

**SUNBOW II PHASE 3 SPA PLAN AMENDMENT
CITY OF CHULA VISTA**

BIOLOGICAL IMPACT ANALYSIS REPORT

May 2021

Prepared for:

Lennar- San Diego Division
16465 Via Esprillo, Suite 150
San Diego, CA 92127
Contact: David Shepherd
Phone: 858-618-4942
E-mail: David.Shepherd@lennar.com

Prepared by:

Merkel & Associates, Inc.
5434 Ruffin Road
San Diego, California 92123
Contact: Kyle Ince
Phone: (858) 560-5465
Fax: (858) 560-7779
E-mail: kince@merkelinc.com



Kyle L. Ince, Senior Biologist/Project Manager



Keith W. Merkel, Principal Consultant

TABLE OF CONTENTS

INTRODUCTION	1
LOCATION.....	1
PROJECT DESCRIPTION	1
BACKGROUND	3
<i>City of Chula Vista MSCP.....</i>	<i>4</i>
METHODS	7
LITERATURE REVIEW	7
SURVEY DATES, TIMES, AND CONDITIONS.....	7
GENERAL BIOLOGICAL SURVEY	9
PROTOCOL QUINO CHECKERSPOT BUTTERFLY SURVEYS	10
PROTOCOL CALIFORNIA COASTAL GNATCATCHER SURVEYS	10
RARE PLANT SURVEYS.....	11
JURISDICTIONAL WETLAND DELINEATION.....	11
<i>Wetland Parameters.....</i>	<i>12</i>
Hydrophytic Vegetation	12
Hydric Soils	13
Wetland Hydrology	13
<i>Jurisdiction of Wetlands and Waterways</i>	<i>13</i>
U.S. Army Corps of Engineers	13
California State Water Resources Control Board/Regional Water Quality Control Board	14
California Department of Fish and Wildlife.....	14
City of Chula Vista	15
<i>Wetland Functions and Values</i>	<i>15</i>
GENERAL SURVEY LIMITATIONS	15
RESULTS.....	17
REGIONAL CONTEXT AND PHYSICAL CHARACTERISTICS	17
VEGETATION COMMUNITIES AND BOTANICAL RESOURCES	17
<i>Habitat/Vegetation Community Types</i>	<i>19</i>
Diegan Coastal Sage Scrub	19
Native Grassland	20
Non-native Grassland.....	20
Non-native Vegetation	20
Southern Willow Scrub.....	21
Mule fat Scrub.....	21
Coastal and Valley Freshwater Marsh.....	21
<i>Zoological Resources.....</i>	<i>21</i>
Butterflies.....	21
Amphibians	22
Reptiles.....	22
Birds	22
Mammals	23
JURISDICTIONAL WETLANDS AND NON-WETLANDS RESOURCES	24
<i>Southern Willow Scrub.....</i>	<i>24</i>
<i>Mule Fat Scrub.....</i>	<i>26</i>

<i>Coastal and Valley Freshwater Marsh</i>	26
<i>NWW/Streambeds</i>	26
Functions and Values of Jurisdictional Resources	26
RARE, THREATENED, ENDANGERED, ENDEMIC AND/OR SENSITIVE OR MSCP-COVERED SPECIES	27
<i>Sensitive Flora</i>	27
Other Potentially Occurring Sensitive Flora	28
<i>Sensitive Fauna</i>	28
Least Bell's Vireo	29
Coastal California Gnatcatcher	29
Quino Checkerspot Butterfly	30
Other Potentially Occurring Sensitive Fauna	30
Nesting Sensitive Raptor Species	30
Wildlife Corridors and Connectivity	31
CITY OF CHULA VISTA MSCP	31
PROJECT IMPACT ANALYSIS	32
THRESHOLDS OF SIGNIFICANCE	32
DIRECT IMPACTS	32
<i>Vegetation Community Direct Impacts</i>	32
<i>Jurisdictional Wetlands and Waterways Direct Impacts</i>	35
<i>Sensitive Species Direct Impacts</i>	35
Sensitive Plant Species	35
Otay Tarplant	36
Orcutt's Bird's-Beak	37
Decumbent Goldenbush	37
San Diego Viguiera	37
San Diego County Needlegrass	37
Ashy Spike-moss	38
Small-flowered Bindweed, Coast Barrel Cactus, San Diego bursage, Southwestern Spiny Rush, San Diego Marsh Elder, Palmer's Sagewort & Palmer's Grappling-hook	38
Sensitive Wildlife Species	38
Coastal California Gnatcatcher	38
Least Bell's Vireo	39
Quino Checkerspot Butterfly	39
Yellow Warbler, Yellow-breasted Chat, & Nuttall's Woodpecker	39
Sensitive Raptors	39
Orange-throated Whiptail & Two-striped Garter Snake	41
<i>Wildlife Corridor Direct Impacts</i>	41
INDIRECT IMPACTS	42
CITY OF CHULA VISTA MSCP CONSISTENCY	42
100% Preserve Compatible and Conditionally Compatible Uses	43
<i>Facilities Siting Criteria</i>	43
Narrow Endemic Policy and Wetland Protection Program Narrow Endemic Policy	43
Wetlands Protection Program	44
MSCP Conditions of Coverage	44
<i>Coastal California Gnatcatcher Condition of Coverage</i>	44
<i>Least Bell's Vireo Condition of Coverage</i>	44
<i>Orange-throated Whiptail Condition of Coverage</i>	45

<i>Cooper's Hawk Condition of Coverage</i>	45
<i>Northern Harrier Condition of Coverage</i>	45
<i>Otay Tarplant Condition of Coverage</i>	45
<i>Orcutt's Bird's-Beak Condition of Coverage</i>	45
<i>Coast Barrel Cactus Condition of Coverage</i>	46
<i>Adjacency Management Guidelines</i>	46
<i>MSCP Minor Amendment Area</i>	48
<i>HLIT Draft Findings</i>	49
CUMULATIVE IMPACTS.....	49
MITIGATION REQUIREMENTS	50
LITERATURE CITED	60

LIST OF TABLES

Table 1. Summary of Survey Dates, Times, Conditions, and Staff	7
Table 2. Habitats/Vegetation Communities within Project Site	19
Table 3. Summary of Jurisdictional Resources Present Within the Project Site	24
Table 4. Sensitive Flora Located Onsite Inside and Outside Preserve Boundaries	28
Table 5. Sensitive Fauna Located Onsite Inside and Outside Preserve Boundaries	29
Table 6. Quantitative Summary of Vegetation Community Impacts from the Proposed Project	33
Table 7. Proposed Impacts to Sensitive Plant Species	35
Table 8. Narrow Endemic Policy- Estimated Otay Tarplant Impact Assessment	44
Table 9. Project Habitat Mitigation Ratios and Acreages	57

LIST OF FIGURES

Figure 1. Project Vicinity Map	2
Figure 2. Environmental Setting/MSCP Map	5
Figure 3. Vegetation Communities/Biological Resources Map.....	18
Figure 4. Jurisdictional Resources Map	25
Figure 5. Project Impacts Map	34
Figure 6. Proposed Project Onsite Open Space and Mitigation.....	59

LIST OF APPENDICES

Appendix 1. Sunbow II USFWS 1995 Biological Opinion	
Appendix 2. Flora Species Observed within the Study Area	
Appendix 3. Fauna Species Observed or Detected within the Study Area	
Appendix 4. Occurrence or Potential of Special Status Species on the Project Site	
Appendix 5. Wetland Delineation Data Forms	
Appendix 6. Wetland Delineation Photo Points	
Appendix 7. Coastal California Gnatcatcher USFWS 45-day Report	
Appendix 8. Quino Checkerspot Butterfly USFWS45-day Report	
Appendix 9. City of Chula Vista Habitat Loss Incidental Take Draft Findings	

SUNBOW II PHASE 3 SPA PLAN AMENDMENT

CITY OF CHULA VISTA

SAN DIEGO COUNTY, CALIFORNIA

BIOLOGICAL IMPACT ANALYSIS REPORT

Merkel and Associates, Inc.

Revised February 2021

December 2020

June 2020

INTRODUCTION

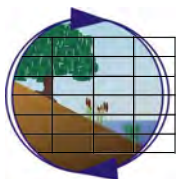
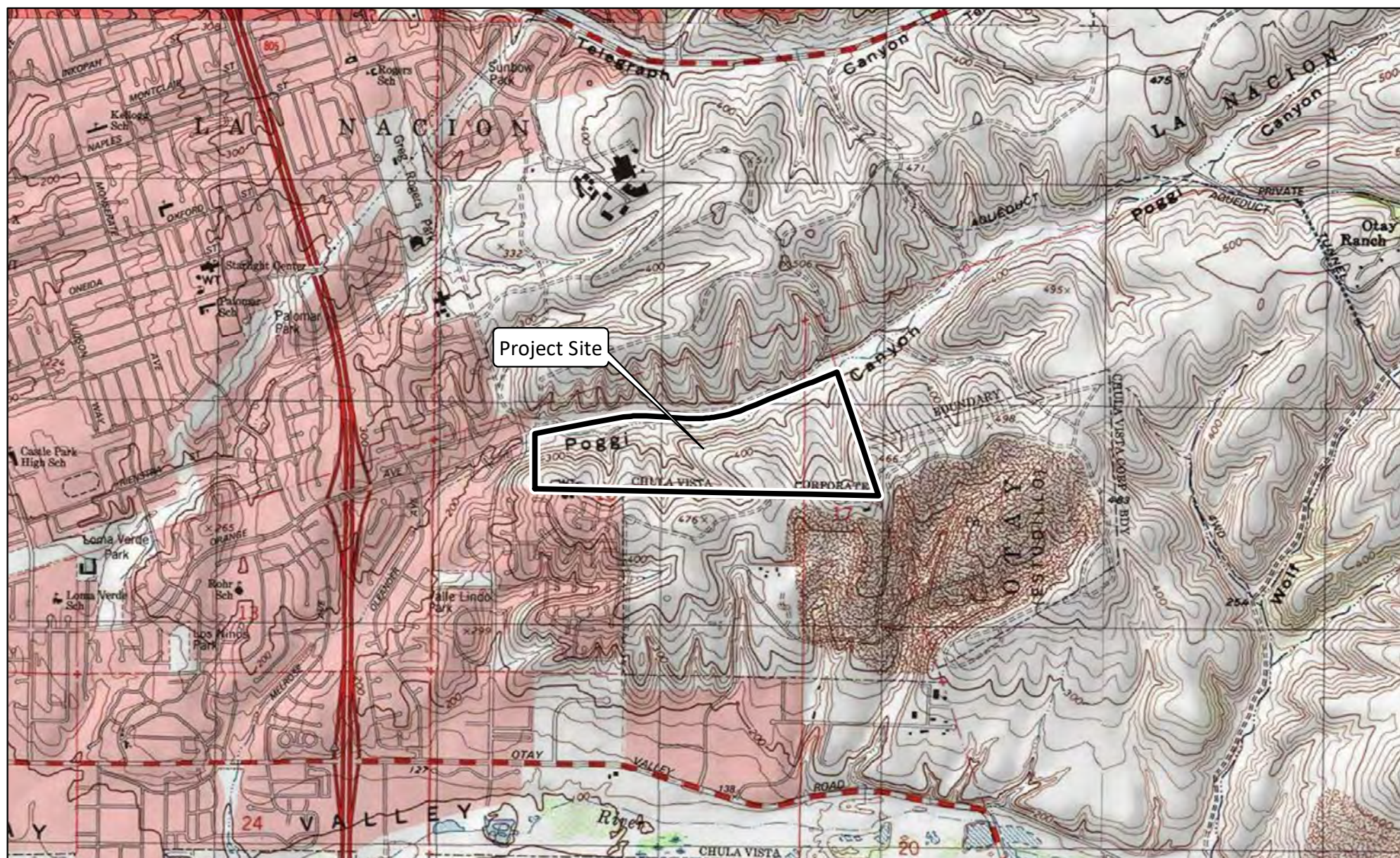
Merkel & Associates, Inc. (M&A) has prepared this biological impact analysis report for the proposed Sunbow II, Phase 3 Sectional Planning Area (SPA) Plan Amendment Project (project). The purpose of this report is to document the existing biological resources and jurisdictional resources identified on the project site; identify potential biological resource project impacts based on the project development plans prepared by Hunsaker & Associates and dated June 12, 2020 that could result from proposed project implementation; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with the California Environmental Quality Act (CEQA), the City of Chula Vista MSCP Subarea Plan, and Habitat Loss and Incidental Take Ordinance (HLIT).

LOCATION

The project property (Assessor's Parcel Numbers 644-011-06-00 and 644-020-11-00) is located south of Olympic Parkway (previously East Orange Avenue) and east of Brandywine in the City of Chula Vista within San Diego County. Further, the project site is situated within Sections 17 and 18, Township 18 South, Range 1 West of the U.S. Geological Survey Imperial Beach, California Quadrangle (Figure 1).

