor adults of the Quino Checkerspot were identified during the 2016 protocol survey. Therefore, any proposed future development of the Sunroad Centrum 250 property will have no effect on the endangered Quino Checkerspot Butterfly." A copy of her 2016 QCB report is also provided in **Appendix G**.

1.4.6.6 Other Federal and State Protection for Birds

Raptors and native birds are also afforded protection under federal and State law. California Fish and Game Code Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant to the Code. The federal Migratory Bird Treaty Act prohibits the killing or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation (such as for "game" birds), Therefore, all native, non-game birds on the Project site, and the nests and eggs of all native non-game birds, are protected during the nesting season even if these birds are not special-status or otherwise protected. Birds are assumed to nest onsite. Northern harriers appear to regularly nest in northern non-native grassland onsite, and California horned larks likely nest onsite.

California Fish and Game Code Section 3503.5 specifically protects all birds in the orders Falconiformes or Strigiformes (raptors, including owls). It is unlawful to take, possess, or destroy any such raptors or their nests and eggs except as otherwise provided in the Fish and Game Code. Seven raptor species were directly observed on or over the site: Cooper's hawk, red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk, norther harrier, white-tailed kite, barn owl (*Tyto alba*), and American kestrel (*Falco sparverius*). Although burrowing owl was not directly observed, evidence of past use of the site by this raptor was observed.

1.4.7 Wetlands / Jurisdictional Waters

Wetland and water features onsite remain essentially unchanged since 2000 except for the effects of drought, and consist of the following four features or sets of features:

1. The creek with non-native riparian vegetation in Johnson Canyon;
2. Vernal pools;
3. Small area of disturbed wetland in the abandoned agricultural pond; and
4. Small area of disturbed wetland along berm northeast of the agricultural pond.

These wetlands/waters, shown on **Figure 6**, are afforded protection by the County of San Diego, State of California, and US Environmental Protection Agency through the US Army Corps of Engineers (USACE). Jurisdictions are summarized below.

1.4.7.1 County of San Diego Wetlands/Waters

The County of San Diego, through its Resource Protection Ordinance (RPO), controls impacts to sensitive habitats including wetlands and floodplains. For the RPO, "wetland" is defined in Section 86.602(q)(1) as "lands having one or more of the following attributes:

(a) at least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
(b) the substratum is predominantly undrained hydric soil; or

(c) an ephemeral or perennial stream is present, whose substratum is predominantly non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system."

In Section 86.602(q)(2), the RPO definition of a wetland is qualified to exclude lands that have those wetland attributes solely due to man-made structures such as culverts, ditches, road crossings, or agricultural ponds, provided that the Director of Planning and Development Services determines that they

(i) have negligible biological function or value as wetlands;
(ii) are small and geographically isolated from other wetland systems;
(iii) are not vernal pools; and,
(iv) do not have substantial or locally important populations of wetland dependent sensitive species.

Also excluded in Section 86.602(q)(2) are lands that have been degraded by past legal land disturbance activities, to the point that they meet the following criteria, as determined by the Director of Planning and Development Services:

(i) have negligible biological function or value as wetlands even if restored to the extent feasible; and
(ii) do not have substantial or locally important populations of wetland dependent sensitive species.

Allowed uses of and impacts to RPO wetlands are limited by the RPO. The wetlands must be protected by upland buffers, which also have use and impact limitations. (Wetlands that do not qualify as RPO wetlands are less strictly regulated by the County, but are still considered County wetland *habitats* and are protected as sensitive habitat.)

Based on the definitions listed above, all four (sets of) features would currently qualify as RPO wetlands.

1. The creek with non-native riparian vegetation in Johnson Canyon, because it is an ephemeral to intermittent creek with areas of riparian and wetland vegetation, as well as areas of non-soil substrate, and is a tributary to the Otay River.
2. Vernal pools, because they are specifically included as RPO wetlands.
3. Small area of disturbed wetland in the abandoned agricultural pond because it contained live San Diego fairy shrimp during the last completed protocol survey (any fairy shrimp on Otay Mesa are part of a locally important population).
4. Small area of disturbed wetland along berm northeast of the agricultural pond because it contained San Diego fairy shrimp cysts during the last completed protocol survey (again, any fairy shrimp on Otay Mesa are part of a locally important population).

It should be noted that, at the time the FSEIR was approved, the term "wetlands" was more narrowly defined in the RPO. The 1991 RPO, in Article II part 16, defined "wetland" as "All lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface of where land is covered by water. All lands having one or more of the following attributes are "wetlands":

(a) At least periodically, the land supports predominantly hydrophytes (plants whose habitat is water or very wet places);
(b) The substratum is predominantly undrained hydric soil; or
(c) The substratum is nonsoil and is saturated with water or covered by water at some time during the growing season of each year."

No exclusions were included with the definition at the time of the approved FSEIR, and vernal pools were not explicitly included as RPO wetlands at that time. Because the disturbed wetlands and vernal pool do not support predominately hydrophytes, or have undrained hydric soil or a nonsoil substrate, they did not qualify as RPO wetlands when the 2000 FSEIR was approved.

1.4.7.2 US Army Corps of Engineers (USACE) Wetlands/Waters

Pursuant to Section 404 of the Clean Water Act (CWA), the USACE regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in USACE regulations at 33 CFR Part 328.3(a) as:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters, which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:
  (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  (ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or
  (iii) Which are used or could be used for industrial purpose by industries in interstate commerce...
(4) All impoundments of waters otherwise defined as waters of the United States under the definition;
(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.
(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency (EPA).

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM) which is defined in 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

The term "wetlands," a subset of "waters of the United States," is defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 "Wetland Delineation Manual and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region" generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics.

At the time of the 2000 BTR and FSEIR, vernal pools and the small disturbed wetland areas were considered USACE-jurisdictional despite the fact that they are isolated waters. However, under the current enforcement of CWA regulations, the USACE does not claim isolated wetlands such as vernal pools or upland agricultural ponds. Therefore, only the Johnson Canyon drainage in the northeastern corner of the site would fall under USACE jurisdiction, as a Waters of the US (which could contain USACE wetlands). This area was not delineated beyond the level of habitat mapping because it will be preserved in BOS in the northeastern corner of the site.

1.4.7.3 California Waters of the State

Wetlands and waters are also protected by the State of California under the Porter-Cologne Water Quality Control Act (CWC 2013) as "Waters of the State," which is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Porter-Cologne Act designated the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) as the principal state agencies with primary responsibility for the coordination and control of water quality.

As with the CWA definition of wetlands, certain exemptions exist: exemptions from CWA section 404 permits are also excluded from the State dredge and fill procedures. These exemptions are prior converted cropland, constructed treatment wetlands, and

certain aquatic areas determined not to be waters of the State, such as treatment wetlands and sedimentation/storm water detention basins.

Because the RWQCB claims jurisdiction over all surface waters except for those specifically exempted, and the onsite wetland/water features periodically contain surface water and are not covered by those exemptions, all four (sets of) features would fall under RWQCB jurisdiction.

1.4.7.4 California Department of Fish and Wildlife (CDFW) Lakes and Streams

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFW does not typically claim jurisdiction over small isolated waters such as vernal pools or detention basins.

Because CDFW jurisdiction over lakes and streams does not extend to small isolated waters, only the Johnson Canyon drainage in the northeastern corner of the site would be CDFW-jurisdictional.

1.4.8 Habitat Connectivity, Wildlife Corridors, and Nursery Sites

The County defines a corridor as “A specific route that is used for movement and migration of species. A corridor may be different from a ‘linkage’ because it represents a smaller or more narrow avenue for movement.” A linkage is “An area of land which supports or contributes to the long-term movement of wildlife and genetic exchange by providing live-in habitat that connects to other habitat areas.” (County of San Diego 2010) Wildlife corridors or linkages between significant wildlife areas are important because of their role in preserving species diversity and viability. Without some connection or corridor to other areas, wildlife areas become virtual islands surrounded by development. Carlquist’s principals of island biogeography predict that species diversity of an island is a function of the size of the island, the distance from the mainland, and the length of time it has been isolated (Carlquist 1974). These principles have been shown to apply to wildlife areas within the urban fabric (Soule et al. 1988). As shown by Soule, small fragmented areas of habitat ultimately support lower numbers of species than similarly situated larger blocks of habitat. Therefore, it is important to design development with the goal of maximizing large contiguous open space and minimizing isolated wildlife habitat.

As described in the 1993 EOMSP BTR, the Project site and overall EOMSP area are located at the southwestern edge of an extensive natural open space system that includes Bureau of Land Management (BLM) land to the north and east, City of San Diego lands around Lower Otay Reservoir, and the Otay River Valley to the north of the site. The San Ysidro Mountains to the east are one the largest continuous undisturbed tracts of natural open space in southwestern San Diego County. These mountains have been identified as a high-priority core preserve area under the MSCP program. Lower Otay Reservoir to the north is the major year-round water source in the area. The Otay River Valley is a major linkage between the fragments of habitat remaining to the west of the site, and the large areas of open space to the north and east of the site. Johnson Canyon and O'Neal Canyon provide access to the river valley from Otay Mesa, as well as relatively protected habitat and riparian resources. O'Neal Canyon, with its steep canyon walls, trees, natural habitats, stream, and rocky pools, provides cover, food, and water for wildlife. It is a major linkage between the San Ysidro Mountains and the Otay River Valley and is used by large mammals, golden eagles, California gnatcatchers, and a variety of other wildlife species. Johnson Canyon, which traverses the northern edge of the Project site, is of somewhat lower value as a movement corridor because it ends west of Alta Road and no longer directly connects to the mountains. As analyzed in the EOMSP BTR, the western portion of the SPA (in which the site is located) supports poor habitat for wildlife movement because the open agricultural fields provide little topographical or vegetative cover, and the region west and south of the Otay River is largely developed or otherwise constrained by human activity. (County of San Diego 1993)

As identified in the 1993 EOMSP BTR and included in the 2000 Project BTR, the slopes of Johnson Canyon in the northern part of the Project site provide wildlife corridor function. The portion of Johnson Canyon and its drainage on and adjacent to the site represents the upper end of a wildlife corridor that leads to the Otay River Valley, but it does not provide a high quality corridor to the extensive open space to the east. However, it does provide a degree of connectivity between the northern section of the site and the Lone Star mitigation bank/preserve located on the canyon approximately 0.6 mile downstream and 0.3 mile overland to the east.

Because the site is bordered by Otay Mesa Road and industrial development to the south, and SR-125 to the west, it does not provide a corridor or connectivity in those directions.

Native wildlife nursery sites are sites where wildlife concentrates for hatching and/or raising young, such as rookeries, spawning areas and bat colonies (County of San Diego 2010). Although wildlife species breed onsite, breeding activity is not concentrated, and the site would not be considered a wildlife nursery.

1.5 Applicable Regulations

A variety of federal, State, and local regulations established to protect and conserve biological resources apply to the Otay 250 Project, and these are summarized below.

1.5.1 Federal Regulations and Standards

Federal Endangered Species Act

The US Congress passed the federal Endangered Species Act (ESA) in 1973 to provide a means for conserving the ecosystems that Endangered and Threatened species require in order to avoid extinction. The federal ESA has four major components: 1) Section 4, which provides for listing species and designating critical habitat; 2) Section 7, which requires federal agencies, in consultation with the USFWS, to ensure that their actions are not likely to jeopardize the continued existence of species or result in the modification or destruction of critical habitat; 3) Section 9, which prohibits against "taking" listed species; and 4) Section 10, which provides for permitting incidental take of listed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (as amended) was passed by Congress to prohibit the killing or transportation of native migratory birds and the parts, nests and eggs of such birds, except as allowed by other legislation. All birds in California except those specifically excluded (such as non-native birds and certain "game" birds) are protected by this act.

Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act was enacted in 1940 to prohibit the take, transport, or sale of bald eagles, their eggs, or any part except where expressly allowed by the Secretary of Interior, and was amended in 1962 to also cover golden eagles and in 2010 to prohibit "take of important use areas".

Clean Water Act

The 1948 federal Water Pollution Control Act was amended in 1972 to become the Clean Water Act (CWA), which established the basic structure for regulating discharges of pollutants into the waters of the United States and regulating surface water quality standards. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters of the United States unless a permit is obtained.

Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into Waters of the US. This agency claims jurisdiction over waters of the US, including wetlands in or adjacent to Waters of the US. Impacts to USACE wetlands and other Waters of the US generally require a permit from the USACE. Such impacts may be permitted under pre-approved Nationwide permits, but Individual permits may be required when projects propose impacts greater than what is covered by individual permits. Compensatory mitigation is required to achieve the USACE goal of "no net loss."

1.5.2 California Regulations and Standards

California Endangered Species Act

The California Endangered Species Act (CESA) of 1984 generally parallels the main provisions of the federal ESA and is administered by the California Department of Fish and Wildlife (CDFW); it prohibits take of any species that the California Fish and Game Commission has classified as Threatened or Endangered, or that is experiencing a significant decline that could lead to such as designation, and it permits take incidental to otherwise lawful development projects with approval from CDFW.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) of 1970 (as amended) requires that proposed projects be reviewed for environmental impacts, including impacts to biological resources. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource; instead, lead agencies are charged with determining what should be considered a significant impact according to the CEQA guidelines, and establishing the appropriate mitigation measures regarding biological impacts. CEQA guidelines provide criteria that the County of San Diego uses in determining whether a Project may have significant effects.

California Fish and Game Code

California Fish and Game Code regulates the taking and possession of birds, mammals, fish, amphibians, and reptiles, as well as impacts to natural resources such as Waters of the State. It includes the CESA described above, Streambed Alteration Agreement regulations (Sections 1600-1616), provisions for legal hunting and fishing, tribal agreements for activities involving take of native wildlife, protection of nests and eggs of all birds except as otherwise provided by Fish and Game Code (Section 3503), protection of all raptors and their nests and eggs except as otherwise provided (Section 3503.5), and the California Native Plant Protection Act (Section 1900-1913).

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 directed CDFW to carry out the legislature's intent to "preserve, protect and enhance Rare and Endangered plants in this State" and gave CDFW the power to designate native plants as Endangered or Rare and to protect such designated plants from take.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (CWC 2013) provides State-wide coordination for protection of Waters of the State. It established the State Water Resources Control Board (SWRCB) as the State agency with primary responsibility for the control of water quality, and nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality at the regional level. Impacts to Waters of the State require notification/permitting through the RWQCB and usually also require compensatory mitigation, although this mitigation is typically handled through USACE and/or CDFW.

Natural Communities Conservation Planning Act

The State of California passed the Natural Communities Conservation Planning (NCCP) Act (Fish and Game Code 2800 *et seq.*) in 1991. Under this Act, NCCP Plans are designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. It is broader in its orientation and objectives than the California and federal Endangered Species Acts, which are designed to identify and protect individual species that have already declined significantly in number. CDFW is the principal State agency that implements the NCCP Program. NCCP Plans developed in accordance with the Act provide for comprehensive management and conservation of multiple wildlife species, and identify and provide for regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. For planning purposes, some subregions are organized into "Subareas" that correspond to geographic boundaries of participating jurisdictions and/or landowners. In each subregion and subarea, a local lead agency coordinated the collaborative planning process. Working with landowners, environmental organizations, and other interested parties, the local lead agency oversees development of a conservation plan, and CDFW and USFWS provide the necessary support and guidance. Because the Project site is within the County of San Diego MSCP subarea, the NCCP is largely supplanted by the MSCP plan; however, portions of eastern Otay Mesa are classified as Amendment Areas, in which take to State and federally protected species must still be negotiated with the Wildlife Agencies (see MSCP below).

1.5.1 Local Regulations and Standards

County of San Diego Resource Protection Ordinance

The Resource Protection Ordinance (RPO) was adopted in 1989 and amended in 1991 and 2007. It restricts, to varying degrees, impacts to natural resources including wetlands, wetland buffers, floodplains, steep slopes, sensitive habitat lands, and historical sites. Certain permit types are subject to the requirement to prepare Resource Protection Studies under the RPO. RPO-permitted uses in wetlands, as defined by the ordinance, are aquaculture, scientific research, wetland restoration projects, limited removal of diseased or invasive plant species, and limited road, driveway, or trail crossings when specific findings are made for these uses. In addition, the ordinance requires that a wetland buffer be provided to further protect the wetland resources. Improvements necessary to protect the adjacent wetlands and those uses allowed within the actual wetland are the only allowed uses within the buffer.

The RPO also limits impacts to sensitive habitat lands. Habitats considered sensitive or significant under CEQA are not necessarily considered RPO sensitive habitat lands. RPO sensitive habitat lands include, but are not limited to:

- Lands that include habitats of rare or endangered species or subspecies of animals or plants as defined under Section 15380 of CEQA Guidelines (State- and federal-listed species or species that would qualify for such listing);
- Lands that contain unique vegetation communities that are rare or substantially depleted; and

- Lands which are critical to the proper functioning of a balanced natural ecosystem or which served as a functioning wildlife corridor.

Examples of lands that would not automatically be considered RPO sensitive habitat lands include, but are not limited to: coastal sage scrub, oak woodland, chaparral, and non-native grasslands, provided that these habitats: (a) do not include populations of State- and federal-listed species); (b) are not critical to a balanced ecosystem; or (c) are not part of a functioning wildlife corridor. Impacts to RPO sensitive habitat lands are only allowed when: (a) all feasible measures have been applied to reduce impacts; and (b) mitigation provides an equal or greater benefit to the affected species.

The RPO includes the provision that when "the extent of environmentally sensitive lands on a particular legal lot is such that no reasonable economic use of such lot would be permitted by these regulations, then an encroachment into such environmentally sensitive lands to the minimum extent necessary to provide for such reasonable use may be allowed".

Multiple Species Conservation Program

The MSCP is a long-term regional conservation plan designed to establish a connected preserve system that protects the County's sensitive species and habitats. The MSCP covers 582,243 acres in over 12 jurisdictions, and each jurisdiction will have its own subarea plan. The Subarea Plan for the County's main jurisdictional area (now also known as the South County MSCP) covers 252,132 acres in the southwestern area, and is implemented by the Biological Mitigation Ordinance (BMO), which outlines the specific criteria and requirements for projects within the MSCP boundaries. As an NCCP Plan, the MSCP allows the County to authorize take for certain federal- and state-protected "covered" species and thereby simplifies the administrative process of environmental permitting and development in the County.

MSCP Amendment Areas: In some areas, locations of preservation and development were not resolved at the time the County Subarea Plan was published, and these areas are called Amendment Areas. Amendment Areas are not included in County take authorizations otherwise provided by the MSCP until an amendment process is completed; processing involves consultation with not only County biologists, but also representatives of CDFW and USFWS to ensure compliance with CEQA, ESA, and CESA.

Major Amendment Areas contain habitat of higher value, including dedicated or designated preserve areas. Projects in Major Amendment Areas must be fully processed by USFWS and CDFW in conformance with all applicable laws and regulations, including those listed above.

Minor Amendment Areas contain habitat that could be lost without significant negative impacts to the County Subarea Plan. Minor Amendments require approval of the USFWS field office supervisor and the CDFW Natural Communities Conservation Program Manager. Processing a Minor Amendment requires preparation of a CEQA document, a biological resources report, identification of any

mitigation required by the BMO, and concurrence by the wildlife agencies. Before development may occur, the Minor Amendment must be granted and the required mitigation implemented. Minor Amendment requests are currently being processed on a case-by-case basis. Most of the Minor Amendment Area is covered by non-native grasslands habitat.

Minor Amendment Areas with Special Considerations are transitional areas located primarily between the Minor and Major Amendment Areas where the likelihood of the presence of biologically sensitive resources is higher. If particularly sensitive species are identified as occurring in one of these Areas, onsite preservation may be required. The process for a Minor Amendment Area with Special Considerations is similar to a Minor Amendment area, but onsite preservation may be required if particularly sensitive species are identified. Minor Amendment Areas with Special Considerations are processed on a case-by-case basis.

Amendment Areas on the Project site as mapped in the 2015 EOMSPA (see following paragraph) are shown in **Figure 5**. Most of the southern and western section of the site, south of the Lone Star Road alignment, is classified as a Minor Amendment Area. A small area in the center of the site, corresponding to the mima mound area, is classified as a Minor Amendment Area Subject to Special Consideration with "G Designator". The G Designator applies to areas that have steep slopes and/or are biologically sensitive, and are subject to the Sensitive Resource Area Regulations of the Zoning Ordinance. The entire area to the north of Lone Star Road is classified as a Major Amendment Area with G-Designator.

East Otay Mesa Specific Plan and Amendments

The EOMSP is a regulatory document that established standards for development, environmental conservation, and public facilities to implement the objectives of the County of San Diego General Plan and Otay Subregional Plan. The Specific Plan area contains approximately 3,013 acres of land, of which approximately 2,110 acres are planned as a modern industrial and business center and approximately 552 acres would be set aside for conservation or very low-density residential use. Planning for the EOMSP began in the 1990s in response to expansion of industrial development in the City portion of Otay Mesa, opening of the Otay Mesa Border Crossing, and improvement of Otay Mesa Road/SR-905, which prompted County property owners to plan for future development in eastern Otay Mesa. The Board of Supervisors approved the original Specific Plan in 1994. Amendments to the original plan have been approved and implemented since that time, the latest of which is the eighth amendment approved in April 2015. The latest version of Amendment Area mapping is provided in the April 2015 EOMSPA. The Project site is located in the northwestern section of the EOMSP area, as shown in **Figure 5**.

End of Section 1.0

2.0 PROJECT EFFECTS

The Project proposes development of the portion of the site south of Lone Star Road, with the exception of one vernal pool and its watershed which will be protected with a biological open space (BOS) easement; and conservation of all land north of Lone Star Road within BOS (**Figure 7**). Development of the Project footprint may result in the loss or degradation of biological resources, which would be considered an adverse effect. Adverse, potentially significant impacts resulting from development of the Project site were assumed in the 1994 EOMSP and EIR, and mitigation measures were developed at that time. Project impacts were re-addressed in the 2000 FSEIR, 2003 RCP, 2003 Minor Amendment, and 2012 Conditions of Approval, with the addition of updated mitigation measures as well as inclusion of prior applicable mitigation measures. (Note: the 2000 FSEIR supplants the 1994 EIR for the Project site.) The analysis of Project effects in this 2017 BTR update incorporates information from those prior analyses, addresses new biological resources data gathered since the 2000 FSEIR, updates the significance analysis to the current 2010 Guidelines, and identifies changes in impact significance analysis since two previous certified EIRs.

Significant adverse effects on biological resources can be direct, indirect, or cumulative impacts. Project impacts within each of these categories are detailed below.

2.1 Direct Impacts

Direct impacts are generally obvious, absolute, or quantifiable, such as direct destruction of vegetation, sensitive habitats, and plant and animal populations; loss of foraging, nesting, breeding, or burrowing habitat; clearing of a particular species' required habitat (directly impacting that species); or blocking a wildlife corridor. They may occur as a result of the Project itself, or activities necessary for implementation of the Project such as construction staging areas. This Project's direct impacts within the development footprint are shown in **Figure 7**. Off-site impact areas are also identified on **Figure 7**.

2.1.1 Direct Vegetation/Habitat Impacts

Direct vegetation/habitat impacts resulting from implementation of the Project are summarized in Table 2-1, below. Direct impacts of the Project consist of removal of habitat (including Fuel Modification Zone impacts), with the potential to directly impact special-status species. As shown in Table 2-1, 201.39 acres would be directly impacted onsite, and another 2.69 acres offsite, for a total of 204.08 acres. Approximately 51.75 acres (with 49.43 acres of natural habitat), will be protected from direct impacts in BOS.

Table 2-1. Direct Vegetation/Habitat Impacts

Habitat	Existing (acres)	Onsite Impacts (acres)	Offsite Impacts (acres)	Total Impacts (acres)	Remaining in BOS
Disturbed Wetland	0.11	0.11	-	0.11	-
Non-Native Riparian	0.39	-	-	-	0.39
San Diego Mesa Claypan Vernal Pool	0.21	-	-	-	0.21
Native Grassland	1.96	-	-	-	1.96
Non-native Grassland	240.24	193.37	2.62	195.99	46.87
Developed Land	2.97	2.97	-	2.97	-
Disturbed Habitat	7.26	4.94	0.07	5.01	2.32
Totals	253.14	201.39	2.69	204.08	51.75

Disturbed wetland and non-native grasslands will be directly impacted. Non-native riparian habitat, vernal pools, and native grassland will not be directly impacted.

Table 2-2 provides a comparison between Project impact acreages in the 2000 FSEIR and in this 2017 BTR update.

Table 2-2. Comparison of 2017 BTR and 2000 FSEIR Vegetation/Habitat Impacts

Habitat	2016 Impacts (acres)			2000 Impacts (acres)			Change from 2000 to 2016 (acres)
	Onsite	Offsite	Total	Onsite	Offsite	Total	
Disturbed Wetland	0.11	-	0.11	0.11	-	0.11	0
Non-Native Riparian	-	-	-	NA	NA	-	0
San Diego Mesa Claypan Vernal Pool	-	-	-	-	-	-	0
Southern Willow Scrub	NA	NA		0.20	-	0.20	-0.20
Coastal Sage Scrub	NA	NA		2.1	-	2.1	-2.1
Native Grassland	-	-	-	4.2	-	4.2	-4.2
Non-native Grassland	193.77	2.62	195.99	186.37	0.13	186.5	+9.49
Developed Land	2.97	-	2.97	NA	NA	-	+2.97
Disturbed Land	4.94	0.07	5.01	5.9	-	5.9	-0.89
Totals	201.39	2.69	204.08	198.88	0.13	199.01	+5.07

2.1.2 Direct Special-status Species Impacts

Project direct impacts to special-status species consist of the loss of:

- Approximately 55 coast barrel cacti;
- The observed location of a patch of variegated dudleya observed in 1998;
- Approximately 30 San Diego button-celery in a mima mound depression observed in 2001 and 2004;
- One small-flower bindweed;
- San Diego fairy shrimp in disturbed wetland habitat;
- Riverside fairy shrimp (assumed present in the agricultural pond disturbed wetland in 2000);
- Observed locations and breeding habitat of California horned larks;
- Observed location and foraging habitat of (one) loggerhead shrike;
- Observed locations and habitat of approximately five San Diego black-tailed jackrabbits;
- Loss of burrowing owl breeding and foraging habitat; and
- Loss of northern harrier, turkey vulture, and raptor foraging habitat through direct impacts to 195.99 acres of non-native grassland.

2.2 Indirect Impacts

Indirect impacts may be the result of secondary effects from direct impacts, or those impacts that over time cause degradation of a resource by changing its function, health, or quality. Unlike direct impacts that are typically one-time effects, indirect impacts often continue in the long term and may actually increase. Indirect impacts commonly result from "edge effects." Edge effects from development can extend several hundred feet into adjacent areas, causing significant changes in species composition, diversity and abundance in those nearby lands. Projects may result in a wide variety of indirect impacts depending on project context. Examples of indirect impacts include edge effects such as increase in human encroachment into the natural environment, particularly through off-road vehicle use; harassment and/or collection of wildlife species by people; predation upon wildlife by domestic animals that intrude into open space areas; and increased wildlife mortality along roads. Other less visible indirect impacts include decline in the availability of a resource such as water or prey, reduction in habitat viability as a result of altering moisture regime or vegetation, habitat fragmentation, and damage to or loss of ecosystem and/or watershed integrity.

As described in the Project's original June 2000 BTR, potentially significant indirect Project impacts could include noise and lighting, water quality, and introduced plant or animal species.

The effects of industrial and residential noise on wildlife are poorly understood. Excessive noise could potentially affect communication, prey detection, and predator awareness in a variety of species. Project-related noise, both during and after construction, could deter wildlife from using the southern portion of the BOS and

effectively cause a loss of usable habitat. Light reaching the BOS would likely exclude a number of nocturnal species from the lighted zone, again effectively causing a loss of usable habitat for those species. The responses of sensitive vernal pool animals, including vernal pool plant pollinators, to light from an adjacent development are not known.

Impacts to water quality could result from the proposed Project. Siltation could occur during or after grading if proper erosion control measures are not followed, potentially resulting in a temporary degradation of surface waters and alteration wetlands and other water resources. Another potential water quality impact would be introduction of toxins from onsite sources to habitats, wetlands, and other water resources. This could result from industrial and residential runoff or from illegal dumping of waste. Vernal pool species in the BOS, already subject to drought, fire, and invasive species infestation, could be unusually vulnerable to contaminated runoff or dumping. As reported in the 1993 EOMSP BTR, vernal pools onsite could also be adversely affected by hydrological changes associated with construction of Lone Star Road (County of San Diego 1993). Another potential vernal pool indirect impact described in the EOMSP BTR is loss of genetic diversity associated with reduction of this already rare habitat.

Development adjacent to natural habitat often introduces domestic and urban-adapted species into that habitat. Animals that follow development (e.g. opossum, black rat) compete with native animals for food, and may provoke poisoning or trapping that can impact native animals. Other introduced animals such as cats and dogs, and urban-adapted native species such as skunks and ravens, may increase predation on native species in adjacent natural habitat. Even increased human intrusion from new adjacent development could significantly impact sensitive habitats and species in BOS.

These potential indirect impacts, addressed in the 2000 FSEIR, remain applicable to the Project. Indirect impacts are, overall, potentially significant but mitigable.

2.3 Cumulative Impacts

Cumulative impacts occur as a result of the additive effect of multiple or ongoing direct and indirect impacts to a resource over time. A project's direct and indirect impacts may not be individually significant, but the additive effect when viewed in the context of past, present and probable future project impacts may cause significant loss or degradation of a resource.

The geographic scope for a cumulative impact analysis includes past, present and future development projects (tentative tract maps, major use permits, etc.) within a geographic area sufficiently large to provide a reasonable basis for evaluating cumulative impacts. The geographic scope of the analysis is based on the nature of the geography surrounding the Project site and the characteristics and properties of each resource and the region to which they apply. In this case, the cumulative impact study area would be the entirety of Otay Mesa, as bounded by the Otay River Valley to the north, the Interstate (I) 805 to the west, the US-Mexican border to the south, and the San Ysidro Mountains to the east, with limited extensions northward to Lower Otay Reservoir and eastward to Jamul. Based on

this geographic scope, 60 other projects were included in the cumulative analysis list for this Project. The source of this list is an August 2013 search of the SANGIS Discretionary Permit GIS Database, (SanGIS 2012), the 2009 "Corrections Corporation of America Otay Mesa Facility Biological Technical Report" (Helix 2009), and a list provided by the County of San Diego in 2016. Cumulative projects are identified below in Table 2-3, below, and key locations are shown in **Figure 8**.