PROJECT DESCRIPTION

The proposed Sunbow project parcel (135.7 acres) includes a 67.5-acre development area comprised of 44.2 acres of residential, a 0.9-acre Community Purpose Facility site, 5.9 acres of public streets, and 16.5 acres of manufactured slopes/basins. Approximately 4.3 acres of proposed Poggi Canyon Easement area, a 0.3-acre wetland avoidance area, and 63.6 acres of adjacent proposed MSCP Preserve area are also within the Sunbow parcel. The proposed project's residential land use includes four unique multi-family attached residential product types with 15 unique floor plans, ranging in square footage from approximately 1,100 to 2,050 square feet in two- and three-story units. Each home includes a two-car garage and two to four bedrooms. In addition, the project proposes offsite construction access and grading within 2.13 acres on the Otay Ranch Village 2 property directly to the east and 0.57 acre on the City of Chula Vista property to the south. The proposed permanent project impacts would consist of vegetation clearing, grading, and residential development including homes, associated fuel modification activities, detention basins, and roadways. Temporary impacts consist of vegetation clearing, construction vehicular access and activities, grading in some areas (i.e., offsite buttress work on City of Chula Vista property), and subsequent revegetation efforts to ensure erosion control and/or native habitat restoration activities to ensure long-term biological functions and values.



Project Vicinity Map

Sunbow II Phase 3 SPA Amendment

Source: USGS 7.5' Imperial Beach, CA Quadrangle

Figure 1

The proposed project includes a Chula Vista General Plan Amendment, Sunbow General Development Plan Amendment, Sunbow II SPA Plan Amendment, a rezone, and a Tentative Map. In addition, the proposed project also includes a Chula Vista MSCP Preserve Boundary Line Adjustment (BLA) that would implement adjustments to the existing MSCP Preserve areas onsite and propose new areas of MSCP Preserve onsite that meet the MSCP BLA functional equivalency criteria and would result in a 0.09-acre increase to MSCP Preserve Area.

In addition, the project proponent is working with the City of Chula Vista as the property owner to request a MSCP Minor Amendment on the City parcel to the south within a Minor Amendment Area. The project proposes to encroach 25 feet onto the City's property for offsite temporary project impacts including construction vehicular access and a buttress that would address slope stability. This request for a Minor Amendment would also require wildlife agency concurrence.

As a note, two existing conservation easements occur along Poggi Creek within the project property (i.e., May 31, 2000 recorded conservation easement for Sunbow mitigation; and not yet recorded conservation easement for Olympic Parkway mitigation). Portions of the recorded conservation easement were included in the assembly of the City's 100% Preserve in 2003; while the remainder of this recorded easement is included in the proposed project as a mapping correction to fill in gaps of areas that are considered conserved but were not included in the City's Preserve. None of the conservation easement areas are proposed as habitat compensatory mitigation or proposed as part of the Give area to the Preserve in the proposed BLA (See Functional Equivalency Analysis for a MSCP BLA Report, Figure 6).

BACKGROUND

The proposed Sunbow II Phase 3 Development Project is part of the larger Sunbow Development (710 acres) that consists of the 108-acre Sunbow I residential development approved in a 1987 EIR (ERC Environmental and Energy Services Co.) and the 602-acre Sunbow II development consisting of Phases 1 and 2 (residential, commercial, open space) and a portion of Phase 3 (business park, open space) that was approved in a 1989 EIR/ 1990 Addendum to EIR (ERC Environmental and Energy Services Co). The full Sunbow II development project was issued local, state, and federal approvals and development was completed within Phase 1 and 2 sites (located north of Olympic Parkway), but only access crossing improvements, permitted wetland impacts, and 7 acres of wetland mitigation within Poggi Canyon were completed on the Phase 3 site located south of Olympic Parkway.

The original Sunbow Phase 3 development consisting of a business park and open space approved under the 1989/1990 EIR and 1995 USFWS Biological Opinion [BO, #1-6-95-F-17 (February 13, 1995), Appendix 1] addressed significant impacts to Diegan coastal sage scrub and wetlands only. There were no other identified significant impacts at that time. Associated Diegan coastal sage scrub and wetland habitat mitigation was addressed in the project EIR and regulatory wetland permits such as the project ACOE Section 404 permit. In addition, the 1995 BO for Sunbow II included Terms and Conditions relevant to habitat in Sunbow II, Phase 3, as follows:

- *#2 No clearing of sage scrub habitat shall occur during the gnatcatcher nesting season (15 February through 31 July) unless it is first demonstrated to be un-occupied by California gnatcatchers or other nesting avian species.*

- *#5 To mitigate for direct impacts to gnatcatchers and coastal sage scrub a combination of on-site and off-site measures shall be employed in accordance with Table 1. Sunbow Projects Impacts and Mitigation Phasing Program. The on-site restoration mitigation shall be conducted concurrent or preceding the phase for which mitigation is required. Off-site mitigation must be acquired and under long-term management prior to initiation of impacts for the project phase for which mitigation is required.*
- *#9 Off-site mitigation shall be conducted at the O'Neill Canyon mitigation area in southern San Diego County. An alternative site may be proposed and utilized at the discretion of the Service in consultation with the Department of Fish and Game. Any alternative site proposed shall have a demonstrable value to the California gnatcatcher and long-term strategic planning value for multi-species and habitat protection in San Diego.*

The BO further included one Conservation Recommendation relevant to Sunbow II, Phase 3:

- *#1 The open space habitats proposed for Sunbow site are considered to be important for numerous species which are candidate or future candidates for federal listing. Many of these species currently carry state listing status and are a focus of multi-species planning efforts intended to reduce the need for future listings. Among the most important resources within the open space are coastal cactus wrens and Otay tarplant. Potential exists for the compatible enhancement of these resources along with the restoration of on-site sage scrub habitats. In addition, there is a good potential for restoration of San Diego thornmint to some of the open space clay lenses. The Service would look favorably on such multi-species enhancement efforts should the Corps or applicant incorporate consideration of these species into the on-site restoration and maintenance program.*

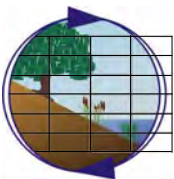
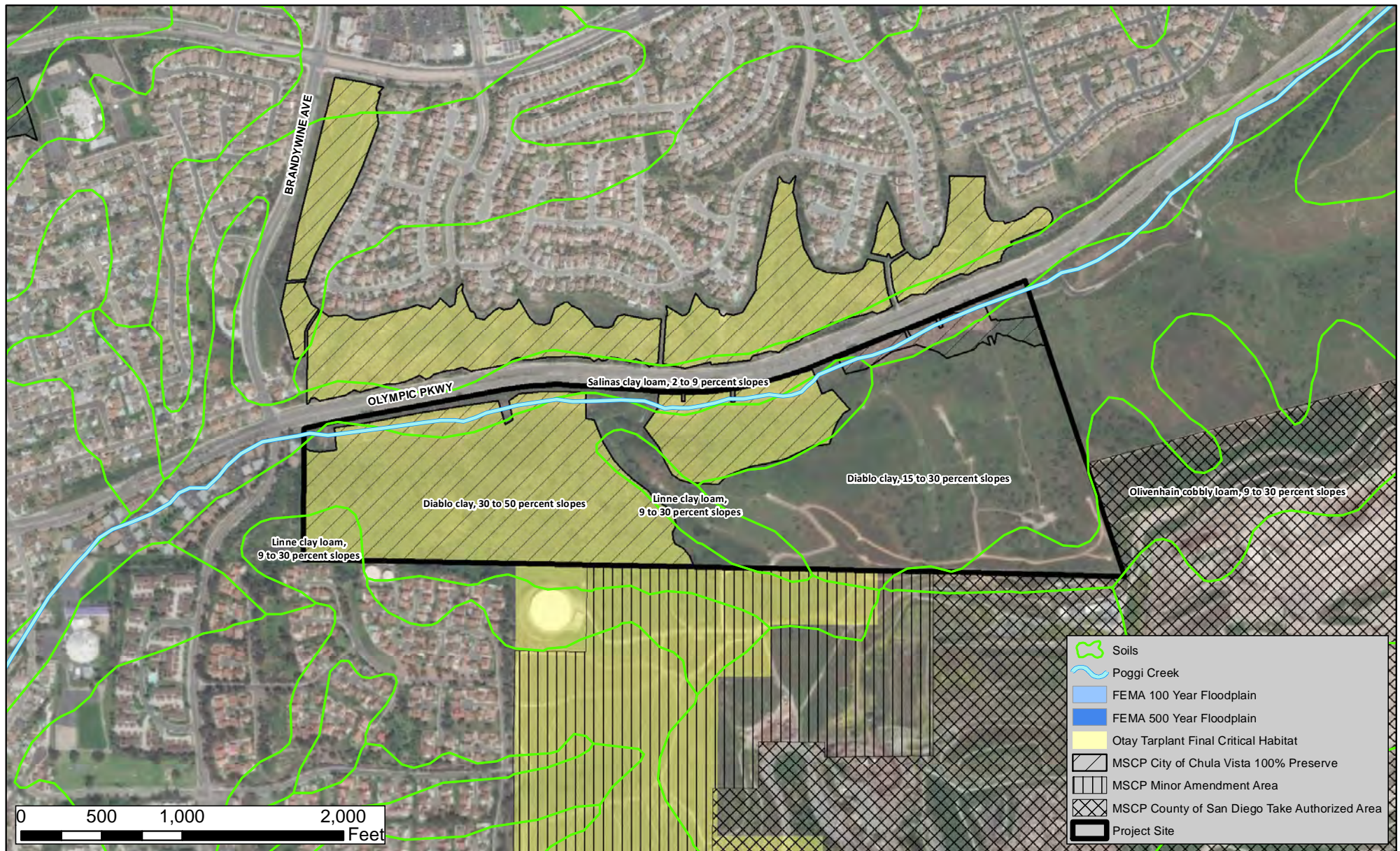
The original Sunbow II Phase 3 business park development has not yet been constructed; however, within the proposed project site the installation of Poggi Canyon wetland mitigation was completed during Phase 1 in 1998 (followed by 5 years of maintenance and monitoring) and two sensitive plant species, Orcutt's bird's-beak and coast barrel cactus, were salvaged from the project area and replanted in 1998 within the created upland slopes of the Poggi Canyon wetland site to fulfill conditions of the project Mitigation Monitoring Reporting Program (MMRP).

City of Chula Vista MSCP

The Multiple Species Conservation Program (MSCP) Subregional Plan dated August 1998 under the NCCP Act of 1991 was prepared for 12 local San Diego jurisdictions including the City of Chula Vista that would be implemented through MSCP Subarea Plans. Subarea Plans approved under the NCCP would allow, "take" of various sensitive species through specific conditions of coverage pursuant to Section 4(d) of the FESA. The City has an adopted MSCP Subarea Plan (2003) and the Habitat Loss and Incidental Take (HLIT) Ordinance (2005, updated 2019) regulates the implementation of the Subarea Plan.

The western half of the project site and much of the northern edges along Poggi Creek are located within the City's MSCP 100% Preserve while generally the eastern half of the site is located within a Chula Vista MSCP Development Area (Figure 2).

The City's MSCP Subarea Plan discusses the original Sunbow II project (Phases 1 and 2 and a portion of Phase 3 [i.e., business park, open space]), not the currently proposed project in several sections



Local Environmental Setting Map

Sunbow II Phase 3 SPA Amendment

Aerial Source: ESRI 2020

Created on January 19, 2021

Figure 2

including MSCP Section 7.5.6.1 (Management Requirements and/or Conditions for Coverage) where it states that Sunbow *“completed a Section 7 Consultation which was approved by the USFWS in 1995. The Sunbow II parcel has been fully mapped and conservation areas established through the City environmental review and land-use approval process as well as environmental requirements established under the ESA, U.S. Clean Water Act, and California Fish and Game Code. These conservation areas are incorporated into the Preserve. Notwithstanding any provision to the contrary within this Subarea Plan, the Section 7 Consultation Agreement, incorporated herein by reference, shall govern development of the Sunbow II project.”* Therefore, the project 1995 BO terms and conditions as well as conservation recommendations as outlined previously would be applied to the currently proposed project where applicable (i.e., Diegan coastal sage scrub), but the MSCP Subarea Plan and HLIT requirements would be applied to the remainder of the project elements.

As provided in the City Subarea Plan in Section 5.1 and Figures 1-2 & 5-1, the Sunbow II project is not a MSCP Covered Project; however, a MSCP 100% Preserve is overlaid within the western half and the northern edge of the property. In general, the eastern half of the property is mapped as a Development Area in the MSCP. There is a conflict between the currently proposed development boundaries and the mapped 100% Preserve onsite. In the Subarea Plan on page 5-2, it states that *“these 100% Conservation Areas are either already in public ownership or will be dedicated into Preserve as part of the development approval process for Covered Projects”*. However, the placement of a 100% Preserve overlay rather than a 75-100% Preserve was premature on the Sunbow II, Phase 3 site based on the fact that the project was not identified as a Covered Project and design had not developed to the extent necessary to fully establish limits of preserve and development. The conflict between the proposed project and mapped Preserve requiring an MSCP Preserve (BLA) today would not have existed if the preservation were 75-100%. To rectify these issues between MSCP planned conservation and the proposed development, a MSCP Preserve boundary correction or a BLA would be required. A boundary correction is characterized as a corrective action to address an inadvertent error in the initial mapping of the preserve areas within the City. As such, it is reasonably argued that a correction is appropriate in that the final development configuration and entitlements for Sunbow II, Phase 3 has not yet been issued and thus hard lining as 100% conservation around this area was premature. Further, as noted in the Subarea Plan, this designation applies to Covered Projects and public lands, neither of which apply to the original Sunbow II, notwithstanding the fact that the scale of conservation was known and general massing of development in the less sensitive eastern portion of the site was defined at the time of Subarea Plan adoption as derived from the BO. Alternatively, the Subarea Plan adoption has generally subsumed the prior Sunbow II project approvals and provides a good overall framework for a path forward and thus a viable alternative to the Preserve boundary correction would be a BLA. Under this approach, it would be required to demonstrate that the modification of the preserve boundary would result in a Preserve configuration that has a Biological Functional Equivalency with that of the present preserve configuration.

The current project proposes an MSCP Preserve BLA as discussed further in the project Functional Equivalency Analysis for the MSCP Boundary Line Adjustment and Facilities Siting Criteria report dated February 2021, prepared by M&A.

METHODS

LITERATURE REVIEW

Historical and currently available biological literature and data pertaining to the study area were reviewed prior to initiation of current 2019-2020 field investigation. This review included examination of:

- 1) Environmental Impact Report, Sunbow General Development Plan Pre-Zone dated 1989;
- 2) Addendum to Final Environmental Impact Report (EIR) 88-1 Sunbow II Draft Sectional Planning Area (SPA) Plan dated January 1990;
- 3) Biological Opinion on Impacts to the Coastal California Gnatcatcher (*Polioptila californica californica*) to Result From Construction of the Sunbow Planned Community #1-6-95-F-172;
- 4) Analysis of ultra-low altitude high resolution ortho-rectified aerial photography of the site acquired by Merkel & Associates on January 3, 2020;
- 5) Regional vegetation data for the project vicinity (City of Chula Vista 2019);
- 6) County Geographical Information System (GIS) data (SanGIS 2012);
- 7) Google Earth Pro™ [Website Image Server]. 2019 and 2020;
- 8) Geological substrates and soil types mapped on the project site (Geocon geology data, USDA SCS 2002, respectively), and;
- 9) California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (USFWS) special status species records, and designated critical habitat for the project vicinity (CDFW 2020, USFWS 2019a and 2019b, respectively).

SURVEY DATES, TIMES, AND CONDITIONS

M&A biologists conducted several general biological field surveys within the project study area (Table 1) that consisted of the Sunbow project parcel and two areas directly offsite consisting of a portion of the Otay Village 2 property to the east and a portion of City of Chula Vista property to the south. Further, a 50-foot habitat mapping buffer is included in some of the report figures for context only and is not a part of the proposed project or project study area.

Table 1. Summary of Survey Dates, Times, Conditions, and Staff

Date	Time	Weather Conditions ¹	Biologist	Survey
November 8, 2019	0800-1130	Weather: 0%-0% cc Wind: 0-1 BS Temperature: 70°-71°F	Kyle Ince	General Biological Survey
November 14, 2019	1115-1630	Weather: 0%-0% cc Wind: 0-2 BS Temperature: 65°-67°F	Kyle Ince Gina Krantz	General Biological Survey
November 18, 2019	1045-1600	Weather: 80%-90% cc Wind: 0-1 BS Temperature: 80°-76°F	Kyle Ince Gina Krantz	General Biological Survey

Date	Time	Weather Conditions ¹	Biologist	Survey
November 22, 2019	0730-0845	Weather: 0-0% cc Wind: 0-1 BS Temperature: 55°-57°F	Kyle Ince	General Biological Survey
December 20, 2019	0830-1130	Weather: 0-0% cc Wind: 0-1 BS Temperature: 60°-66°F	Kyle Ince Gina Krantz	Jurisdictional Wetland Delineation
January 3, 2020	1130-1530	Weather: 0-0% cc Wind: 0-1 BS Temperature: 61°-68°F	Jordan Volker	Low Altitude Aerial Survey
January 10, 2020	0815-1300	Weather: 0-0% cc Wind: 0-1 BS Temperature: 50°-63°F	Kyle Ince	General Biological Survey
March 6, 2020	1020-1340	Weather: 0%-0% cc Wind: 0-5 mph Temperature: 63°-64° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #1
March 11, 2020	1245-1545	Weather: 30%-50% cc Wind: 1-5 mph Temperature: 62°-69° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #2
March 17, 2020	1300-1645	Weather: 40%-10% cc Wind: 0-3 mph Temperature: 60°-62° F	Gina Krantz Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #3
March 21, 2020	1115-1515	Weather: 50%-5% cc Wind: 0-3 mph Temperature: 66°-68° F	Kyle Ince Adam Behle	Quino Checkerspot Butterfly Protocol Survey #4
March 24, 2020	1200-1600	Weather: 40%-10% cc Wind: 5-3 mph Temperature: 61°-62° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #5
March 27, 2020	1045-1415	Weather: 40%-0% cc Wind: 0-5 mph Temperature: 60°-62° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #6
April 3, 2020	1100-1500	Weather: 20%-30% cc Wind: 0-4 mph Temperature: 61°-74° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #7
April 14, 2020	1100-1420	Weather: 5%-5% cc Wind: 1-7 mph Temperature: 64°-66° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #8
April 15, 2020	0830-1200	Weather: 0%-0%cc Wind: BS 0-1 Temp.: 63°F -75°F	Gina Krantz Kyle Ince	Coastal California Gnatcatcher Protocol Survey #1
April 16, 2020	1000-1505	Weather: 0%-0% cc Wind: 3-7 mph Temperature: 65°-72° F	Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #9
April 22, 2020	0835-1200	Weather: 0%-0%cc Wind: BS 0-1 Temp.: 62°F-72°F	Gina Krantz Kyle Ince (Adam Behle/ Brandon Stidum) ²	Coastal California Gnatcatcher Protocol Survey #2

Date	Time	Weather Conditions ¹	Biologist	Survey
April 23, 2020	0900-1235	Weather: 0%-0% cc Wind: 1-5 mph Temperature: 64°-78° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #10
April 28, 2020	1000-1500	Weather: 0%-0% cc Wind: 0-5 mph Temperature: 70°-72° F	Amanda Gonzales Kyle Ince	Jurisdictional Wetland Delineation
April 29, 2020	0840-1145	Weather: 100%-100%cc Wind: BS 0-1 Temp.: 63°F-67°F	Gina Krantz Kyle Ince (Adam Behle/ Brandon Stidum) ²	Coastal California Gnatcatcher Protocol Survey #3
April 30, 2020	1100-1430	Weather: 100%-50% cc Wind: 1-3 mph Temperature: 70°-73° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #11
May 7, 2020	0845-1215	Weather: 0%-0% cc Wind: 0-4mph Temperature: 64°-74° F	Gina Krantz Adam Behle Kyle Ince	Quino Checkerspot Butterfly Protocol Survey #12
May 7, 2020	1215-1330	Weather: 0%-5% cc Wind: 0-3 mph Temperature: 74°-75° F	Kyle Ince	Rare Plant Survey
May 28, 2020	1545-1630	Weather: 100%-100% cc Wind: 0-5 mph Temperature: 70°-70° F	Kyle Ince	Rare Plant Survey
June 8, 2020	1115-1445	Weather: 0%-5% cc Wind: 3-5 mph Temperature: 75°-81° F	Kyle Ince	General Biological Survey and Rare Plant Survey
July 9, 2020	0840-1420	Weather: 40%-5% cc Wind: 0-2 mph Temperature: 64°-74° F	Kyle Ince Gina Krantz	Rare Plant Survey
July 15, 2020	0830-1430	Weather: 15%-0% cc Wind: 0-5 mph Temperature: 69°-74° F	Kyle Ince Gina Krantz	Rare Plant Survey
January 13, 2021	0900-1215	Weather: 50%-0% cc Wind: 0-5 mph Temperature: 61°-72° F	Kyle Ince	General Biological Survey for Proposed Slope and Berm on Otay Village 2 Property

¹ cc = cloud cover; BS = Beaufort Scale; mph = miles per hour; F = Fahrenheit

² M&A biologists in training supervised by permitted biologists

GENERAL BIOLOGICAL SURVEY

Existing vegetation types were delineated onto a 1" = 100' scale, December 2019 color aerial photograph of the site. Vegetation types were classified according to the Holland (1986) code classification system as modified by Oberbauer (2008). A list of detectable flora and fauna species were recorded in a field notebook. Plant identifications were either resolved in the field or later determined through verification of voucher specimens, and wildlife species were determined through direct observation (aided by binoculars), identification of songs, call notes and alarm calls,

or by detection of sign (e.g., burrows, tracks, scat, etc.). In addition, directed searches for sensitive species with a potential to occur onsite were conducted within the study area, and any other potential occurrences were assessed in the field based on the existing biological conditions. Photographs of the project study area were taken to record the biological resources present, and data collected from the survey were digitized into current Geographical Information System (GIS) Environmental Systems Research Institute (ESRI) software platforms. The scientific and common names utilized for the floral and faunal resources were noted according to the following scientific nomenclature: flora, Rebman and Simpson (2014); butterflies, Klein/San Diego Natural History Museum (2002); amphibians and reptiles, Crother et al. (2017); birds, Chesser et al. (2019); and mammals, San Diego Natural History Museum (undated), which uses Wilson and Reeder (2005) for species names and Hall (1981) for subspecies.

PROTOCOL QUINO CHECKERSPOT BUTTERFLY SURVEYS

Permitted M&A biologists conducted protocol surveys for the quino checkerspot butterfly as authorized under M&A's federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #797999-9. The surveys were conducted in accordance with the current USFWS *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014) as well as in coordination with the Carlsbad Fish and Wildlife Office staff biologists (USFWS pers. comm. 2020), allowing protocol surveys to start the first week of March 2020 rather than the third week of February 2020 and were conducted less than a week apart when survey conditions were met to catch up to the protocol survey schedule. Survey acres covered per survey area and survey date were consistent with the current *Quino Checkerspot Butterfly Survey Guidelines*. Specific quino survey dates varied within the timeframe provided in the protocol according to weather conditions and scheduling needs. Biologists slowly walked a variable, winding course that generally followed 30-foot transects within suitable habitat in the pre-determined butterfly survey areas, carefully followed the movements of butterflies, and periodically stopped within areas that appeared most suitable. A list of detected nectar resources and butterfly species was recorded on datasheets or a field notebook, and the locations of potential quino larval host plants were recorded/mapped using a mobile mapping application and noted in field notes. Data collected from the surveys were digitized in ESRI GIS software, using ArcGIS for Desktop.

PROTOCOL CALIFORNIA COASTAL GNATCATCHER SURVEYS

Permitted M&A biologists conducted three protocol surveys for the coastal California gnatcatcher, as authorized under M&A's federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #797999-9 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). The surveys were conducted in accordance with the current USFWS *Coastal California Gnatcatcher Presence/Absence Survey Protocol* (USFWS 1997). Based on the Protocol, three protocol surveys were conducted at least one week apart within the gnatcatcher survey area that consisted of potentially suitable gnatcatcher habitat (e.g., Diegan coastal sage scrub) and any immediately adjacent habitat within the project site. All on-site vegetation communities were mapped, and survey routes were slowly walked in potentially suitable gnatcatcher habitat. Taped recordings of gnatcatcher vocalizations, as well as "pishing", were used to elicit initial vocal responses, and an appropriate time interval was allowed for a response, particularly from advantageous viewpoints. The gnatcatcher tape was not played when any potential gnatcatcher predator was detected in the vicinity. A list of all detected avian species was recorded in a field notebook. Data collected from the surveys were digitized into current GIS ESRI software platforms.

RARE PLANT SURVEYS

Rare plants were detected and mapped throughout the late winter, spring, and early summer months. All areas of the property were surveyed for rare plants although surveys were intensified in areas of clay soils which are suitable for a variety of endemic sensitive species known from the area. Surveys were conducted on foot with the aid of binoculars for mapping larger stands of perennial shrubs. Plants were either individually counted or numbers were estimated based on mapped area size and noted density.

Surveys were conducted during the flowering period for all potentially occurring sensitive species. Perennial shrubs such as San Diego viguiera (*Bahiopsis laciniata*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), and coast barrel cactus (*Ferocactus viridescens*) were identifiable throughout the entire survey period. Flowers present during the spring of the perennial San Diego County needlegrass were required to identify it from the more abundant native stipa species occurring on the property. Annual species including Otay tarplant (*Deinandra conjugens*) and Orcutt's bird's-beak (*Dicranostegia orcuttiana*) were identifiable from remnant dead growth observed during the winter surveys and their populations were further studied during the spring and summer months following their re-emergence from seed. The 2020 surveys for Otay tarplant were conducted near the end of this species' blooming period (April-July) when it appeared that most plants were in flower following several reconnaissance site visits to previously mapped high density areas. It should be noted that the survey of the proposed 1.66-acre off-site slope and berm on the Otay Ranch Village 2 property was conducted during the winter (January) of 2021. Both Otay tarplant and Orcutt's bird's-beak were detectable from remnant dead growth on the Sunbow property during this survey. No Otay tarplant, Orcutt's bird's-beak, or anyother sensitive species were observed on the proposed off-site slope and berm during this winter survey.

The population size of annual species fluctuates depending on climatic factors such as temperature and rainfall and therefore their population size is expected to fluctuate yearly. For the purpose of this report, the greatest number of plants for each recorded population was used to assess project impacts/preservation. Some annual species such as small-flower bindweed (*Convolvulus simulans*) were only detectable during the spring months.

JURISDICTIONAL WETLAND DELINEATION

Merkel & Associates, Inc. conducted a jurisdictional wetland delineation on December 20, 2019 and on April 28, 2020. The wetland delineation surveys were conducted using the routine onsite determination methods noted in the U.S. Army Corps of Engineers' (ACOE) *Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008a). In addition, the delineation was expanded to identify non-wetland federally regulated waters as well as waters of the state.