Table 2-3. Projects Included in Cumulative Impact Analysis

Map Reference	Project Name	Project Number(s)	Non-native grassland	
			Impacts	Mitigation
1 (Proposed Project)	Otay 250 SPA	TM5607	195.99	98.00
County Projects				
2	Saeed TM/Airway Business Center	TM 5304	38.5	19.3
3	Roll County LLC/ Enrico Fermi Industrial Park	TM 5394	NA	NA
4	Otay Hills	P04-004, RP04-001, ER04-19-004	40.4	26.9
5	Burke Minor Subdivision	TPM 20701RPL1, ZAP 99-029, STP 05-018	40.0	20.0
6	East Otay Mesa Auto Storage/ Aaron Construction Auto Auction Park	MUP 00-012, Minor Deviation 00-012-02	NA	NA
7	Family Motocross Park	MUP 00-024, SPA 04-006	NA	NA
8	Otay Mesa Auto Transfer/Rowland	MUP 03-001	NA	NA
9	Bradley/Robertson Copart Salvage Auto Auctions	MUP 88-020, STP 00-070	NA	NA
10	National Enterprises Storage and Recycling Facility	MUP 98-001 RPL1	103.61	24.29
11	Calpine PG&E	TPM 20570	NA	NA
12	Otay Business Park	TM 5505	176.1	NA
13	Otay Crossings Commerce Park	TM 5405	273.3	NA
14	San Diego Correctional Facility/ Corrections Corporation of America	SPA 06-005, MUP 06-074, P06-074	36.7	NA
15	Otay Mesa Travel Plaza	TPM 20414, MUP 98-024 and Mod-01	NA	NA
16	Pilot Travel Center	TPM 20894, STP 05-021	12.9	6.5
17	East Otay Temporary Fire Facility	STP 00-070	NA	NA
18	International Industrial Park, Johnson Canyon	TM 5549	Part of 118.4	35.9
19	OMC Properties	TPM 21140	NA	NA
20	Pio Pico Energy Center Project	11-AFC-1C	NA	NA
21	California Crossings	P06-102, TPM 21046	23.4	15.4

22	COPART County Sales Yard Time Extension	P 88-020W1	NA	NA
23	FEDEX Site Plan	S08-018	NA	NA
24	Insurance Auto Auctions	P00-012TE	NA	NA
25	Sunroad Interim Uses - Sunroad Center I Harvest Ranch Nursery	P 09-009, P 09-005	NA	NA
26	Travel Plaza	P 98-024W1, TPM 20424	NA	NA
27	Vulcan	S 07-038	NA	NA
28	Piper Otay Park	TM 5527	NA	NA
29	Hawano	10-0123176	79.6(?)	NA
31	Rabago	TM 3100 5568	Part of 71.1	NA
32	Otay Mesa Generating (Calpine)	TPM 20570	NA	NA
33	Otay Business Park	TM 5505	179.9	179.9
34	Otay Ranch Village 12 (Otay Ranch Preserve and Resort	GPA04-003, SP04-002, REZ04-009, TM5316A & B, ER LOG 04-19-005	NA	Part of 1,089 acres of preserved open space
35	Simpson Farms	PDS2005-3100-YM5460, TM5200RPL	NA	NA
36	SR-11 Phase II and East Otay Mesa port of Entry	PM0.0/2.7 EA 056300	171.9	NA
City Projects				
A	Sunroad/Interstate Industrial Center	TPM 98-0759	NA	NA
B	Sunroad Otay Park	TM 91-0394	NA	NA
C	La Media Truck Park II	77518	NA	NA
D	Robinhood Ridge Phase I	96580	9.7	19.4
E	Semitrailer Storage Facility	Planned Development Permit 12083	NA	NA
F	Airway 18 Truck Terminal/ Airway Auto Park Storage	2246	NA	NA
G	California Terraces Planning Areas 13 &14 Phase I	4987	NA	NA
H	Dennery Ranch Village 2/3	5091	NA	NA
I	Hidden Trails	6738	--	--
J	Southview	2204	NA	NA
K	Candlelight Villas	50591/40329	--	--
L	Handler Otay Mesa Phase I	92122	31.8	15.9
M	Otay Corporate Center North	NA	NA	NA
N	Otay Corporate Center South	98825	NA	NA
O	Las Californias Center	4281	NA	NA
P	Opus Phases I and II	6626	NA	NA
Q	Just Rite	5751	NA	NA
R	World Petrol III	32284/97452	NA	NA
S	Pardee Commercial	NA	NA	NA
T	Martinez Ranch Business Park	100994/45445	NA	NA
U	Siempre Viva Business Park	102899	NA	NA
V	Southwestern Community College	NA	NA	NA
W	Brown Field Tech Park	208889	Part of 33.1	NA

X	Ingalls Property	NA	NA	NA
Y	Lonestar Ridge	50728	112.7	56.4

NA: Not available

End of Section 2.0

3.0 SPECIAL-STATUS SPECIES

The way that project impacts are organized and analyzed has changed since the time of the Project's 2000 FSEIR. Some policies, such as the RPO, have also changed. This 2017 BTR update follows the current "Guidelines for Determining Significance and Report Format and Content Requirements" (County of San Diego 2010) and "Report Format and Content Requirements" (County of San Diego 2010a). As a result, the impact analysis in this and following sections is more detailed and impacts are analyzed more specifically than in the certified 2000 FSEIR.

3.1 Guidelines for the Determination of Significance for Special-status Species

The following analysis determines if the Project would have a substantial adverse effect, either directly or through habitat modifications, on one or more species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service. Items 3.1.A through L, below, are addressed as either a significant impact (SI) or less than significant impact (LSI) in Section 3.2.

3.1.A. The project would impact one or more individuals of a species listed as federally or State Endangered or Threatened.

3.1.B. The project would impact an onsite population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a State Species of Special Concern.

3.1.C. The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.

3.1.D. The project may impact arroyo toad aestivation, foraging or breeding habitat.

3.1.E. The project would impact golden eagle habitat.

3.1.F. The project would result in a loss of functional foraging habitat for raptors.

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

3.1.H. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term. The following issues should be addressed: increasing human access; increasing predation or competition from domestic animals, pests or exotic species; altering natural drainage; and increasing noise and/or nighttime lighting to a level above ambient that has been shown to adversely affect sensitive species.

3.1.I. The project would impact occupied burrowing owl habitat.

3.1.J. The project would impact occupied cactus wren habitat, or formerly

occupied coastal cactus wren habitat that has been burned by wildfire.

3.1.K. The project would impact occupied Hermes copper habitat.

3.1.L. The project would impact nesting success of the following sensitive bird species through grading, clearing, fire fuel modification, and/or other noise generating activities such as construction:

- Tree-nesting raptors
- Ground-nesting raptors
- Golden eagle (*Aquila chrysaetos*)
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Coastal California gnatcatcher (*Polioptila c. californica*)
- Light-footed clapper rail (*Rallus longirostris levipes*)
- Least Bell's vireo (*Vireo bellii pusillus*)

3.2 Analysis of Project Effects for Special-Status Species

The Project would result in significant impacts [SI] to special-status species, based on the following:

SI 3.1.A. *Guideline: The project would impact one or more individuals of a species listed as federally or State Endangered or Threatened.*

Two federal and/or State Endangered species have been documented within the Project's direct impact area: San Diego button-celery (State and federal Endangered) and San Diego fairy shrimp (federal Endangered), Riverside fairy shrimp (federal Endangered) was assumed present.

The Project would directly impact approximately 46% (~30 individuals) of all San Diego button-celery (federal and State Endangered) plants documented onsite (~65 individuals) through loss of a previously undetected group of approximately 30 plants in a mima mound depression south of Lone Star Road, and southeast of the vernal pool located south of Lone Star Road. The Project could also result in indirect impacts to San Diego button-celery close to Lone Star Road, due to edge effects. These direct and indirect impacts would be considered significant and require mitigation. San Diego button-celery was not found onsite during the 2015-2016 surveys. San Diego button-celery has been reported onsite in previous studies and may have been undetectable in 2015-2016 due to drought conditions. Therefore, in accordance with County guidelines, potential impacts and mitigation were evaluated based on the earlier reports. Spring surveys during a year of average or better rainfall would be necessary to update the number of San Diego button-celery individuals impacted.

Based on the 2000 FSEIR, development of the Project would directly impact San Diego fairy shrimp (federal Endangered) through loss of two small disturbed wetlands in which it was found. In addition,

although 72.65 acres of the site is designated critical habitat, based on recent surveys, 26.8 acres of suitable habitat (mima mound topography with pools typically more than 30 centimeters deep, within 61 kilometers of the Pacific Ocean, and less than 701 meters AMSL) exist onsite. The remaining 45.7 acres of designated critical habitat are currently non-native grassland without mima mounds or vernal pools. All mima mound topography with vernal pools is located within the open space easement. Therefore, existing critical habitat would be preserved.

Based on the 2000 FSEIR, development of the Project could also result in significant indirect impacts to San Diego fairy shrimp in vernal pools that are close to Lone Star Road and vulnerable to edge effects. These indirect impacts would be considered significant and require mitigation.

Riverside fairy shrimp (federal Endangered) is assumed present in the disturbed wetland of the agricultural basin, as stated in the 2000 BTR. Therefore, based on the 2000 FSEIR, direct Project impacts to this species are assumed significant and would require mitigation.

In summary, development of the Project site would result in significant impacts to three State/federal Endangered species (San Diego button-celery, San Diego fairy shrimp, and Riverside fairy shrimp). Significant impacts to these species would require mitigation.

SI 3.1.B. *Guideline: The project would impact an onsite population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a State Species of Special Concern.*

Three County List A or B plant species were documented within the Project's direct impact area in the surveys conducted for the 2000 FSEIR and the more recent surveys: variegated dudleya (Group A), San Diego button-celery (Group A), and coast barrel cactus (Group B). For the purposes of quantifying impacts in this 2016 update, the 1993 EOMSP BTR dudleya plant count is used because it included dudleya found in the same general areas as in later surveys, and is the only population count with a precise number. Based on the numbers provided in the 1993 EOMSP BTR, 73 (in the SPA Industrial land use area south of Lone Star Road) of the 361 individuals associated with the J22 vernal pool complex would be impacted (20% of the J22 population found at that time). The Project's direct impacts to variegated dudleya would be considered significant and require mitigation. Variegated dudleya was not found onsite during the 2015-2016 surveys and may have been undetectable in 2015-2016 due to drought conditions. Therefore, in accordance with County guidelines, potential impacts and mitigation were evaluated based on the earlier reports. Spring surveys during a year of average or better rainfall would be necessary to update the number of variegated dudleya individuals impacted.

Significant Project impacts to San Diego button-celery are described in 3.1.A, above.

Approximately half (55 individuals) of the coast barrel cacti found onsite were located within the Project impact area. This significant direct impact would require mitigation. As described below in Section 3.4.1.3, below, an approved Barrel Cactus Transplantation Plan was implemented and received County sign-off for completion in 2012; therefore, mitigation for significant direct impacts to this species is complete.

Twelve County Group 1 or State Species of Special Concern animal species have been documented in or over the Project's direct impact area: San Diego fairy shrimp (Group 1), Riverside fairy shrimp (Group 1) (assumed present), Cooper's hawk (Group 1), Southern California rufous-crowned sparrow (Group 1), grasshopper sparrow (Species of Special Concern, Group 1), burrowing owl (Species of Special Concern, Group 1), ferruginous hawk (Group 1), turkey vulture (Group 1), northern harrier (Species of Special Concern, Group 1), white-tailed kite (Group 1), loggerhead shrike (Species of Special Concern, Group 1), and black-tailed jackrabbit (Species of Special Concern).

Significant Project impacts to San Diego fairy shrimp (and Riverside fairy shrimp) are described in 3.1.A, above.

The Project would impact burrowing owl habitat. No active or recently active burrows were found onsite during the 2015 and 2016 surveys. Fifteen abandoned burrows were found within the Project development footprint (and another 24 within proposed BOS). This direct impact to burrowing owl habitat would be significant and requires mitigation, but because the burrows are unoccupied, the habitat is treated like non-native grassland and the mitigation ratio is 0.5:1 (also see 3.1.I below).

The turkey vulture that was observed foraging onsite would be impacted by loss of foraging habitat; this direct impact could be considered significant and require mitigation.

Northern harriers have been observed foraging and nesting onsite since REC's 1998 surveys through the present. The location of nesting behavior observed in 2016 will not be directly impacted. However, as documented in the 2000 FSEIR, development of the Project site would result in direct impacts to northern harrier breeding and foraging habitat. These impacts would be considered significant and require mitigation.

White-tailed kites were observed foraging over the site during surveys conducted for the 2000 FSEIR. Development of the Project site would result in the loss of non-native grassland habitat, which would impact foraging habitat for this species. This direct impact would be considered significant and require mitigation.

The Project would impact the 2015 observed location of a loggerhead shrike and its foraging and nesting habitat; this direct impact would be considered significant and require mitigation.

The Project would impact the 2016 observed locations of approximately three black-tailed jackrabbits and remove a substantial

portion of their breeding and foraging habitat onsite; this direct impact would be considered significant and require mitigation.

See LSI 3.1.B below for Cooper's hawk, Southern California rufous-crowned sparrow, grasshopper sparrow, and ferruginous hawk.

In summary, development of the Project site would result in significant direct impacts to three County List A or B plant species (variegated dudleya, San Diego button-celery, coastal barrel cactus), and eight County List 1 or Species of Special Concern (San Diego fairy shrimp, Riverside fairy shrimp, turkey vulture, northern harrier, white-tailed kite, loggerhead shrike, San Diego black-tailed jackrabbit, and burrowing owl. Significant direct impacts to these species would require mitigation. As described below in Section 3.4.1.3, mitigation for significant direct impacts to coast barrel cactus is complete.

SI 3.1.F. *Guideline: The project would result in a loss of functional foraging habitat for raptors.*

The County of San Diego (2010) defines raptor foraging habitat as "land that is a minimum of 5 acres (not limited to project boundaries) of fallow or open areas with any evidence of foraging potential (i.e., burrows, raptor nests, etc.)." The site qualifies as raptor foraging habitat due to its extensive grassland acreage, as well as the presence of suitable prey animals such as California ground squirrel and Botta's pocket gopher (*Thomomys bottae*). Seven raptor species were seen on or over the site: Cooper's hawk, red-tailed hawk, ferruginous hawk, norther harrier, white-tailed kite, American kestrel, and barn owl. Evidence of past site use by burrowing owl was also observed. Implementation of the Project would result in the direct loss of 195.99 acres of non-native grassland. This direct loss of functional raptor foraging habitat would be considered significant and require mitigation.

SI 3.1.H. *Guideline: The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term. The following issues should be addressed: increasing human access; increasing predation or competition from domestic animals, pests or exotic species; altering natural drainage; and increasing noise and/or nighttime lighting to a level above ambient that has been shown to adversely affect sensitive species.*

As discussed in Section 2.2 and previously analyzed in the 2000 FSEIR, the Project could cause indirect impacts to preserved land in BOS by increasing human access; increasing predation or competition from domestic animals, pests or exotic species; altering natural drainage (and in particular impacting vernal pool hydrology); and increasing noise and/or nighttime lighting to a level above ambient. These indirect impacts would potentially be significant and require mitigation.

SI 3.1.I. *Guideline: The project would impact occupied burrowing owl habitat.*

The Project would impact burrowing owl habitat. No active or recently active burrows were found onsite during the 2015 and 2016 surveys. However, direct impacts to burrowing owl habitat would be significant and would require mitigation, but because the burrows are unoccupied, the habitat is treated like non-native grassland and the mitigation ratio is 0.5:1.

SI 3.1.L. *Guideline: The project would impact nesting success of [Section 3.1.L species] through grading, clearing, fire fuel modification, and/or other noise generating activities such as construction.*

Tree-nesting raptors, golden eagles, coastal cactus wren, southwestern willow flycatcher, coastal California gnatcatcher, light-footed clapper rail, and least Bell's vireo have not been documented onsite and would not be expected to nest on or adjacent to the site. Northern harrier is a ground-nesting raptor, and appears to have been nesting onsite over the course of REC's team surveys. Direct Project-related impacts to northern harrier nesting success, due to grading, clearing, fire fuel modification, and/or other noise generating activities such as construction, would be considered significant and require mitigation.

The Project would not result in significant impacts [LSI] to special-status species according to the following evaluation topics:

LSI 3.1.B. *Guideline: The project would impact an onsite population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a State Species of Special Concern.*

As described above in SI 3.1.B, eleven County Group 1 or State Species of Special Concern animal species have been documented in or over the Project's direct impact area. Of these, three will not experience significant impacts.

The Project would directly impact non-native grassland over which one Cooper's hawk was flying. However, because the Cooper's hawk was not observed foraging over the site, and its observed activity in the Project area was limited to investigating the recorded Cooper's hawk call from the adjacent power plant, loss of non-native grassland onsite should not be assumed a significant impact to this particular species. Significant loss of foraging habitat for raptors as a group is addressed in 3.1.F, below.

The Project would directly impact approximately half of the former open coastal sage scrub vegetation growing in the mima mound area onsite, where Southern California rufous-crowned sparrows were observed. Because the patchy coastal sage vegetation has not regenerated since it burned (date unknown), it appears unlikely that these sparrows would still use the site; therefore, Project impacts to Southern California rufous-crowned sparrow would not be considered significant.

Because the area in which grasshopper sparrows were observed in 2001 will be preserved within BOS, and all remaining native grassland onsite will be preserved, Project impacts to grasshopper sparrow would not be considered significant.

The one ferruginous hawk soaring high over the site did not appear to be foraging onsite, and loss of non-native grassland onsite should not be assumed to be a significant impact to this particular species. Significant loss of foraging habitat for raptors as a group is addressed in 3.1.F, below.

See SI 3.1.B above for significant impacts to County Group and State Species of Special Concern wildlife.

LSI 3.1.C. *Guideline: The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.*

Two County List D (and no List C) plant species have been documented onsite: San Diego sunflower (observed in the 1999 surveys; not observed in the 2015-2016 surveys) and small-flower bindweed (not previously detected; observed in the 2015-2016 surveys).

The locally common San Diego sunflower has not been observed onsite since the former sparse coastal sage scrub vegetation in the mima mound area burned; if this species does return, a substantial portion would be expected to occur within the mima mound area of the BOS. Therefore, Project impacts to this CRPR 4.2 species would be less than significant.

A population of small-flower bindweed occurs onsite near the northern property boundary. This location will be preserved within the BOS. Only a single individual was found within the development footprint, near the southeastern property boundary. Therefore, Project impacts to this species would be less than significant.

Four County Group 2 animal species have been observed onsite within or near the Project impact area: San Diego ring-neck snake, California horned lark, barn owl, and San Diego black-tailed jackrabbit. San Diego ring-neck snake, California horned lark, and barn owl are discussed below; impacts to San Diego Black-tailed jackrabbit are significant and discussed above in SI 3.1.B.

The exact location of the San Diego ring-neck snake observation is not known; however, in the 1999 QCB report, it was documented in the northern part of the mima mound area. Its location will be protected within BOS. Therefore, Project impacts to this species would be less than significant.

California horned larks observed onsite were on and adjacent to dirt roads within non-native grassland in the Project impact area. The direct loss of their observed locations and habitat would impact this species onsite, but is not expected to impact the long-term survival locally due to their lower degree of sensitivity (CDFW Watchlist rather than Species of Special Concern) and the abundance of non-native grassland to remain

onsite in BOS and offsite nearby. Project impacts to this species are anticipated to be less than significant.

One barn owl was observed on/over the site during the 1998-1999 surveys, and recent use was documented in 2016. Although the site may lack suitable roosts, barn owl(s) likely use the site for foraging. Barn owls are relatively well adapted to suburban and urban environments, and may roost in trees or structures near the Project site. Because barn owls are not uncommon, are unlikely to roost onsite, and are relatively tolerant of urban/suburban conditions, loss of foraging habitat onsite would be less than significant.

In summary, Project impacts to the long-term survival of County List D plants San Diego sunflower and small-flower bindweed, and County Group B animals San Diego ring-neck snake, California horned lark, and barn owl, are unlikely to adversely impact the local long-term survival of these species, and Project impacts to the long-term survival of these species would be considered less than significant.

LSI 3.1.D. *Guideline: The project may impact arroyo toad aestivation, foraging or breeding habitat.*

No arroyo toads were observed on the Project site or are expected to occur on the site. Although disturbed wetlands and riparian areas occur onsite, there are no riparian areas with sandy streamsides, stable terraces and areas of quiet water or sandy/gravel-bottom, silt-free pools suitable for breeding. No suitable breeding habitat was observed adjacent to the site during field surveys. Without breeding habitat, upland habitat onsite would not be considered potential foraging or aestivation habitat. No CNDDB records of arroyo toad in the Otay Mesa quad were found. The nearest documented occurrence is approximately 10 miles east of the Project site in the Otay Mountain quad (CNDDB 2015). Therefore, potential Project impacts to arroyo toad aestivation or breeding habitat would be less than significant.

LSI 3.1.E. *Guideline: The project would impact golden eagle habitat.*

A pair of golden eagles is reported to nest in O'Neal Canyon, and their foraging radius could potentially overlap the Project site. The Wildlife Agencies review all nests and important eagle-use areas within ten miles of a project to determine impacts (Federal Register/Vol. 74, No. 175). If the Wildlife Agencies' review determines that development of the Project may reduce eagle foraging habitat, this would trigger federal requirements under the Eagle Protection Act and would be potentially significant and require mitigation. However, there are no historical sightings of eagles nesting on or using the site, and little evidence to support a finding that the site is an important eagle-use area. Therefore, this impact would be less than significant.

LSI 3.1.G. *Guideline: The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species.*

Development of the Project site has been clustered in the southern half of the site, closest to existing development. The southern half of the site is unlikely to be a core wildlife area because it is bounded by SR-125 to the west, Otay Mesa Road and industrial development to the south, and rural residential development to the east. The only critical area/feature needed for wildlife movement, the portion of Johnson Canyon that occurs in the northeastern corner of the site, will be preserved within BOS. Therefore, implementation of the Project would not impact the viability of a core wildlife area and this potential impact would be less than significant.

LSI 3.1.J. *Guideline: The project would impact occupied cactus wren habitat, or formerly occupied coastal cactus wren habitat that has been burned by wildfire.*

In 1990, one occurrence of sixteen coastal cactus wren individuals was reported approximately 0.28 mile north-northeast of the Project site (CNDDB 2015). However, no occupied or formerly occupied coastal cactus wren habitat was identified onsite. Therefore, Project impacts to coastal cactus wren would be less than significant.

LSI 3.1.K. *Guideline: The project would impact occupied Hermes copper habitat.*

Habitat suitable for the Hermes copper butterfly, specifically mature spiny redberry in proximity to buckwheat scrub, has not been found onsite; therefore, Project impacts to this species would be less than significant.

3.3 Cumulative Impact Analysis for Special-Status Species

A summary of projects in the Otay Mesa cumulative impact study area is provided in Table 2-3, and the location of key project is shown in **Figure 8**.

Several of the cumulative projects listed in Table 2-3 have or will result in loss of habitat or edge effects that significantly impact special-status plant and wildlife species. One such project is the SR-11 East Otay Mesa Point-of-Entry project, which would result in direct and indirect impacts to special-status species including small-flower bindweed, variegated dudleya, coast barrel cactus, San Diego fairy shrimp (critical habitat), burrowing owl, northern harrier, white-tailed kite, turkey vulture, loggerhead shrike, California horned lark, and San Diego black-tailed jackrabbit, as well as 171.9 acres of non-native grassland. Two other projects that have large impacts to non-native grassland are Otay Business Park (176.1 acres) and Otay Crossings Commerce Park (273.3).

Due to the rarity and restricted distribution of San Diego button-celery, San Diego fairy shrimp, Riverside fairy shrimp (assumed present), coast barrel cactus, variegated dudleya, loggerhead shrike, San Diego black-tailed jackrabbit, and burrowing owl, Project impacts to these species would be considered cumulatively significant. The loss of 195.99 acres of non-native grassland raptor foraging habitat in an area where substantial acreage of non-native grassland has already been developed would also be cumulatively significant.

3.4 Mitigation Measures and Design Considerations for Special-Status Species

The Project's mitigation measures specified in the "Final Supplemental Environmental Impact Report, East Otay Mesa Specific Plan, Sunroad Centrum, TM 5139, LOG 98-19-013, SCH No. 92101099" (FSEIR) (T&B 2000) were approved by the County of San Diego in December 2000. Some of the approved mitigation measures were revised and updated in the December 2003 "Sunroad Centrum Resource Conservation Plan, TM 513RPL^{6}R" (RCP) (REC 2003). Project mitigation measures for special-status plant species, as published in the FSEIR are provided below. Following the FSEIR measures are any revised or updated mitigation measures described in the Project's December 2003 RCP; those RCP measures replace the earlier FSEIR versions. Any mitigation measures added or revised based on the Conditions of Approval in the March 2012 "Resolution of San Diego County Conditionally Approving Tentative Map No. 31000 5538 (TM)" are provided after the 2003 RCP measures. Mitigation measures for this 2017 BTR update are included after FSEIR, RCP, and Conditions of Approval measures. An updated 2016 version of all applicable mitigation measure elements is provided at the end of each mitigation element (i.e. variegated dudleya). A summary table of the currently applicable mitigation measures is provided in Table 8-1.

Mitigation measures for vegetation impacts, listed in Section 4.4, would also provide mitigation for special-status species.

3.4.1 Mitigation Measures for Plant Species

3.4.1.1 Variegated dudleya mitigation measures

FSEIR mitigation measures for variegated dudleya:

> 2.3.4.4: Preservation of the majority of this population will occur within the designated open space, north of Lone Star Road, thereby significantly reducing the overall impacts to this population. However, the impacts to the plants located south of Lone Star road would be impacted by development. Transplantation and re-introduction within the onsite open space preserve areas will be required for the impacts to the plants located south of Lone Star Road. Based on the species' biology, this species may lend itself to transplantation efforts. The re-introduction program for this species shall consist of salvaging; site selection, based on habitat characterization and other factors (e.g., hydrology, topography, soils, site protection); development of a

detailed plan (including an experimental component and horticultural and botanical monitoring), and a long-term (5-year) monitoring program. The receiver sites with the open space preserve area shall be similar to the impacted site with respect to topography, habitat, hydrology, and soils, and shall be in proximity to the impacted site. This transplanting program is discussed in more detail with the required RCP.

2.3.4.4.b: If salvage/transplantation is not successful (80% success criteria or 64 individuals), offsite mitigation through the purchase of habitat to the extent determined unsuccessful and as acceptable to the County and the Resource Agencies shall be required. It is anticipated that Hollenbeck Canyon would satisfy this off-site purchase obligation, should it arise. The proposed mitigation would reduce the impacts to a level below significant.

2003 RCP mitigation measures for variegated dudleya:

Through additional discussions with the County and a subsequent revision to the Project's Conditions of Approval, Condition 14.p.(3) states that the applicant shall "Provided 1:1 off-site mitigation for 80 impacted variegated dudleya plants to the satisfaction of the Director of Planning and Land Use." It was agreed by the applicant and the County that this offsite purchase would be for ¼ acre of offsite mitigation land supporting no less than 80 individuals of variegated dudleya. The offsite mitigation land or credit purchase shall occur at a location approved by the County. (This RCP mitigation plan was formalized in the "Agreement to Mitigate Variegated Dudleya Impacts, County of San Diego, Tract No. 5139-1.")

2012 Conditions of Approval mitigation measures for variegated dudleya:

GP (Grading Plan condition) 5: The applicant shall provide 1:1 offsite mitigation for impacted dudleya plants. The potential impact area shall be surveyed for variegated dudleya plants during the blooming period (May to June). If variegated dudleya are found onsite and outside of the open space easement within lots 28 and 55, the applicant shall purchase and preserve habitat supporting the same number of variegated dudleya plants to be impacted, located at a County approved location as indicated below.

Option 1: If purchasing mitigation credit the mitigation bank shall be approved by the California Department of Fish and Game [now CDFW]. The mitigation should be located within the County MSCP. If mitigation is proposed outside of the County County MSCP, provide documentation that a current and thorough search was done and that mitigation land is not available within our subarea. The evidence of purchase shall include the following information to be provided by the mitigation bank:

1. Confirmation that the habitat credits purchase support at least the same number of variegated dudleya plants found in the impact area. Surveys of the impact site and mitigation site should be conducted within the same blooming season.

2. A copy of the purchase contract referencing the project name and numbers for which the habitat credits were purchased.
3. If not stated explicitly in the purchase contract, a separate letter must be provided identifying the entity responsible for the long-term management and monitoring of the preserved land.
4. To ensure the land will be protected in perpetuity, evidence must be provided that a dedicated conservation easement or similar land constraint has been placed over the mitigation land.
5. An accounting of the status of the mitigation bank. This shall include the total amount of credits available at the bank, the amount required by this project and the amount remaining after utilization by this project.

Option 2: If habitat credits cannot be purchased in a mitigation bank, then the applicant shall provide for the conservation of habitat supporting at least the same number of variegated dudleya plants found in the impact are to the satisfaction of the Department of Planning and Land Use [DPLU, now PDS] as indicated below:

1. The type of habitat and the location of the proposed mitigation must be pre-approved by DPLU, PCC before purchase or entering into any agreement for purchase.
2. The mitigation should be located within the South County MSCP. If mitigation is proposed outside the South County MSCP, provide documentation that a current and thorough search was done and that mitigation land is not available within our subarea.
3. If an offsite mitigation property is pursued that does not have an existing management plan, then a Resource Management Plan (RMP) shall be prepared and approved pursuant to the County of San Diego Biological Report Format and Content Requirements to the satisfaction of the Director of DPLU . If the offsite mitigation is proposed to be owned and/or managed by DPR [Department of Parks and Recreation], the RMP shall also be approved by the Director of DPR.
4. An open space easement over the land shall be dedicated to the County of San Diego or like agency or the land shall be protected in perpetuity by other suitable mechanism to the satisfaction of the Director of DPLU [now PDS].
5. The final RMP cannot be approved until the following has been completed to the satisfaction of the Director of DPLU: The land shall be purchased, the easements shall be dedicated, a Resource Manager shall be selected, and the RMP funding mechanism shall be in place.
6. In lieu of providing a private habitat manager, the applicant may contract with a federal, State or local government agency with the primary mission of resource management to take fee title or function as grantee under an easement and manage the mitigation land. Evidence of satisfaction must include a copy of the contract with the agency, and a written statement from the agency that (1) the land contains the specified acreage and the specified habitat, or like-functioning habitat, and (2) the land will be managed by the agency for conservation of natural resources in perpetuity.

2017 BTR update mitigation measures for direct impacts to variegated dudleya:

The 2012 Conditions of Approval mitigation measures shall apply, with the understanding that updated variegated dudleya surveys have not been possible due to drought, and unless climatic conditions permit an effective new population count prior to implementation of the mitigation measures, the population numbers provided in the EOMSP BTR shall be used to quantify impacts to this species. Use of the EOMSP BTR population numbers results in a mitigation requirement for approximately 80 variegated dudleya individuals. If a new population count is obtained during a year of adequate rainfall, and comparison of onsite conditions to conditions at a County-approved variegated dudleya reference site indicates that the new population count should accurately represent the current onsite population, that new population count may be used to update the number of individuals to mitigate.

3.4.1.2 San Diego button-celery mitigation measures

FSEIR mitigation measures for San Diego button-celery:

2.3.4.5: This species occurs in the vernal pool complex. All populations of this species onsite would be preserved within the proposed open space easement and protected under the RCP (Appendix B of this SEIR). Any potential indirect impacts to vernal pools (and the San Diego button-celery) due to construction activities and the alignment of Lone Star Road would be fully mitigated through long term management and protection and of the complex, as discussed in the RCP and through the implementation of the various mitigation measures listed below in the discussion titled *Indirect Impacts to Biological Resources*. Accordingly, the button-celery would be protected, and the potential impacts would be reduced to a level below significant.

2017 BTR update mitigation measures for direct impacts to San Diego button-celery:

Based on results of the 2001 and 2004 surveys, the Project would directly impact approximately 46% (~30 individuals) of all San Diego button-celery plants documented onsite (~65 individuals) through loss of the previously undetected group of approximately 30 plants in a mima mound depression south of Lone Star Road. To mitigate for direct impacts to this group of San Diego button-celery, the plants in this location shall be salvaged and translocated to a preserved vernal pool within BOS, in conjunction with the approved Fairy Shrimp Translocation and Five Year Monitoring Mitigation Plan. An addendum to the Fairy Shrimp Plan shall be prepared, and will specify the methods, monitoring, and success criteria for the San Diego button-celery salvage and translocation. This plan will be reviewed by the County and Wildlife Agencies; additional measures may be required by the Wildlife Agencies during Minor Amendment re-evaluation and

will be incorporated into Project design. If a focused survey in a year of adequate rainfall and vernal pool ponding should demonstrate that this group of button-celery is no longer extant, this mitigation measure for direct impacts would not be required.

3.4.1.3 Coast Barrel Cactus mitigation measures

FSEIR mitigation measures for coast barrel cactus:

2.3.4.6: This species is found scattered throughout the coastal sage scrub habitat onsite. Impacts to this species is not considered significant on a project-specific basis, however, impacts would be cumulatively significant when impacts to this species from other projects are also taken into consideration. Preservation of a large portion of this species onsite would occur through preservation of the sage scrub habitat located in the proposed open space preservation easement.

2003 RCP mitigation measures for coast barrel cactus:

Approximately 50% of the individuals will be impacted by the proposed Project. Although the loss of these individuals does not constitute a significant impact on a Project-specific basis, it does represent a cumulative loss. Therefore, this direct impact is significant and mitigated to below a level of significance by onsite preservation and a transplantation plan. See the attached Barrel Cactus Transplantation Plan.

2017 BTR update mitigation measures for direct impacts to coast barrel cactus:

The approved Barrel Cactus Transplantation Plan was implemented and received County sign-off for completion in 2012 (County of San Diego 2012a); therefore, mitigation for significant direct impacts to this species is complete.

3.4.1.4 Special-status plant indirect impacts mitigation measures

FSEIR mitigation measures for indirect impacts to biological resources:

2.3.4.8.a: Human Activities. The adverse effects on vegetation due to the increase in human activity in the area can be minimized by: 1) creating buffer zones adjacent to the open space easements to minimize the effects from noise and lighting; 2) limiting pedestrian and equestrian trails to existing roads or non-sensitive habitats; and 3) discouraging entry into native habitats such as the riparian and vernal pool habitats by installing fencing and barrier plantings and/or signage. In addition, the RCP will require fencing around the entire open space preserve easement to discourage trespassing and illegal dumping.

2.3.4.8.b: Construction Activities. Indirect impacts to habitats may result from construction activities, such as construction of Lone Star Road. To avoid the

potential impacts, the limits of the vernal pool habitats shall be surveyed and staked prior to construction. These limits shall be clearly shown on all construction drawings as 'no impact zones.' This area will have temporary fencing prior to construction to prevent vehicular or pedestrian access, equipment storage, storage of spoils materials, and refuse disposal.

2.3.4.8.c: Introduced Species. The use of non-native, invasive plant species will be prohibited in the proposed landscaping palettes (including container stock and hydroseed material) for the streetscapes and commercial/industrial. A qualified biologist or native plant horticulturist shall review and sign all landscaping plans to determine the appropriate species to be used in landscaping, prior to project approval. These measures would reduce the potential impacts to below significant.

2.3.4.8.d: Increased Runoff, Erosion, and Sedimentation. The proposed construction of Lone Star Road would result in the removal of vegetation on hillsides that could result in a temporary increase in runoff into the onsite vernal pools. Increased runoff can, in turn, result in erosion and sedimentation that could adversely affect wetland vegetation or other drainages. Erosion and sedimentation impacts can also be mitigated by employing standard erosion control procedures, such as, sandbagging, diversion ditches, and stream bank stabilization. Prior to project approval, a construction erosion control plan will be reviewed and approved by the County. In addition, the project will be required to obtain a National Pollutant Discharge Elimination System (NPDES) Permit for construction activities from the Regional Water Quality Control Board, of which will require an approved Storm Water Pollution Prevention plan. That plan will require the permit applicant to implement measures to prevent contamination of the surrounding drainages during construction. These measures would mitigate the potential for significant impacts to a level below significant.

2.3.4.8.e: Toxic Materials. Spills of toxic materials could occur during both construction and operational phases of the project. These spills could contaminate drainages and create a significant impact to habitat and water quality. In order to prevent these impacts, a 'no fueling' zone shall be designated within 25 feet of all drainages during the construction period. In addition, all equipment used near drainages during construction shall be routinely maintained and inspected for leaks. Major leaks shall be repaired immediately. Drip pans and tarps shall be placed under minor leaks. Used drip pans and tarps shall be properly disposed of at the end of each work day. Emergency provisions (e.g. straw bales) shall be placed at all drainage crossings, prior to the onset of construction to deal with unintentional spills. All of these measures will be included in approved Storm Water Pollution Prevention Plan (SWPPP) as a part of the RWQCB-required NPDES permit for construction activities. In addition, all commercial/industrial uses that plan to store materials within the proposed commercial/industrial complex would be required to obtain a NPDES permit for operational activities from RWQCB. That permit would also require a SWPPP for each facility to

prevent contamination of nearby drainages. These measures would mitigate the potential for significant impacts to a level below significant.

2.3.4.8.f: Habitat Fragmentation. Lone Star Road could potentially result in habitat fragmentation between the vernal pool complex to the north of Lone Star Road and the one vernal pool to the south of Lone Star Road. The southern vernal pool will be managed as a part of the larger vernal pool complex to the north. Integrated management of the southern pool with the rest of the vernal pool complex will ensure the long term viability of this pool and associated plant populations. The required RCP includes a management program for the vernal pools and would mitigate the potential for impacts to below significant.

In addition to the mitigation measures described above, the Project also would be required to implement the applicable mitigation measures from the certified 1994 EOMSP EIR. The following measures were incorporated into both the 2000 FSEIR and the 2003 RCP for the project.

2.3.4.9.a: *Provision should be made to inform the construction contractor(s) (prior to the construction process) about the biological constraints of this project. The contractor(s) will be responsible for impacts lo biological sensitivities beyond those identified in this report and that occur as a direct result of construction activities. All sensitive habitat areas or occurrences of sensitive species to be avoided shall be clearly marked on project maps provided to the contractor. These areas shall be designated as "no construction" or "limited construction" zones. These areas will be flagged by the project biologist prior to the onset of construction activities. In some cases, resources may need to be fenced or otherwise protected .from direct or indirect impacts.*

2.3.4.9.b: *A contractor education meeting shall be conducted to ensure that contractors and all construction personnel are fully informed of the biological sensitivities associated with this project. This meeting should focus on 1) the purpose for resource protection, 2) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), 3) sensitive construction practices (see nos. 4-9, ...on Pages 4.3-106 and 4.3-107 of the Specific Plan EIR), and protocol to resolve conflicts that may arise during the construction process. This meeting shall be conducted by a qualified biologist, and shall be a requirement for all construction personnel.*

2.3.4.9.c: *Heavy equipment and construction activities shall be restricted to the development area. Prohibited activities within drainages or other wetland areas (including vernal pools) include staging areas, equipment access, and disposal or temporary placement of excess fill.*

2.3.4.9.d: *Staging areas are prohibited within sensitive habitat areas or any habitat included in open space. Staging areas shall be delineated on the grading plans and reviewed by a qualified biologist. Likewise, vehicle access shall be prohibited in all open space areas.*

2.3.4.9.e: *Fueling of equipment shall not occur adjacent to drainages. ...[F]ueling zones should be designated on construction maps and shall be situated a minimum distance of 7. 6 m (25 ft) from all drainages the open space limits or near storm drains that may drain into Johnson Canyon.*

2.3.4.9.f: *Construction in or adjacent to sensitive areas should be appropriately scheduled to minimize potential impacts to biological resources. All work in or near wetlands or other "waters of the U.S." shall take place during periods of minimum flow (i.e., summer through the first significant rain of fall) to avoid excessive sedimentation and erosion.*

2.3.4.9.g: *The open space limits must be staked and flagged prior to clearing or grubbing. The limits of the open space must be fenced with a chain link fence at least five feet tall prior to clearing or grubbing. The fence location must be approved by County staff or monitoring biologist prior to receipt of grading permit and will be a permanent protection measure.*

2.3.4.9.h: *A Resource Conservation Plan detailing wetland enhancement, preservation, and maintenance, coastal sage scrub habitat preservation, sensitive species salvaging, and transplanting as well as success standards and report requirements must be completed prior to the initiation of construction*.

2003 RCP mitigation for indirect impacts to sensitive biological resources:

The following potentially significant indirect impact will be mitigated through Project and BOS design and compliance with water quality regulations:

Noise and Lighting: Project and open space design, in which only one border would be adjacent to development and also separated by Lone Star Road.

Water Quality: Mitigation measures approved in the FSEIR [see above] and storm water pollution prevention regulations.

Introduced Animal Species: Project design, in which the entire site is proposed to be industrial and therefore would not be expected to introduce pet animal species into the BOS.

Potentially significant indirect impacts will also be mitigated through implementation of the RCP, which includes the following mitigation design features:

- The southern boundary of the open space area north of Lone Star Road and the vernal pool to the south of Lone Star Road will be fenced using a 4-foot temporary fence installed prior to any clearing or grubbing on the Project site.
- The open space area along Lone Star Road (to the north of the easement dedicated for construction of Lone Star Road) shall be fenced with permanent four-foot chain-link fencing.
- In addition to the fencing along Lone Star Road, a 3-strand wire fence will be installed along the eastern and western edges of the open space area for a distance of 200 feet remaining open space boundary [sic].

- Four-foot chain-link fencing for the vernal pool south of Lone Star Road shall be placed around the perimeter of the vernal pool's watershed.
- Signs, in English and Spanish, will be posted every 100 feet along the permanent fencing, stating that any persons found vandalizing or trespassing shall be prosecuted to the full extent of the law. Signs will also provide information as to why access to the site is restricted, as well as the contact number for both the biological monitor and maintenance contractor so that vandalism or suspicious activity can be reported.

2012 Conditions of Approval mitigation measures applicable to indirect impacts to sensitive biological resource:

Standard Condition 5: To mitigate for the impacts to vernal pools, fairy shrimp, and coastal sage scrub [no longer occurs onsite] and to provide for the long-term management of the open spaces on Lots 55 and 28, the applicant shall submit an updated cost estimate to implement the approved 2003 RCP (with revisions to cost estimate), including the Fairy Shrimp Translocation and Five Year Mitigation Monitoring Plan, Vernal Pool Management Plan, and Long-term Management, Maintenance, and Monitoring Plan. Standard Condition 12/15: To protect sensitive biological resources by limiting the need to clear or modify vegetation for fire protection purposes within the adjacent biological open space easement, grant to the County of San Diego a 30-ft Limited Building Zone (LBZ) easement on lot 28/38.

GP 1: To prevent inadvertent disturbance to San Diego barrel cactus, northern harrier, vernal pools, and other sensitive habitats and species, a County approved biologist "Project Biologist" shall perform biological monitoring pursuant to the most current version of the "County of San Diego Biological Report Format and Requirements" guidelines during all grading, clearing, grubbing, and trenching located within 100 feet of the Open Space [BOS] Easements… The Project Biologist shall also attend the preconstruction meeting to educate the grading contractor and personnel as to the site's biological sensitivities.

GP 2: To prevent inadvertent disturbance to vernal pools and biological open space, the applicant installed temporary fencing as specified in the 2003 RCP. The existing fencing shall remain in place until the conclusion of grading activities, after which the fencing shall be removed.

GP 3: To mitigate for impacts to vernal pools, complete initial vernal pool restoration activities and commence the five-year maintenance and monitoring.

2017 BTR update mitigation measures for indirect impacts to sensitive biological resources including special-status plant species:

No 2016 mitigation measure updates are required for Project indirect impacts to special-status plant species.

3.4.2 Mitigation Measures for Animal Species

3.4.2.1 San Diego and Riverside fairy shrimp

2000 FSEIR mitigation measures for San Diego and Riverside fairy shrimp:

2.3.4.7.a: The San Diego fairy shrimp occur in the vernal pools and the ponds onsite. Although, the Riverside Fair Shrimp was not identified in either the vernal pools or the ponds, it is assumed that the species occurs onsite. Vernal pool preservation would partially mitigate impacts to both species. However, impacts associated with the loss of the ponds would require additional mitigation. Accordingly, the project is proposing to create wetland habitat to mitigate wetland impacts that also would provide habitat for these two species in the proposed open space easement, as specified in the RCP. Creation of wetlands suitable for both species will fully mitigate impacts to these species to below a level of significance. The restoration effort will incorporate measures to salvage these species from the onsite ponds and relocate them into the created pools within the proposed open space easement. The pools will be monitored for fairy shrimp at intervals specified in the RCP for a five-year period. Quarterly reports will be prepared by the applicant's consultant for the first year and annual reports thereafter. If the success criteria listed in the RCP are not met at the end of a given year, remedial action will be taken, pursuant to the direction and approval from the US Army Corps of Engineers and US Fish and Wildlife Service.

See also FSEIR mitigation measures 2.3.4.8.a and 2.3.4.8.d-f and 2.3.4.9a-h in Section 3.4.1.4, above.

2003 RCP mitigation for San Diego fairy shrimp:

Impacts to this species would be mitigated to a level below significant by the creation of habitat and the preservation of the J-22 vernal pool complex as specified in the Fairy Shrimp Translocation and Five Year Monitoring Mitigation Plan.

2003 RCP mitigation for Riverside fairy shrimp:

Impacts to this species, which is assumed present, would be mitigated to a level below significance by the creation of habitat and the preservation of the J-22 vernal pool complex as specified in the Fairy Shrimp Translocation and Five Year Monitoring Mitigation Plan. As required by the 2003 USFWS Biological Opinion, wet season and dry season Riverside fairy shrimp surveys shall be conducted in 2016-2017. If a protocol survey (2 wet, or 1 dry and 1 wet survey) for Riverside fairy shrimp demonstrates that this species is not present in the agricultural pond, then the success criteria for Riverside fairy shrimp will be dismissed.

2017 BTR update mitigation for new impacts to San Diego and Riverside fairy shrimp:

All previously approved and required mitigation measures shall apply. No 2016 mitigation measure updates are required.

3.4.2.2 White-tailed kite:

2000 FSEIR mitigation measures for white-tailed kite:

2.3.4.7.b: Mitigation requirements for the loss of foraging habitat and potential breeding habitat for this species would be met by requiring a qualified biologist to monitor the construction area for suitable nesting habitat (e.g., trees) in the vicinity of construction during the breeding season. The RCP would require that a 'construction-free zone' be created around any identified nesting sites until fledging has occurred. The biologist would coordinate with County staff during the monitoring efforts to determine the size of any required construction zone. This would mitigate the impacts to a level below significant.

See also 2000 FSEIR mitigation measures 2.3.4.8.a and 2.3.4.8.d-f and 2.3.4.9a-h in Section 3.4.1.4, above.

2017 BTR update mitigation for new impacts to white-tailed kite:

Existing measures will reduce Project impacts to below a level of significance; no new mitigation measures specific to white-tailed kite are proposed.

3.4.2.3 Northern harrier:

2000 FSEIR mitigation measures for northern harrier:

2.3.4.7.b: Mitigation requirements for this species would be partially met by the preservation of foraging habitat… within the proposed open space easement. The enhancement of the habitat within the open space will further reduce impacts to this species. In addition, initial clearing of vegetation shall occur outside the nesting season (mid-April through July). If that is not possible, a raptor nesting survey shall be conducted. If an active nest is found, grading will cease in the immediate vicinity, and the monitoring biologist and County staff will determine and agree to an acceptable buffer between the nest location and grading activities. Table 3.5 in the 1996 MSCP Plan states that an acceptable buffer would be 900 feet. Once the nest becomes non-active, grading restrictions shall not longer apply. Mitigation in conformance with the BMO for both on- and offsite habitat preservation (as proposed above in the discussion of sage scrub and grassland habitat mitigation) will fully mitigate for the loss of foraging habitat for this species regionally.

See also FSEIR mitigation measures 2.3.4.8.a and 2.3.4.8.d-f and 2.3.4.9a-h in Section 3.4.1.4, above.

2017 BTR update mitigation for new impacts to northern harrier:

Existing measures will reduce Project impacts to below a level of significance; no new mitigation measures specific to northern harrier are proposed.

3.4.2.4 Burrowing owl:

2017 BTR update mitigation for new impacts to burrowing owl habitat:

Although no evidence of current burrowing owl use was detected during the 2016 protocol surveys, the site has been used by burrowing owls as recently as 2014. The Project would result in a significant impact to burrowing owl through loss of habitat (see SI 3.1.B and SI 3.1.I in Section 3.2). This impact would be largely mitigated through the existing plan to preserve and enhance habitat in the northern BOS, because the majority of owl burrows were located in the northern BOS. It will also be partially mitigated through the approved mitigation for onsite and offsite non-native grassland habitat. Dedication of the BOS, preservation of onsite grassland in the BOS, and purchase of offsite non-native grassland mitigation have been completed (see Section 4.4) and this portion of burrowing owl mitigation is complete. Mitigation measures shall also consist of a requirement for a pre-construction burrowing owl survey to be conducted in the Project development area prior to clearing of the development area, and a pre-construction burrowing owl survey to be conducted in the BOS prior to disturbance within the BOS (such as excavation of new vernal pool).

3.4.2.5 Turkey vulture:

2017 BTR update mitigation for new impacts to turkey vulture:

The Project would result in a significant impact to turkey vulture through loss of habitat (see SI 3.1.B in Section 3.2). Existing Project mitigation measures for impacts to other raptors, such as preservation and enhancement of the northern BOS and additional offsite mitigation for non-native grassland impacts, would also provide mitigation for this significant impact to turkey vulture.

3.4.2.6 Loggerhead shrike:

2017 BTR update mitigation for new impacts to loggerhead shrike:

The Project would result in a significant impact to loggerhead shrike through loss of habitat (see SI 3.1.B in Section 3.2). Existing Project mitigation measures for impacts to other special-status animals including raptors, such as preservation and

enhancement of the northern BOS and additional offsite mitigation for non-native grassland impacts, would also provide mitigation for this significant impact to loggerhead shrike.

3.4.2.7 Black-tailed jackrabbit:

2017 BTR update mitigation for new impacts to black-tailed jackrabbit:

The Project would result in a significant impact to black-tailed jackrabbit through loss of habitat (see SI 3.1.B in Section 3.2). Existing Project mitigation measures for impacts to other special-status animals, such as preservation and enhancement of the northern BOS and additional offsite mitigation for non-native grassland impacts, would also provide mitigation for this significant impact to black-tailed jackrabbit.

3.4.2.8 Raptors:

2017 BTR update mitigation for new impacts to raptors:

The Project would result in a significant impact to raptors as a group, through loss of habitat (see SI 3.1.B in Section 3.2). Existing Project mitigation measures for impacts to special-status raptor species, such as preservation and enhancement of the northern BOS and additional offsite mitigation for non-native grassland impacts, would also provide mitigation for this significant impact to all raptors.

3.4.2.9 Quino Checkerspot Butterfly:

2012 Conditions of Approval mitigation measure:

GP 4: To comply with the federal Endangered Species Act for impacts to Quino checkerspot butterfly, provide the Director of Planning and Land Use [now PDS] with a copy of a survey for Quino checkerspot butterfly conducted within the most recent survey season.

3.4.2.10 Cumulative impacts to special-status species:

2017 BTR update mitigation for cumulative impacts special-status species:

In the approved 2000 FEIR, cumulative impacts to variegated dudleya and coast barrel cactus were identified as cumulative significant but mitigated. The Project would also result in a significant cumulative impacts to San Diego button-celery, San Diego fairy shrimp, Riverside fairy shrimp (assumed present), burrowing owl, loggerhead shrike, raptors, and San Diego black-tailed jackrabbit (see Section 3.3). Existing Project mitigation measures described above are expected to mitigate for these significant cumulative impacts to special-status species.

3.5 Conclusions for Special Status Species

Implementation of the previously approved mitigation measures including updates and revisions and the implementation of **2017** BTR update measures would mitigate all significant Project impacts to special-status species. A summary of all currently applicable mitigation measures is provided in Table 8-1.

End of Section 3.0

4.0 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

4.1 Guidelines for the Determination of Significance for Riparian or Sensitive Natural Communities

The following analysis determines if the Project would have a substantial adverse effect on any riparian habitat or other sensitive habitat identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service. Unless otherwise indicated as "new," all impacts were previously identified and addressed in the 2000 FSEIR.

Any of the following conditions would be considered significant:

4.1.A. Project-related grading, clearing, construction or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as identified in County of San Diego Guidelines, excluding those without a mitigation ratio) on or off the project site.

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

4.1.C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.

4.1.D. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term. The following issues should be addressed: increasing human access; increasing predation or competition from domestic animals, pests or exotic species; altering natural drainage; and increasing noise and/or nighttime lighting to a level above ambient that has been shown by the best available science to adversely affect the functioning of sensitive habitats.

4.1.E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands. If the project is subject to the Resource Protection Ordinance, buffers of a minimum of 50 feet and a maximum of 200 feet to protect wetlands are required based on the best available science available to the County at the time of adoption of the ordinance.

4.2 Analysis of Project Effects for Riparian or Sensitive Natural Communities

The Project would result in significant impacts [SI] to riparian and other sensitive habitats, based on the following:

SI 4.1.A. *Guideline: Project-related grading, clearing, construction or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as identified in County of San Diego Guidelines, excluding those without a mitigation ratio) on or off the project site.*

Development of the Project site would result in significant impacts associated with the permanent removal of 195.99 acres of naturalized non-native grassland habitat and 0.11 acre of disturbed wetlands. These impacts would be significant and require mitigation. Mitigation for impacts to non-native grassland has been completed (see Section 4.4).

SI 4.1.B. *Guideline: Any of the following will occur to or within jurisdictional wetlands and/or riparian habitats as defined by USACE, CDFW and the County of San Diego: [those identified in Section 4.1.B].*

The Project site supports three wetland/riparian habitats: disturbed wetlands, non-native riparian, and vernal pools.

The disturbed wetlands areas within the agricultural stock pond and man-made swale are County of San Diego RPO wetlands. Therefore, loss of the disturbed wetlands would be a significant direct impact and require mitigation.

Non-native riparian habitat in the northeastern corner of the site is an RPO wetland because, although it currently dominated by tamarisk, it was southern willow scrub habitat before tamarisk before the tamarisk changed it. The drainage within this habitat is also USACE- and CDFW-jurisdictional as Waters of the US and streambed, respectively. Because the non-native riparian habitat will be protected in BOS, Project impacts to this resource would be less than significant. *(The Project will no longer impact any southern willow scrub habitat.)*

Vernal pools are RPO wetlands. All documented vernal pools will be preserved in BOS; therefore, impacts to vernal pool RPO wetlands would be less than significant.

SI 4.1.D. *Guideline: The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term. The following issues should be addressed: [those identified in Section 4.1.D].*

As discussed in Section 2.2 above, the Project could cause indirect impacts to preserved land in open space through increased human access; increasing competition from exotic species; alteration of natural drainage (and in particular impacting vernal pool hydrology). These indirect impacts are potentially significant and would require mitigation.

The Project <u>would not</u> result in significant impacts [LSI] for the following evaluation topics:

LSI 4.1.C. *Guideline: The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.*

The Project will not draw down the groundwater table. Project impacts to groundwater-dependent habitat would be less than significant.

LSI 4.1.E. *Guideline: The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands. If the project is subject to the Resource Protection Ordinance, buffers of a minimum of 50 feet and a maximum of 200 feet to protect wetlands are required based on the best available science available to the County at the time of adoption of the ordinance.*

All remaining wetlands (vernal pools and the Johnson Canyon drainage) will be preserved within BOS. Within the northern BOS, the vernal pool closest to development is the westernmost vernal pool, which is 28 feet from the BOS boundary and 34 feet from the Lone Star Road right-of-way. This distance is probably greater than the width of the pool's watershed. The Fuel Modification Zone (FMZ) along the northern edge of Lone Star Road does not encroach into the northern BOS (see Section 4.4); therefore, the watershed of westernmost vernal pool and adjacent upland, which serve as a buffer, will not be impacted, and an adequate buffer is provided. All other vernal pools in the northern BOS and the Johnson Canyon drainage are much further from the road and BOS boundary, and will have much larger buffers. Additional buffering for wetlands in the northern BOS will be provided by the required Limited Building Zone (LBZ) along the southern boundary of the northern BOS. This LBZ will ensure that no structures requiring additional fuel modification can be built within 30 feet of the BOS (see Section 4.4). For the vernal pool preserved in BOS south of Lone Star Road, the closest habitat impact will be over 50 feet from the vernal pool. This southern vernal pool BOS is comprised of the pool and its entire watershed. A buffer is provided through conservation of the watershed (0.37 acre of non-native grassland around the pool). A 30-foot LBZ will also surround this BOS, as required. No FMZ encroaches into the BOS. The combination of vernal pool watershed preservation within the BOS, restriction of any fuel modification within the BOS, and the LBZ around the BOS will provide an adequate buffer for the southern vernal pool. Therefore, potential Project impacts pertaining to this guideline would be considered less than significant.

4.3 Cumulative Impact Analysis for Riparian or Sensitive Natural Communities

As described in the 1993 EOMSP BTR, "loss of any vernal pool habitat is considered an adverse, cumulative impact." At the time that document was written, San Diego vernal pool loss was already estimated at 97%. The Proposed project would not directly impact any documented vernal pool, but could result in significant indirect impacts to hydrology and genetic diversity. Therefore, indirect Project impacts to vernal pools would be potentially cumulatively significant and require mitigation. Because recent and ongoing development on Otay Mesa is rapidly impacting and fragmenting non-native grassland habitat, loss of 195.99 acres of non-native grassland would be cumulatively significant (see Section 3.3). Due to the historical degree of wetland loss in San Diego County, loss of 0.11 acre of disturbed wetland would also be cumulatively significant.

4.4 Mitigation Measures and Design Considerations for Riparian or Sensitive Natural Communities

Habitat mitigation ratios are based on the location of both impact area and mitigation area(s) within a Biological Resource Core Area (BRCA). The Project site is partially a BRCA based on the following criteria in BMO Section 86.506(a)(1):

> (iii) The land contains a high number of Sensitive Species and is adjacent or contiguous to surrounding undisturbed habitats, or contains soil derived from the following geologic formations which are known to support Sensitive Species:
>
> A. Gabbroic rock;
> B. Metavolcanic rock;
> C. Clay;
> D. Coastal sandstone.

The site contains a high number of sensitive (special-status) species and is adjacent or contiguous to surrounding undisturbed habitats, and site soils are predominantly clay. According to the Project's MSCP Compliance BMO Findings (County of San Diego 2000), portions of the site that are underlain by clay soils (see **Figure 4**) qualify as BRCA.

As described in Section 3.4 above, the Project's mitigation measures specified in the 2000 FSEIR were approved by the County of San Diego in December 2000. The 2000 FSEIR mitigation measures for significant impacts to riparian or sensitive natural communities are provided below. Following the 2000 FSEIR measures are any revised or updated mitigation measures based on current site conditions as documented in this **2017** BTR update. A summary table of the currently applicable mitigation measures is provided in Table 8-1. Any bracketed text in the pre-2016 mitigation measures is a 2016 annotation.

2000 FSEIR mitigation measures for vegetation:

2.3.4.1.a: Coastal Sage Scrub. Impacts to 2.1 acres of coastal sage scrub would be considered significant. Coastal sage scrub is a Tier II habitat within the Biological Maintenance Ordinance (BMO), and therefore must be mitigated at

a ratio of 1.5:1. Thus, 3.1 acres of sage scrub must be either preserved onsite or acquired and placed into the preserve system. The impacts would be fully mitigated onsite by preserving 3.3 acres of coastal sage scrub within the proposed open space preserve easement to the North of Lone Star Road. The preservation [of] coastal sage scrub onsite mitigates this impact to below a level of significant.

2.3.4.1.b: Native Grassland. Impacts to 4.2 acres of native grassland habitat would be considered significant. Native grassland habitat is Tier I habitat in the BMO and impacts to this habitat would require mitigation at a ratio of 2:1. Accordingly, 8.4 acres of Tier 1 habitat would require mitigation. The impacts would be partially mitigated by preserving 3.1 acres of Tier I habitat within the proposed open space preserve easement to the north of Lone Star Road, thereby leaving a deficit of 5.4 acres of habitat needing off-site mitigation. This habitat would be purchased off-site or within a pre-approved mitigation bank within the MSCP subregion. The combination of preservation on-site and the purchase of credits mitigates this impact to below a level of significant. [Note: native grasslands are no longer impacted, but this measure is included because it pertains to 2016 non-native grassland mitigation.]

2.3.4.1.c and 2.3.4.3: Non-Native Grassland. Impacts to 186.5 acres (186.37 onsite and 0.13 off-site) would be considered significant. Non-native grassland habitat is a Tier III habitat in the BMO and impacts to this habitat would require mitigation at a ratio of 0.5:1. Accordingly, 93.3 acres of this habitat would require mitigation. The impacts would be partially mitigated by preserving 44.7 acres of this habitat within the proposed open space preserve easement to the north of Lone Star Road, thereby leaving a deficit of 48.6 acres of habitat needing off-site mitigation. This habitat was to be purchased off-site or within a pre-approved mitigation bank within the MSCP subregion. The combination of preservation onsite and the purchase of credits mitigates this impact to below a level of significant.

2.3.4.1.d: Wetlands and Other "Waters of the US". Project implementation would result in the loss of wetlands and other "Waters of the US," including the loss of the agricultural pond (0.02 acre), the small pond (0.09 acre) to the north of the agricultural pond, and 0.20 acre of southern willow scrub. Thus, the loss of 0.31 acre of jurisdictional wetland habitat would be considered significant and would requires mitigation at a ratio of 2:1 (total includes creation of at least 1: 1). The project is proposing to create 0.22 acre of wetland habitat within the vernal pool complex located within the proposed open space easement onsite. An additional 0.4 acre of wetland habitat would either be created onsite adjacent to the existing southern willow scrub habitat near Johnson Canyon, or at a[n] off-site location that would be approved by the County and USACE. The objective of the onsite 0.22-acre wetland mitigation site would be to create basins that will collect water adequately to provide habitat for the endangered San Diego and Riverside fairy shrimp and to ensure no net loss of wetland habitat value. The on- or off-site 0.40-acre wetland mitigation site would be to create southern willow scrub habitat adjacent to existing wetland habitat. The precise proportions and ecological arrangement of plantings shall be specified

in the site-specific RCP (Appendix B of this SEIR). In addition, impacts to the wetlands will require a permit from the USACE under Section 404 of the Clean Water Act, and a 401 water quality certification from the Regional Water Quality Control Board. Those permits would require a qualified biologist to prepare a detailed site-specific mitigation and monitoring plan for the proposed mitigation plan. The proposed wetland mitigation plan would reduce the impacts to below significant.

2.3.4.2: Although the proposed project would not impact the seven onsite vernal pools, a vernal pool management plan will be required in accordance with the SPA. Additional mitigation measures that have been incorporated into the RCP include protection of the open space through the use of: perimeter fencing, maintenance of the trail easement, and signs along open space perimeter.

See also 2000 FSEIR mitigation measures for indirect impacts to biological resources, 2003 RCP mitigation measures for indirect impacts to sensitive biological resources, and 2012 Conditions of Approval mitigation measures applicable to indirect impacts to sensitive biological resources, in Section 3.4.1.4, above.

Additional detail on 2012 Specific Conditions 12 and 15 is provided here. Those conditions require protection of sensitive biological resources "by limiting the need to clear or modify vegetation for fire protection purposes within the adjacent biological open space easement" by granting to the County a 30-ft Limited Building Zone (LBZ) easement. Although lot numbers have changed since 2012, the requirement still applies to BOS onsite. The locations of the LBZ adjacent to the large northern BOS and southern vernal pool BOS are shown in **Figure 7b**.

Where the LBZ potentially overlaps a Fuel Modification Zone (FMZ), fuel modification may occur within the LBZ. However, fuel modification may not extend beyond the LBZ into BOS. As specified in the March 2003 TM Revision, clearing of vegetation is prohibited in the open space, with limited exceptions. Fuel modification may occur in the LBZ around the small southern vernal pool BOS, but not within the BOS itself. Where a FMZ is located along the northern edge of the Lone Star Road right-of-way (ROW), the FMZ is limited to the approximately 6 feet between the ROW and BOS boundary, and the strip of unbuilt land between the ROW and the edge of the road itself. This will provide adequate protection given the type of vegetation within the BOS – grassland with so few shrubs that fuel load, in combination with the barrier of the road itself, poses very low risk. Furthermore, growth of flammable invasive species within the adjacent northern BOS, such as Russian-thistle, will be controlled as part of the BOS long-term management. (This design of the road south of the BOS without a large FMZ was approved in the FSEIR and not revised in later approvals.) The arrangement of FMZs relative to LBZs adjacent to the BOS is also shown in **Figure 7b**.

The March 2003 TM Revision prohibition on clearing within BOS does refer to limited exceptions, including "Selective clearing of vegetation by hand to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard." In the event that fire authorities determine that conditions during a certain period

mandate clearing along the southern boundary of the BOS, this selective clearing of vegetation by hand could be implemented, but will not encroach into the watershed of a vernal pool.

2017 BTR update mitigation measures for impacts to riparian habitat and sensitive natural communities:

Habitat and vegetation features that changed between completion of the approved 2000 FSEIR and 2015-2016 update surveys are documented in this **2017** BTR update (see Section 2.1.1). Consequently, habitat mitigation acreages have also changed. All current habitat impact and mitigation acreage requirements are summarized in Table 4-1 and described in the following paragraphs.

Table 4-1. Summary of 2017 Habitat Impact and Mitigation Acreages

Habitat	Existing (acres)	Onsite Impacts (acres)	Offsite Impacts (acres)	Total Impacts (acres)	Remaining onsite in BOS	Mitigation Ratio	Mitigation Required (acres)	Onsite Mitigation (acres)	Offsite Mitigation (acres)
Disturbed Wetland	0.11	0.11	-	0.11	-	2:1	0.22	0.22	0.00
Non-Native Riparian	0.39	-	-	-	0.39				
San Diego Mesa Claypan Vernal Pool	0.21	-	-	-	0.21[1]				
Native Grassland	1.96	-	-	-	1.96				
Non-native Grassland	240.24	193.37	2.62	195.99	46.87[2]	0.5:1	98.00	48.72[3]	49.28
Developed Land	2.97	2.97	-	2.97	-				
Disturbed Habitat	7.26	4.94	0.07	5.01	2.32				
Totals	253.14	201.39	2.69	204.08	51.75		98.22	48.94	49.28

[1] of which 0.04 acre is in the southern BOS
[2] of which 0.37 acre is in the southern BOS; 0.11 in northern BOS will be used for wetland creation
[3] 48.72 acres = 46.87 NNG in BOS + 1.96 NG – 0.11 NNG used for wetland creation

2016 disturbed wetland mitigation

Significant impacts to 0.11 acre of disturbed wetland would be mitigated at a ratio of 2:1. Mitigation, as previously approved, would consist of 1:1 creation and 1:1 enhancement, in the form of creating 0.11 acre of new wetland habitat in the northern BOS (as required by the Fairy Shrimp Translocation and Five Year Monitoring Mitigation Plan), and enhancing 0.11 acre of wetland habitat in BOS. The enhancement element consists of enhancing all of the vernal pools in BOS as required by the Long Term Management, Maintenance, and Monitoring Plan, and will actually provide 0.21 acre of enhancement.