Evidence supporting jurisdictional determinations was recorded on field data forms and depicted in photographs of the data points, as provided in Appendices. Wetland habitats and jurisdictional waterways were recorded using a Trimble® geoexplorer Global Positioning System (GPS) unit with submeter accuracy and plotted onto a 1" = 200' scale, color aerial map (Google Earth, 2020) (with topographic overlay) of the project site, with waterway widths noted to provide true jurisdictional dimensions. Data collected from the delineation were digitized into current Geographical

Information System (GIS) Environmental Systems Research Institute (ESRI) software platforms. Information on the overall delineation process and regulatory jurisdictions may be found in the *ACOE Wetland Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, as well as federal, state, and local enacting legislation, or through guidance provided by judicial interpretation, solicitors opinions, and regulatory guidance issued to jurisdictional agencies.

Prior to conducting the delineation, the project site was evaluated to identify potential jurisdictional wetlands and/or waterways on the project site, and their connection to off-site hydrological resources. In addition, the overall landforms, slopes, soils, and climatic/hydrological conditions present on the project site were assessed. Data points were then taken in areas that were visually determined to best represent the characteristics of each potential wetland community type and/or jurisdictional resource identified on the project site, as well as in areas where the presence of a wetland and/or jurisdictional resource was uncertain. In regards to Poggi Creek channel, data points were taken in areas surrounding existing road crossings, where storm drain development is expected to tie into existing culvert infrastructure. The ACOE routine on-site determination methods require the presence of three parameters to define an area as a wetland (e.g., hydrophytic vegetation, hydric soils, and wetland hydrology). At each data point location, the area was first assessed to determine if normal environmental conditions were present. Some wetland indicators of one or more of the parameters can be periodically lacking due to normal seasonal or annual variations in environmental conditions (i.e., problem areas) or effects of recent human activities or natural events (i.e., atypical situations). Each data point was then evaluated for indicators of each of the wetland parameters.

Wetland Parameters

Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the community of macrophytes that occurs in areas where inundation and soil saturation is either permanent, or of sufficient frequency and duration to exert a controlling influence on the plant species present” (ACOE 2008, Section 2). For the purposes of this delineation, five levels of wetland indicator status were used to assess the presence of hydrophytic vegetation, based on the most current National Wetland Plant List for the Arid West (USACOE 2018): species classified as 1) obligate wetland plants (OBL) [plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands]; 2) facultative wetland plants (FACW) [plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands]; 3) facultative plants (FAC) [plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands]; 4) facultative upland plants (FACU) [plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands]; and 5) obligate upland plants [plants that occur rarely (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions] (Environmental Laboratory 1987, Table 1). Hydrophytic vegetation was determined to be present if any one of the following three indicator tests were satisfied: 1) the Dominance Test (Indicator 1), where “more than 50% of the dominant plant species across all strata were rated OBL, FACW, or FAC”; 2) the Prevalence Test (Indicator 2), where there were indicators of hydric soils and wetland

hydrology, and the prevalence index was 3.0 or less, which is a weighted-average wetland indicator status of all plant species by abundance (percent cover); and/or 3) the Plant Morphological Adaptations Test (Indicator 3), where there were indicators of hydric soils and wetland hydrology present, and either the Dominance Test (Indicator 1) or Prevalence Test (Indicator 2) were satisfied after reconsideration of the indicator status of certain plant species that exhibited morphological adaptations for life in wetlands.

Hydric Soils

Hydric soils are defined as “a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (ACOE 2008, Section 3). For the purposes of this delineation, the hydric soil indicators described in the USACOE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a) and *National Technical Committee for Hydric Soils (NTCHS) Field Indicators of Hydric Soils in the United States* (USDA NRCS 2016) were used to assess the presence of hydric soils. Soil test pits were dug to the depth needed to document the soil chroma index using the Munsell® Soil Color Charts (Munsell® Color 2000), as well as additional hydric soil indicators. The soil was determined to be hydric if one or more hydric soil indicators were present.

Wetland Hydrology

Wetland hydrology is indicated by the presence of surficial or sub-surficial hydrologic characteristics long enough during the growing season to show that the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively; thus, for an area to be defined as a wetland, periodic inundation or saturation of soils during the growing season must be determined to be present (ACOE 2008, Section 4). Indicators described in the ACOE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a) were used to assess the presence of wetland hydrology. Wetland hydrology was determined to be present if one or more primary indicators or two or more secondary indicators were observed.

Jurisdiction of Wetlands and Waterways

The extent of jurisdictional boundaries was determined according to the ACOE, RWQCB, CDFW, and City of Chula Vista definitions of wetlands, navigable waters, and non-wetland waters of the U.S./streambed (NWW). The following text describes each agency’s jurisdiction.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) has regulatory authority to issue permits for 1) the discharge of dredged or fill material in “waters of the U.S.” under section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), and 2) work and placement of structures in “navigable waters of the U.S.” under sections 9 and 10 of the Rivers and Harbors Act (RHA) (33 U.S.C 401).

The term “navigable waters of the U.S.” is defined in 33 CFR Part 328.4 as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.” The term “waters of the U.S.” is defined in 33 CFR Part 328.3(a).

“Wetlands” are defined in 33 CFR 328.3(c)(4) as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Thus, all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present for an area to be a jurisdictional wetland under normal circumstances.

The limits of CWA jurisdiction in tidal Waters of the U.S. (WOTUS) [33 CFR 328.4(b)] extend to the high tide line or to the limits of adjacent non-tidal WOTUS as described in the following sentence. The limits of jurisdiction in non-tidal waters of the U.S. [33 CFR 328.4(c)] extend to the limits of the wetlands or adjacent wetlands. Non-tidal waters of the U.S. that lack one or two of the wetland parameters may still be jurisdictional under the USACOE as non-wetland waters of the U.S. (NWW). In the absence of wetlands or adjacent wetlands, the limits of jurisdiction in non-tidal waters of the U.S. 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 method for identification of lateral limits for potential NWWs are detailed in the USACOE *A Delineation Manual, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACOE 2008c, Revised 2010).

The regulatory purview of the USACOE under Section 404 of the CWA has been restricted by rulings of the U.S. Supreme Court. These have included principal rulings under *Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers et al.* (2001) and the 2006 ruling in *Rapanos v. U.S.* and *Carabell v. U.S.* (hereafter referred to as *Rapanos*).

California State Water Resources Control Board/Regional Water Quality Control Board

The RWQCB (under the State Water Resources Control Board [SWRCB]) regulates wastewater discharges to “waters of the State”, which is defined in section 13050(e) of the California Water Code as “any surface water or groundwater, including saline waters, within the boundaries of the State.” For waters of the State that are federally regulated under the CWA, the RWQCB must provide state water quality certification pursuant to Section 401 of the CWA for activities that may result in discharge of pollutants into WOTUS.

California Department of Fish and Wildlife

Under section 1602 of the California Fish and Game Code, the CDFW has regulatory authority over any proposed activity that may substantially modify a river, stream, or lake. The CDFW regulates alterations of lakes or streambeds through the development of a Streambed Alteration Agreement (Agreement) under the Lake and Streambed Alteration Program (LSA). Unlike the ACOE process, the Agreement is not a discretionary permit, but rather an Agreement developed between an applicant and the CDFW. This Agreement may include conditions of mitigation, impact reduction, or avoidance measures. These measures are subject to acceptance by the applicant or may be countered with alternative measures. If an Agreement cannot be reached between the CDFW and applicant, an arbitration process exists.

The breadth of jurisdiction under the CDFW differs from the ACOE in that a “streambed” is not limited to the OHWM, but rather encompasses the entire width of the streambed, from bank to bank, regardless of the water level. CDFW regulatory authority under section 1602 of the Fish and Game Code extends not only to the bed and bank of streams or lakes, but also to adjacent riparian habitats that are supported by a river, stream, or lake, regardless of the riparian area’s federal wetland status. These areas are considered “adjacent riparian habitat”. For practical purposes of defining adjacent riparian habitats, these habitats include the extent of the canopy for stream associated vegetation that is rooted within, and dependent on the jurisdictional streambeds, as well as all adjacent hydrophytic vegetation. In some instances, small disjunctions between the stream course and adjacent riparian stands may occur where prior disturbance has occurred to fragment the riparian corridor. Adjacent riparian habitat does not include isolated trees or groves, or other wetland vegetation types in absence of proximate streambeds or lakes. Section 1602 does not extend to isolated wetlands and waters such as small ponds not located on a drainage, wet meadows, vernal pools, or tenajas. CDFW jurisdiction does not extend to tidal waters that lack the geometry and riparian characteristics of a stream.

City of Chula Vista

The City of Chula Vista defines wetlands under the City of Chula Vista MSCP as any of the following:

1. Areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions;
2. Lands which contain naturally occurring wetland communities listed on Table 5-6 of the Chula Vista MSCP Subarea Plan and further described in Appendix B (see below); and
3. Areas lacking wetland communities due to non-permitted filling of previously existing wetlands.

Furthermore, Appendix B of the Chula Vista MSCP Subarea Plan lists and defines the following vegetation communities as being a wetland: saltpan, vernal pools, southern coastal salt marsh, freshwater/alkali marsh, riparian forest, oak riparian forest, riparian woodland, riparian scrub, open water/freshwater, natural flood channel, and disturbed wetlands.

Wetland Functions and Values

Based on the wetland delineation, wetland functions and values were assessed for any wetlands identified onsite. Wetland functions can be defined as the physical, chemical, and biological characteristics of a wetland. The physical and chemical functions and values of a wetland are determined based on the wetland width, slope, substrate, hydrology characteristics, and habitat type/floral constituents. These functions and values typically include groundwater recharge, floodflow alteration, streambed stabilization, sediment/toxicant retention, nutrient transformation, and production export. The biological functions and values of a wetland typically include wildlife habitat (i.e., breeding, foraging) and cover.

GENERAL SURVEY LIMITATIONS

Biological inventories are generally subject to various survey limitations. Depending on the season and time of day during which field surveys are conducted, some species may not be detected due to temporal species variability. The biological surveys conducted for this project were performed

during daylight hours and included late fall, winter, spring, and the early summer months; thus, some nocturnal animal species that were not detected by sign (e.g., tracks, scat) during day surveys may not have been detected. Further, based on the literature review performed, as well as knowledge of species-specific habitat requirements, it is anticipated that any additional species potentially present on the project site can be fairly accurately predicted, and that the surveys conducted were sufficient in obtaining a thorough review of the biological resources present on the project site.

RESULTS

REGIONAL CONTEXT AND PHYSICAL CHARACTERISTICS

The proposed project site is located on private vacant land east of Brandywine and south of Olympic Parkway. It is abutted by the currently undeveloped but future Otay Ranch Village II development parcel to the east, the Otay Landfill to the southeast, and the parcel directly to the south owned by the City of Chula Vista is within a MSCP Minor Amendment Area (Figure 2). The project parcel has a MSCP City of Chula Vista 100% Preserve overlay over most of the western half of the project property as well the northern portions of the eastern half of the property (Figure 2). The majority of the site is designated as quino checkerspot butterfly habitat Category C in the City's MSCP Subarea Plan Section 4.4 and exhibited in Figure 4.1 of the Subarea Plan. Habitat Category designations A-C represent suitable quino habitat ranked in order of decreasing potential to support quino in the City of Chula Vista. Category A represents the highest potential to support quino and Category C represents the lowest potential to support quino. Further, Category C is described in the Subarea Plan as low quality and isolated habitat. Otay tarplant USFWS designated critical habitat is mapped within the western half and a smaller area in the north-central portion of the project property that overlaps with the majority (but not entirely) of the existing 100% Preserve configuration onsite (USFWS 2019b) (Figure 2). No other designated critical habitat for any listed species is present onsite.

Poggi Creek runs east-west within the project site along the northern boundary and directly adjacent to Olympic Parkway (Figure 2). The elevations within the project study area range from approximately 212 feet mean sea level (MSL) at the Poggi Creek channel storm drain outlet near the northwest corner of the site to a high elevation of 470 MSL located near the southeast corner of the site. The soils within the project study area are derived from Alluvium, Otay Formation, San Diego Formation, Sweetwater Formation and previously placed fill (Geocon-Geologic Map). Soils are mapped as Diablo clay, 15 to 30 percent slopes, Diablo clay, 30 to 50 percent slopes, Linne clay loam, 9 to 30 percent slopes, Olivenhain cobbly loam, 9 to 30 percent slopes, Salinas clay loam, 2 to 9 percent slopes, Olivenhain cobbly loam, 2 to 9 percent slopes on the mesa top, and terrace escarpments on the surrounding slopes (USDA 2002) (Figure 2). The regional climate is characterized by warm, dry summers and mild winters with most of the annual precipitation falling between December and March. Annual rainfall is approximately 9–13 inches (USDA-NRCS 2002).

VEGETATION COMMUNITIES AND BOTANICAL RESOURCES

Several vegetation types were identified within the project study area during the biological field surveys (Figure 3; Table 2). These identified vegetation types consist of upland habitats including Diegan coastal sage scrub, native grassland, non-native grassland, and non-native vegetation as well as wetland habitats including southern willow scrub, mule fat scrub and coastal and valley freshwater marsh. Acreages of these vegetation types are summarized in Table 2, and each is discussed in more detail following the table. A list of floral species observed or detected onsite is included as Appendix 2.