2016 non-native grassland

Significant impacts to 195.99 acres of non-native grassland would be mitigated at a ratio of 0.5:1, as previously approved in the 2000 FSEIR. The required 98.00 acres of non-native grassland mitigation would be provided through preservation of 46.76 acres of non-native grassland and 1.96 acres of native grassland within BOS, and purchase of 49.28 acres in an approved offsite mitigation bank. Onsite non-native grassland mitigation acreage will be within both the northern BOS and the smaller vernal pool BOS. The northern BOS will preserve 46.39 acres of non-native grassland and 1.96 acre of native grassland (totaling 48.35 acre of grassland). The southern vernal pool BOS will preserve of 0.37 acre of non-native grassland onsite within the southern vernal pool BOS. (Non-native grassland preservation acreages account for [do not include] the 0.11 acre that will be used for vernal pool wetland creation, see Table 4-1.) The offsite mitigation purchase was already completed after the FSEIR, through the $243,450.00 purchase of 48.6 acres of non-native grassland and 5.4 acres of native grassland mitigation credits in Hollenbeck Canyon, an approved preserve area in the MSCP subarea. This purchase was to satisfy the original FSEIR non-native grassland and native grassland mitigation requirements. Native grassland mitigation is no longer required, and the combined native and non-native grassland offsite mitigation acreages (54 acres total) are now applied to the 2016 non-native grassland mitigation requirement of 49.28 acres of offsite non-native grassland mitigation. Therefore, mitigation for significant direct impacts to non-native grassland is complete.

Changes between the 2017 BTR update and 2000 FSEIR impact totals and mitigation acreage requirements are summarized in Table 4-2.

Table 4-2. Comparison of 2017 BTR and 2000 FSEIR Habitat Impacts and Mitigation

	2016 Impacts and Mitigation (acres)			2000* Impacts and Mitigation (acres)			Mitigation Change from 2000 to 2016
Habitat	Impact Total	Ratio	Mitigation Total	Impact Total	Ratio	Mitigation Total	(acres)
Disturbed Wetland	0.11	2:1	0.22	0.11	2:1	0.22	0
Non-Native Riparian	-			NA			0
Vernal Pool	-			-			0
Southern Willow Scrub	NA			0.20	2:1	0.40	-0.40
Coastal Sage Scrub	NA			2.1	1.5:1	3.1	-3.1

Native Grassland	-			4.2	2:1	8.4	-8.4
Non-native Grassland	195.99	0.5:1	98.00	186.63	0.5:1	93.3	+4.7
Developed Land	2.97			NA			-
Disturbed Land	5.01			5.9			-
Totals	204.48		98.22	199.03		105.42	-7.2

*Acreages in FSEIR were slightly different than in associated 2000 BTR; this table provides acreages in the approved FSEIR, including the discrepancy in total acreage.

4.5 Conclusions for Riparian or Sensitive Natural Communities

Implementation of the applicable previously approved 2000 FSEIR measures, with adjustments to acreages based on current site conditions, would mitigate all significant Project impacts to riparian habitats and sensitive natural communities. A summary of all currently applicable mitigation measures is provided in Table 8-1.

End of Section 4.0

5.0 JURISDICTIONAL WETLANDS AND WATERWAYS

As specified in County Guidelines for Determining Significance, these guidelines refer only to federally protected wetlands, based on Section 4 guidelines 4.2.B, C, and E.

5.1 Guidelines for the Determination of Significance for Federal Jurisdictional Wetlands

The Project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

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

5.1.B. The project would draw down the groundwater table to the detriment of [federally protected] groundwater-dependent [wetland] habitat, typically a drop of three feet or more from historical low groundwater levels.

5.1.C. The project does not include a wetland buffer adequate to protect the functions and values of existing [federally protected] wetlands...

5.2 Analysis of Project Effects to Federal Jurisdictional Wetlands

The Project would not result in significant impacts [LSI] to federally protected wetlands, based on the following:

LSI 5.1.A. No federally protected wetlands will be impacted. (The onsite vernal pools are not currently USACE-jurisdictional wetlands). This guideline is no longer applicable, and potential impact would be less than significant.

LSI 5.1.B. The Project will not draw down the groundwater table and no federally protected wetlands will be impacted. This guideline is not applicable, and potential impact would be less than significant.

LSI 5.1.C. No federally protected wetlands potentially requiring a buffer would be impacted. (Wetlands formerly identified as USACE-jurisdictional are no longer classified as such because they are isolated. The federally protected Waters of the US within Johnson Canyon in the northeastern corner of the site will be protected within the BOS.) This guideline is not applicable, and potential impact would be less than significant.

5.3 Cumulative Impact Analysis for Federal Jurisdictional Wetlands

Because the Project does not impact any federally protected jurisdictional wetlands (or waters), it will not contribute to cumulative impacts to these resources.

5.4 Mitigation Measures and Design Considerations for Federal Jurisdictional Wetlands

Because the Project does not impact any federally protected wetlands (or waters), no mitigation for such impacts is required.

At the time the FSEIR was approved, the disturbed wetlands, riparian scrub, and vernal pools onsite were considered federally protected wetlands, subject to significant Project impacts. The following FSEIR mitigation measure (also applied to significant habitat impacts in Section 4.4, above) was provided for significant impacts to those wetlands.

2000 FSEIR mitigation measure for wetlands:

2.3.4.1.d: Wetlands and Other Waters of the US: Project implementation would result in the loss of wetlands and other Waters of the US, including the loss of the agricultural pond (0.02 acre), the small pond (0.09 acre) to the north of the agricultural pond, and 0.20 acre of southern willow scrub. Thus, the loss of 0.31 acre of jurisdictional wetland habitat would be considered significant and would require mitigation at a ratio of 2:1 (total includes creation of at least 1: 1). The project is proposing to create 0.22 acre of wetland habitat within the vernal pool complex located within the proposed open space easement onsite. An additional 0.4 acre of wetland habitat would either be created onsite adjacent to the existing southern willow scrub habitat near Johnson Canyon, or at a[n] off-site location that would be approved by the County and USACE. The objective of the onsite 0.22-acre wetland mitigation site would be to create basins that will collect water adequately to provide habitat for the endangered San Diego and Riverside fairy shrimp and to ensure no net loss of wetland habitat value. The on- or off-site 0.40-acre wetland mitigation site would be to create southern willow scrub habitat adjacent to existing wetland habitat. The precise proportions and ecological arrangement of plantings shall be specified in the site-specific RCP. In addition, impacts to the wetlands will require a permit from the US Army Corps of Engineers under Section 404 of the Clean Water Act, and a 401 water quality certification from the Regional Water Quality Control Board. Those permits would require a qualified biologist to prepare a detailed site-specific mitigation and monitoring plan for the proposed mitigation plan. The proposed wetland mitigation plan would reduce the impacts to below significant.

2017 BTR update mitigation measures for impacts to federally protected wetlands:

Because the Project will only impact wetlands that no longer fall under jurisdiction of the USACE, no mitigation for such impacts is proposed. A 401 water quality certification from the Regional Water Quality Control Board would still be required because the impacted disturbed wetlands would still be considered Waters of the State. Impacts to Waters of the State will require mitigation. Mitigation shall consist of wetland creation and enhancement/ restoration as proposed for wetland habitat impacts in Section 4.4 above.

5.5 Conclusions for Federal Jurisdictional Wetlands

The Project will not impact jurisdictional wetlands or waterways, ensuring that Project impacts to such resources are less than significant. However, a 401 water quality certification with associated mitigation will be required, and mitigation (based on wetland habitat mitigation) will reduce impacts related to the 401 certification to below a level of significance.

End of Section 5.0

6.0 WILDLIFE MOVEMENT AND NURSERY SITES

6.1 Guidelines for the Determination of Significance for Wildlife Movement and Nursery Sites

The following analysis determines if the project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.

Any of the following conditions would be considered significant:

6.1.A. The project would prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

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

6.1.C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

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

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

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

6.2 Analysis of Project Effects for Wildlife Movement and Nursery Sites

The Proposed Project would not result in significant impacts [LSI] under the following guidelines, based on the following:

LSI 6.1.A. *Guideline: The project would prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.*

As analyzed in the EOMSP BTR, the western portion of the SPA (in which the site is located) supports poor habitat for wildlife movement because the open agricultural fields provide little topographical or vegetative cover. (County of San Diego 1993) Furthermore, the site is bordered by Otay Mesa Road and industrial development to the south, and SR-125 to the west. The only part of the site that is likely to serve as a wildlife corridor is Johnson Canyon along the northern edge of the site.

Development of the Project is concentrated in the southern portion of the site, and Johnson Canyon would be protected in BOS. The site is not a wildlife nursery per County guidelines. Therefore, Project impacts to wildlife access to these types of resources would be less than significant.

LSI 6.1.B. *Guideline: The project would substantially interfere with connectivity between blocks of habitat, or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.*

As summarized above, the site is bordered by Otay Mesa Road and industrial development to the south, and SR-125 to the west. The only part of the site that is likely to serve as a wildlife corridor is Johnson Canyon along the northern edge of the site. Development of the Project is concentrated in the southern portion of the site, and Johnson Canyon would be protected in BOS contiguous with undeveloped land to the north, northwest, and east. Therefore, Project impacts to habitat connectivity and wildlife corridors/linkages would be less than significant.

LSI 6.1.C. *Guideline: The project would create artificial wildlife corridors that do not follow natural movement patterns.*

The Project would not create any wildlife corridors. It would preserve the most likely wildlife corridor (the onsite portion of Johnson Canyon) in BOS. Therefore, Project impacts pertaining to creation of artificial wildlife corridors would be less than significant.

LSI 6.1.D. *Guideline: The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels likely to affect the behavior of the animals identified in a site specific analysis of wildlife movement.*

It is assumed that noise and nighttime lighting will increase near the southern edge of BOS due to Project development. However, the southern portion of BOS is on the mesa top. As analyzed in the EOMSP BTR, the fields on the mesa provide little topographical or vegetative cover and are poor habitat for wildlife movement. The most likely wildlife corridor (the onsite portion of Johnson Canyon) is located along the northern edge of the site, within BOS, and would be protected from significant increases in noise and nighttime lighting by both distance and the sheltering topography of the canyon slope. Therefore, Project noise- and lighting-related impacts to wildlife corridors or linkages would be less than significant.

LSI 6.1.E. *Guideline: The project does not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.*

The most likely wildlife corridor (the onsite portion of Johnson

Canyon) is located along the northern edge of the site, within BOS. The BOS will prevent reduction in the width of, or increased constraints upon, any wildlife corridor/linkage in Johnson Canyon; therefore, Project impacts would be less than significant.

LSI 6.1.F. *Guideline: The project does not maintain adequate visual continuity (i.e., long lines-of-site) within wildlife corridors or linkage.*

As analyzed in the EOMSP BTR, the fields on the mesa provide little topographical or vegetative cover for wildlife movement, and the most likely wildlife corridor (the onsite portion of Johnson Canyon) is located along the northern edge of the site, within BOS. Therefore, Project impacts to visual continuity within any wildlife corridor/linkage would be less than significant.

6.3 Cumulative Impact Analysis for Wildlife Movement and Nursery Sites

The only part of the site that is likely to serve as a wildlife corridor is Johnson Canyon along the northern edge of the site. Development of the Project is concentrated in the southern portion of the site, and Johnson Canyon would be protected in BOS. The site is not a wildlife nursery per County guidelines. Therefore, cumulative Project impacts to wildlife access to these types of resources would be less than significant.

6.4 Mitigation Measures and Design Considerations for Wildlife Movement and Nursery Sites.

Because the Project does not impact wildlife movement or important nursery sites, no mitigation for such impacts is required. The 2000 FSEIR did not include mitigation measures for wildlife movement and nursery site impact

6.5 Conclusions for Wildlife Movement and Nursery Sites

The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

End of Section 6.0

7.0 LOCAL POLICIES, ORDINANCES AND ADOPTED PLANS

7.1 Guidelines for the Determination of Significance

The following analysis determines if the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or State habitat conservation plan. Analysis under this set of guidelines is new to this 2017 BTR update report, because the way that impacts are organized and analyzed has changed since the time of the approved 2000 FSEIR. However, most approved mitigation measures still apply.

Any of the following conditions would be considered significant:

7.1.A. For lands outside of the MSCP, the project would impact coastal sage scrub (CSS) vegetation in excess of the County's 5% habitat loss threshold as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.

7.1.B. The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

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

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

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

7.1.F. For lands within the Multiple Species Conservation Program (MSCP), the project would not minimize impacts to Biological Resource Core Areas (BRCAs), as defined in the Biological Mitigation Ordinance (BMO).

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

7.1.H. The project does not maintain existing movement corridors and/or habitat linkages as defined by the Biological Mitigation Ordinance (BMO).

7.1.I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.

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

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

7.1.L. The project would result in the take of eagles, eagle eggs or any part of an eagle (Bald and Golden Eagle Protection Act).

7.2 Analysis of Project Effects on Local Policies, Ordinances and Adopted Plans

The Project would result in significant conflicts [SI] with local policies, ordinances, and adopted plans, based on the following:

SI 7.1.C. *Guideline: The project will impact any amount of wetlands or sensitive habitat lands as outlined in the Resource Protection Ordinance (RPO).*

Development of the Project would impact RPO wetlands (see Section 1.4.7.1). The Project would also impact RPO sensitive habitat lands. The mima mound depression south of Lone Star Road that supported approximately 30 San Diego button-celery individuals in 2004 would be considered sensitive habitat land based on the following criterion: "Lands that include habitats of Endangered species under Section 15380 of CEQA Guidelines (State- and federally listed species or species that would qualify for such listing)." This area would be directly impacted. Project impacts to RPO wetlands and sensitive habitat lands would be significant and require mitigation.

SI 7.1.I. *Guideline: The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.*

Development of the Project would impact approximately 73 of 361 MSCP Narrow Endemic variegated dudleya individuals, or approximately 20% of the J-22 population, based on the 1993 EOMSP BTR (see Section 1.4.5.1 and Section 3.2 SI 3.1.B). The Project would impact two locations in which MSCP Narrow Endemic San Diego fairy shrimp was detected. These significant impacts would require mitigation.

SI 7 .1.J. *Guideline: The project would reduce the likelihood of survival and recovery of listed species in the wild.*

Development of the Project site would result in the loss of two San Diego fairy shrimp locations and one previously documented San Diego button-celery location would reduce the likelihood of survival and recovery of these listed species in the wild and would require mitigation.

The Project would not result in significant conflicts with local policies, ordinances, and adopted plans, based on the following:

LSI 7.1.A. *Guideline: For lands outside of the MSCP, the project would impact coastal sage scrub (CSS) vegetation in excess of the County's 5% habitat loss threshold as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.*

The Project is within the MSCP and will comply with MSCP requirements, including Wildlife Agency consultation pertaining to Minor and Major Amendment areas. This guideline is not applicable, and potential impacts would be less than significant.

LSI 7.1.B. *Guideline: The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.*

Because the Project is within the MSCP, and will comply with MSCP requirements including any Wildlife Agency consultation pertaining to Minor and Major Amendment areas, it would not interfere with preparation of the NCCP. This guideline is not applicable, and potential impacts would be less than significant.

LSI 7.1.D. *Guideline: The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Communities Conservation Planning Process (NCCP) Guidelines.*

The Project will not impact any coastal sage scrub habitat. Coastal sage scrub habitat no longer occurs onsite; it was replaced by non-native grassland after the area burned (date unknown). This guideline is not applicable, and potential impacts would be less than significant.

LSI 7.1.E. *Guideline: The project does not conform to the goals and requirements as outlined in any applicable Habitat Conservation Plan (HCP), Habitat Management Plan (HMP), Special Area Management Plan (SAMP), Watershed Plan, or similar regional planning effort.*

The Project will conform to the goals and requirements of the MSCP, Major and Minor Amendment Areas, and EOMSP. Impacts pertaining to this guideline would be less than significant.

LSI 7.1.F. *Guideline: For lands within the Multiple Species Conservation Program (MSCP), the project would not minimize impacts to Biological Resource Core Areas (BRCAs), as defined in the Biological Mitigation Ordinance (BMO).*

The Project is within the MSCP and qualifies as a BRCA (see Section 4.4). Project design minimizes impacts to the BRCA by (a) developing the least environmentally sensitive section of the site (non-native grassland adjacent to development), (b) preserving the higher value resources, designated as Major Amendment Area, in BOS (vernal pools, approximately half of the mima mound area, native grassland, and the wildlife corridor of Johnson Canyon). Therefore, Project impacts related to this guideline would be less than significant.

LSI 7.1.G. *Guideline: The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.*

Coastal sage scrub habitat no longer occurs onsite; it was replaced by non-native grassland after the area burned (date unknown). For other types of habitat, the Project would not preclude connectivity because the Project development is located in the southern portion of the site, closest to existing development. The site is bordered by Otay Mesa Road and industrial development to the south, and SR-125 to the west. Land to the east (on the south side) is rural residential with horse pasture. In the Project area, the site is located at the southern limit of undeveloped habitat, and will preserve the northern area closest to nearby preserve land. The Project would not block connectivity between areas of high value habitat, and would contribute to such connectivity by preserving the northern portion of the site, along Johnson Canyon, within BOS. Therefore, Project impacts to high-value habitat connectivity would be less than significant.

LSI 7.1.H. *Guideline: The project does not maintain existing movement corridors and/or habitat linkages as defined by the Biological Mitigation Ordinance (BMO).*

As defined in the BMO, a "corridor is a specific route that is used for movement and migration of species. A corridor may be different from a 'linkage' because it represents a smaller or more narrow avenue for movement." A "linkage" is defined in the BMO as "an area of land which supports or contributes to the long-term movement of wildlife and genetic material."

As analyzed in the EOMSP BTR, the mesa in the Project area supports poor habitat for wildlife movement because the open agricultural fields provide little topographical or vegetative cover (County of San Diego 1993). Furthermore, the site is bordered by Otay Mesa Road and industrial development to the south, and SR-125 to the west. The only part of the site that is likely to serve as a wildlife corridor or linkage is Johnson Canyon along the northern edge of the site. Development of the Project is concentrated in the southern portion of the site, and Johnson Canyon would be protected in BOS. Therefore, Project impacts to maintaining existing movement corridors and/or habitat linkages would be less than significant.

LSI 7.1.K. *Guideline: The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (Migratory Bird Treaty Act).*

The Project would include restrictions on clearing, grading, and construction that would prevent killing of migratory birds or destruction of active migratory bird nests/eggs; therefore, potential Project impacts would be less than significant.

LSI 7.1.L. *Guideline: The project would result in the take of eagles, eagle eggs or any part of an eagle (Bald and Golden Eagle Protection Act).*

The Project would not result in take of eagles, eagle eggs, or any part of an eagle; therefore, Project impacts would be less than significant.

7.3 Cumulative Impact Analysis for Local Policies, Ordinances and Adopted Plans

The Project would impact RPO wetlands, RPO sensitive habitat lands, and a Narrow Endemic species (San Diego fairy shrimp); and potentially reduce the chance of survival and recovery for listed species San Diego Fairy Shrimp and San Diego button-celery (see SI 7.1.C, I, and J above). Given the rarity and restricted distribution of these species, Project impacts would be cumulatively significant.

7.4 Mitigation Measures and Design Considerations for Local Policies, Ordinances and Adopted Plans

2017 BTR update mitigation measures for impacts related to local policies, ordinances, and adopted plans:

The Project will result in an impact to RPO wetlands (SI 7.1.C) as a result of the change in the RPO definition of wetlands between the time the 2000 FSEIR was completed and now (see Section 1.4.7.1). The impacted disturbed wetlands were not RPO wetlands at the time of the 2000 FSEIR approval, and impacts to the disturbed wetlands habitat will be mitigated through creation of new wetlands in BOS. Therefore, with the approved mitigation measures, impacts to RPO wetlands would be reduced to less than significant.

The Project will result in impacts to sensitive habitat lands based on the presence of San Diego fairy shrimp in the disturbed wetlands and San Diego button celery in an impacted mima mound depression (SI 7.1.C). However, mitigation measures for impacts to the disturbed wetlands (as both wetlands and fairy shrimp habitat) were already approved in the 2000 FSEIR, and the direct impact to San Diego button-celery has been addressed in this 2016 update report in Section 3.4.1.2. Therefore, with these mitigation measures, impacts to sensitive habitat lands would be reduced to less than significant.

Similarly, the loss of approximately 20% of the J-22 population of variegated dudleya, two San Diego fairy shrimp locations, and one San Diego button-celery location would be significant impacts (SI 7.1.I and 7.1.J). As with the impacts to sensitive habitat lands, mitigation measures for impacts to variegated dudleya and fairy shrimp have already been approved in the 2000 FSEIR. The significant direct impact to San Diego button-celery has been addressed in this 2016 update report in Section 3.4.1.2.

7.5 Conclusions for Local Policies, Ordinances and Adopted Plans

Implementation of the approved 2000 FSEIR mitigation measures and 2016 update mitigation measures for San Diego button-celery and wetland impacts would mitigate all significant Project impacts related to local policies, ordinances, and adopted plans.

End of Section 7.0

8.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

Development of the Otay 250 Project will result in significant biological impacts to sensitive habitats and special-status species. Significant impacts are based on those identified in the 2000 SEIR, as well as those identified with the 2016 updated surveys. Tables 8-1 summarizes mitigation for significant impacts.

Table 8-1. Summary of Applicable Mitigation Measures for All Significant Impacts

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
MM-1	A 51.34-acre Biological Open Space (BOS) easement in the northern portion of the site north of Lone Star Road, and a 0.41-acre BOS easement around one vernal pool south of Lone Star Road, shall be established to protect sensitive biological resources. The northern BOS shall contain 0.17 acre of natural vernal pools (seven pools) (0.28 acre after 0.11 acre vernal pool creation), 46.50 acres of non-native grassland (46.39 after 0.11 acre vernal pool creation), 1.96 acres of native grassland, and 0.39 acre of non-native riparian habitat. The southern BOS shall contain 0.04 acre of vernal pool and 0.37 acre of non-native grassland (the vernal pool's watershed). BOS protective measures: • The southern boundary of the open space area north of Lone Star Road and the vernal pool to the south of Lone Star Road shall be fenced using a 4-foot temporary fence installed prior to any clearing or grubbing on the Project site. Previously installed temporary fencing shall be replaced until permanent fencing is installed. • The open space area along Lone Star Road (to the north of the easement dedicated for construction of Lone Star Road) shall be fenced with permanent four-foot chain-link fencing. • In addition to the fencing along Lone Star Road, a 3-strand wire fence shall be installed along the eastern and western edges of the open space area for a distance of 200 feet north of fencing along Lone Star Road, to deter trespassers without blocking wildlife use. • Four-foot chain-link fencing for the vernal pool south of Lone Star Road shall be placed around the perimeter of the vernal pool's watershed. • Signs, in English and Spanish, will be posted every 100 feet along the permanent fencing, stating that any persons found vandalizing or trespassing shall be prosecuted to the full extent of the law. Signs shall also provide information as to why access to the site is restricted, as well as the contact number for both the biological monitor and maintenance contractor so that vandalism or suspicious activity can be reported. • Fuel modification along Lone Star Road will not encroach into BOS. In the event that fire authorities issue a written order stating that conditions during a certain period mandate clearing along the southern boundary of the northern BOS, selective clearing of vegetation by hand may be undertaken, but no such clearing will not encroach into the watershed of a vernal pool.	4.1.A, B, D; 4.3; also 3.1.A, B, F, H, I, L; 3.3; 7.3	Less than significant **PARTIALLY COMPLETE:** Easements have been established

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
MM-2	The BOS shall be managed and maintained in perpetuity according to the approved Resource Conservation Plan (RCP) including the Long-Term Management, Maintenance, and Monitoring Plan (REC 2003). • The vernal pool preserved in BOS south of, and separate from, the BOS north of Lone Star Road, shall be managed as a part of the larger vernal pool complex to the north. • The 2003 RCP shall be updated to reflect adjustments or additions based on this 2017 BTR update (e.g. MM-5, MM-10).	3.1.A, B, F, I, L; 3.3; 4.1.A, B; 4.3; 7.1.C, I, J; 7.3	Less than significant
MM-3	Buffer zones shall be established adjacent to BOS to minimize effects from noise and lighting. The 30-ft LBZ to be established at the edge of each BOS shall provide such a buffer.	3.1.H	Less than significant
MM-4	For non-native grassland mitigation, the required 98.00 acres shall be provided through 1. In northern BOS, preservation of 46.39* acres of non-native grassland and 1.96 acre of native grassland (totaling 48.35 acre of grassland) onsite, 2. In southern vernal pool BOS, preservation of 0.37 acre of non-native grassland onsite within the southern vernal pool BOS, and 3. purchase of an additional 49.28 acres offsite in an approved mitigation bank. *46.50 remaining in northern BOS minus 0.11 acre for vernal pool creation	4.1.A; 3.1.B, F, I, L; 3.3, 7.3	Less than significant **COMPLETE:** 54 acres of grassland (5.4 native, 48.6 non-native) were already purchased to satisfy the approved FSEIR mitigation measures, and onsite non-native grassland mitigation acreage has been protected within the established BOS easement.
MM-5	For wetland mitigation, 0.11 acre of wetland habitat shall be created and 0.11 acre of wetland habitat shall be enhanced within the northern BOS.	3.1.A, B; 3.3; 4.1.B, 7.1.I, J; 7.3	Less than significant
MM-6	Pedestrian and equestrian trails shall be restricted to existing roads or non-sensitive habits.	3.1.H	Less than significant
MM-7	The majority of onsite variegated dudleyas shall be preserved onsite within the northern BOS.	3.1.B, 3.3, 7.1.J	Less than significant, with MM-8

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
MM-8	Offsite mitigation land supporting at least the number of variegated dudleya plants documented in the Project impact area (approximately 80 on approximately one-quarter acre) shall be purchased at a location approved by the County. The location may be within an existing mitigation bank, or if that is not available, then outside a mitigation bank if the location is approved by the County and an open space easement and Resource Management plan are established and implemented. If a new population count is obtained prior to Project implementation, during a year of adequate rainfall, and comparison of onsite conditions to conditions at a County-approved variegated dudleya reference site indicates that the new population count should accurately represent the current onsite population, that new population count may be used to update the number of individuals to mitigate.	3.1.B, 3.3, 7.1.I	Less than significant, with MM-7
MM-9	San Diego button-celery individuals within BOS shall be preserved onsite.	3.1.A, 3.1.B, 3.3, 7.1.J, 7.3	Less than significant, with MM-10
MM-10	A San Diego Button-Celery Translocation and Mitigation and Monitoring Plan, for individuals that would be impacted by Project Development, shall be prepared and provided as an addendum to the approved Fairy Shrimp Translocation and Five Year Mitigation and Monitoring Plan. The plan shall be implemented prior to Project development. This plan will be reviewed by the County and Wildlife Agencies; additional measures may be required by the Wildlife Agencies during Minor Amendment re-evaluation and will be incorporated into Project Design. If a focused survey in a year of adequate rainfall and vernal pool ponding should demonstrate that this group of button-celery is no longer extant, this mitigation measure for direct impacts would not be required.	3.1.A, 3.1.B, 3.3, 4.1.B, 7.1.J, 7.3	Less than significant, with MM-9
MM-11	Approximately 50% of the existing onsite coast barrel cacti plants shall be preserved within onsite BOS.	3.1.B, 3.3	Less than significant, **COMPLETE:** BOS easement has been established.
MM-12	At least 47 barrel cacti shall be transplanted from the Project impact area to the same habitat within BOS, as described in the December 2003 Barrel Cactus Transplantation Plan. The transplanted barrel cacti shall be maintained and monitored as described in the Cactus Plan. If the final success criterion of 80% survivorship (38 healthy individuals) is not achieved by the end of the fifth year, the responsible party's maintenance and monitoring obligations shall continue until the County of San Diego gives final project confirmation.	3.1.B, 3.3	Less than significant **COMPLETE:** Cactus Plan has been implemented and received County sign-off.
MM-13	Of the 0.22 acres of wetland to be created/enhanced in BOS, at least 0.11 acre shall be creation of vernal pools that will support fairy shrimp.	3.1.A, B; 3.3; 7.1.I, J; 7.3	Less than significant
MM-14	Fairy shrimp (cysts) shall be translocated from the agricultural pond	3.1.A, B; 3.3;	Less than

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
	basin via collection of inoculum and distribution in newly created basins as described in December 2003 Fairy Shrimp Translocation and Five Year Mitigation and Monitoring Plan (Fairy Shrimp Plan). The pools shall be maintained and monitored for a five-year period or until success criteria are achieved, as described in the Fairy Shrimp Plan. If the success criteria provided in the Fairy Shrimp Plan are not achieved, the permittee's maintenance and monitoring obligations shall continue until the County give final mitigation success clearance. If, prior to translocation, a protocol survey (2 wet, or 1 dry and 1 wet survey) for Riverside fairy shrimp is conducted, and this survey demonstrates that this species is not present in the agricultural pond, then the success criteria for Riverside fairy shrimp will be dismissed.	7.1.I, J; 7.3	significant
MM-15	A pre-construction burrowing owl survey shall be conducted in the Project development area prior to clearing of the development area, and a pre-construction burrowing owl survey shall be conducted in the BOS prior to disturbance within the BOS (such as excavation of new vernal pools). If any active burrows are found, clearing shall not proceed until after consultation with County and Wildlife Agency staff and implementation of any protective measures required.	3.1.B, 3.3	Less than significant
MM-16	Initial clearing of vegetation shall occur outside the avian breeding season. If that is not possible, a nesting bird survey shall be conducted prior to clearing. If an active nest is found during the nesting bird survey or during clearing/grading activities, the monitoring biologist shall notify and coordinate with County staff (and Wildlife Agencies if appropriate) to established an acceptable buffer between the nest location and clearing/grading activities. Once the nest becomes inactive, clearing/grading restrictions shall no longer apply.	3.1.B, 3.3	Less than significant
MM-17	A copy of a survey for Quino checkerspot butterfly conducted within the most recent survey season shall be provide to the Director of PDS.	3.1.A	Less than significant
MM-18	Limits of vernal pool habitat shall be surveyed, staked, protected with temporary fencing prior to construction, and clearly shown on all construction drawings as "no impact" zones, in order to prevent vehicular or pedestrian access, equipment storage, storage of spoils materials, and refuse disposal from impacting vernal pool plants and animals.	3.1.A, 3.1.B; 3.3; 4.1.D; 4.3; 7.1.C, 7.1.I, 7.1.J	Less than significant
MM-19	Non-native invasive plant species shall be prohibited in the proposed landscaping palettes (including container stock and hydroseed material) for the streetscapes and commercial/industrial.	3.1.H, 4.1.D	Less than significant
MM-20	A qualified biologist or native plant horticulturalist shall review and sign all landscaping plants to determine the appropriate species to be used in landscaping, prior to Project approval.	3.1.H, 4.1.D	Less than significant
MM-21	Prior to Project approval, a construction erosion control plan shall be reviewed and approved by the County.	3.1.H, 4.1.D	Less than significant

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
MM-22	The Project shall require an approved Storm Water Pollution Prevention Plan (SWPPP).	3.1.H, 4.1.D	Less than significant
MM-23	The Project shall obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB).	3.1.H, 4.1.D	Less than significant
MM-24	The Project shall require a 401 certification, and provide mitigation to satisfy the conditions of the 401 certification if required (see MM-5 for mitigation to be provided).	4.1.A	Less than significant
MM-25	A "no fueling" zone shall be designated within 25 feet of all drainages during the construction period.	3.1.H, 4.1.D	Less than significant
MM-26	All equipment used near drainages during construction shall be routinely maintained and inspected for leaks. Major leaks shall be repaired immediately. Drip pans and tarps shall be placed under minor leaks. Used drip pans and tarps shall be properly disposed of at the end of each work day. (To be included in SWPPP.)	3.1.H, 4.1.D	Less than significant
MM-27	Emergency provisions (e.g. straw bales) shall be placed at all drainage crossings, prior to the onset of construction to deal with unintentional spills. (To be included in SWPPP.)	3.1.H, 4.1.D	Less than significant
MM-28	All commercial/industrial uses that plan to store materials within the proposed commercial/industrial complex shall be required to obtain a NPDES permit, including SWPPP, for operations activities.	3.1.H, 4.1.D	Less than significant
MM-29	A County approved project biologist shall perform biological monitoring pursuant to the most current version of the "County of San Diego Biological Report Format and Requirements" guidelines during all grading, clearing, grubbing, and trenching located within 100 feet of the Open Space [BOS] Easements… The project biologist shall also attend the preconstruction meeting to educate the grading contractor and personnel as to the site's biological sensitivities.	3.1.H, 4.1.D	Less than significant
MM-30	*Applicable original EOMSP EIR mitigation measures:* • Provision should be made to inform the construction contractor(s) (prior to the construction process) about the biological constraints of this project. The contractor(s) will be responsible for impacts lo biological sensitivities beyond those identified in this report and that occur as a direct result of construction activities. All sensitive habitat areas or occurrences of sensitive species to be avoided shall be clearly marked on project maps provided to the contractor. These areas shall be designated as "no construction" or "limited construction" zones. These areas will be flagged by the project biologist prior to the onset of construction activities. In some cases, resources may need to be fenced or otherwise protected .from direct or indirect impacts. • A contractor education meeting shall be conducted to ensure that contractors and all construction personnel are fully informed of the	3.1.H, 4.1.D	Less than significant

	Proposed Mitigation	Applicable Guidelines	Level of Significance after Mitigation
	biological sensitivities associated with this project. This meeting should focus on 1) the purpose for resource protection, 2) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), 3) sensitive construction practices (see nos. 4-9, ...on Pages 4.3-106 and 4.3-107 of the Specific Plan EIR), and protocol to resolve conflicts that may arise during the construction process. This meeting shall be conducted by a qualified biologist, and shall be a requirement for all construction personnel. • Heavy equipment and construction activities shall be restricted to the development area. Prohibited activities within drainages or other wetland areas (including vernal pools) include staging areas, equipment access, and disposal or temporary placement of excess fill. • Staging areas are prohibited within sensitive habitat areas or any habitat included in open space. Staging areas shall be delineated on the grading plans and reviewed by a qualified biologist. Likewise, vehicle access shall be prohibited in all open space areas. • Fueling zones should be designated on construction maps and shall be situated a minimum distance of 7. 6 m (25 ft) from storm drains that may drain into Johnson Canyon. • Construction in or adjacent to sensitive areas should be appropriately scheduled to minimize potential impacts to biological resources. All work in or near wetlands or other "waters of the U.S." shall take place during periods of minimum flow (i.e., summer through the first significant rain of fall) to avoid excessive sedimentation and erosion. • The [open space] fence location must be approved by County staff or monitoring biologist prior to receipt of grading permit and will be a permanent protection measure. • A Resource Conservation Plan detailing wetland enhancement, preservation, and maintenance, coastal sage scrub habitat preservation, sensitive species salvaging, and transplanting as well as success standards and report requirements must be completed prior to the initiation of construction [See Appendix B of this EIR].		