Vegetation Communities

- Coastal and Valley Freshwater Marsh
- Southern Willow Scrub
- Mule Fat Scrub
- Diegan Coastal Sage Scrub
- Native Grassland
- Non-native Grassland
- Non-native Vegetation
- Urban/Developed
- Waters of the State (RWQCB)/Streambed (CDFW)

Special Status Species (Numbers Provided Indicate Total Observed On-site for Each Species)

Special Status Flora

- Otay Tarplant (*Deinandra conjugens*) - 5,449
- Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*) - 803
- Orcutt's Bird's-beak (*Dicranostegia orcuttianus*) - 911
- Ashy Spike-moss (*Selaginella cinerascens*) - 2
- Coast Barrel Cactus (*Ferocactus viridescens*) - 2
- Palmer's Sagwort (*Artemisia palmeri*) - 44
- San Diego County Needlegrass (*Stipa diegoense*) - 10
- San Diego County Viguiera (*Bahiopsis laciniata*) - 7,647
- San Diego Bursage (*Ambrosia chenopodifolia*) - 24
- San Diego Marsh Elder (*Iva hayesiana*) - 816
- Small-flowered Bindweed (*Convolvulus simulans*) - 91
- Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*) - 750

Special Status Fauna

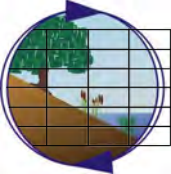
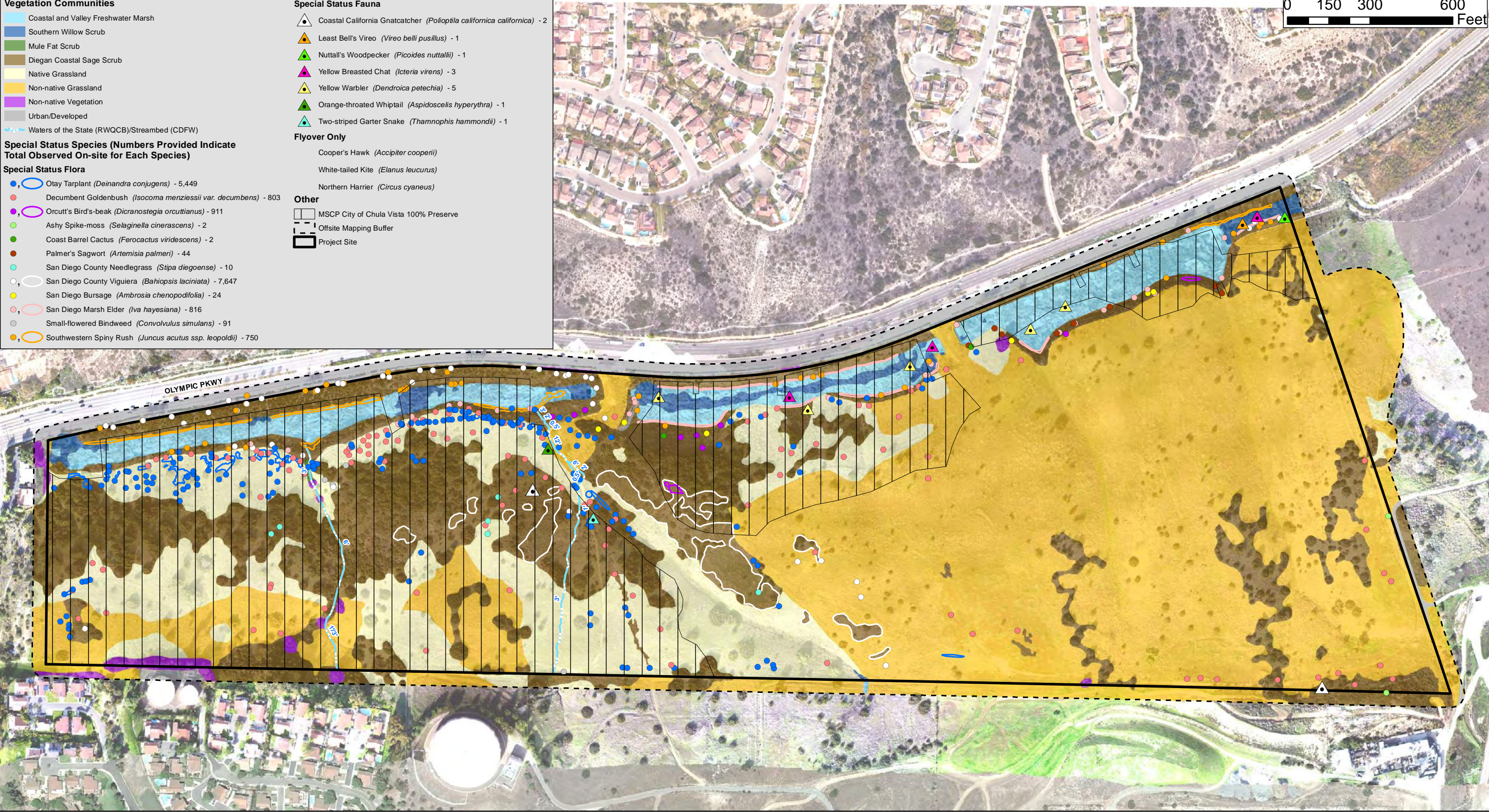
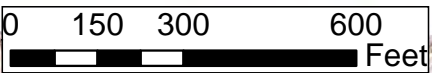
- Coastal California Gnatcatcher (*Poliopitla californica californica*) - 2
- Least Bell's Vireo (*Vireo belli pusillus*) - 1
- Nuttall's Woodpecker (*Picoides nuttallii*) - 1
- Yellow Breasted Chat (*Icteria virens*) - 3
- Yellow Warbler (*Dendroica petechia*) - 5
- Orange-throated Whiptail (*Aspidoscelis hyperythra*) - 1
- Two-striped Garter Snake (*Thamnophis hammondi*) - 1

Flyover Only

- Cooper's Hawk (*Accipiter cooperii*)
- White-tailed Kite (*Elanus leucurus*)
- Northern Harrier (*Circus cyaneus*)

Other

- MSCP City of Chula Vista 100% Preserve
- Offsite Mapping Buffer
- Project Site



Aerial Source: Merkel & Associates Jan. 2020

Biological Resources Map
Sunbow II Phase 3 SPA Amendment

Created on: January 19, 2021

Figure 3

Table 2. Habitats/Vegetation Communities within Project Site

Vegetation Type	MSCP Tier Habitat Type	Holland/Oberbauer Code	Total Area (acres)	Inside Preserve (acres)	Outside Preserve (acres)
Southern Willow Scrub (including seep)	Wetland	63320	2.06	1.14	0.92 (0.01 seep)
Mule fat Scrub	Wetland	63310	0.03	0.03	0.00
Coastal and Valley Freshwater Marsh	Wetland	63300	7.66	6.31	1.35
Native Grassland	I	42100	24.09	19.38	4.71
Diegan Coastal Sage Scrub	II	32500	37.08	24.46	12.62
Non-native Grassland	III	42200	64.19	10.31	53.88
Non-native Vegetation	IV	11000	0.53	0.44	0.09
Urban/Developed	n/a	n/a	0.06	0.00	0.06
		Total	135.70	62.07	73.63

Habitat/Vegetation Community Types

Diegan Coastal Sage Scrub

Diegan coastal sage scrub vegetation is primarily found in the western half of the property. It is also found in the eastern half of the property to a lesser extent where it is predominantly associated with the planted slopes of Poggi Creek channel that serve as a buffer to the wetland habitats that were created with the Sunbow II, Phase I development. In the western half of the property, Diegan coastal sage scrub is characterized by large stands of lemonadeberry (*Rhus integrifolia*) as well as areas that support a mix of lower-growing shrubs such as coastal sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*), California encelia (*Encelia californica*), and bladderpod (*Peritoma arborea*). A patch of habitat occurring near the western portion of the proposed development area is characterized by San Diego viguiera (*Bahiopsis laciniata*) mixed with purple needlegrass (*Stipa pulchra*). The San Diego viguiera is a sensitive species. One San Diego Needlegrass (*Stipa diegoensis*), a sensitive species, was also found on this slope. Restoration areas along the slopes of Poggi Creek channel include a diverse mix of planted sage scrub shrubs and cacti including coastal sagebrush, flat-top buckwheat, white sage (*Salvia apiana*), coast cholla (*Cylindropuntia prolifera*), and coast prickly pear (*Opuntia littoralis*). Giant wild rye (*Leymus condensus*) is common in some areas. Several sensitive species including San Diego bursage (*Ambrosia chenopodifolia*), Palmer's sagewort (*Artemisia palmeri*), coast barrel cactus (*Ferocactus viridescens*), and Orcutt's bird's-beak (*Dicranostegia orcuttiana*) were also planted and are present on these slopes.

Native Grassland

Native grassland is found throughout most of the western half of the property in mostly open areas adjacent to Diegan coastal sage scrub vegetation. It is also found in patches along the bottom of the north-facing slope in the eastern half of the property where it gives way to non-native grassland to the south in more disturbed soils conditions. Native grassland is also found to the east on the adjacent Otay Ranch Village 2 property near the northeast corner of the study area. It should be noted that M&A's current mapping of this area exhibits a decline of approximately 0.31 acres of native grassland from Dudek's 2006 mapping effort (Dudek 2006). This decline may be a result of the several drought years experienced in the local area during the past fifteen years.

Clay soils accommodate fields of purple needlegrass as well as numerous geophytes including common goldenstar (*Bloomeria crocea*), blue dicks (*Dichelotemma capitatum* ssp. *capitatum*), and sharp-toothed sanicle (*Sanicula arguta*). The taller rayless gumplant (*Grindelia camporum*) and locally endemic Otay tarplant (*Deinandra conjugens*) are also associated with these grasslands. Two populations of the sensitive small-flower bindweed (*Convolvulus simulans*) were also detected in this habitat.

Non-native Eurasian grasses including ripgut grass (*Bromus diandrus*) and soft chess (*Bromus hordeaceus*) are common, but typically comprise less than 60 percent of the overall cover. In some areas, clumps of the non-native sweet fennel (*Foeniculum vulgare*) are also found.

Non-native Grassland

Much of the eastern half of the property is comprised of non-native grassland. A dense cover of non-native, annual grass species including ripgut grass, purple-falsebrome (*Brachypodium distachyon*), soft chess, wild oat (*Avena barbata*), and red brome (*Bromus madritensis* ssp. *rubens*) dominate these areas. The perennial darnel (*Festuca tementulentum*) grass is also common in some areas of mesic soils. Numerous perennial and annual non-native forbs including short-pod mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), Russian thistle (*Salsola tragus*), Crete hedypnois (*Hedypnois cretica*), smooth cat's ears (*Hypochaeris glabra*), sweet fennel (*Foeniculum vulgare*), crown daisy (*Glebionis coronaria*), and wild radish (*Raphanus sativus*) are found throughout this habitat amongst the grasses. Some native annual forbs including silver puffs (*Uropappus lindleyi*), California cottonrose (*Logfia filaginoides*), everlasting bedstraw (*Stylocline gnaphalioides*) and tread lightly (*Cardionema ramosissima*) occur occasionally in this habitat. Although Otay tarplant is more common in native grassland, it is also found in the non-native grassland onsite. Individual and small groupings of lemonadeberry surrounded by thatched non-native grasses are found in some locations of the non-native grassland onsite; however, the lemonadeberry shrubs within the non-native grassland consist of no more than 5 percent absolute cover (AECOM et al 2011).

Non-native Vegetation

Non-native vegetation is mapped for areas supporting individual or clusters of non-native tree and shrub species such as tamarisk (*Tamarix parviflora*), eucalyptus (*Eucalyptus* spp.), and cyclops acacia (*Acacia cyclops*). Typical ornamental landscape plants which are less invasive such as pine (*Pinus* spp.) and mission olive (*Olea eropea*) are also included in this category and can be found near the southwest border of the site immediately adjacent to urban development.

Southern Willow Scrub

Southern willow scrub vegetation was planted within the created Poggi Creek channel as part of the Sunbow II, Phase I development project. Mature arroyo willow (*Salix lasiolepis*) and black willow (*Salix gooddingii*) occur in patches along the channel and shade an understory of mostly freshwater marsh vegetation. In drier areas, tall, hydrophytic shrubs such as mule fat (*Baccharis salicifolia*) and narrow-leaved willow (*Salix exigua*) occur in the understory. In saturated soils, low growing herbaceous species including watercress (*Nasturtium officinale*), yerba mansa (*Anemopsis californica*), and salt marsh fleabane (*Pluchea odorata*) were noted.

In addition, a presumed seep from the hillside on the City property to the south extends on to the project site along the southern boundary. On-site, saturated soils support a small patch of southern willow scrub consisting of one black willow tree, a few tamarisk shrubs and lower-growing forbs such as willow herb (*Epilobium ciliatum*) and bristly ox-tongue (*Helminthotheca echioides*).

Mule fat Scrub

A small stand of mule fat occurs at the base of a drainage that feeds into Poggi Creek channel, in the western half of the property.

Coastal and Valley Freshwater Marsh

Perennial water flow along Poggi Creek channel results in permanently saturated soils that support freshwater marsh vegetation. This habitat is dominated by dense stands of southern cat-tail (*Typha domingensis*) with smaller groupings of southern bulrush (*Schoenoplectus californicus*). Moist soils along the periphery of this habitat accommodate relatively large groupings of two sensitive species, San Diego marsh-elder (*Iva hayesiana*) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*).