The required Minor Amendment process was completed in 2003, when a Conditional Concurrence for the Sunroad Centrum Minor Amendment was issued by the Wildlife Agencies (USFWS and CDFG 2003). Those conditions have been incorporated into the Project mitigation measures in Table 8-1.

End of Section 8.0

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End of Section 9.0

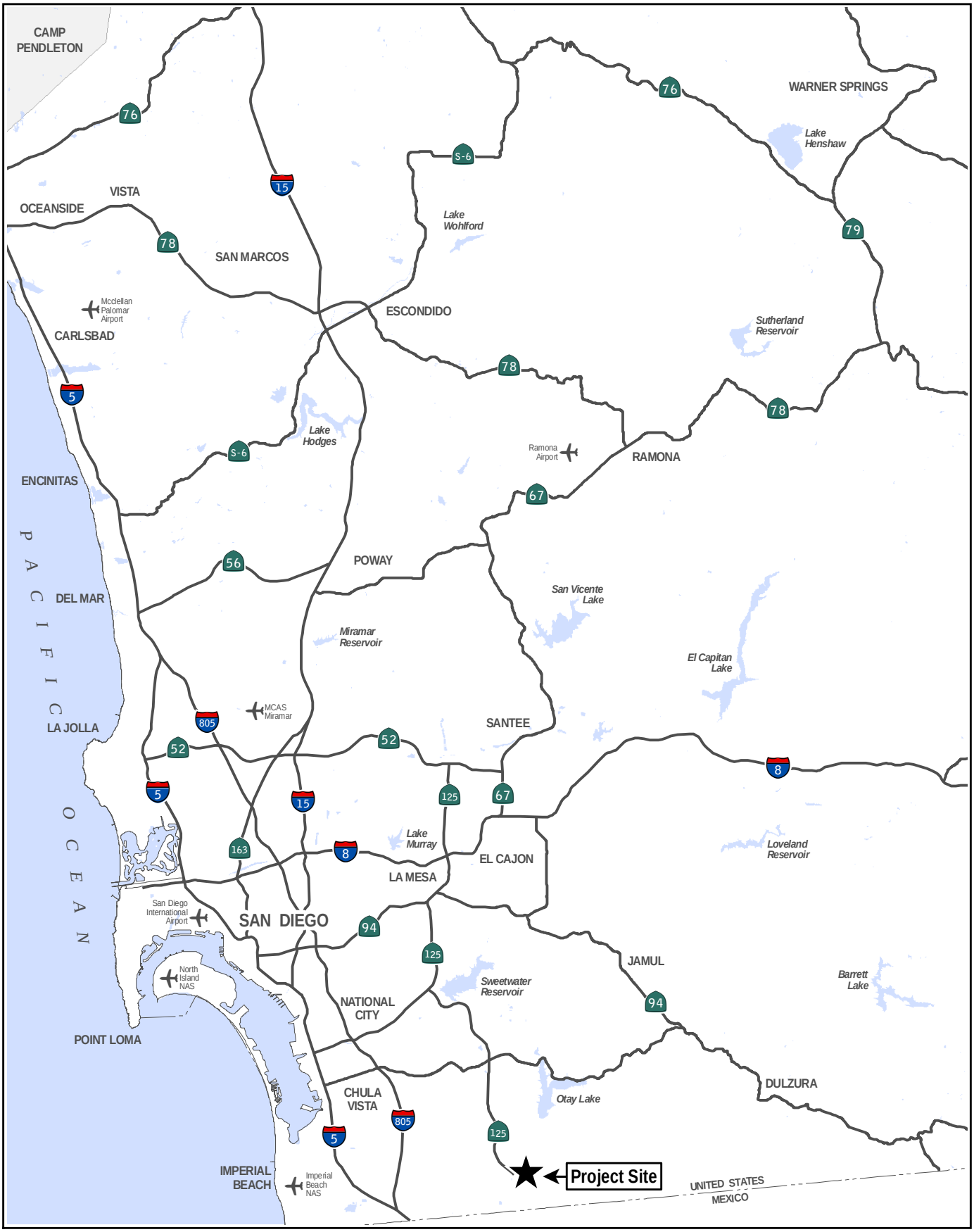
10.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

This report has been prepared by REC Consultants, Inc. staff:

Elyssa Robertson, Principal Biologist – County QCL Biologist, Original Author
Catherine MacGregor, Senior Biologist and Botanist – 2016 Update Author
Lee BenVau, Field Biologist – 2016 Update Co-author
Hedy Levine, Director of Environmental Division – Report Editor
Andrew Funk and James Cooper, GIS Specialists – Graphics and GIS

End of Section 10.0

FIGURES



Regional Location

Miles
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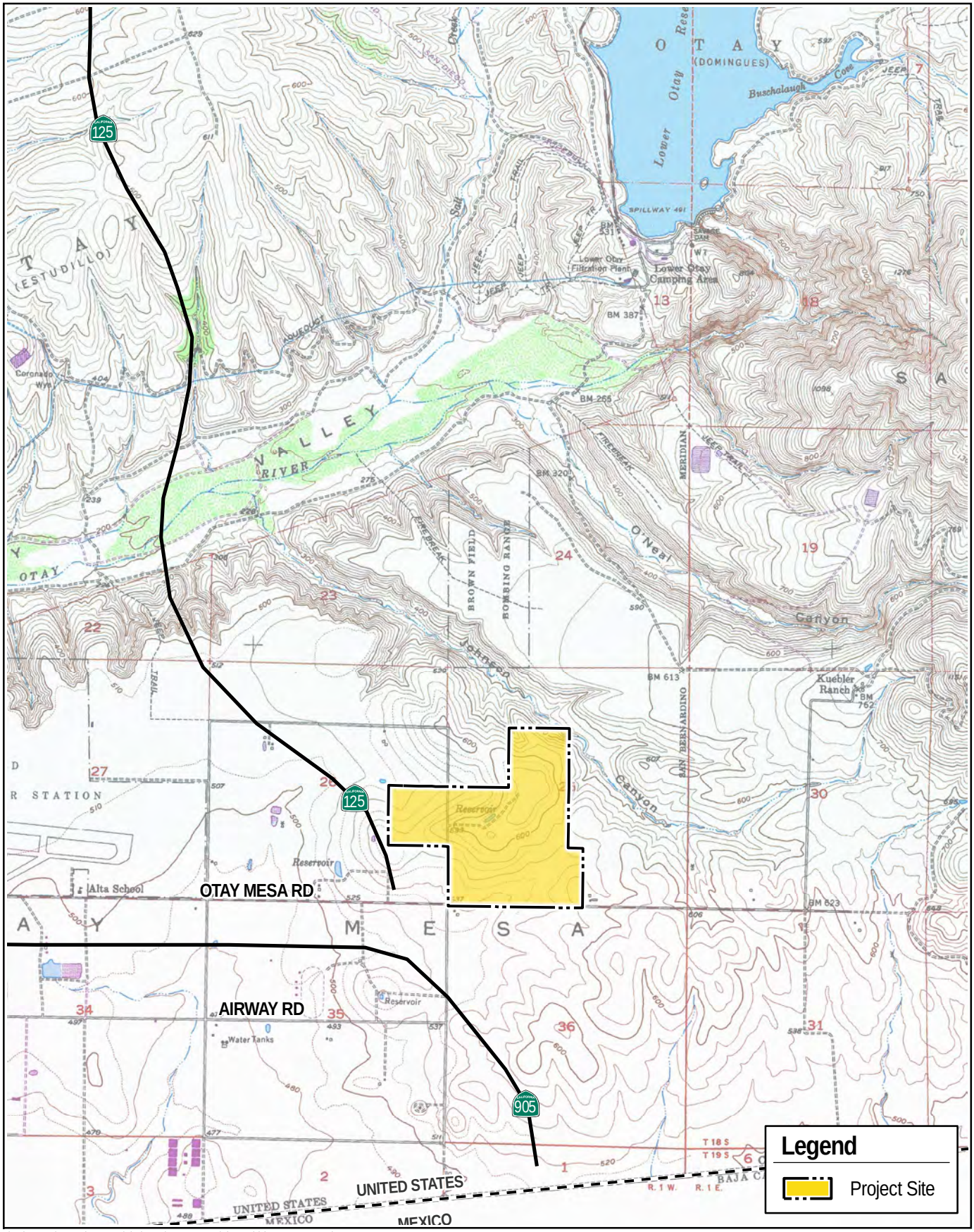
FIGURE 1

R·E·C Consultants, Inc.

OTAY 250

Source: SANGIS GIS Data, 2011.

October 2016



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Vicinity Map

R·E·C Consultants, Inc.

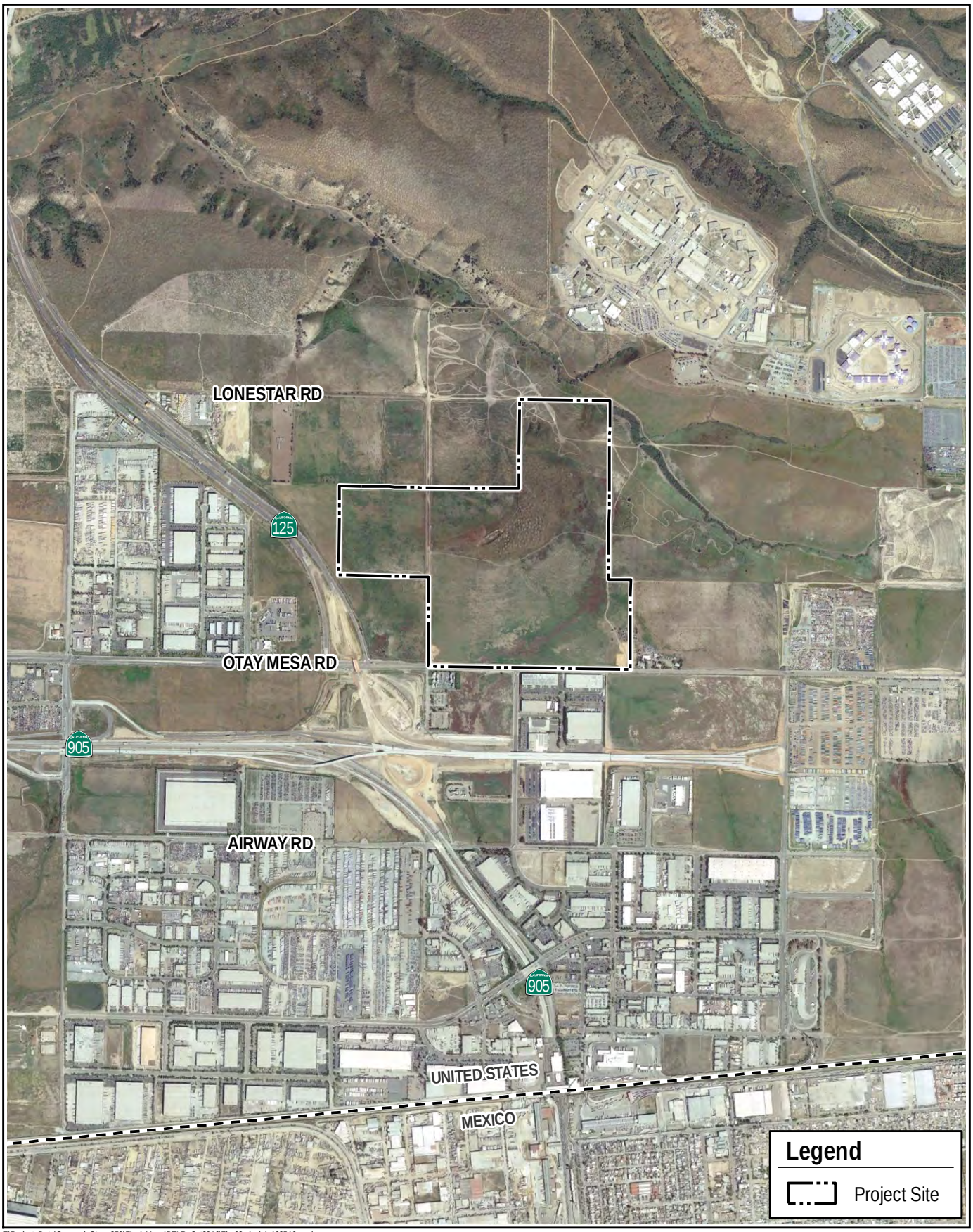
OTAY 250

0 1,500 3,000 Feet

Source: USGS DRG Mosaic

FIGURE 2

October 2016



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R·E·C Consultants, Inc.

Aerial Map

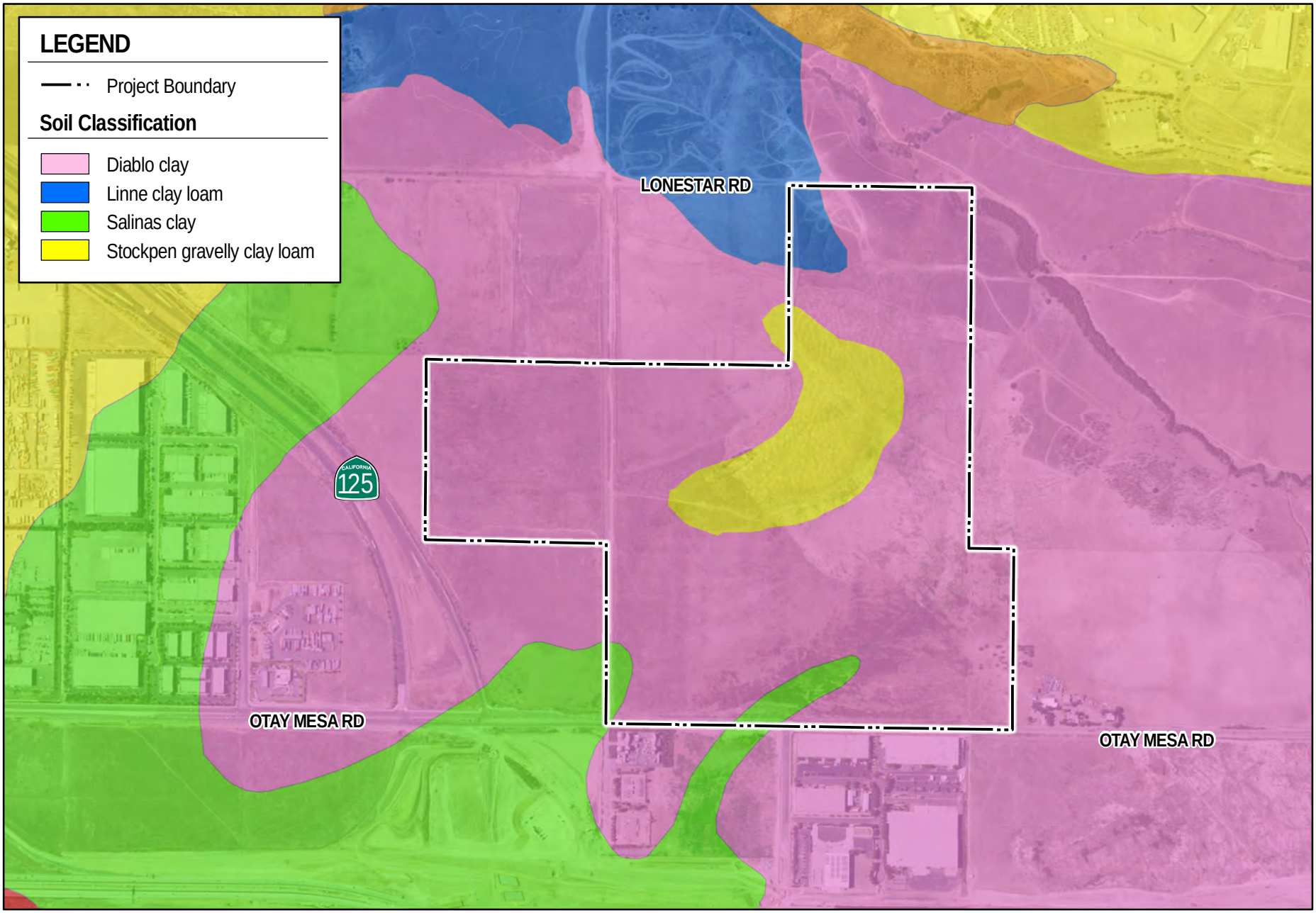
OTAY 250

0 1,000 2,000 Feet

Source: Esri Basemap

FIGURE 3

October 2016



Onsite and Adjacent Soil Classifications

R·E·C Consultants, Inc.

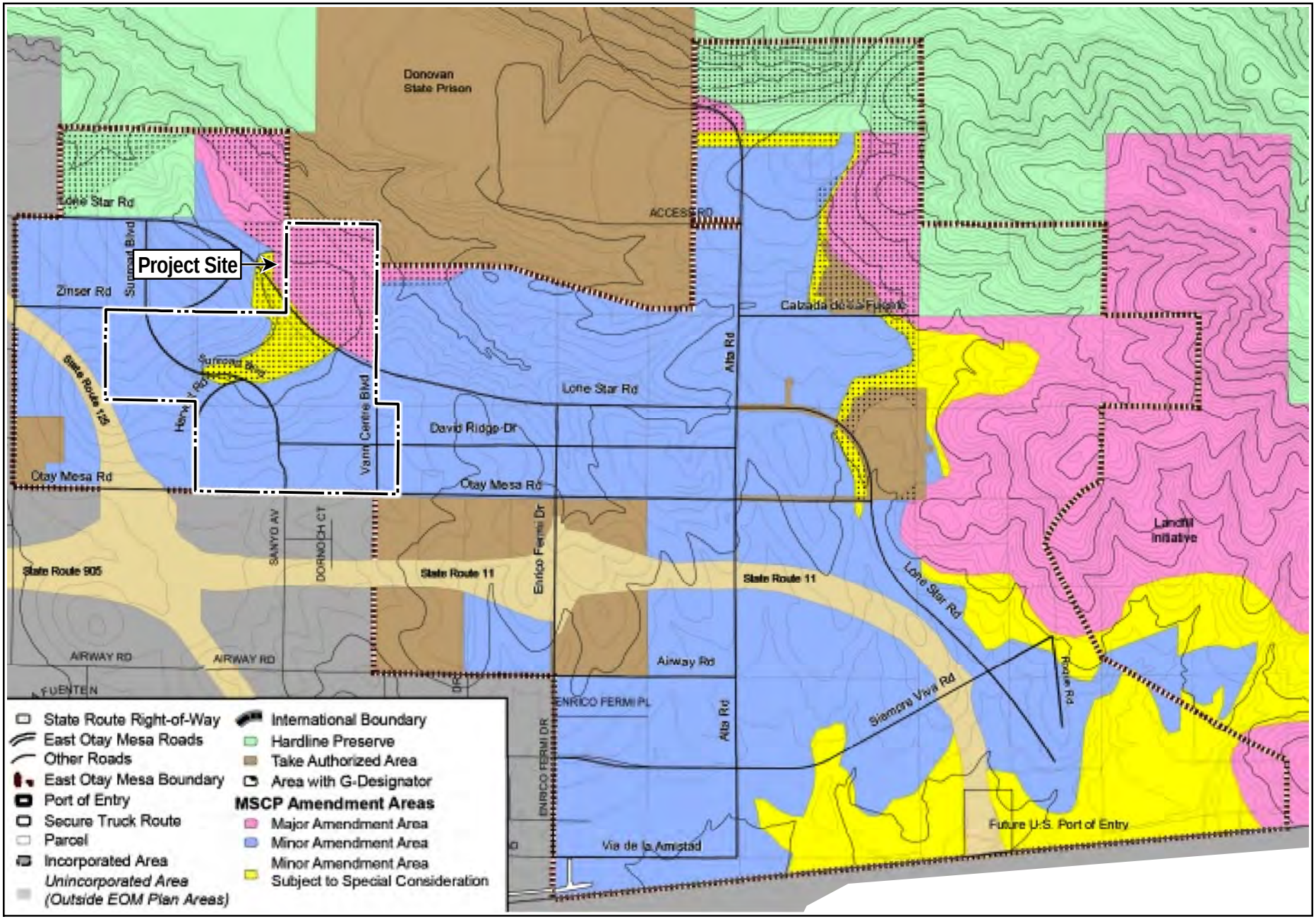
OTAY 250

0 500 1,000 Feet

Data Source: ESRI Basemap

FIGURE 4

October 2016



Project Boundary and Surrounding MSCP Amendment Areas

0 1,000 2,000 Feet

FIGURE 5

R·E·C Consultants, Inc.

OTAY 250

Source: East Otay Mesa Business Park Specific Plan (*April 22, 2015*)

October 2016

Legend

Project Boundary
100-ft Offsite Mapping Limit

Vegetation/Land Cover

- DEV — Developed
- DIS — Disturbed
- DW — Disturbed Wetland
- NG — Native Grassland
- NNG — Non-Native Grassland (including abandoned agricultural pond)
- NNR — Non-Native Riparian
- VP — Vernal Pool

Special-Status Plants and Years Observed

- Cs [year] — *Convolvulus simulans* area, small-flower bindweed
- Dv [year] — *Dudleya variegata* area, variegated dudleya
- Ea [year] — *Eryngium aristulatum var. parishii*, San Diego button-celery
- Fv [year] — *Ferocactus viridescens* area, coast barrel cactus
- Nf [year] — *Navarretia fossalis*, spreading navarretia

Non-Point Special-Status Plants Observations:
Bahiopsis laciniata 1999 (CSS/NNG mima mounds)
San Diego sunflower

Special-Status Animals and Years Observed

- ★ — *Athene cunicularia* inactive burrow, 2016, burrowing owl
- Bs(a) [year] — *Branchinecta sandiegensis* (adult), San Diego fairy shrimp
- Bs(c) [year] — *Branchinecta sandiegensis* (cyst), San Diego fairy shrimp
- Cc [year] — *Circus cyaneus*, northern harrier
- Eaa [year] — *Eremophila alpestris actia*, California horned lark
- Ll [year] — *Lanius ludovicianus*, loggerhead shrike
- Lcb [year] — *Lepus californicus bennettii*, San Diego black-tailed jackrabbit

Non-Point Special-Status Animals Observations:

- *Diadophis punctatus similis*, 1999 — San Diego ring-necked snake (northern mima mound area)
- *Accipiter cooperii*, 2015 (NNG flyover) — Cooper's hawk
- *Aimophila ruficeps canescens*, 1999 — Southern California rufous-crowned sparrow
- *Ammodramus savannarum*, 2001 — Grasshopper sparrow (northern mima mound area)
- *Buteo regalis*, 1998-99 — Ferruginous hawk
- *Cathartes aura*, 2015 (NNG flyover) — Turkey vulture
- *Circus cyaneus*, 1999, 2015, 2016 (NNG flyover) — Northern harrier
- *Elanus leucurus*, 1998-99 — White-tailed kite
- *Tyto alba*, 1998-99, 2016 — Barn owl

LONESTAR RD
OTAY MESA RD
CALIFORNIA 125

Cs Area 2015
NNR
Lcb 2016
NG
Eaa 2016 (2)
Lcb 2016
Cc 2016 (2)
Ea and Bs(c) 1998, Ea 1998, 2005
Dv Area 2006
Ea and Bs(c) 1998
Fv area 1998
Nf 1991
Bs(c) 1998
Dv 2001
Bs(c) 1998
Dv Area 1998
Ea and Bs(c) 1998, Ea 2005
Eaa 2015 (2)
Ea and Bs(c) 1998, Ea 2005
Dv Area 1998
Bs(c) 1998
Bs(c) 1999
Lcb 2015
NNG
Ea 1998, 2001
Ea 2001, 2004
Bs(a) 1999
Ll 2015
Dv Area 1998
Abandoned Agriculture Pond
Vernal Pool Watershed
Eaa 2015 (3)
NNG
DIS
Eaa 2016 (5)
Fv area 1998
NNG
Lcb 2016
Eaa 2016 (20)
Lcb 2015
Cs 2016 (1)
DEV
DIS
DEV
DIS
OTAY MESA RD

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Biological Resources

REC Consultants, Inc.

OTAY 250

0 250 500 Feet

Aerial Source: Google, January 2015. Data Source: REC Biological Survey.

FIGURE 6

October 2016

Legend

- Project Boundary
- Offsite Impacts
- 100-ft Offsite Mapping Limit
- Biological Open Space Boundary

Vegetation/Land Cover

- DEV — Developed
- DIS — Disturbed
- DW — Disturbed Wetland
- NG — Native Grassland
- NNG — Non-Native Grassland (including abandoned agricultural pond)
- NNR — Non-Native Riparian
- VP — Vernal Pool

Special-Status Plants and Years Observed

- Cs [year] — *Convolvulus simulans* area, small-flower bindweed
- Dv [year] — *Dudleya variegata* area, variegated dudleya
- Ea [year] — *Eryngium aristulatum var. parishii*, San Diego button-celery
- Fv [year] — *Ferocactus viridescens* area, coast barrel cactus
- Nf [year] — *Navarretia fossalis*, spreading navarretia

Non-Point Special-Status Plants Observations:
Bahiopsis laciniata 1999 (CSS/NNG mima mounds)
San Diego sunflower

Special-Status Animals and Years Observed

- ★ — *Athene cunicularia* inactive burrow, 2016, burrowing owl
- Bs(a) [year] — *Branchinecta sandiegensis* (adult), San Diego fairy shrimp
- Bs(c) [year] — *Branchinecta sandiegensis* (cyst), San Diego fairy shrimp
- Cc [year] — *Circus cyaneus*, northern harrier
- Eaa [year] — *Eremophila alpestris actia*, California horned lark
- Ll [year] — *Lanius ludovicianus*, loggerhead shrike
- Lcb [year] — *Lepus californicus bennettii*, San Diego black-tailed jackrabbit

Non-Point Special-Status Animals Observations:
Diadophis punctatus similis, 1999
San Diego ring-necked snake (northern mima mound area)
Accipiter cooperii, 2015 (NNG flyover)
Cooper's hawk
Aimophila ruficeps canescens, 1999
Southern California rufous-crowned sparrow
Ammodramus savannarum, 2001
Grasshopper sparrow (northern mima mound area)
Buteo regalis, 1998-99
Ferruginous hawk
Cathartes aura, 2015 (NNG flyover)
Turkey vulture
Circus cyaneus, 1999, 2015, 2016 (NNG flyover)
Northern harrier
Elanus leucurus, 1998-99
White-tailed kite
Tyto alba, 1998-99, 2016
Barn owl

LONESTAR RD

OTAY MESA RD

OTAY MESA R

CALIFORNIA 125

Cs Area 2015

NNR

Lcb 2016

NG

Eaa 2016 (2)

Lcb 2016

Ea and Bs(c) 1998, Ea 1998, 2005

Cc 2016 (2)

Ea and Bs(c) 1998

Fv area 1998

Nf 1991

Bs(c) 1998

Dv Area 2006

Dv 2001

Bs(c) 1998

Dv Area 1998

Biological Open Space

Ea and Bs(c) 1998, Ea 2005

Ea and Bs(c) 1998, Ea 2005

Eaa 2015 (2)

Dv Area 1998

Bs(c) 1999

Bs(c) 1998

Lcb 2015

NNG

Ea 1998, 2001

Ea 2001, 2004

Bs(a) 1999

Ll 2015

Vernal Pool Watershed

NNG

DIS

Eaa 2015 (3)

Abandoned Agriculture Pond

Dv Area 1998

Eaa 2016 (5)

Fv area 1998

NNG

Lcb 2016

Eaa 2016 (20)

Lcb 2015

Cs 2016 (1)

DEV

DIS

DEV

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REC Consultants, Inc.

Project Impacts

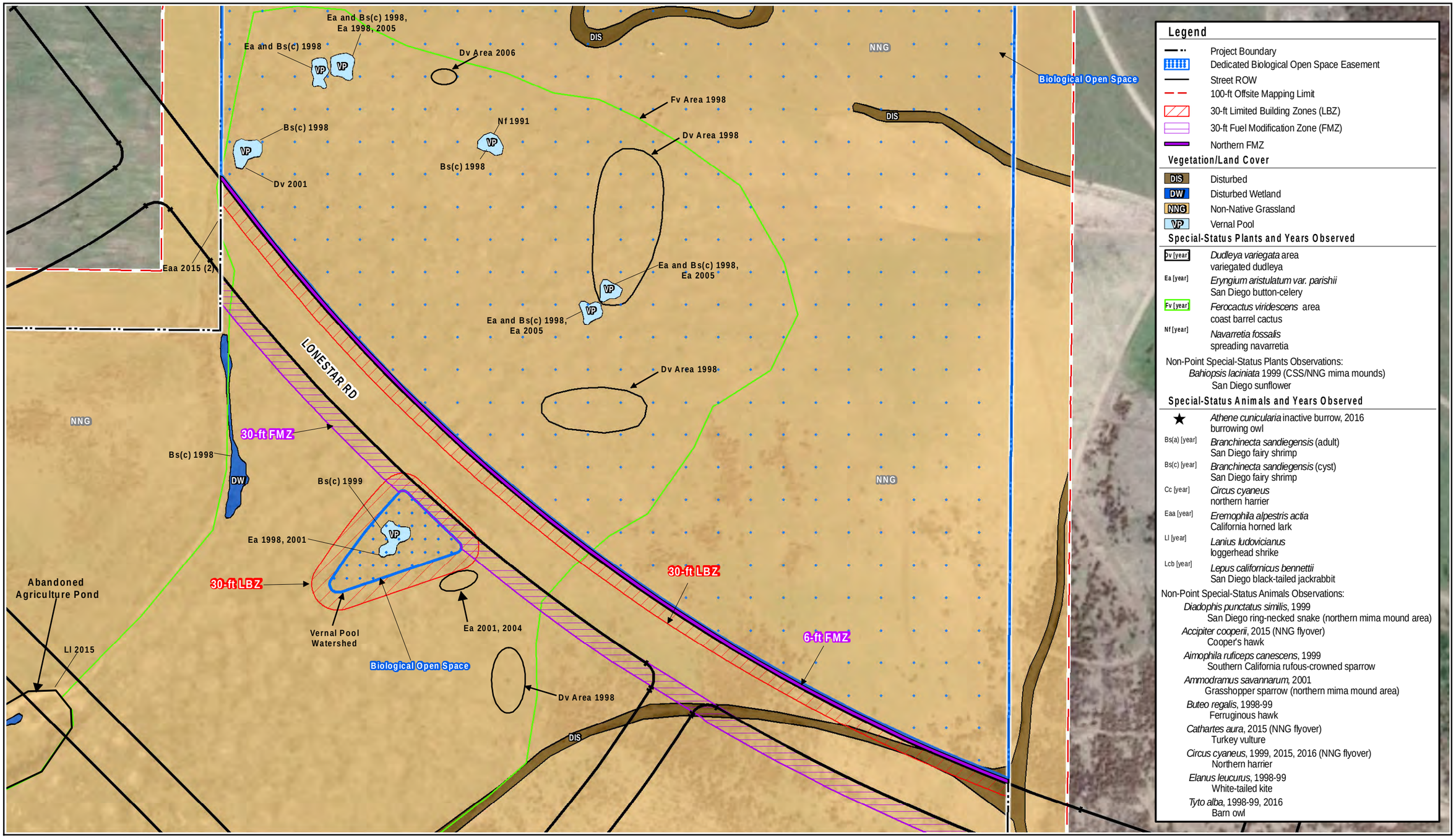
OTAY 250

0 250 500 Feet

Aerial Source: Google, January 2015. Data Source: REC Biological Survey.

FIGURE 7a

October 2016



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REC Consultants, Inc.

Project Impacts Detail with LBZs and FMZs

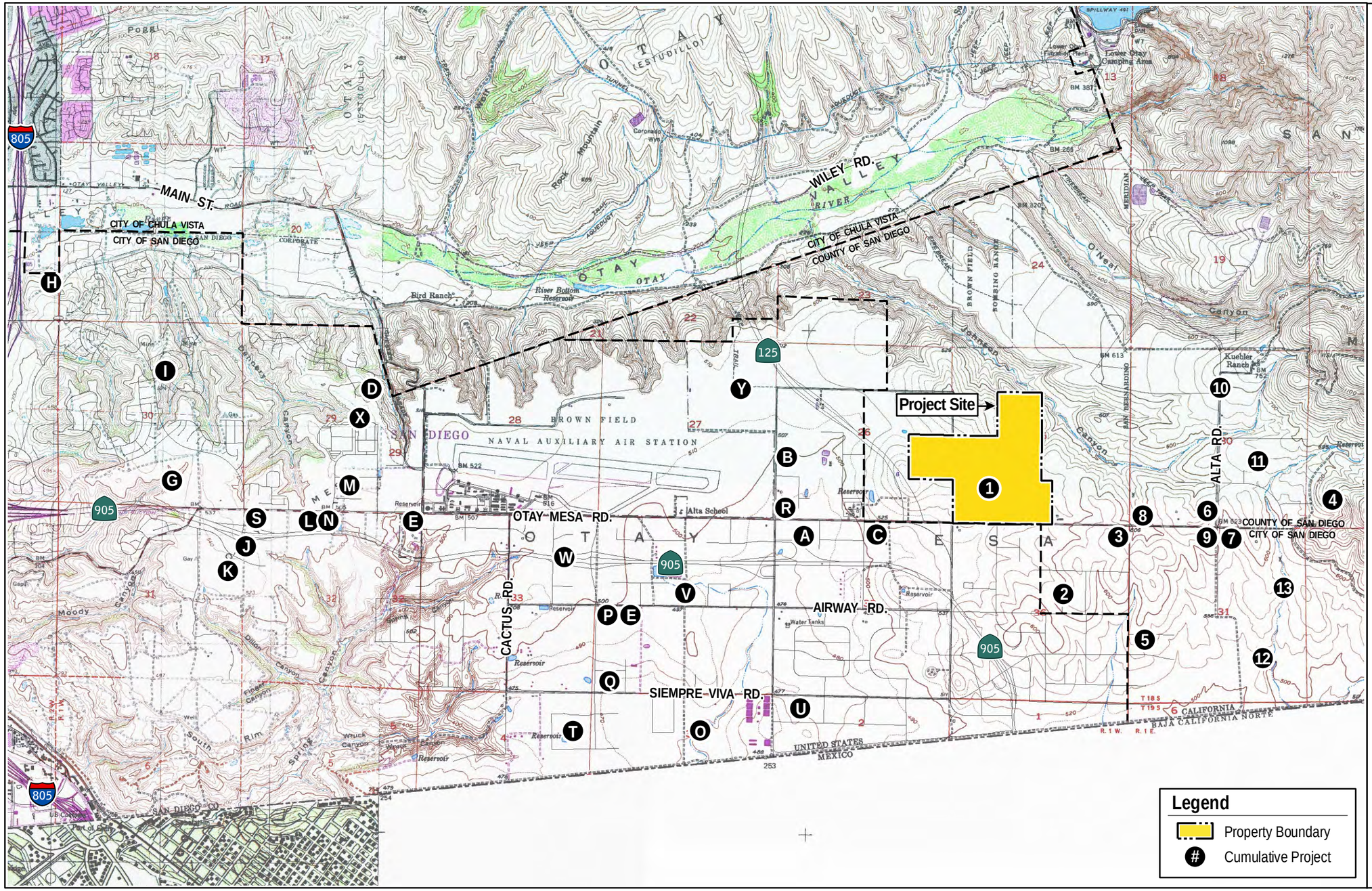
OTAY 250

0 80 160 Feet

FIGURE 7b

Aerial Source: Google, January 2015. Data Source: REC Biological Survey.

October 2016



County of San Diego

1 Otay 250 (Sunroad Centrum)
2 Saeed TM / Sirway Business Center
3 Enrico Fermi Industrial Park
4 Otay Hills Extraction Operation
5 Burke Minor Subdivision
6 Aaron Construction Auto Auction Park
7 Family Motorcross Park
8 Otay Mesa Auto Transfer
9 Bradley / Robertson Copart Salvage Auto Auctions
10 National Enterprises Storage and Recycling Center
11 PG&E Otay Mesa Generating Project (Calpine)
12 Otay Business Park (Paragon)
13 Otay Crossings Commerce Park

City of San Diego

A Sunroad / Interstate Industrial Center
B Sunroad Otay Park
C Street / La Media Truck Park II
D Robinhood Ridge
E Semi-Trailer Storage Facility
F Airway 18 Truck Terminal
G California Terraces
H Dennery Ranch Village 2/3
I Hidden Trails
J Southview
K Candlelight
L Handler Otay Mesa Phase I
M Otay Corporate Center North
N Otay Corporate Center South
O Las Californias Center
P Opus
Q Just Rite
R World Petrol
S Pardee Commercial
T Martinez Ranch
U Siempre Viva Business Park
V Southwestern Community College
W Brown Field Tech Park
X Ingalls Property
Y Lonestar Ridge

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R·E·C Consultants, Inc.

Cumulative Projects

OTAY 250

0 0.5 1 Miles

Source: USGS Mosaic, County of San Diego.

FIGURE 8

October 2016

APPENDIX A

Plants Observed on the Otay 250 SPA Project Site

APPENDIX A
PLANTS OBSERVED ON THE OTAY 250 SPA PROJECT SITE

Species Name	Common Name	Family	Habitat
*Acacia cyclops**	Cyclops acacia	Fabaceae	NNG
Allium haematochiton	red-skin onion	Alliaceae	NG, NNG
Artemisia californica	coastal sagebrush	Asteraceae	NNG
*Arundo donax**	giant reed	Poaceae	NNG
*Atriplex semibaccata**	Australian saltbush	Chenopodiaceae	NNG
*Avena barbata**	slender wild oat	Poaceae	NNG, VP
*Avena fatua**	wild oat	Poaceae	NNG, VP
*Avena sp.**	oats	Poaceae	NNG, NG, VP
Baccharis salicifolia subsp. salicifolia	mule-fat, seep-willow	Asteraceae	DW, NNG
Baccharis sarothroides	broom baccharis	Asteraceae	NNG
Bahiopsis laciniata!	San Diego sunflower	Asteraceae	CSS/NNG (1999)
Bloomeria crocea var. crocea	common goldenstar	Themidaceae	NNG
*Brassica nigra**	black mustard	Brassicaceae	NNG, NG, CSS/NNG
Brodiaea jolonensis	mesa brodiaea	Themidaceae	CSS/NNG
*Bromus diandrus**	ripgut grass	Poaceae	NNG
*Bromus madritensis subsp. rubens**	red brome, foxtail chess	Poaceae	NNG
Calochortus splendens	splendid mariposa lily	Liliaceae	NNG
Calystegia macrostegia	morning-glory	Convolvulaceae	NNG, NG
Castilleja exserta subsp. exserta	purple owl's-clover	Orobanchaceae	CSS/NNG
*Centaurea diluta**	pale-flower centaurea	Asteraceae	NNG
*Centaurea melitensis**	tocalote	Asteraceae	NNG
*Chenopodium murale**	nettle-leaf goosefoot	Chenopodiaceae	NNG
Chlorogalum parviflorum	small flower soap plant/amole	Agavaceae	VP, NNG
*Convolvulus arvensis**	field bindweed	Convolvulaceae	NNG
Convolvulus simulans!	small-flower bindweed	Convolvulaceae	NNG
Corethrogyne filaginifolia	sand-aster	Asteraceae	NNG
Croton setiger	doveweed	Euphorbiaceae	NNG
Cyperus sp.	sedge	Cyperaceae	NNG
Deinandra fasciculata	fascicled tarweed	Asteraceae	VP, NNG, DIS
Dichelostemma capitatum	blue dicks	Themidaceae	NNG, VP
Distichlis spicata	saltgrass	Poaceae	NNR
*Dittrichia graveolens**	stinkwort	Asteraceae	NNR
Dodecatheon clevelandii ssp. clevelandii	Padre's shooting star	Primulaceae	CSS/NNG
Dudleya variegata!	variegated dudleya	Crassulaceae	NNG
Eleocharis sp.	spike-rush	Cyperaceae	VP
Erigeron canadensis	horseweed	Asteraceae	NNG
*Erigeron sumatrensis**	asthmaweed	Asteraceae	NNG
Eriogonum fasciculatum	California buckwheat	Polygonaceae	VP, NNG
*Erodium botrys**	long-beak filaree/storksbill	Geraniaceae	NNG, VP
*Erodium brachycarpum**	short-beak filaree/storksbill	Geraniaceae	NNG, VP
*Erodium cicutarium**	red-stem filaree/storksbill	Geraniaceae	DIS, NNG
Eryngium aristulatum var. parishii!	San Diego button-celery	Apiaceae	VP
Ferocactus viridescens!	coast barrel cactus	Cactaceae	VP, NNG
*Festuca perennis**	perennial rye grass	Poaceae	DW
*Foeniculum vulgare**	sweet fennel	Apiaceae	NG, NNG, CSS/NNG
Fritillaria biflora var. biflora	chocolate lily	Liliaceae	CSS/NNG (2001)
*Glebionis coronaria**	garland daisy, crown daisy	Asteraceae	DW, NNG
Grindelia camporum	rayless gumplant	Asteraceae	NNG, DIS
*Hedypnois rhagadioloides**	Crete hedypnois	Asteraceae	NNG
Helianthus annuus	western sunflower	Asteraceae	NNG

Species Name	Common Name	Family	Habitat
Heliotropium curassavicum var. oculatum	salt heliotrope	Boraginaceae	NNR
*Helminthotheca echioides**	bristly ox-tongue	Asteraceae	NNG
Heteromeles arbutifolia	toyon, Christmas berry	Rosaceae	NNG
Heterotheca grandiflora	telegraph weed	Asteraceae	NNG
*Hirschfeldia incana**	short-pod mustard	Brassicaceae	NNG
*Hordeum murinum subsp. glaucum**	glaucous barley	Poaceae	NNG
*Hordeum murinum subsp. leporinum**	hare barley	Poaceae	CSS/NNG
Isocoma menziesii var. vernonioides	coastal goldenbush	Asteraceae	NNG
Jepsonia parryi	coast jepsonia	Saxifragaceae	NNG
*Lactuca serriola**	prickly lettuce	Asteraceae	NNG
Laennecia coulteri	Coulter's fleabane	Asteraceae	NNG, NNR
*Lamarckia aurea**	golden-top	Poaceae	NNG
Lasthenia gracilis	common goldfields	Asteraceae	NNG
Lepidium nitidum	shining peppergrass	Brassicaceae	VP
Logfia arizonica	Arizona Filago	Asteraceae	VP, NNG
*Lysimachia arvensis**	scarlet pimpernel	Primulaceae	NNR, NNG, NG
*Malva neglecta**	common mallow	Malvaceae	NNG
*Malva parviflora**	cheeseweed	Malvaceae	NNG
Malvella leprosa	alkali mallow	Malvaceae	NNG
*Marrubium vulgare**	horehound	Lamiaceae	NNG
*Medicago polymorpha**	California burclover	Fabaceae	NNG
*Melilotus indicus**	Indian sweetclover	Fabaceae	NNG
*Melilotus sp.**	sweetclover/sourclover	Fabaceae	NNG
*Mesembryanthemum crystallinum**	crystalline iceplant	Aizoaceae	NNG
Mirabilis laevis var. crassifolia	coastal wishbone plant	Nyctaginaceae	NNG
*Nicotiana glauca**	tree tobacco	Solanaceae	NNG
*Olea europaea**	olive	Oleaceae	NNG
Opuntia sp.	prickly-pear cactus (native)	Cactaceae	NNG, VP
Osmadenia tenella	osmadenia	Asteraceae	NNG
Peritoma arborea var. arborea	bladderpod	Cleomaceae	NNG
*Phalaris minor**	little-seed canary grass	Poaceae	DW, NNG
Plantago erecta	dot-seed plantain	Plantaginaceae	DIS, NNG, CSS/NNG
Poaceae	unidentified non-native grass	Poaceae	DW, NNG
Pseudognaphalium biolettii	bicolor cudweed	Asteraceae	NNG
Pseudognaphalium californicum	California everlasting	Asteraceae	NNG
Rhus integrifolia	lemonadeberry	Anacardiaceae	NNG
*Rumex crispus**	curly dock	Polygonaceae	NNR
Salix gooddingii	Goodding's black willow	Salicaceae	NNG
Salix laevigata	red willow	Salicaceae	DW
*Salsola sp.**	Russian-thistle	Chenopodiaceae	NNG, VP
*Salsola tragus**	prickly Russian-thistle, tumbleweed	Chenopodiaceae	NNG, VP, DIS
Sidalcea sparsifolia	checker-bloom	Malvaceae	NNG
*Silybum marianum**	milk thistle	Asteraceae	NNR, NNG
Simmondsia chinensis	jojoba, goatnut	Simmondsiaceae	CSS/NNG
*Sinapis arvensis**	charlock	Brassicaceae	NNG
*Sisymbrium irio**	London rocket	Brassicaceae	NNG
Sisyrinchium bellum	blue-eyed-grass	Iridaceae	VP, NNG
*Sonchus asper subsp. asper**	prickly sow-thistle	Asteraceae	NNG
*Sonchus oleraceus**	common sow-thistle	Asteraceae	NNG, NG
Stipa cernua	nodding needle grass	Poaceae	NG, NNG, VP
Stipa pulchra	purple needle grass	Poaceae	NG, NNG, VP

Species Name	Common Name	Family	Habitat
*Tamarix ramosissima**	tamarisk/salt-cedar	Tamaricaceae	NNG, DW, NNR
Toxicoscordion fremontii	Fremont's camas	Melanthiaceae	CSS/NNG
*Tragopogon porrifolius**	salsify, oyster plant	Asteraceae	NNG
Uropappus lindleyi	silver puffs	Asteraceae	NNG
*Urtica urens**	dwarf nettle	Urticaceae	NNR, NNG
Vicia sp.(*)	vetch	Fabaceae	NNG
*Washingtonia robusta**	Mexican fan palm	Arecaceae	DIS

*Non-native

! State or Federal special-status (State endangered, threatened, or rare, CRPR 1-4; Federal endangered, threatened, or candidate for listing)

CSS/NNG = Coastal Sage Scrub/Non-Native Grassland Mix (pre-burn)
DIS = Disturbed Land
DW = Disturbed Wetland
NG = Native Grassland
NNG = Non-Native Grassland
NNR = Non-Native Riparian
VP = Vernal Pool

APPENDIX B

Animals Observed on the Otay 250 SPA Project Site

APPENDIX B ANIMALS OBSERVED ON THE OTAY 250 SPA PROJECT SITE			
Scientific Name	**Common Name**	**Habitats Observed, Years Observed**	**No. Observed (estimate)****
Invertebrates			
Anthocharis sara	Sara orangetip	NNG 2016	1
Aphonopelma sp.	tarantula	NNG 2001	1
*Apis mellifera**	honey bee	NNG 2015-16	many (colony)
Apodemia mormo	Mormon metalmark	CSS/NNG 1999	2
Argiope argentata	silver argiope spider	NNG 2016	1
Autographa californica	alfalfa looper	2001	-
Bombus sp.	bumble bee	NNG 2016	1
Branchinecta sandiegonensis!	San Diego fairy shrimp	VP 1998, 1999	-
Brephidium exilis	western pygmy-blue	CSS/NNG 1999, NNG 2016	22
Class Gastropoda	snail	NG 2016, NNG 2015-16	many (shells)
*Coccinella septempunctata**	seven-spotted lady beetle	NNG 2015	1
Coenonympha tullia	common ringlet	CSS/NNG 1999	166
Colias eurytheme	orange sulphur	NNG 2016	5+
Colias sp.	clouded sulphur	NNG 2016	2
Dasymutilla sackenii	thistledown velvet ant	NNG 2015, NG 2016	1
Eleodes sp.	desert stink beetle	NNG 2016	2
Erynnis funeralis	funereal duskywing	NNG 2015-16, 1999	2
Family Agelenidae	funnel weaver spider	NNG 2015-16	many
Family Gryllidae	cricket	NNG 2015	many
Family Meloidae	blister beetle	CSS/NNG 2001	-
Family Salticidae	jumping spider	DW 2015	3
Family Syrphidae	hover fly	DIS 2015	1
Family Trombidiidae	true velvet mite	DIS 2015	1
Gnathamitermes perplexus	long-jawed desert termite	NNG 2016	tubes
Hemileuca electra electra	Electra buckmoth	CSS/NNG 2001	-
Lactrodectus hesperus	western black widow	NG 2016	1
Leprus intermedius	Saussure's blue-winged grasshopper	NNG 2016	4+
*Linepithema humile**	Argentine ant	DIS 2015	many
Order Lepidoptera	unidentified moths & caterpillars	DW, NNG 2015	many
Papilio zelicaon	anise swallowtail	NNG 2015-16, 1999	20
Pepsis spp.	tarantula hawk wasps	NNG 2001, 2015-16	4
*Pieris rapae**	cabbage white	CSS/NNG 1999, NNG 2016	16
Pontia protodice	checkered white	NNG 2015-16, 1999	28
Pyrgus albescens	white checkered-skipper	NNG 2015-16	11
*Rumina decollata**	decollate snail	NG, NNG 2015	many
*Scantius aegyptius**	red bug	NNG 2016	many
Strymon melinus	gray hairstreak	CSS/NNG 1999, NNG 2016	3
Subfamily Coliadinae	sulphur or yellow butterfly (unidentified)	NNG 2016	1
Subfamily Pierinae	white buttefly (unidentified)	NNG 2015-16	10
Suborder Anisoptera	dragonfly	NNG 2015-16	2
Suborder Caelifera	grasshopper	DW, NNG 2015	many
Thyanta custator	red-shouldered stink bug	NNG 2016	1
Xysticus sp.	ground crab spider	DW 2015	1

Scientific Name	Common Name	Habitats Observed, Years Observed	No. Observed (estimate)**
Vanessa annabella	west coast lady	NNG 2015-16, 1999	9
Vanessa atalanta	red admiral	NNG 1999	2
Vanessa cardui	painted lady	NNG 2016, 1999	1
Vanessa sp.	lady butterfly (unidentified)	NNG 2015, 1999	6
Vanessa virginiensis	American lady	NNG 2016	5
Amphibians			
Hyla regilla	chorus frog	1998	-
Reptiles			
Crotalus oreganus	western rattlesnake	1998, CSS/NNG 2001, 2015-16 NNG	~~2+~~5
Diadophis punctatus similis!	San Diego ring-necked snake	~~1998~~northern CSS/NNG 1999	1
Elgaria multicarinata	alligator lizard	1998	-
Lampropeltis californiae	California kingsnake	1998, CSS/NNG 1999 and 2001	-, 1, 1
Sceloporus occidentalis	western fence lizard	DW 2015, NNG 2016	1
Suborder Serpentes	unidentified snake	NNG 2015-16	(skin)
Birds			
Accipiter cooperii!	Cooper's hawk	NNG FO 2015	1
Agelaius phoeniceus	red-winged blackbird	NNR, NNG 2015-2016; 1998	6
Aeronautes saxatalis	white-throated swift	NNG 2016	~30
Aimophila ruficeps canescens!	Southern California rufous-crowned sparrow	CSS/NNG 1999	-
Ammodramus savannarum (perpallidus)!	grasshopper sparrow	CSS/NNG 2001	>1
Anas platyrhynchos	mallard	1998	-
Athene cunicularia (*hypugaea*)!	burrowing owl	NNG 2016	burrow(s)
Buteo jamaicensis	red-tailed hawk	NNG 2015-16	2
Buteo regalis!	ferruginous hawk	FO 1998	1
Calypte anna	Anna's hummingbird	DW, NNG 2015-16; 1998	1
Cathartes aura	turkey vulture	NNG FO 2015	1
Circus cyaneus!	northern harrier	Pair, single male, and single female or immature in/over NNG 2015-2016; CSS/NNG (nesting) 1999	3, 1, 2
Corvus brachyrhynchos hesperis	American crow	NNG FO 2016	1
Corvus corax	common raven	NNG 2015-16, 1998	2
Elanus leucurus!	white-tailed kite	Foraging in NNG 1998	pair
Empidonax difficilis	Pacific-slope flycatcher	1998	-
Eremophila alpestris actia!	California horned lark	NNG 2015-16	up to 20
Falco sparverius	American kestrel	NNG 2016, 2015, 1998	1, -
Family Emberizidae	sparrow (unidentified)	NNG 2016	several
Family Hirundinidae	swallow (unidentified)	NNG 2015	3
Geothlypis trichas	common yellowthroat	1998	-
Haemorhous mexicanus	house finch	DW, NNG 2015-2016	up to 30
Icterus cucullatus nelsoni	hooded oriole	NNG 2016	pair
Lanius ludovicianus!	loggerhead shrike	NNG/DW 2015	1
Larus delawarensis	ring-billed gull	NNG FO 2015	1
Larus sp.	larus gull (unidentified)	NNG FO 2016	1

Scientific Name	Common Name	Habitats Observed, Years Observed	No. Observed (estimate)**
Melospiza melodia	song sparrow	DW, NNG 2015, 1998	~10
Mimus polyglottos polyglottos	northern mockingbird	NNG 2016	1
*Passer domesticus domesticus**	house sparrow	NNG 2016	several
Passerculus sandwichensis	savannah sparrow	NNG 2015-16	5
Petrochelidon pyrrhonota	cliff swallow	NNG FO 2015-2016, 1998	25-30
Regulus calendula	ruby-crowned kinglet	1998	-
Sayornis nigricans	black phoebe	1998, 2016	1
Sayornis saya	Say's phoebe	DW, NNG 2015-16; 1998	1
Setophaga coronata	yellow-rumped warbler	NNG 2016	several
Spinus psaltria	lesser goldfinch	1998	-
*Streptopelia decaocto**	Eurasian collared-dove	NNG 2016	2
Sturnella neglecta	western meadowlark	NNG 2015-16, 1998	≥10
*Sturnus vulgaris vulgaris**	European starling	NNG 2016	2
Tyrannus verticalis	western kingbird	NNG 2015-2016	3
Tyto alba	barn owl	1998, NNG 2016	pellet, feathers in BOS in 2016
Zenaida macroura	mourning dove	NNR, NNG 2015-2016; 1998	8
Zonotrichia leucophrys	white-crowned sparrow	NNG 2015-2016, 1998	several to small flock
Mammals			
Canis latrans	coyote	NNG 2015-16, 1998	2 live and scat in 2015, 1 live 2016
Family Leporidae	rabbit or hare (unidentified)	NNG 2015	scat
Family Mephitidae	striped or spotted skunk	NNG 2016	skull
Lepus californicus bennettii!	San Diego black-tailed jackrabbit	CSS/NNG 2001, NNG 2015-16	-, 3
Microtus californicus	California vole	CSS/NNG 1998, 1999	-holes
Order Rodentia	rodent, unidentified	NNG 2015-16	holes
Peromyscus eremicus	cactus mouse	1999	-
Sylvilagus audubonii	desert cottontail	1998, NNG 2016	2
Spermophilus beecheyi	California ground squirrel	NNG 2015-16, 1998	1 live, holes, most common in eastern field
Thomomys bottae	Botta's pocket gopher	NNG 2015-16, 1998	mounds, most dense in mima mound area

* Non-native species

! State or Federal special-status species (State endangered, threatened, endangered candidate, fully protected, watchlist, or CDF or federal endangered, threatened, candidate for listing, USFWS Bird of Conservation Concern, BLM sensitive, or USFWS sensitive)

** Approximate total per survey, not a cumulative total

CSS/NNG = former mosaic of Coastal Sage Scrub and Non-Native Grassland in mima-mound area (prior to fire)

DIS = Disturbed Habitat
DW = Disturbed Wetland
FO = Fly-Over
NG = Native Grassland
NNG = Non-Native Grassland
NNR = Non-Native Riparian

APPENDIX C

Special-Status Plants with Potential to Occur on the Otay 250 SPA Project Site, CNDDB Forms

APPENDIX C

SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR ON THE OTAY 250 SPA PROJECT SITE

(USGS OTAY MESA QUAD, 136 - 191 METERS [445 - 625 FT])