Zoological Resources

Butterflies

Eighteen butterfly species were observed onsite during spring protocol surveys conducted for the federally endangered quino checkerspot butterfly (*Euphydryas editha quino*). Painted Lady (*Vanessa cardui*) was the most commonly encountered butterfly throughout upland vegetation types. Other frequently observed species included funereal dusky wing (*Eurynis funeralis*), anise swallowtail (*Papilio zelicaon*), checkered white (*Pontia protodice*), and pacific sara orange-tip (*Anthocharis sara sara*). Each of these species are considered generalists that typically sip nectar from a wide variety of plant species from the sunflower, carrot, buckwheat, mustard, pea, and mint families. Less commonly encountered species included western tailed blue (*Everes amyntula*), marine blue (*Leptotes marina*), grey hairstreak (*Strymon melinus pudica*), and Behr's metalmark (*Apodemia mormo virgulti*). Except for the metalmark, the caterpillars of these species typically feed on pea family plants such as coastal deerweed, ocean locoweed (*Astragalus trichopodus* var. *lonchus*) and western false-indigo (*Amorpha fruticosa*) which are all found on-site. Behr's metalmark was typically associated with flat-top buckwheat which is the primary caterpillar food source for this species.

Amphibians

Baja California tree frog (*Pseudacris hypochondriaca hypochondriaca*) was commonly detected within Poggi Creek channel and in adjacent coastal sage scrub and grassland habitats during the winter and spring months. Although not detected, western toad (*Anaxyrus boreas*) is also expected to utilize the creek channel and immediately adjacent vegetation communities. Bullfrog (*Lithobates catesbeiana*) may also breed within areas of the creek where water is stagnant. Another common amphibian species, the garden slender salamander (*Batrachoseps major major*), is expected to occur in upland habitats. This species prefers cool, damp soils below leaf litter and debris.

Reptiles

Reptiles observed on-site include several snake species including Southern Pacific rattlesnake (*Crotalus oreganus ssp. helleri*), gophersnake (*Pituophis catenifer*), and California striped racer (*Mastigophis lateralis lateralis*). The sensitive two-striped garter snake (*Thamnophis hammondi*) was observed in coastal sage scrub vegetation in preserved habitat just west of the proposed development. This aquatic species is expected to primarily utilize wetland habitats of Poggi Creek channel but also refuge in immediately adjacent upland mammal burrows during the winter. Other expected snake species include the common kingsnake (*Lampropeltis getula*) and the sensitive red-diamond rattlesnake (*Crotalus ruber*). The red-diamond rattlesnake has been observed within the last year occurring east of the site on the banks of Poggi Creek channel.

Lizard species observed on-site include the western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and southern alligator lizard (*Elgaria multicarinata*). A motion activated camera placed along the edge of Poggi Creek channel captured an image of the sensitive orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) within a sandy wash area of one of the drainages that connects to Poggi Creek. This species is expected to also utilize adjacent coastal sage scrub and grassland habitats.

Birds

Numerous bird species were observed in Diegan coastal sage scrub habitat. Typical bird species detected in this habitat include California towhee (*Melizone crissalis*), spotted towhee (*Pipilo maculates*), bushtit (*Psaltiriparus minimus*), Bewick's wren (*Thryomanes bewickii*), Anna's hummingbird (*Calypste anna*), and western scrub-jay (*Aphelocoma californica*). Fall migrant species observed included white-crowned sparrow (*Zonotrichia leucophrys*) and yellow-rumped warbler (*Dendroica coronata*). Other less commonly encountered species included California thrasher (*Toxostoma redivivum*), blue grosbeak (*Passerina caerulea*), lark sparrow (*Chondestes grammacus*), orange-crowned warbler (*Oreothlypis celata*), Pacific slope flycatcher (*Empidonax difficilis*), and ash-throated flycatcher (*Myiarchus cinerascens*).

The coastal California gnatcatcher (*Poliophtila californica californica*) was observed within coastal sage scrub habitat during protocol surveys for this species. Two male territories were mapped. This listed species is discussed further in the Sensitive Fauna section below.

Poggi Creek channel supported a variety of riparian bird species. Typical year-long resident bird species including song sparrow (*Melospiza melodia*) and common yellowthroat (*Geothlypis trichas*) were detected. Various migrant species including Wilson's warbler (*Wilsonia pusilla*), black-

throated gray warbler (*Dendroica nigrescens*), western tanager (*Piranga ludociniana*), and warbling vireo (*Vireo gilvus*) were detected during spring surveys. Sensitive migrant bird species including yellow warbler (*Dendroica petechial*), yellow-breasted chat (*Icteria virens*) and the federally listed endangered least Bell's vireo (*Vireo bellii pusillus*) were also detected on-site within Poggi Creek channel. The least Bell's vireo's territory appears to extend from the eastern-most 200 feet of the channel to a willow scrub basin located just upstream of the property to the east. Least Bell's vireo is discussed further in the Sensitive Fauna section below. Common yellowthroat, red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*) and Virginia Rail (*Rallus limicola*) forage and nest in freshwater marsh habitat found within the channel.

Grassland habitats (including both native and non-native grassland) provide foraging habitat for a variety of raptor species. Observed species included urban tolerant species such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*) and American kestrel (*Falco sparverius*). During early spring (i.e., March), a red-tailed hawk pair nested in a Eucalyptus tree snag near the southeast corner of the property. Three eggs were visibly observed in this nest in mid-March but it later appeared that only one young was hatched. Surveys in early April did not reveal the nestling, and it was presumed that it was predated upon by one of the many predatory birds (e.g., Cooper's hawk, Common Raven) observed in the area. It should be noted that the location of this nest was identified during the previous survey (Pacific Southwest 1989) of the site and it is possible that it has been routinely used by red-tailed hawks if not other raptors throughout its existence.

Sensitive raptor species such as the northern harrier (*Circus cyaneus*) and white-tailed kite (*Elanus leucurus*) were also observed foraging over grassland habitat. No nests of these species were observed during the site investigations. It should be noted that the northern harrier nests on the ground with the nest concealed within a marsh or other dense vegetation (Unitt 2004). Grasshopper sparrow (*Ammodramus savannarum*) is a sensitive species that was historically identified to occur on site (Pacific Southwest 1989) but was not observed during the recent surveys.

Given the abundance of grassland habitat throughout the site, western burrowing owl (*Athene cunicularia*) was sought during the site investigations. No burrowing owls were observed during the numerous surveys of the site. In addition, no burrows with evidence of sign (i.e., molted feathers, cast pellets, prey remains, eggshell fragments, excrement) were observed during the surveys.

Urban adapted bird species such as house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), and hooded oriole (*Icterus cucullatus*) were common within non-native, ornamental plantings that border the southwest property boundary.

Mammals

Mammal species detected on-site include coyote (*Canis latrans clepticus*), California ground squirrel (*Spermophilus beecheyi nudipes*), Botta's pocket gopher (*Thomomys bottae*) and desert cottontail (*Sylvilagus audubonii sanctidiegi*). Raccoon (*Procyon lotor psora*) tracks were observed along the muddy creek bottom of Poggi Creek channel. Other urban adapted mammals such as the striped skunk (*Mephitis mephitis holzneri*) and Virginia opossum (*Didelphis virginiana*) are also expected to scavenge for food along the channel at night. The dusky-footed woodrat (*Neotoma fuscipes macrotis*) is another mostly nocturnal species that is expected to occur on-site. Although no stick nests were detected, images of what is believed to be this species were captured by a motion

activated camera placed along the edge of the channel. Other species expected to occur on-site include, California vole (*Microtus californicus sanctidiegi*), agile kangaroo rat (*Dipodomys agilis*) and various species of mice including western harvest mouse (*Reithrodontomys megalotis longicaudus*) and deer mouse (*Peromyscus maniculatus*). These small mammals provide a food source for the various previously mentioned raptor species.

Other potentially occurring mammal species include bobcat (*Lynx rufus*) and the relatively urban adapted gray fox (*Urocyon cinereoargenteus californicus*).

Watersheds found within the southern part of the County including the Tijuana River Valley, the Otay River Valley and the Sweetwater River Valley support a relatively large diversity of bat species (Stokes 2005). Relatively common species including the Mexican free-tailed bat (*Tadarida brasiliensis*) and Yuma myotis (*Myotis yumanensis*) are expected to forage for insects over the site, especially along Poggi Creek channel.

JURISDICTIONAL WETLANDS AND NON-WETLANDS RESOURCES

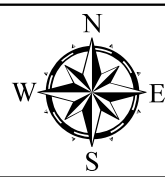
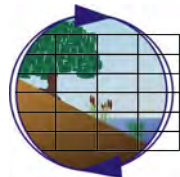
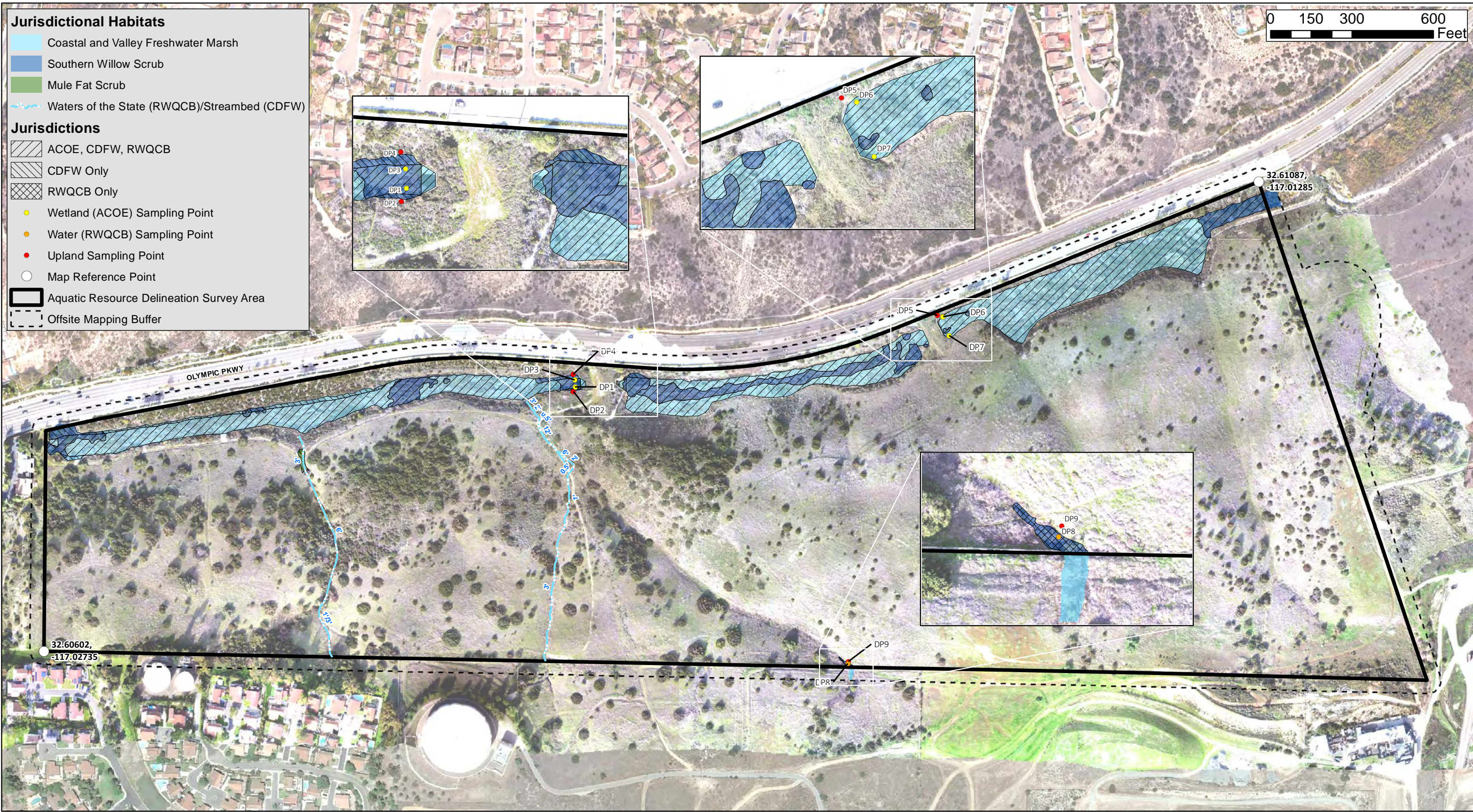
ACOE, RWQCB, CDFW, and/or City of Chula Vista jurisdictional wetlands and non-wetland waters are delineated for the project site as described further below and shown in Figure 4. Jurisdictional wetland habitat types on the site include southern willow scrub, mule fat scrub, and coastal and valley freshwater marsh. Jurisdictional non-wetland waters (NWW) were also delineated where applicable. Table 3 below summarizes the acreages of jurisdictional resources within the project site and the following text discusses these habitats with regard to hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland determination data forms and photo points that support the delineation are provided in Appendices 5 and 6, respectively.

Table 3. Summary of Jurisdictional Resources Present Within the Project Site

Jurisdictional Resource	Onsite Total (acreage)	Jurisdiction		
		ACOE/ RWQCB/ CDFW/ City	RWQCB	CDFW/ City
Coastal and Valley Freshwater Marsh	7.66	7.44	0.00	0.22
Southern Willow Scrub	2.06	1.85	0.01	0.20
Mule Fat Scrub	0.03	<0.01	0.00	0.03
Non-wetland Waters of the U.S./ Waters of the State/Streambed	0.17 (2,044 linear feet)	0.17 (2,044 linear feet)	0.00	0.00
Total:	9.92	9.46	0.01	0.45

Southern Willow Scrub

Southern Willow Scrub is primarily found along Poggi Creek channel and includes a tree stratum dominated by various FACW of willow species including arroyo willow, black willow, and Pacific willow (*Salix lasiandra* ssp. *lucida*). Species within the shrub stratum included mule fat (FAC), San



Aerial Source: Merkel & Associates Jan. 2020

Wetland Delineation Map
Sunbow II Phase 3 SPA Amendment

Created on: January 19, 2021

Merkel & Associates, Inc.

Figure 4

Diego marsh elder (FACW), and coyote brush (UPL). The herb stratum included mostly OBL species such as southern cattail, southern bulrush, yerba mansa, and watercress. Several FACW species including Mexican rush (*Juncus mexicanus*) and great-marsh evening primrose (*Oenothera elata*) were noted at higher elevations within this stratum. Areas in which hydrophytic vegetation extends beyond the ordinary high water mark of the creek are mapped as California Department of Fish and Wildlife Jurisdiction Only.

Soil tests pits revealed a relatively dark matrix with redox depletions within the upper 8 inches of the profile. Highly decomposed organic matter in the surface layer and a sulfidic odor was also characteristic of the soils in these test pits. Primary hydrology indicators included water stained leaves and hydrogen sulfide odor. Secondary hydrology indicators included drainage patterns and drift deposits.

A small patch of willow scrub represented by one black willow (FACW), a few tamarisk (FAC) shrubs and low-growing forbs such as willow herb (FACW) and bristly ox-tongue (FAC) occurs near the southern property boundary. The hydric plant species in this area are supported by a seep that occurs offsite, to the south on City owned property. No hydric soil indicators were observed within the excavated soils pit; however, hydrology was indicated by the presence of surface water and saturated soils. Since this area lacks a defined bed, bank, and ordinary high water mark and has no defined drainage connection to Poggi Creek channel it's not jurisdictional under ACOE or CDFW but rather it is considered Regional Water Quality Control Board Jurisdiction Only.

Mule Fat Scrub

A small stand of mule fat (FAC) occurs within a narrow drainage ditch that feeds into Poggi Creek channel. Hydrology was indicated by the presence of secondary indicators including drainage patterns and sediment deposits.

Coastal and Valley Freshwater Marsh

Perennial water flow along Poggi Creek channel results in permanently saturated soils that support freshwater marsh vegetation. Two OBL species, southern cat-tail and southern bulrush characterize this habitat. Other lower-growing species within the herb stratum include water cress (OBL), yerba mansa (OBL), and curly dock (*Rumex crispus*)(FAC).

Soils in these areas exhibited a loamy gleyed matrix with redox features noted within the upper 6 inches. Primary hydrology indicators included inundation and oxidized rhizospheres within living roots. Secondary hydrology indicators included drift deposits and drainage patterns.

NWW/Streambeds

Jurisdictional non-wetland waters of the U.S./streambeds were mapped for drainages with a defined bed and bank but which lacked hydric vegetation and soils.

Functions and Values of Jurisdictional Resources

Poggi Creek is a perennially flowing stream that is supported by urban runoff stemming from storm drains originating from the adjacent Sunbow and Otay Ranch developments. Surface flow is relatively slow throughout the year. This is fostered by upstream manufactured design features

associated with wetland mitigation created for the construction of Olympic Parkway. These design features include rip-rap drop structures with shallow wading pools and rock ribbed sand bars that force flows to slow and meander down the channel, dropping sediment and allowing for the planted wetland vegetation to effectively treat runoff. As a result, wetland functions such as groundwater recharge, flood flow alteration, and sediment/toxicant retention is considered relatively high. The presence of significant woody (i.e., willow) and herbaceous (i.e., cattail) vegetation contributes to high nutrient transformation and streambed stabilization throughout the channel. The created wetlands within the channel have proven to provide significant wildlife value, especially for birds. A high diversity of resident and migratory bird species utilize the channel which is further enhanced by the presence of the native Diegan coastal sage scrub which was planted on the channel banks to buffer the wetlands. Sensitive migrant bird species including the least Bell's vireo, yellow warbler, and yellow-breasted chat breed within the created wetlands during the spring and summer months. The created coastal sage scrub on the channel banks provides potential habitat for the resident coastal California gnatcatcher.

RARE, THREATENED, ENDANGERED, ENDEMIC AND/OR SENSITIVE OR MSCP-COVERED SPECIES

Sensitive species are those considered sensitive by the City or any state or federal agency. For the purposes of this report, species listed as endangered or threatened under the federal Endangered Species Act (ESA) and California Endangered Species Act (CESA); species designated as California Special Concern species or Fully Protected species by the CDFW; and species listed as MSCP narrow endemics by the City of Chula Vista (2003) are considered "sensitive". Species considered rare by the California Native Plant Society as California Rare Plant Rank (CRPR) species (2020) or as Special Plants or Animals in the CNDDDB (2020, 2019, respectively), may be considered "sensitive" if they meet the CEQA Guidelines §15380 (Title 14, Chapter 3, Article 20) definition for "endangered, rare or threatened species".

Sensitive Flora

Twelve sensitive floral species were identified within the project study area during the general biological surveys: Otay tarplant (ESA Threatened, CESA Endangered, MSCP NE and Covered Species), Orcutt's birds-beak (CRPR 2B.1, CNDDDB Special Plant, MSCP Covered Species), decumbent goldenbush (CNDDDB Special Plant, CRPR 1B.2), coast barrel cactus (CNDDDB Special Plant, CRPR 2B.1), San Diego bursage (CRPR 2B.1), San Diego marsh elder (CNDDDB Special Plant, CRPR 2B.2), small-flowered bindweed (CRPR 4.2), Palmer's sagewort (CNDDDB Special Plant, CRPR 4.2), San Diego County needlegrass (CRPR 4.2), San Diego viguiera (CNDDDB Special Plant, CRPR 4.3), southwestern spiny rush (CNDDDB Special Plant, CRPR 4.2), and ashy spike-moss (CRPR 4.1) (Table 4; Figure 3).

Otay Tarplant was the only City narrow endemic identified and expected onsite. Surveys were conducted in 2020 during the flowering period (April-July) for this species. In addition, remaining remnants of plants from the 2019 growth season were mapped during the late fall of 2019. The 2020 Otay tarplant mapped locations and plant numbers were combined with the 2019 Otay tarplant survey results taking the largest numbers if the locations overlapped to estimate the onsite Otay tarplant population. It is recognized that the number and locations of individual plants in any Otay tarplant population varies each year, due to a number of factors, including rainfall, temperature, soil conditions, and seed bank (USFWS 2004).

The following table identifies sensitive plant species detected on-site and their location relative to preserve boundaries.

Table 4. Sensitive Flora Located Onsite Inside and Outside Preserve Boundaries

Species	Inside Preserve	Outside Preserve	Total
*Ashy Spike-moss (<i>Selaginella cinerascens</i>)	0	2	2
Coast Barrel Cactus (<i>Ferocactus viridescens</i>)	1	1	2
Decumbent Goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	533	270	803
Orcutt's Bird's-beak (<i>Dicranostegia orcuttiana</i>)	705	206	911
Otay Tarplant (<i>Deinandra conjugens</i>)	4,044	1,405	5,449
Palmer's Sagwort (<i>Artemisia palmeri</i>)	16	28	44
San Diego Bursage (<i>Ambrosia chenopodiifolia</i>)	7	17	24
San Diego County Needlegrass (<i>Stipa diegoense</i>)	9	1	10
San Diego County Vigiera (<i>Bahiopsis laciniata</i>)	2,745	4,902	7,647
San Diego Marsh Elder (<i>Iva hayesiana</i>)	641	175	816
Small-flowered Bindweed (<i>Convolvulus simulans</i>)	91	0	91
Southwestern Spiny Rush (<i>Juncus acutus</i> ssp. <i>leopoldii</i>)	489	261	750

* = Prostrate ground cover herb quantified by number of patches

Other Potentially Occurring Sensitive Flora

Multiple biological surveys including focused rare plant surveys were conducted onsite throughout the blooming period for all potentially occurring sensitive species. As a result, only one species, Palmer's grappling-hook (*Harpagonella palmeri*) (CRPR 4.2, CNDDDB Special Plant), has a moderate or greater potential to occur on-site despite not being observed during the biological surveys given the cryptic nature of this inconspicuous annual plant.

No other potential sensitive floral species are expected to have at least a moderate potential to occur within the project site predominately based on a lack of potentially suitable habitat, soils, and/or the number of recent field surveys conducted by M&A biologists onsite throughout the year that would have likely detected most species, if present. All of the potentially occurring sensitive floral species are discussed in Appendix 3.

Sensitive Fauna

Ten sensitive fauna species were identified within the project study area during the general biological surveys and/or protocol surveys: least Bell's vireo (USFWS federally listed Endangered, CDFW state list Endangered, CNDDDB Special Animal, and MSCP Covered Species); California gnatcatcher (*Polioptila californica californica*) (USFWS federally listed Threatened, CDFW Species of Special Concern, CNDDDB Special Animal, and MSCP Covered Species); yellow-breasted chat (CDFW Species of Special Concern, CNDDDB Special Animal); yellow warbler (CDFW Species of Special Concern, CNDDDB Special Animal, USFWS Birds of Conservation Concern); Cooper's hawk (CNDDDB Special Animal, CDFW Watch List, MSCP Covered Species); Nuttall's woodpecker (CNDDDB Special Animal); northern harrier (CDFW Species of Special Concern, CNDDDB Special Animal, MSCP Covered Species); white-tailed kite (CDFW California Fully Protected Species, CNDDDB Special Animal);

orange-throated whiptail (CDFW Species of Special Concern, CNDDDB Special Animal, and MSCP Covered Species); and two-striped garter snake (CDFW Species of Special Concern, CNDDDB Special Animal). Several of the sensitive avian species onsite were observed within riparian habitat along Poggi Creek consisting of yellow warbler, yellow breasted chat, Nuttall's woodpecker, as well as least Bell's vireo discussed further below (Table 5; Figure 3). The sensitive raptors observed onsite (i.e., Cooper's hawk, northern harrier, white-tailed kite) were detected only flying over and/or potentially foraging throughout the site and were not observed to be nesting and are not expected to nest onsite due to the limited amount of nesting habitat. The orange-throated whiptail and two-striped garter snake were briefly detected in the central portion of the site within native grassland and Diegan coastal sage scrub habitats, respectively. Coastal California gnatcatcher was identified onsite and is discussed further below. The following table identifies sensitive animal species detected on-site and their location relative to preserve boundaries.

Table 5. Sensitive Fauna Located Onsite Inside and Outside Preserve Boundaries

Species	Inside Preserve	Outside Preserve	Total
Coastal California Gnatcatcher (<i>Poliophtila californica californica</i>)	1	1	2
*Cooper's Hawk (<i>Accipiter cooperi</i>)	NA	NA	NA
Least Bell's Vireo (<i>Vireo bellii pusillus</i>)	0	1	1
*Northern Harrier (<i>Circus cyaneus</i>)	NA	NA	NA
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)		1	1
Orange-throated Whiptail (<i>Aspidoscelis hyperythra</i>)	1	0	1
Two-striped Garter Snake (<i>Plestiodon skiltonianus interparietalis</i>)	1	0	1
*White-tailed Kite (<i>Elanus leucurus</i>)	NA	NA	NA
Yellow-breasted Chat (<i>Icteria virens</i>)	2	1	3
Yellow Warbler (<i>Setophaga brewsteri</i>)	4	1	5

* = fly over species not limited to inside or outside the preserve

Least Bell's Vireo

One least Bell's vireo territorial male was incidentally detected by call within the southern willow scrub in Poggi Creek during general biological surveys as well as during protocol surveys for quino checkerspot butterfly and coastal California gnatcatcher conducted by M&A throughout the spring months of 2020. The observations were relatively consistent and limited to the northeastern portion of the project site (Figure 3). The least Bell's vireo's territory appears to extend from the eastern-most 200 feet of the channel onsite to an offsite basin that supports southern willow scrub located just upstream of the property to the east.

Coastal California Gnatcatcher

The project site supports approximately 37 acres of potentially suitable gnatcatcher habitat consisting of Diegan coastal sage scrub; however, not all of the 37 acres of the Diegan coastal sage scrub onsite supports suitable nesting gnatcatcher habitat. The suitable nesting habitat is located predominately within the existing Preserve in the central portion of the site along four rolling hillsides north of Poggi Creek and Olympic Parkway, as well as a smaller patch of Diegan coastal sage scrub that is located in the southeastern corner of the project site and extends offsite (Figures 3). The suitable gnatcatcher habitat quality in these areas is moderate to high quality

predominately due to the native species composition and diversity. The remaining areas of Diegan coastal sage scrub onsite, specifically those areas that consist entirely of lemonadeberry are not considered suitable nesting habitat for gnatcatcher due to the lack of plant species composition preferred for nesting (e.g., *Artemisia californica*, *Eriogonum fasciculatum*) and those narrow linear areas along Poggi Creek are less suitable gnatcatcher habitat and of lower quality for gnatcatcher due to their linear configuration, and fragmented locations onsite.