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Acanthomintha ilicifolia	thornmint, San Diego thorn-mint	Lamiaceae	1B.1	**SE/FT**	X	X	A	Annual herb, Apr-Jun	Clay soil, openings in chaparral, coastal scrub, valley & foothill grassland, vernal pools; 10-960 m	Low; not detected on site during 1978, 1991, 1998, 1999, or any 2000s surveys.
Adolphia californica	spineshrub, California adolphia	Rhamnaceae	2B.1	-/-			B	Shrub (deciduous), Dec-May	Clay soil in chaparral, coastal scrub, valley & foothill grassland; 45-740 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Agave shawii var. *shawii*	Shaw's agave	Agavaceae	2B.1	-/-	X	X	B	Perennial (leaf succulent), Sep-May	Coastal bluff scrub, coastal scrub; 10-120 m	Low; not known to occur in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed during 1978, 1991, 1998, 1999 or any 2000s surveys.
Ambrosia chenopodiifolia	San Diego bur-sage	Asteraceae	2B.1	-/-			B	Shrub, Apr-Jun	Coastal scrub; 55-155 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ambrosia monogyra (Hymenoclea m.)	desert fragrance	Asteraceae	2B.2	-/-			-	Shrub, Aug-Nov	Sandy or rocky soils in sage scrub, chaparral and Sonoran desert scrub; 10-500 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ambrosia pumila	San Diego ambrosia	Asteraceae	1B.1	-/**FE**	X	X	A	Perennial herb (rhizomatous), Apr-Oct	Sandy loam or clay, often disturbed areas, sometimes alkaline areas, in chaparral, coastal scrub, valley & foothill grassland, near vernal pools; 20-415 m	Low; potentially suitable habitat and soils occur on-site, but not known to occur in Project quad and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Aphanisma blitoides	aphanisma	Chenopodiaceae	1B.2	-/-		X	A	Annual herb, Mar-Jun	Sandy soils in coastal bluff scrub, coastal dunes, coastal scrub; 1-305 m	Low; unsuitable habitat and soils occur on-site, not known to occur in Project quad, and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Arctostaphylos otayensis	Otay manzanita	Ericaceae	1B.2	-/-		X	A	Shrub (evergreen), Jan-Apr	Metavolcanic soils in chaparral, cismontane woodland; 275-1700 m	Low; not known to occur in Project quad and suitable soils and habitat do not occur on-site; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Artemisia palmeri	Palmer's sagewort, San Diego sagewort	Asteraceae	4.2	-/-			D	Biennial to perennial herb to subshrub, Feb-Sep	Sandy, mesic soils in chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; 15-915 m	Low; not known to occur in Project quad, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Asplenium vespertinum	western spleenwort	Aspleniaceae	4.2	-/-			D	Perennial herb (rhizomatous), Feb-Jun	Under overhanging rocks in rocky chaparral, cismontane woodland, coastal scrub; 180-1000 m	Low; known to occur in Project quad, but suitable habitat does not occur on-site and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Astragalus deanei	Deane's locoweed/milkvetch	Fabaceae	1B.1	-/-			A	Perennial herb, Feb-May	Chaparral, cismontane woodland, coastal scrub, riparian forest; 75-695 m	Low; not known to occur in Project quad, suitable habitat does not occur on-site, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	1B.2	-/-			A	Perennial herb, Mar-Oct	Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland; 3-460 m	Low; potentially suitable habitat and soils occur on-site but not known to occur in Project quad, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Atriplex pacifica	south coast saltbush, south coast saltscale	Chenopodiaceae	1B.2	-/-			A	Annual herb, Mar-Oct	Coastal bluff scrub, coastal dunes, coastal scrub, playas; 0-140 m	Low; known to occur in Project quad, but onsite habitat likely unsuitable, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Bahiopsis laciniata (Viguiera l.)	San Diego sunflower, San Diego County viguiera	Asteraceae	4.2	-/-			D	Shrub, Feb-Aug	Chaparral, coastal scrub; 60-750 m	**DOCUMENTED ONSITE; observed onsite among coastal sage scrub plants in 1999 and 2001 QCB surveys, not observed since that vegetation burned (burn date unknown) but could regenerate under decent rainfall**
Bergerocactus emoryi	velvet cactus, golden-club cactus, golden-spined cereus	Cactaceae	2B.2	-/-			B	Shrub (stem succulent), May-Jun	Sandy soils in closed-cone coniferous forest, chaparral, coastal scrub; 3-395 m	Low; documented in O'Neal Canyon but suitable habitat does not occur on-site, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Bloomeria clevelandii (Muilla c.)	San Diego goldenstar	Themidaceae	1B.1	-/-		X	A	Perennial herb (bulbiferous), Apr-May	Clay soil in chaparral, coastal scrub, valley & foothill grassland, near vernal pools; 50-465 m	Moderate; not observed onsite during surveys conducted to date, but documented north side of Johnson Canyon on same soil map unit in onsite mima mound area, and on similar soils to east of site.
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	1B.1	-/-		X	A	Perennial herb (deciduous, bulbiferous), May-Jul	Mesic, clay, serpentinite soils in closed-cone coniferous forest, chaparral, cismontane woodland, meadows & seeps, valley & foothill grassland, and near vernal pools; 30-1692 m	Low; although historically documented in Johnson Canyon and nearby vernal pools, was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Calandrinia breweri	Brewer's calandrinia	Montiaceae	4.2	-/-			D	Annual herb, Mar-Jun	Sandy or loamy disturbed or burned areas in chaparral, coastal scrub; 10-1220 m	Low; not known to occur in Project quad, onsite soils unsuitable, was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Cistanthe maritima	sea kisses, seaside cistanthe/calandrinia	Montiaceae	4.2	-/-			D	Annual herb, Feb-Aug	Sandy soils in coastal bluff scrub, coastal scrub, valley & foothill grassland; 5-300 m	Low; known to occur in Project quad but onsite soils unsuitable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
California macrophylla (Erodium macrophyllum)	California large-leaf filaree/storksbill, round-leaved filaree	Geraniaceae	1B.1	-/-			B	Annual herb, Mar-May	Clay soil, cismontane woodland, valley & foothill grassland; 15-1200 m	Low; known to occur in Project quad but onsite soils potentially suitable but was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Calochortus dunnii	Dunn's mariposa lily	Liliaceae	1B.2	**SR**/-	X	X	A	Perennial herb (bulbiferous), Feb-Jun	Gabbroic or metavolcanic soil, rocky, in closed-cone coniferous forest, chaparral, valley & foothill grassland; 185-1830 m	Low; suitable soil does not occur on-site, was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Camissonia lewisii	Lewis's evening-primrose	Onagraceae	3	-			C	Annual herb, Mar-Jun	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley & foothill grassland/ sandy or clay; 0-300 m	Low; not documented in Project quad, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Caulanthus simulans	Payson's caulanthus, Payson's jewel-flower	Brassicaceae	4.2	-/-			D	Annual herb, Feb-Jun	Sandy, granitic chaparral, coastal scrub; 90-2200 m	Low; not known to occur in Project quad, suitable habitat and soils do not occur on-site, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ceanothus cyaneus	Lakeside-lilac, Lakeside ceanothus	Rhamnaceae	1B.2	-/-	X	X	A	Shrub (evergreen), Apr-Jun	Closed-cone coniferous forest, chaparral; 235-755 m	Low; known to occur in Project quad but suitable habitat does not occur on-site, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ceanothus otayensis	Otay-lilac, Otay Mountain ceanothus	Rhamnaceae	1B.2	-/-			-	Shrub (evergreen), Jan-Apr	Metavolcanic or gabbroic soils in chaparral; 600-1100 m	Low; not known to occur in Project quad but suitable habitat does not occur on-site, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Chamaebatia australis	southern mountain misery	Rosaceae	4.2	-/-			D	Shrub (evergreen), Nov-May	Gabbroic or metavolcanic chaparral; 300-1020 m	Low; known to occur in Project quad but suitable habitat and soils do not occur on-site, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Chorizanthe polygonoides var. *longispina*	knotweed spineflower, long-spined spineflower	Polygonaceae	1B.2	-/-			A	Annual herb, Apr-Jul	Often clay soils in chaparral, coastal scrub, meadows & seeps, valley & foothill grassland, near vernal pools; 30-1530 m	Low; documented in Project quad and potentially suitable habitat occurs onsite, but not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Clarkia delicata	delicate clarkia, Campo clarkia	Onagraceae	1B.2	-/-			A	Annual herb, Apr-Jun	Often gabbroic soil in chaparral, cismontane woodland; 235-1000 m	Low; 5 documented on north-facing slopes of O'Neal Canyon but suitable habitat and soils do not occur on-site, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Clinopodium chandleri (Satureja c.)	San Miguel savory	Lamiaceae	1B.2	-/-		X	A	Shrub, Mar-Jul	Rocky, gabbroic or metavolcanic soils in chaparral, cismontane woodland, coastal scrub, riparian woodland, valley & foothill grassland; 120-1075 m	Low; not known to occur in Project quad, unsuitable soils onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Comarostaphylis diversifolia subsp. *diversifolia*	summer-holly	Ericaceae	1B.2	-/-			A	Shrub (evergreen), Apr-Jun	Chaparral, cismontane woodland; 30-790 m	Low; documented in Project quad but suitable habitat does not occur onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Convolvulus simulans	small-flower bindweed, small-flowered morning-glory	Convolvulaceae	4.2	-/-			D	Annual herb, Mar-Jul	Clay soils and serpentinite seeps in chaparral openings, coastal scrub, valley & foothill grassland; 30-700 m	**OCCURS ONSITE; observed growing in non-native grassland near patch of native grassland just upslope of creek in Johnson Canyon in 2015. 1 individual growing on abandoned BUOW burrow in SE NNG in 2016.**
Corethrogyne filaginifolia var. *incana* (no varieties recognized in TJM2)	San Diego sand-aster	Asteraceae	1B.1	-/-			A	Perennial herb, Jun-Sep	Chaparral, coastal bluff scrub, coastal scrub; 3-115 m	Low; not known to occur in Project quad, suitable habitat does not occur onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Cylindropuntia californica var. *californica (Opuntia parryi* var. *serpentina)*	snake cholla	Cactaceae	1B.1	-/-	X	X	A	Shrub (stem succulent), Apr-May	Chaparral, coastal scrub; 30-150 m	Low; documented in Project quad, but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Deinandra conjugens (Hemizonia c.)	Otay tarplant	Asteraceae	1B.1	**SE/FT**	X	X	A	Annual herb, May-Jun	Clay soils in coastal scrub, valley & foothill grassland; 25-300 m	Low; documented to southeast of site in the SPA but not detected onsite during 1978, 1991, or any 2000s surveys.
Deinandra floribunda (Hemizonia f.)	Tecate tarplant	Asteraceae	1B.2	-/-			A	Annual herb, Aug-Oct	Chaparral, coastal scrub; 70-1220 m	Low; not known to occur in Project quad, suitable habitat does not occur onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Deinandra paniculata (Hemizonia p.)	San Diego tarplant, paniculate tarplant	Asteraceae	4.2	-/-			D	Annual herb, Apr-Nov	Vernal pools and vernally mesic areas in coastal scrub, valley & foothill grassland; 25-940 m	Low; suitable habitat onsite but not known to occur in Project quad, not observed during 1978, 1991, 1998, 1999, or any 2000s surveys.
Dichondra occidentalis	western dichondra, western ponyfoot	Convolvulaceae	4.2	-/-			D	Perennial herb (rhizomatous), Jan-Jul	Chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 50-500 m	Low to moderate; not documented onsite, but occurs near eastern edge of SPA, could grow around rocks in former CSS area, and can be difficult to detect.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Dicranostegia orcuttiana (Cordylanthus orcuttianus)	Orcutt's bird's beak	Orobanchaceae	2B.1	-		X	B	Annual herb (hemiparasitic), Mar-Sep	Coastal scrub, 10-350 m	Low; known to occur in Project quad but suitable habitat does not occur onsite and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Dudleya attenuata subsp. attenuata (D. a. subsp. orcuttii)	Orcutt's dudleya	Crassulaceae	2B.1	-/-			B	Perennial herb, May-Jul	Rocky or gravelly coastal bluff scrub, chaparral, coastal scrub; 3-50 m	Low; only known in CA from Border Field State Park, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Dudleya blochmaniae subsp. *blochmaniae*	Blochman's dudleya	Crassulaceae	1B.1	-/-			A	Perennial herb, Apr-Jun	Rocky, often clay/serpentinite in coastal bluff scrub, chaparral, coastal scrub, valley & foothill grassland; 5-450 m	Low; not known to occur in Project quad, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Dudleya variegata	variegated dudleya	Crassulaceae	1B.2	-/-	X	X	A	Perennial herb, Apr-Jun	Clay soils in chaparral, cismontane woodland, coastal scrub, valley & foothill grassland, near vernal pools; 3-580 m	**DOCUMENTED ONSITE; observed onsite in mima mound area over several decades, see report text.**
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	Asteraceae	1B.1	-/-	X	X	B	Shrub (evergreen), Jul-Nov	Mesic chaparral, coastal scrub; 30-600 m	Low; not known to occur in Project quad, unsuitable habitat onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Eryngium aristulatum var. *parishii*	San Diego button-celery	Apiaceae	1B.1	**SE/FE**		X	A	Biennial to perennial herb, Apr-Jun	Mesic coastal scrub, valley & foothill grassland, vernal pools; 20-620 m	**DOCUMENTED ONSITE; observed onsite in vernal pools/ depressions since at least 1978, see report text. Observed in 2001 and 2004 and in 1999 QCB survey.**
Euphorbia misera	cliff spurge	Euphorbiaceae	2B.2	-/-			B	Shrub, Dec-Aug	Coastal bluff scrub, coastal scrub/ rocky; 10-500 m	Low; known to occur in Project quad but unsuitable habitat onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ferocactus viridescens	coast barrel cactus, San Diego barrel cactus	Cactaceae	2B.1	-/-		X	B	Perennial (stem succulent), May-Jun	Chaparral, coastal scrub, valley & foothill grassland, near vernal pools; 3-450 m	**OCCURS ONSITE; observed growing in non-native grassland and former CSS vegetation in mima mound area; 110 counted onsite in 2001, observed in 2015-2016.**
Fremontodendron mexicanum	southern fremontia, Mexican flannelbush	Malvaceae	1B.1	**SR/FE**			A	Shrub (evergreen), Mar-Jun	Gabbroic, metavolcanic, or serpentinite soils in closed-cone coniferous forest, chaparral, cismontane woodland; 10-716 m	Low; known to occur in Project quad but unsuitable habitat and soil onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Grindelia hallii (G. hirsutula var. *hallii)*	San Diego gumplant	Asteraceae	1B.2	-/-			A	Perennial herb, Jul-Oct	Chaparral, lower montane coniferous forest, meadows & seeps, valley & foothill grassland; 185-1745 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Harpagonella palmeri	Palmer's grappling-hook	Boraginaceae	4.2	-/-			D	Annual herb, Mar-May	Clay soils in chaparral, coastal scrub, valley & foothill grassland; 20-955 m	Moderate; not observed onsite during surveys conducted to date, but documented in northeastern portion of SPA, suitable habitat occurs onsite, and can be difficult to detect.
Hesperocyparis forbesii (Cupressus f.)	Tecate cypress	Cupressaceae	1B.1	-/-		X	A	Tree (evergreen)	Clay, gabbroic, or metavolcanic soils in closed-cone coniferous forest, chaparral; 80-1500 m	Low; occurs in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Holocarpha virgata subsp. *elongata*	graceful tarplant	Asteraceae	4.2	-/-			D	Annual herb, May-Nov	Chaparral, cismontane woodland, coastal scrub, valley & foothill grassland; 60-1100 m	Low; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Hordeum intercedens	little barley, vernal barley	Poaceae	3.2	-			C	Annual herb, Mar-Jun	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; 5-1000 m	Low; not documented onsite during 1991, 1998, 1999, or any 2000s surveys.
Hosackia crassifolia var. *otayensis (Lotus crassifolius* var. *o.)*	Otay Mountain lotus	Fabaceae	1B.1	-/-			A	Perennial herb, May-Aug	Metavolcanic soils, often disturbed, in chaparral; 380-1005 m	Low; not known to occur in Project quad, unsuitable habitat and soils onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	1B.2	-/-			A	Shrub, Apr-Nov	Sandy, often disturbed areas in chaparral, coastal scrub; 10-135 m	Low; known to occur in Project quad but unsuitable habitat and soil onsite, no observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys (onsite *Isocoma* identified as *I. m.* var. *vernonioides)* .
Iva hayesiana	San Diego marsh-elder	Asteraceae	2B.2	-/-			B	Perennial herb to subshrub, Apr-Oct	Marshes & swamps, playas; 10-500 m	Low to moderate; occurs along drainage in Johnson Canyon, apparently just outside northern parcel boundary.
Juncus acutus subsp. *leopoldii*	southwestern spiny rush	Juncaceae	4.2	-/-			D	Perennial herb, Mar-Jun	Coastal dunes (mesic), meadows & seeps (alkaline seeps), marshes and swamps (coastal salt); 3-900 m	Low; occurs in Johnson Canyon but easily detectable and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Lasthenia glabrata subsp. *coulteri*	Coulter's salt-marsh daisy, Coulter's goldfields	Asteraceae	1B.1	-/-			A	Annual herb, Feb-Jun	Coastal salt marshes & swamps, playas, vernal pools; 1-1220 m	Low; not known to occur in Project quad, only marginally suitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Lepechinia ganderi	Gander's pitcher sage	Lamiaceae	1B.3	-/-	X	X	A	Shrub, Jun-Jul	Gabbroic or metavolcanic soils in closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; 305-1005 m	Low; known to occur in Project quad but unsuitable soils onsite, would have been detectable and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Lepidium virginicum var. *robinsonii* (not recognized in TJM2)	Robinson's peppergrass	Brassicaceae	4.3	-/-			A	Annual herb, Jan-Jul	Chaparral, coastal scrub; 1-885 m	Low; known to occur in Project quad and former CSS vegetation onsite could have been marginally suitable, but no observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Lilium humboldtii subsp. *ocellatum*	ocellated lily, ocellated Humboldt lily	Liliaceae	4.2	-/-			D	Perennial herb (bulbiferous), Mar-Aug	Openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; 30-1800 m	Low; known to occur in Project quad but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Lycium californicum	California desert thorn	Solanaceae	4.2	-			D	Shrub, Mar-Aug	Coastal bluff scrub, coastal scrub; 5-150 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Microseris douglasii subsp. *platycarpha*	small-flower microseris	Asteraceae	4.2	-/-			D	Annual herb, Mar-May	Clay soils in cismontane woodland, coastal scrub, valley & foothill grassland, vernal pools; 15-1070 m	Low; potentially suitable habitat and soils onsite but not known to occur in Project quad, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Monardella stoneana	Jennifer's monardella	Lamiaceae	1B.2	-/-			A	Perennial herb to subshrub, Jun-Sep	Usually in rocky intermittent streambeds, closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; 10-790 m	Low; documented in Project quad, but vouchered specimens are from further east, and not observed in onsite drainage during any 2000s surveys.
Monardella viminea (M. linoides subsp. v.)	willowy monardella	Lamiaceae	1B.1	**SE/FE**	X	X	A	Perennial herb to subshrub, Jun-Aug	Alluvial ephemeral washes, chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; 50-225 m	Low; not known to occur in Project quad, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Mucronea californica	California spineflower	Polygonaceae	4.2	-/-			D	Annual herb, Mar-Aug	Sandy soil in chaparral, cismontane woodland, coastal dunes, coastal scrub, valley & foothill grassland; 0-1400 m	Low; onsite soils unsuitable, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Myosurus minimus (includes M. m. subsp. apus)	little mousetail	Ranunculaceae	3.1	-/-			C	Annual herb, Mar-Jun	Valley & foothill grassland, vernal pools (alkaline); 20-640 m	Low; never documented in J22 complex, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Nama stenocarpum	mud nama	Boraginaceae	2B.2	-/-			B	Annual to perennial herb, Jan-Jul	Marshes & swamps (lake margins, riverbanks); 5-500 m	Low; known to occur in Project quad but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Navarretia fossalis	spreading navarretia	Polemoniaceae	1B.1	**-/FT**		X	A	Annual herb, Apr-Jun	Chenopod scrub, marshes & swamps (shallow freshwater), playas, vernal pools; 30-655 m	**DOCUMENTED ONSITE; documented as present in J22 complex in 1978, and approx. 12 individuals in one J22 vernal pool documented in 1991.**

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Navarretia prostrata	flat navarretia	Polemoniaceae	1B.1	-/-			A	Annual herb, Apr-Jul	Alkaline floodplains and vernal pools; <700 m (TJM2)	Low; not known to occur in Project area, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ophioglossum californicum	California adder's tongue	Ophioglossaceae	4.2	-			D	Perennial herb (rhizomatous), Dec-Jun	Mesic chaparral and valley & foothill grassland, vernal pools margins); 60-525 m	Low; although potentially suitable habitat occurs onsite, not vouchered in Project area and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Orcuttia californica	California Orcutt's grass	Poaceae	1B.1	**SE/FE**		X	A	Annual herb, Apr-Aug	Vernal pools; 15-660 m	Low; although potentially suitable habitat occurs onsite, not vouchered in Project area and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ornithostaphylos oppositifolia	Baja California birdbush	Ericaceae	2B.1	**SE**/-			B	Shrub (evergreen), Jan-Apr	Chaparral; 55-800 m	Low; not known to occur in Project quad, unsuitable habitat onsite; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys..
Orobanche parishii subsp. *brachyloba*	beach orobanche, short-lobe orobanche	Orobanchaceae	4.2	-/-			D	Perennial herb (parasitic), Apr-Oct	Sandy coastal bluff scrub, coastal dunes, coastal scrub; parasitic on shrubs, generally *Isocoma menziesii* ; 3-305 m	Low; not known to occur in Project quad, unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Pentachaeta aurea subsp. *aurea*	golden-ray pentachaeta	Asteraceae	4.2	-			D	Annual herb, Mar-Jul	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley & foothill grassland; 80-1850 m	Moderate; not documented onsite, but widespread and easily overlooked.
Pickeringia montana var. tomentosa	woolly chaparral-pea	Fabaceae	4.3					Shrub (evergreen), May-Aug	Gabbroic, granitic or clay soils in chaparral; 0-1700 m	Low; documented in Project quad but unsuitable habitat onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Piperia cooperi	Cooper's rein orchid, chaparral rein orchid	Orchidaceae	4.2	-/-			D	Perennial herb, Mar-Jun	Chaparral, cismontane woodland, valley & foothill grassland; 15-1585 m	Low; onsite habitat only marginally suitable, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Pogogyne nudiuscula	Otay mesa mint	Lamiaceae	1B.1	**SE/FE**		X	A	Annual herb, May-Jul	Vernal pools; 90-250 m	Low; was not reported in Project J22 complex in 1978 or any subsequent surveys; during 1991 surveys within SPA, was found only in J26.
Polygala cornuta var. *fishiae*	Fish's milkwort	Polygalaceae	4.3	-/-			D	Shrub (deciduous), May-Aug	Chaparral, cismontane woodland, riparian woodland; 100-1100 m	Low; not known to occur in Project quad, unsuitable habitat onsite; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Quercus dumosa	Nuttall's scrub oak	Fagaceae	1B.1	-/-			A	Shrub (evergreen), Feb-Aug	Sandy, clay loam soils in closed-cone coniferous forest, chaparral, coastal scrub; 15-400 m	Low; known to occur in Project quad but unsuitable habitat and soils onsite; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys..
Quercus engelmannii	Engelmann/mesa blue oak	Fagaceae	4.2	-			D	Tree (deciduous), Mar-May	Chaparral, cismontane woodland, riparian woodland, valley & foothill grassland; 120-1300 m	Low; known to occur in Project quad but would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Ribes viburnifolium	Santa Catalina Island currant, evergreen currant	Grossulariaceae	1B.2	-/-			A	Shrub (evergreen), Feb-Apr	Chaparral, cismontane woodland; 30-305 m	Low; not known to occur in Project quad and suitable habitat does not occur on-site; would have been detectable and was not observed.
Romneya coulteri	Coulter's Matilija poppy	Papaveraceae	4.2	-/-			D	Perennial herb (rhizomatous), Mar-Jul	Chaparral, coastal scrub, often in burns; 20-1200 m	Low; documented in O'Neal Canyon and to east within SPA, but would have been detectable and not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys..
Rosa minutifolia	small-leaf rose, desert rose	Rosaceae	2B.1	**SE**/-		X	B	Shrub (deciduous), Jan-Jun	Chaparral, coastal scrub; 150-160 m	Low; not known to occur in Project quad, unsuitable habitat onsite; would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Salvia munzii	Munz's sage	Lamiaceae	2B.2	-/-			B	Shrub (evergreen), Feb-Apr	Chaparral, coastal scrub; 120-1065 m	Low; occurs in eastern part of SPA but unsuitable habitat onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Selaginella cinerascens	mesa spike-moss, ashy spike-moss	Selaginellaceae	4.1	-/-			D	Perennial rhizomatous herb	Chaparral and coastal scrub on undisturbed soil.	Low; known to occur in Project quad but not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Senecio aphanactis	California groundsel, chaparral ragwort	Asteraceae	2B.2	-/-			B	Annual herb, Jan-Apr	Chaparral, cismontane woodland, coastal scrub, sometimes alkaline; 15-800 m	Low; known to occur in Project quad but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Stemodia durantifolia	blue streamwort, purple stemodia	Plantaginaceae	2B.1	-/-			B	Perennial herb, Jan-Dec	Riparian habitats, on wet sand or rocks, drying streambeds; <400 m (TJM2)	Low; documented in Project quad but not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Stipa diegoensis (Achnatherum diegoense)	San Diego needlegrass, San Diego County needle grass	Poaceae	4.2	-/-			D	Perennial herb, Feb-Jun	Rocky, often mesic areas in chaparral, coastal scrub; 10-800 m	Low; documented in eastern side of SPA, but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Streptanthus bernardinus	Laguna Mountain jewelflower	Brassicaceae	4.3	-/-			D	Perennial herb, May-Aug	Chaparral, lower montane coniferous forest; 670-2500 m	Low; known to occur in Project quad but unsuitable habitat onsite, not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Species Name	Common Name	Family	CRPR	State/ Federal	Cnty NE	MSCP	Cnty List	Growth form, bloom time	Habitat	Potential to Occur Onsite
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	1B.2	-/-		X	A	Shrub, Apr-May	Chaparral, coastal scrub; 165-1000 m	Low; known to occur in Project quad but unsuitable habitat onsite, would have been detectable and was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.
Tortula californica	California screw moss	Pottiaceae	1B.2	-/-				Moss	Sandy soils in chenopod scrub, valley and foothill grassland; only known from one location in Border Field State Park 10-1460 m	Non-vascular plants were not evaluated for potential to occur, but not known to occur in Project quad and suitable habitat does not occur on-site.
Xanthisma junceum (Machaeranthera juncea)	rush chaparral-star, rush-like bristleweed	Asteraceae	4.3	-/-			D	Perennial herb, Jun-Jan	Chaparral, coastal scrub; 240-1000 m	Low; not known to occur in Project quad, unsuitable habitat onsite, was not observed onsite during 1978, 1991, 1998, 1999, or any 2000s surveys.

Listing Designations

CRPR - California Rare Plant Rank (from Rare Plant Status Review Group, jointly managed by California Department of Fish and Wildlife [CDFW] and California Native Plant Society [CNPS])

1A - Plants presumed extirpated in California and either rare or extinct elsewhere
1B - Plants rare, threatened or endangered in California AND elsewhere
2A - Presumed extirpated or extinct in California, but more common elsewhere
2B - Plants rare, threatened or endangered in California, but more common elsewhere
3 - Plants about which more information is needed - a review list
4 - Plants of limited distribution - a watch list

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

State of California species designations (CDFW April 2013)
SE - State-listed Endangered
ST - State-listed Threatened
SR - State-listed Rare

Federal species designations (CDFW April 2013, USFWS 2013)
FE - Federally-listed Endangered
FT - Federally-listed Threatened
FC - Federal candidate for listing

Cnty NE - an X in this column indicates the species is considered a Narrow Endemic by the County of San Diego (MSCP County of San Diego Subarea Plan 1997)

Cnty List - County Sensitive Plant List (County of San Diego 2010)
A - County List A: plants rare, threatened or endangered in California and elsewhere
B - County List B: plants rare, threatened or endangered in California but more common elsewhere
C - County List C: plants which may be rare, but need more information to determine their true rarity status
D - County List D: plants of limited distribution and are uncommon, but not presently rare or endangered

MSCP - an X in this column indicates the species is included in the Multiple Species Conservation Program (MSCP Plan 1998)

Other abbreviations:

EOMSPA BTR - Biological Technical Report for the East Otay Mesa Specific Plan Area; Ogden Environmental and Energy Services Co., Inc. October 1993
TJM2 - The Jepson Manual, 2nd edition (2012) (taxonomic authority for this report except where it conflicts with special-status plant recognition)
(Common names are primarily from *The Checklist of Vascular Plants of San Diego County* [Rebman and Simpson 2006], and secondarily from CNPS's Inventory of Rare and Endangered Plants [CNPS 2010, 2013])

APPENDIX D

Special-Status Animals with Potential to Occur on the Otay 250 SPA Project Site, CNDDB Forms

APPENDIX D
SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR ON THE OTAY 250 SPA PROJECT SITE
(USGS OTAY MESA QUAD, 136 - 191 METERS [445 - 625 FT])

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
INVERTEBRATES							
Branchinecta sandiegonensis	San Diego fairy shrimp	-/**FE**	X	X	1	Vernal pools and other unvegetated ephemeral basins in Orange and San Diego Counties and Baja California.	**Observed onsite during 1998-1999 surveys; cysts observed in all vernal pools and disturbed wetland NE of ag pond; adults observed in disturbed wetland within ag pond. 72.5 acres of critical habitat mapped on-site. 2016 wet season survey attempted but not completed due to lack of ponding.**
Callophrys thornei, C. gryneus t.	Thorne's hairstreak	-/BLM-S	X	X	1	Otay Mountain; host plant is *Hesperocyparis forbesii* .	Low; known to occur in Project quad but host plant does not occur onsite.
Cicindela gabbii	western tidal-flat tiger beetle	-/-			2	Mud flats, salt marshes, and sea beaches	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Cicindela hirticollis gravida	sandy beach tiger beetle	-/-			2	Moist swales behind dunes or on upper beaches above normal high tide	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Cicindela latesignata latesignata	western beach tiger beetle	-/-			2	Coastal sea beaches, bays, estuaries, salt marshes, and alkali sloughs.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Cicindela senilis frosti	senile tiger beetle	-/-			2	Coastal salt marshes, tidal mud flats, interior alkali mud flats; an inland site near Jacumba.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Coelus globosus	globose dune beetle	-/-			1	Sea beach dunes	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Danaus plexippus	monarch butterfly	-/-			2	Land with host plant milkweeds (*Asclepias* spp.) or nectar plants.	Low; *Asclepias* spp. not observed onsite and site supports limited nectar plants.
Euphydryas editha quino	Quino checkerspot butterfly	-/**FE**	X		1	Open grassy areas, interior foothills, host-plant is *Plantago erecta* , *Plantago ovata* , *Castilleja exserta;* 0-1000ft.	Low; neither butterfly nor host plants detected onsite in 1999 focused surveys but documented in/near mima mound area less than 1 mile to northeast, *Plantago erecta* observed onsite in 2015-2016. No adults or larvae found during 2016 protocol survey.
Euphyes vestris harbisoni	Harbison dun skipper	-/-	X		1	Drainages containing host plant San Diego sedge (*Carex spissa)* in San Diego and Orange Counties.	Low; not known to occur in Project quad and *Carex spissa* was not observed onsite.
Lycaena hermes	Hermes copper	-/-			1	Coastal sage scrub, mixed chaparral and chamise chaparral; 0-3000ft. Host plant is *Rhamnus crocea* .	Low; not known to occur in Project quad, host plant not observed onsite.
Panoquina errans	wandering skipper (saltmarsh skipper)	-/-		X	1	Salt or alkali marsh; 0-500 ft	Low; not known to occur in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Streptocephalus woottoni	Riverside fairy shrimp	-/**FE**	X	X	1	Vernal pools and other unvegetated ephemeral basins in inland Riverside, Orange and San Diego (Ramona area) Counties, and coastal SD County and Baja California.	Moderate; not detected in 1999 surveys but known to occur in Project quad and results were inconclusive due to insufficient ponding duration. 2016 wet season survey attempted but not completed due to lack of ponding.
Tryonia imitator	mimic tryonia	-/-			2	Coastal lagoons, estuaries and salt marshes in permanently submerged areas, in a variety of sediment types, withstands wide range of salinity.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
AMPHIBIANS							
Spea hammondii	western spadefoot	SSC/BLM-S			2	Open areas with sandy or gravelly soils, in mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains; rainpools free of bullfrogs, fish, or crayfish needed for breeding. Activity limited to wet season, summer storms or during evenings with elevated substrate moisture levels. Nocturnal. 0-4,500 ft	Low; per EOMSPA BTR, a single population found in cattle pond of southern-central SPA, but would not have been detectable in surveys and not observed onsite during 1991, 1998, 1999, or 2000s surveys.
REPTILES							
Acinemys marmorata (Emys m., Clemmys m. pallida)	western pond turtle (southwestern pond turtle)	SSC/BLM-S, USFS-S	X	X	1	Major rivers and streams, especially in headwater areas.	Low; suitable habitat does not occur onsite.
Anniella stebbinsi (formerly *A. pulchra pulchra*)	Southern California legless lizard (formerly silvery legless lizard)	SSC/-			2	Loose soil and leaf litter with plant cover in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks; often under surface objects such as rocks, boards, driftwood, and logs; sometimes found in suburban gardens in southern California; lives mostly	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Aspidoscelis hyperythra (Cnemidophorus hyperythrus)	orange-throated whiptail	SSC/-		X	2	Coastal sage scrub, mixed chaparral, grassland, riparian, and chamise chaparral habitats. Open hillsides with brush and rock, well drained soils; 1-	Low; although suitable habitat occurs onsite, per EOMSPA BTR not detected in SPA.
Aspidoscelis tigris stejnegeri (Cnemidophorus t. s.)	coastal whiptail	-/-			2	Found in hot, dry open areas with sparse foliage such as chaparral, woodland, and riparian areas mostly west of the Peninsular Ranges.	Low; per EOMSPA BTR, three areas of high concentration within SPA, but none observed onsite, only marginally suitable habitat occurs onsite.
Coleonyx variegatus abbotti	San Diego banded gecko	-/-			1	Interior coastal region, west of Peninsular ranges, prefers rocky areas in coastal sage and chaparral, nocturnal, hibernates in winter	Low; per EOMSPA BTR, occurs in Otay Mesa area, but suitable habitat with large rock outcrops does not occur onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Crotalus ruber	red diamond rattlesnake	SSC/-			2	Coastal sage scrub, mixed chaparral, open grassy areas and agricultural areas, chamise chaparral, pinon juniper and desert scrub; 0-3000ft.	Low; per EOMSPA BTR, observed in O'Neal Canyon, likely occupy naturally vegetated habitats in SPA, but suitable habitat with rocky outcrops does not occur onsite.
Diadophis punctatus similis	San Diego ringneck snake	-/USFS-S			2	Moist habitats including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands, along coast into Peninsular Ranges; may not be distinct from San Bernardino subspecies (*D. p. modestus*), which is	**Observed onsite during 1999 QCB surveys in northern CSS/NNG habitat.**
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)	SSC/USFS-S		X	2	Laguna, Palomar, Volcan, and Hot Springs Mountains in SD County.	Low; range does not overlap site, suitable habitat does not occur onsite.
Lichanura trivirgata (Charina t.)	rosy boa (coastal rosy boa)	-/USFS-S			2	Coastal sage scrub, mixed chaparral, oak woodlands and chamise chaparral. Often found in association with rock outcrops; 0-3000ft.	Low; per EOMSPA BTR, detected in SPA to east and southeast of site, but suitable habitat with rocky outcrops does not occur onsite.
Phrynosoma blainvillii (Anota coronatum, P. c.)	Blainville's horned lizard, coast horned lizard	SSC/BLM-S, USFS-S		X	2	Coastal sage scrub with harvester ants *(Pogonomyrmex* spp.).	Low; per EOMSPA BTR, occurs in eastern SPA but not detected onsite and habitat is only marginally suitable.
Plestiodon skiltonianus interparietalis (Eumeces s. i.)	Coronado skink	SSC/BLM-S			2	Coastal sage scrub, grassland, riparian, near vernal pools, oak woodlands, chamise chaparral, mixed conifer, closed cone forests, and freshwater marshes.	Moderate; not detected in site surveys, but per EOMSPA BTR likely to occur in grasslands throughout SPA.
Salvadora hexalepis virgultea	coast patch-nosed snake	SSC/-			2	Chaparral, coastal sage scrub, and other brushy vegetation west of desert, found near rock outcrops with adjacent seasonal drainages.	Moderate; not observed onsite, but per EOMSPA BTR likely to occur in SPA and northeastern corner of site in Johnson Canyon likely contains suitable habitat with friable soils.
Thamnophis hammondii	two-striped garter snake	SSC/BLM-S, USFS-S			1	In or near permanent fresh water, often along streams with rocky beds bordered by willows or other streamside growth. Sometimes near vernal pools; 0-1000ft.	Low; per EOMSPA BTR, significant breeding population in creek of O'Neal Canyon, but not detected onsite and preferred permanent fresh water does not occur onsite.
BIRDS							
Accipiter cooperii	Cooper's hawk	WL/-		X	1	Riparian and oak woodlands, eucalyptus groves and other forested areas; 500-3000ft.	**Observed onsite, one flying over onsite NNG in 2015; appeared to be attracted to recorded Cooper's hawk call from power plant to south.**
Accipiter striatus	sharp-shinned hawk	WL/-			1	Widespread but uncommon winter visitor in SD County, especially coastal slope; variety of habitats, preferably with trees or tall shrubs; attracted to any place that concentrates small prey birds.	Low; uncommon winter visitor and not observed on or over site.
Agelaius tricolor	tricolored blackbird	SSC/BCC, BLM-S		X	1	Fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs (Breeds). Feeds in grassland and cropland habitats; 0-500ft and 1000-	Low; not known to occur in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	WL/-		X	1	Sparse, mixed chaparral and coastal scrub habitats (especially coastal sage). Frequents relatively steep, often rocky hillsides with grass and forb patches; 0-	**Observed onsite in former CSS/NNG vegetation in mima mound area during 1999 QCB surveys.**
Ammodramus savannarum	grasshopper sparrow	SSC/-	X	X	1	Short- to middle-height, moderately open grasslands with scattered shrubs, native bunchgrasses preferred; hard to identify except when singing (Mar-Jul).	**Observed onsite during 2001 Quino survey in mima mound area.**
Aquila chrysaetos	golden eagle	FP, WL, CDF-S/ BLM-S, BCC	X	X	1	Mountains, foothills, and adjacent grassland, open areas and canyons; 0-3000ft. (nesting/wintering)	Moderate; not observed on over site during any survey (1998-2016), but one pair nests in O'Neal Canyon, suitable foraging habitat occurs onsite and per EOMSPA BTR a portion of the territory occurs within the SPA.
Ardea herodias	great blue heron	CDF-S/-			2	Year-round in wetlands of all kinds, also forages in uplands for gophers and rats, nests in tall trees.	Low; not observed on or over site, drainage in Johnson Canyon and adjacent uplands are only marginally suitable.
Artemisiospiza belli belli (Amphispiza b. b.)	Bell's sage sparrow	WL/BCC			1	Year-round resident in open chaparral and sage scrub, especially recently where burned areas or on gabbro substrate; most common in central southern SD County; very sensitive to habitat fragmentation.	Low; per EOMSPA BTR, occurs within SPA, but site is too close to development and suitable habitat lacking.
Athene cunicularia	burrowing owl	SSC/BCC, BLM-S	X	X	1	Open, dry grasslands, agricultural and range lands, shrub and desert habitats of low-growing open vegetation (associated with burrowing animals).	**Evidence of prior site use found in 2015-2016; 15 inactive burrows found within the project footprint, and 24 inactive found in proposed Biological Open Space. Based on Google Earth aerials, most appeared to have been created between 2012 and 2014. No owl activity was observed in 2015 or 2015, and burrows did not appear to have been used in 2015 or 2016.**
Buteo regalis	ferruginous hawk	WL/BCC	X	X	1	Uncommon winter visitor to SD County, forages over larger tracts of grassland, especially those >12 miles inland.	**Observed soaring high over site in December 1998.**
Buteo swainsoni	Swainson's hawk	ST/BCC, USFS-S		X	1	Winters in desert scrub; 0-500ft.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren, San Diego cactus wren	SSC/BCC, USFS-S	X	X	1	Open coastal sage scrub with thickets of chollas (*Cylindropuntia* sp.), south- and west-facing slopes below 1,500 ft, usually within quarter mile of river	Low; documented in Project quad but suitable habitat does not occur onsite.
Cathartes aura	turkey vulture	-/-		X	1	Dry open country or along roadsides; coastal sage scrub, mixed and chamise chaparral, grassland, riparian, mixed conifer and closed cone forest; 0 to	**Observed onsite; 1 individual observed flying over site in 2015.**
Charadrius nivosus (Charadrius alexandrinus n.)	snowy plover (western snowy plover)	-/-		X	1	Immediate coast at scattered beach, bay and lagoon locations; nests on beaches, dunes and salt flats.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Circus cyaneus	northern harrier	SSC/-		X	1	Year-round resident but more common in winter; nests on ground in marsh or other dense vegetation, forages over grasslands.	**Observed onsite; breeding pairs observed onsite repeatedly beginning 1999; 1 individual observed flying over NNG Feb. 2015; pair and single male observed on and over site Feb. 2016; EOMSPA BTR: fields south of Johnson Canyon particularly significant due to suspected nesting activity.**
Coccyzus americanus occidentalis	western yellow-billed cuckoo	**SE**/FC, BCC, BLM-S, USFS-S	X		1	Extensive stands of mature riparian woodland.	Low; known to occur in Project quad but suitable habitat does not occur onsite.
Elanus leucurus (*E. caeruleus*)	white-tailed kite black-shouldered kite	FP/BLM-S		X	1	Widespread over coastal slope, prefers riparian woodlands, oak groves, or sycamore groves adjacent to grassland; feeds almost exclusively on California	**Observed foraging in N part of site during 1998-1999 surveys.**
Empidonax traillii extimus	southwestern willow flycatcher	**SE/FE**	X	X	1	Riparian wooded/shrubby habitat that is dense in all strata.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Eremophila alpestris actia	California horned lark	WL/-			2	Open patches of bare land alternating with low vegetation in grasslands, montane meadows, and sagebrush plains.	**Observed onsite; group of 3 on main east-west unpaved road plus one pair at W end of Lone Star Road in 2015. Common onsite, flock of approx. 20 individuals observed in S NNG.**
Falco mexicanus	prairie falcon	WL/BCC			1	Mountainous grasslands, open hills, open plains; 0 to over 3000ft.	Moderate; suitable habitat occurs onsite, documented in the Otay Mesa area.
Icteria virens	yellow-breasted chat	SSC/-			1	Summer visitor in dense riparian woodland, most common in coastal lowland, strongly concentrated in NW corner of County; usually return to SD second week in April and start to leave by early August.	Low; documented in Project quad but suitable habitat does not occur onsite.
Lanius ludovicianus	loggerhead shrike	SSC/BCC		X	1	Open fields with scattered trees, open woodland, scrub, agricultural land, desert wash, desert-edge scrub, beach areas, broken chapparal.	**Observed onsite; 1 individual observed in snag at edge of abandoned agricultural pond in 2015.**
Larus californicus	California gull	WL/-			2	In winter at beaches, bays, estuaries, and lakes/reservoirs through coastal lowland, and occasionally at higher elevation lakes; uncommon to	Low; not known to occur in Project quad or surrounding quads and suitable habitat does not occur onsite.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	**SE**/-	X	X	1	Narrowly restricted to coastal marshes dominated by pickleweed, southern California and northern Baja California	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Polioptila californica californica	coastal California gnatcatcher	SSC/**FT**		X	1	Coastal sagebrush scrub especially where California sage (*Artemisia californica*) is dominant plant; up to 3000 ft but 90% at 1000 ft or lower.	Low; occurs in coastal sage scrub to northeast and east of site, but never detected onsite and former CSS onsite is gone.
Setophaga petechia (Dendroica p.)	yellow warbler	SSC/BCC			2	Mature riparian woodland.	Low; not known to occur in Project quad and suitable habitat does not occur onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Sternula antillarum browni (Sterna a. b.)	California least tern	**SE**, FP/**FE**	X	X	1	Nests on dunes and flats along sea, bay and estuary shores; forages in bays and estuaries, ocean, and inland lakes in coastal lowland; has nested up to four miles inland in the past	Low; not known to occur in Project quad and suitable habitat does not occur onsite.
Tyto alba	barn owl	-/-			2	Nests in buildings, among bases of palm leaves, cavities in native trees or cliff ledges, and nest boxes; SD owl most adapted to suburban and urban	**Observed on/over site during 1998-1999 surveys. Pellet and feathers found in Biological Open Space in 2016.**
Vireo bellii pusillus	least Bell's vireo	**SE/FE**	X	X	1	Riparian vegetation along rivers and larger creeks, with both riparian canopy and somewhat a dense or shrubby understory for nesting.	Low; known to occur in Project quad but suitable habitat does not occur onsite.
MAMMALS							
Antrozous pallidus	pallid bat	SSC/BLM-S, USFS-S			2	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, desert wash and desert scrub. Prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.	Low; suitable habitat does not occur onsite.
Chaetodipus californicus femoralis	Dulzura California pocket mouse	SSC/-			2	Coastal sage scrub, mixed chaparral, oak woodland, chamise chaparral, and mixed conifer habitats; 0 to over 3000ft.	Low; not known to occur in Project quad but per EOMSPA BTR, most habitat in the SPA has been rendered unsuitable by agricultural use.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC/-			2	Sandy, herbaceous areas, usually associated with rocks or coarse gravel, in coastal scrub, chaparral, grasslands, sagebrush in western San Diego County;	Low; documented in Project quad but suitable habitat does not occur onsite.
Choeronycteris mexicana	Mexican long-tongued bat	SSC/-			2	In CA, found in residential areas, roosts in garages, sheds, porches, and under houses on stilts; feeds on pollen and nectar, especially of agaves and columnar cacti, and will visit hummingbird feeders and possibly avocado flowers; seen in fall and winter,	Low; suitable roosts and food plants not observed on or adjacent to site.
Corynorhinus townsendii (Plecotus t. pallescens)	Townsend's big-eared bat	SSC/BLM-S, USFS-S			2	Variety of habitats, most common at mesic sites. Roosts in the open , extremely sensitive to human	Low; no suitable roosts and Project site has been subject to too much disturbance for this species.
Eumops perotis californicus	western mastiff bat	SSC/BLM-S			2	Open semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. Crevices in cliff faces, high buildings, trees, and tunnels are required for roosting;	Low; documented in Project quad but suitable roosts do not occur onsite.
Lasiurus blossevillii	western red bat	SSC/-			2	Prefers riparian areas, where they roost in broad-leaf trees; migratory, most likely to be in western SD in	Low; known to occur in Project quad but no suitable roosts onsite.
Lasiurus xanthinus	western yellow bat	SSC/-				Desert areas with palms and, increasingly, year-round in urban areas in planted palms; roosts in hanging palm fronds; eats insects.	Low; no suitable roosts observed onsite.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC/-			2	Coastal sage scrub, mixed chaparral, oak woodlands, chamise chaparral, mixed conifer, and closed cone forest and open areas. Common in irrigated pastures and row crops; 0 to over 3000ft.	**Observed onsite; 2 individuals observed in NNG in 2015 and 5 individuals observed in NNG in 2016.**
Macrotus californicus	California leaf-nosed bat	SSC/BLM-S, USFS-S			2	Coastal sage scrub, mixed chaparral, riparian, desert scrub and wash, needs rugged terrain with mines or caves for roosting.	Low; no suitable roosts onsite.
Myotis ciliolabrum	western small-footed myotis	-/BLM-S			2	Primarily found in relatively arid wooded and brushy uplands near water; roosts in caves, buildings, mines, crevices, and occasionally under bridges and under	Low; documented in Project quad but no suitable habitat or roosts onsite.
Myotis evotis	long-eared myotis	-/BLM-S			2	Brush, woodland and forest habitats from sea level to around 900 ft, but prefers coniferous woodlands and forests; roosts in tree cavities, under tree bark, or in rock crevices, caves, mines, abandoned buildings; feeds on insects over open water.	Low; suitable roosts and feeding areas absent from site.
Myotis yumanensis	Yuma myotis	-/BLM-S			2	Open forests and woodlands with water bodies over which to forage, roosts in caves, mines, buildings, bridges, and tree cavities.	Low; suitable roosts and feeding areas absent from site.
Neotoma lepida intermedia	San Diego desert woodrat	SSC/-			2	Coastal sage scrub, oak woodlands and chamise chaparral and rocky outcrops. Nocturnal. Typically associated with cacti; 500-3000ft.	Low; known to occur in Project quad but suitable habitat with rock outcrops or cactus patches not observed onsite, no woodrat middens observed onsite.
Nyctinomops femorosaccus	pocketed free-tailed bat	SSC/-			2	Variety of arid areas in southern California; pine-juniper woodlands, desert scrub, palm oases, desert wash, desert riparian; rocky areas with high cliffs.	Low; EOSMPA BTR: no roosting habitat for bats in SPA; known to occur in Project quad but suitable habitat does not occur onsite.
Nyctinomops macrotis	big free-tailed bat	SSC/-			2	Dry high elevation forests.	Low; suitable habitat does not occur onsite.
Odocoileus hemionus (fuliginata)	mule deer, southern mule deer	-/-	X		2	Woodlands, riparian areas, margins of meadows and grasslands, and open shrublands.	Low; no tracks or sign observed onsite; per EOMSPA BTR only detected in O'Neal Canyon, constrained by minimal water sources.
Onychomys torridus ramona	southern grasshopper mouse	SSC/-		X	2	Semi-arid to arid scrub with friable soils and low to moderate shrub cover. Carnivorous, preferred food is grasshoppers but will consume seeds, other insects and lizards.	Low; per EOMSPA BTR, suitable habitat occurs in SPA, but clay soils onsite unlikely suitable.
Perognathus longimembris pacificus	Pacific little pocket mouse	SSC/**FE**	X		1	Coastal sage scrub and grasslands with fine-grain, sandy substrates; historically inhabited coastal dunes, river alluvium, and sage scrub habitats growing on marine terraces within approximately 2.4 miles of the ocean; 0-500 ft.	Low; per EOMSPA BTR, has "some potential" to occur in SPA, but suitable soil and habitat do not occur onsite.
Puma concolor (Felis c.)	mountain lion	-/-	X		2	Needs large areas of habitat in forested or brushy regions, or rugged terrain with woods or rocks; avoids open areas.	Low; detected in O'Neal Canyon, but Project site unlikely to be used due to lack of mule deer and drinking water.

Species Name	Common Name	State/Federal Status	Cnty NE	MSCP	Cnty Group	Habitat	Potential to Occur Onsite
Taxidea taxus	American badger	SSC/-		X	2	Most common in drier open stages of most shrub, forest, and herbaceous habitats with friable soils.	Low; known to occur in Project quad but suitable habitat and soil do not occur onsite.

Listing Designations

Federal Listing (USFWS 2013, CDFW 2011)
FE - Federal-listed Endangered
FT - Federal-listed Threatened
FC - Federal candidate for listing
BCC - US Fish and Wildlife Service Bird of Conservation Concern
BLM-S - Bureau of Land Management Sensitive
USFS-S - US Forest Service Sensitive

State Listing (CDFW 2011, 2013)
SE - State-listed Endangered
ST - State-listed Threatened
SEC - State Endangered Candidate
FP - CA Dept. of Fish and Wildlife Fully Protected
SSC - State Species of Special Concern
WL - CA Dept. of Fish and Wildlife Watch List
CDF-S - CA Dept. of Forestry Sensitive

Cnty NE - an X in this column indicates the species is considered a Narrow Endemic by the County of San Diego (MSCP County of San Diego Subarea Plan 1997)

Cnty Group - County of San Diego Sensitive Animal Group (County of San Diego 2010)
1 - County of SD Sensitive Animal List Group 1
2 - County of SD Sensitive Animal List Group 2

MSCP - an X in this column indicates the species is included in the Multiple Species Conservation Program (MSCP Plan 1998)
EOMSPA BTR - Biological Technical Report for the East Otay Mesa Specific Plan Area; Ogden Environmental and Energy Services Co., Inc., October 1993

APPENDIX E

Fairy Shrimp Survey Reports and Documentation, 1998-1999, 2016

Fairy Shrimp Survey Report, 1998-1999

Dry Season Season Sampling of the REC Otay Mesa Vernal Pools for Fairy Shrimp Cysts

Charles Black
Department of Bilogy
SDSU

Methods

Soil samples were collected with a 4 cm inside diameter pipe core sampler. This pipe with sharpened edges was driven 3 to 4 cm into the soil by blows with a small mallet, resulting in sampling area of approximately 12.6 cm^2/sample. The plug of soil in the pipe, and any loosened soil which fell from the pipe when it was extracted, was placed in a polyethylene zip-lock bag labeled with the pool and sample numbers. Five samples were taken at approximately equidistant points along a transect bisecting the length of each pool, and five samples were taken along a transect perpendicular to the first transect, resulting in a total of 10 samples per pool. The central sample in each transect (samples 3 and 8) were taken in the deepest area of each pool. Samples on the ends of transects were taken near pool margins, indicated by the highest extent of pool vegetation or of soil appearance indicating probable inundation during the preceding rainfall season. Samples were taken on the morning of August 20, 1998. REC employees Holly Breslow and Robin Church participated in the sampling by indicating pools to be sampled.

Soil samples were stored at room temperature until they were processed on August 27 and 28, 1998. Gravel and large pieces of organic matter were removed from samples by sieving them through a 2 mm (number 10) brass U.S.A. Standard Testing Sieve. This soil was then weighed, placed in labeled 16 oz. plastic deli containers, and wet with 2-3 oz of deionized water. After standing for 10-30 minutes, each sample was washed with deionized water through as set of two brass sieves: a 355 micrometer (number 45) brass U.S.A. Standard Testing Sieve and a 125 micrometer (number 120) brass U.S.A. Standard Testing Sieve. The fraction passing through the 355 micrometer sieve and caught on the 125 micrometer sieve was spooned and washed into a clean 16 oz. plastic deli container. The resulting samples were examined under an Olympus 7.5-64 power

zoom stereo dissecting microscope illuminated by a Introlux 5000 focused halogen bulb. For each sample, 20 random views of the container were examined at near 64 power, and the numbers of whole or partial cysts recorded for each view. The entire sample was then examined at lower magnification before and after being slightly stirred to release any cysts which might have been present. After all 10 samples from a single pool were examined, they were combined in a single plastic deli container, and the resulting deli container was topped off with deionized water and maintained at room temperature.

At the same time that the samples collected from the Otay Mesa REC pools were processed, a soil sample collected from a Marine Corps Air Station Miramar vernal pool known to support a large population of *Branchinecta sandiegonensis* was processed and wet up. The cysts that were extracted from the soils were compared with electron micrographs of *Branchinecta sandiegonensis*, *Branchinecta lindahli*, and *Streptocephalus woottoni* cysts prepared by John Pitcairn of the San Diego State University Department of Biology Electron Microscopy facility (Figure 1a-c).

Results

The weights of the < 2 mm soil samples ranged from 10 to 93 grams, and averaged 42 grams (Table 1). The volume of this soil fraction averaged 1.4 ml/gram, so the volumes of soil samples examined ranged from 14 to 130 ml. The variation in weights and volumes was based on the different depths of soils sampled and the different amounts of gravel and large organic matter that were collected as part of the sample.

Numbers of cysts on a per volume basis ranged from 2 cysts in pool 1 (in which only a single partial cysts was found), to 87 cysts in pool 6 (Table 1). All of these were *Branchinecta* cysts (Figure 1a &b)- no *Streptocephalus* cysts were encountered. Identification of *Branchinecta* cysts to the species level is problematic, but based on the distributions of *Branchinecta sandiegonensis* and *Branchinecta lindahlii*in San Diego County, and the low likelihood that pools on this site have received *B. lindahli* inoculum, the *Branchinecta* cysts found here are almost certainly those of the endangered San Diego Fairy Shrimp. Cysts were found at all sample locations within pools. and did not appear to be concentrated in the deepest central areas, as might have been predicted (Figure 2).

Cysts recovered from the Miramar pool soil samples were similar in appearance to those recovered from the Otay samples, but were found in much greater concentrations (> 150/100 ml of soil) than in the Otay samples. San Diego Fairy Shrimp hatched from these Miramar soil samples after these were inundated for approximately one week at room temperature. No fairy shrimp hatched from the Otay samples which were inundated and held under the same conditions. Since a large number of fairy shrimp cysts appear to exhibit some type of dormancy, and since hatching conditions were probably less than optimal during the period of this study, it is possible that a greater number of cysts wet up under more ideal hatching conditions would yield specimens suitable for identification. Wet season sampling of the Otay pools early in the rainfall season, after approximately 10 days of inundation, would likely yield identifiable specimens of fairy shrimp.

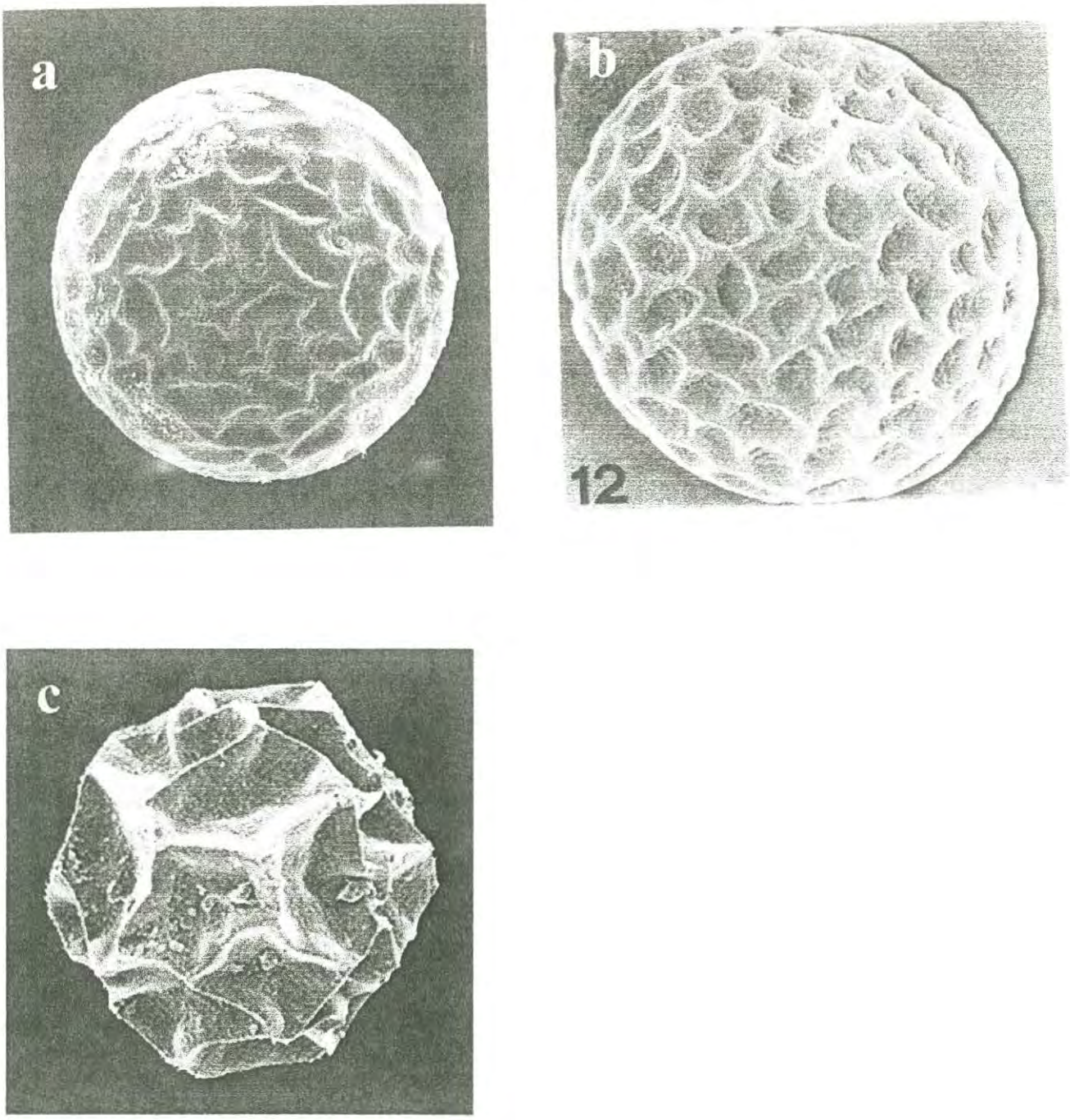


Figure 1a-c. Cysts of Branchinecta sandiegonensis (a), B. lindahli (b) and Streptocephalus woottoni (c).

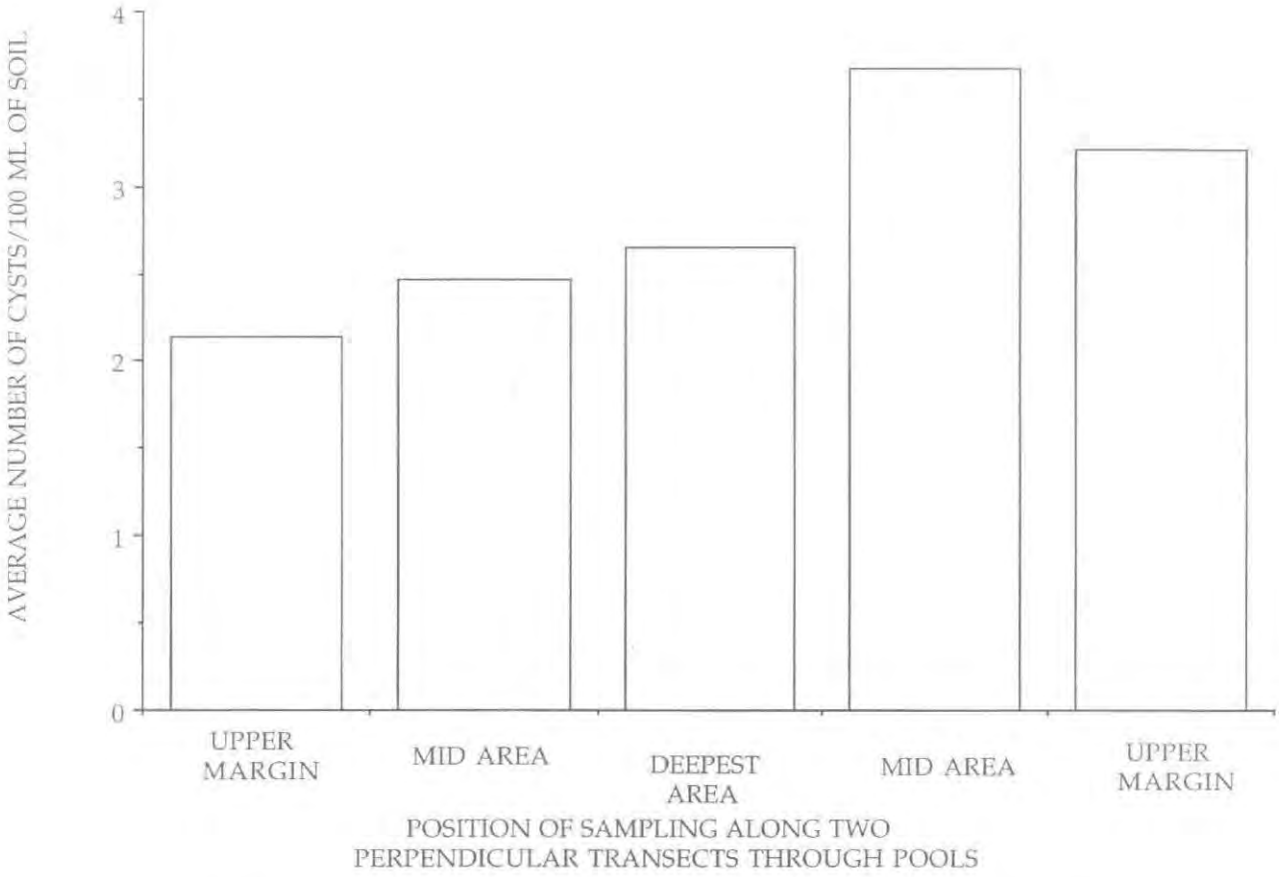


Figure 2 - Average numbers of cysts on a per volume basis found in different positions along 2 perpendicular transects in eight Otay Mesa vernal pools.

Table 1 - Weights of soil samples collected and numbers of fairy shrimp cysts observed in samples.

Pool 1	weight of < 2 mm soil (g)	Numbers of cysts observed in 20 64-power views	Number of cysts observed in lower power scans	Cysts/100 ml of soil
1	24			0
2	22			0
3	22			0
4	25			0
5	52			0
6	39	1 flattened partial cyst		2
7	44			0
8	36			0
9	26			0
10	34			0
			Total	2
Pool 2				
1	26			0
2	32	2 partial cysts	1 whole cyst	7
3	28			0
4	29			0
5	12			0
6	42		1 whole cyst	2
7	37			0
8	10		1 partial cyst	7
9	25			0
10	32			0
			Total	16
Pool 3				
1	38	5, 2 partial		23
2	27		3 whole, 2 partial cysts	0
3	53	2 whole cysts		4
4	85	4 partial cysts	1 whole cyst	5
5	79		2 partial cysts	0
6	28	2 whole cysts		5
7	19	1 whole, 1 partial cysts		8
8	31	2 whole cysts		5
9	56	3 whole, 2 partial cysts		6
10	29	5 whole cysts		12
			Total	68
Pool 4				
1	70			0
2	15			0
3	27	1 whole cyst		5
4	43		1 whole cyst	0
5	39	1 broken cyst	1 whole cyst	4
6	44			0
7	34		2 whole cysts	4
8	35			0
9	54	3 whole cysts, 2 partial cysts		7
10	55		1 partial cyst	1
			Total	21

Table 1 - (continued)

Pool 5	weight of < 2 mm soil (g)	Numbers of cysts observed in 20 64-power views	Number of cysts observed in lower power scans		Cysts/100 ml of soil
1	20				0
2	25		2 cysts		0
3	16				0
4	35		1 whole cyst, 2 partial cysts		0
5	11				0
6	37				0
7	16				0
8	17				0
9	47	1 whole cyst			2
10	47				0
				Total	2
Pool 6					
1	64				0
2	67	2 whole cysts, 5 partial cysts			7
3	50	8 whole cysts, 4 partial cysts			17
4	43	7 whole cysts, 3 partial cysts			17
5	47	11 whole cysts, 2 partial cysts			20
6	71	1 partial cyst			1
7	49	1 partial cyst	6 whole cysts		10
8	60	1 partial cyst			1
9	50	4 whole cysts, 3 partial cysts			10
10	58	2 whole cysts, 1 partial cyst			4
				Total	87
Pool 7					
1	34	1 partial cyst			2
2	56	1 partial cyst			1
3	79				0
4	40	2 Branchinecta cysts.			4
5	48				0
6	93				0
7	64	2 cysts			2
8	51				0
9	45				0
10	54	1 whole cyst, 1 partial cyst			1
				Total	11
Pool 8					
1	70				0
2	81				0
3	47	2 partial cysts, 1 whole cyst			3
4	39	3 whole cysts, 1 partial cyst			7
5	30	1 whole cyst	1 whole cyst, 2 partial cysts		10
6	59				0
7	44				0
8	67				0
9	39	1 whole cyst			2
10	71				0
				Total	22

SDSU
San Diego State University

Department of Biology
College of Sciences
5500 Campanile Drive
San Diego CA 92182-4614
TEL: 619-594-6767
FAX: 619-594-5676

7 July, 1999

Ms. Robin Church
R.E.C.
2650 Jamacha Road
Suite 147/202
El Cajon, CA 92019

Dear Robin,

I submitted a dry season fairy shrimp cyst report to you on November 9, 1998. As you may recall, I found whole or partial cysts in all eight of the pools I sampled on the property. The agricultural pond was not sampled during the 1997-98 wet season, nor in the 1998 dry season sampling.

After submitting the dry season sampling report, I wet up the soils left from this sampling, and placed them in a growth chamber at 15°/20° C night/day temperatures. On November 17 I observed 2 mature fairy shrimp swimming in water with pool 7 soil, and keyed these 2 females out to *Branchinecta sandiegonensis*.

In early February, 1999, I was informed that fairy shrimp had been observed in the agricultural pond on the site. I visited this pond on February 8, 1999. At that time I estimated the surface area of the water to be approximately 200 m^2, with a maximum depth of approximately 25 cm. Due to the unusually low rainfall of the 1998-99 season and lack of any other water input, this pond was much smaller and shallower than it had been in the 1997-98 winter. I observed fairy shrimp swimming in the water at estimated concentrations of 2 to 10 per decimeter, (200 to 10000 per square meter). Several adult males were collected at identified as *Branchinecta sandiegonensis*, San Diego Fairy Shrimp.

In conclusion, fairy shrimp were not observed in pools on the site in 1997-98 wet season sampling, although this was at the very end of the season when fairy shrimp populations are minimal if they exist at all. Cysts found in pools in dry season sampling and observations of shrimp in the agricultural pond, which was the only basin that held water for long durations this season, suggest that San Diego Fairy Shrimp have moderate to sizable populations in all the basins on the site.

Sincerely,

Charles Black
Adjunct Professor of Biology
SDSU
(619) 594-7173

Fairy Shrimp Notification and Results, 2016

ALDEN
ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

May 11, 2016

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Ste. 250
Carlsbad, CA 92008

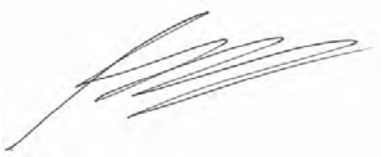
Subject: Results of Wet Season Fairy Shrimp Surveys on the Sunroad Project Site

Dear Ms. Love:

This letter is in regards to the wet season sampling effort for the Sunroad Project in Otay Mesa. We submitted a request to conduct a survey on February 1, 2016. While it was late in the season, the intent was to obtain possible additional fairy shrimp information for the site. Site visits were conducted following rain events to survey for fairy shrimp. Unfortunately, there was no ponding and therefore I was unable to conduct a survey. Given the lack of ponding, no wet sampling was possible and the survey was aborted.

If you have any questions, please contact me.

Sincerely,



Greg Mason
Principal/Senior Biologist

Attachment: USFWS Survey Notification

ALDEN
ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

February 1, 2016

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Ste. 250
Carlsbad, CA 92008

Subject: Request to Conduct a Wet Season Fairy Shrimp Survey on the Sunroad Project Site

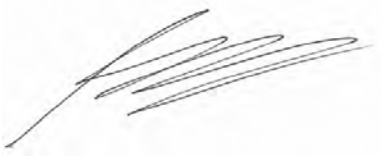
Dear Ms. Love:

I hereby request authorization from USFWS to conduct wet season fairy shrimp surveys for the San Diego fairy shrimp (*Branchinecta sandiegonensis*) and the Riverside fairy shrimp (*Streptocephalus woottoni*) under my Threatened/Endangered Permit No. TE-58862A on the Sunroad project site located in the County of San Diego. The proposed project site is located on Otay Mesa Road, just east of State Route 125 within the U.S. Geological Survey (USGS) Otay Mesa quadrangle (see attached map).

We have just been asked to conduct a wet season survey of this site. As the rainy season has begun we are requesting to be allowed to initiate surveys immediately in order to maximize the potential for a complete season survey.

If you have any questions, please contact me.

Sincerely,



Greg Mason
Principal/Senior Biologist

Sent via email 2/1/16
Attachments: Site Maps