Based on positive USFWS protocol surveys conducted in April 2020 (M&A 2020), two coastal California gnatcatcher territorial males were observed and heard within the survey area in two separate areas of Diegan coastal sage scrub onsite (Appendix 7). One gnatcatcher territory is located in the central portion of the site within the larger area of high quality Diegan coastal sage scrub. The other gnatcatcher territory is located both onsite and offsite within the southeastern corner of the project site where a small amount of Diegan coastal sage scrub occurs onsite with more suitable habitat that extends offsite onto the County of San Diego landfill property to the south (Figure 3).

Quino Checkerspot Butterfly

Based on USFWS protocol surveys for the federally listed endangered quino checkerspot butterfly conducted by M&A in 2020, quino checkerspot butterfly is not present within the project site (Appendix 8).

Other Potentially Occurring Sensitive Fauna

The red-diamond rattlesnake (*Crotalus ruber*) has been recorded to occur in open space habitat near the northwest corner of the site in 1987 and 2006 (CNDDDB 2020). M&A biologists have observed this often cryptic species east of the site in Poggi Creek Channel within the last year. This cryptic species has a moderate potential to occur on-site, given the presence of suitable habitat and the most recent sightings near the property. This is the only sensitive potentially occurring faunal species with at least a moderate potential of occurring on the site. No other potential sensitive faunal species are expected to have at least a moderate potential to occur within the project site predominately based on a lack of potentially suitable habitat and/or the number of recent field surveys conducted by M&A biologists onsite throughout the year that would have likely detected most species if present. All of the potentially occurring sensitive faunal species are discussed in Appendix 3.

Nesting Sensitive Raptor Species

No nests of sensitive raptor species were observed or are expected to occur on-site. These include nests for tree/tall shrub nesting species such as the white-tailed kite and Cooper's hawk, as well as ground nesting species such as the northern harrier. These species were only observed flying over and/or foraging over the site. As discussed earlier, no burrowing owls or burrows with evidence of sign (i.e., molted feathers, cast pellets, prey remains, eggshell fragments, excrement) were observed during the surveys. Further, no ground squirrel burrows or other potential burrows were observed onsite. As such, this species is not expected to occur on-site. Nesting potential for sensitive raptor species is also discussed in Appendix 3.

Wildlife Corridors and Connectivity

The northern portion of the project site and Olympic Parkway are located in an area that was historically Poggi Canyon. The project site is not located within a known regional wildlife corridor; however the northern portion of the project site currently supports created wetlands along Poggi Creek and adjacent upland slopes including dirt trails; as well as a few game trails and smaller drainages throughout the upland habitat likely serve as local wildlife corridors for the project area due to their topography, vegetation cover, and location that currently supports undeveloped land within an urbanized area to the north, west, and portions to the south. Further, the project likely serves as part of a stepping stone corridor for avian species in the region due to the available habitat onsite that is generally surrounded by an urbanized area. As noted, the BO for the Sunbow II project required off-site habitat mitigation of sage scrub habitat associated with the further fragmentation of the habitat connectivity associated with development of Sunbow II, Phase 3. As a result, the anticipation of habitat connectivity impact associated with Phase III development has been captured in regional conservation planning and project specific regulatory actions.

CITY OF CHULA VISTA MSCP

The MSCP Subregional Plan dated August 1998 under the NCCP Act of 1991 was prepared for 12 local San Diego jurisdictions including the City of Chula Vista that would be implemented through MSCP Subarea Plans. Subarea Plans approved under the NCCP would allow, “take” of various sensitive species through specific conditions of coverage pursuant to Section 4(d) of the FESA. The City of Chula Vista has an adopted MSCP Subarea Plan (2003) and HLIT (2005, 2019) that regulates the implementation of the Subarea Plan.

The western half of the project site and much of the northern edges along Poggi Creek are located within the City’s MSCP 100% Preserve while generally the eastern half of the site is located within a Chula Vista MSCP Development Area (Figure 2). In addition, there are adjacent MSCP designations to the south and southeast (Figure 2). Directly south of the project site is a City of Chula Vista owned property that is a MSCP Minor Amendment Area. As provided in the MSCP Subarea Plan Section 5.1.3.1, these Minor Amendment Areas will require the processing of a Minor Amendment to the Subarea Plan before Take Authorization will apply to any portion of the properties with this designation. Directly southeast of the project site is a County of San Diego owned property where the Otay Landfill is located. This County of San Diego property is designated as a MSCP Take Authorization Area that has granted take to the County of San Diego under the County Subarea Plan presumably for County landfill activities.

PROJECT IMPACT ANALYSIS

THRESHOLDS OF SIGNIFICANCE

The CEQA guidelines §15065 state that a project may have a significant effect on the environment if:

- “The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”
- “The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.”
- “The project has possible environmental effects which are individually limited but cumulatively considerable.”

The City of Chula Vista has not developed “standards” for evaluating biological impact significance under CEQA. Any proposed project impacts located in the City of Chula Vista would be evaluated under the above CEQA guidelines to determine significance. Applicable project avoidance, minimization, and mitigation measures in conformance with CEQA, the project’s 1995 USFWS BO, and the City of Chula Vista’s MSCP Subarea Plan and HLIT conditions and requirements would be applied to the proposed project, as provided below.

DIRECT IMPACTS

CEQA guidelines §15358 define a “direct impact or primary effect” as “effects which are caused by the project and occur at the same time and place” that can produce a temporary or permanent biologically significant, “physical change” in the environment.

Vegetation Community Direct Impacts

Based on the proposed project design, the project would result in direct permanent and temporary impacts to sensitive vegetation communities/habitats consisting of native grassland (Tier I), Diegan coastal sage scrub (Tier II), and non-native grassland (Tier III) habitats (Table 6, Figure 5). Permanent project impacts consist of vegetation clearing, grading, and residential development including houses, fuel modification zone activities, detention basins, and roadways. Temporary impacts consist of vegetation clearing, construction vehicular temporary access and activities, grading in some areas, and subsequent revegetation efforts to ensure erosion control and/or native habitat restoration activities to ensure long-term biological functions and values. Permanent impacts to these sensitive upland habitats would be considered significant under CEQA and require mitigation consistent with the City MSCP Subarea Plan Section 5.2.4, Table 5-3 and Table 5-6 respectively as well as the HLIT to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section. Temporary impacts to sensitive upland habitat require onsite native revegetation pursuant to Sections 17.35.090 (A)(4) and 17.35.110 (A)(6) of the HLIT to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section. The HLIT does not limit encroachment into Tier I, II, and III habitats, except

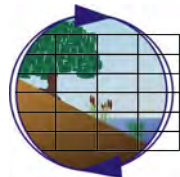
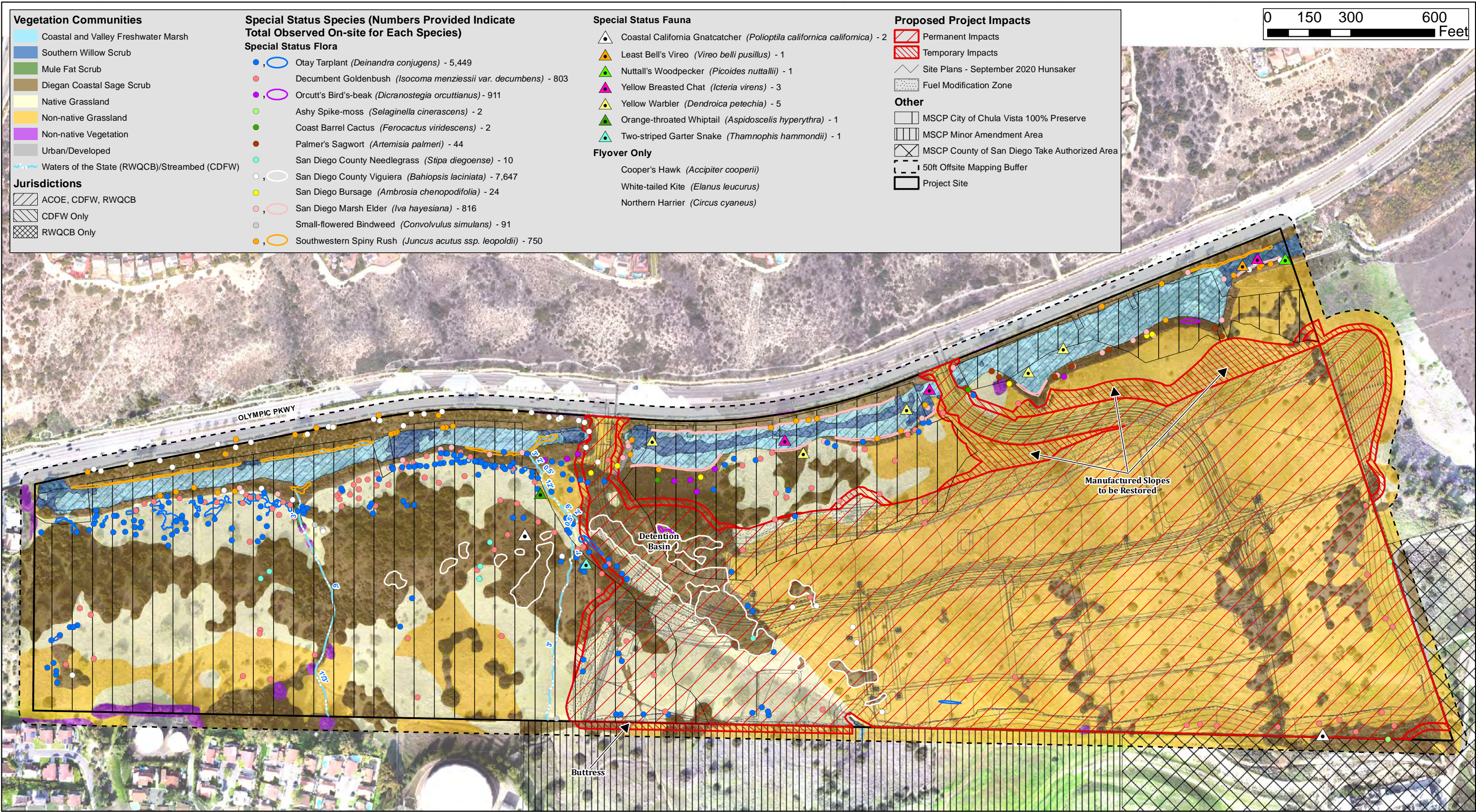
where necessary to avoid or minimize potential impacts to Narrow Endemic species and/or wetlands for projects within the Development Area outside of Covered Projects. The project proposes to minimize potential impacts to Otay tarplant, the only narrow endemic species known and expected to occur onsite that occurs predominately in native grassland and is discussed further in the Sensitive Species Impacts section and City of Chula Vista MSCP Consistency section below. In addition, the project proposes to completely avoid wetland habitat impacts. The proposed project impacts to non-native vegetation, a Tier IV habitat that does not support sensitive species would not be considered significant under CEQA.

In addition, the original EIR and 1995 USFWS BO accounted for 2.5 acres of Diegan coastal sage scrub impact onsite and 5.0 acres of associated Diegan coastal sage scrub mitigation offsite. The residual project Diegan coastal sage scrub impacts and mitigation for the proposed project after the Diegan coastal sage scrub impact and mitigation from the 1995 BO are applied to Table 4 and are consistent with the MSCP.

Table 6. Quantitative Summary of Vegetation Community Impacts from the Proposed Project

Vegetation Type	MSCP Tier Habitat Type	Onsite Impacts (Acres)					Offsite Impacts (Acres)		
		Total Onsite Impact	100% Preserve		Development Area		Total Offsite Impact	City Minor Amend -ment Area	Otay Ranch Village 2
			Perm	Temp	Perm	Temp			
Southern Willow Scrub	Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mule Fat Scrub	Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coastal and Valley Freshwater Marsh	Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Native Grassland	I	7.72	3.22	0.18	4.21	0.11	0.07	0.00	0.06 temp/ 0.01 perm
Diegan Coastal Sage Scrub	II	8.25	2.24	0.39	5.08*	0.54	0.30	0.22 temp	0.01 temp/ 0.07 perm
Non-native Grassland	III	53.28	1.66	0.10	48.61	2.91	2.33	0.35 temp	0.37 temp/ 1.61 perm
Non-native Vegetation	IV	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Urban/Developed	n/a	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
	Total:	69.28	7.12	0.67	57.92	3.57	2.70	0.57	2.13

*The proposed project would permanently impact 7.58 acres of Diegan coastal sage scrub in the onsite Development Area; however, the 2.5 acres of DCSS impact as documented in the USFWS 1995 BO has been applied to this proposed impact acreage resulting in a residual amount of 5.08 acres impact.



Aerial Source: Merkel & Associates Jan. 2020

Biological Impacts Map
Sunbow II Phase 3 SPA Amendment

Created on: January 19, 2021

Jurisdictional Wetlands and Waterways Direct Impacts

The project proposes to entirely avoid impacts to jurisdictional resources including wetlands and any appropriate buffer around applicable jurisdictional resources to ensure complete avoidance during project construction and implementation; therefore, no wetland mitigation or regulatory permitting would be required.

Sensitive Species Direct Impacts

Sensitive Plant Species

The proposed project would directly impact several sensitive plant species as quantified in Table 7 and assessed by species further below.

Table 7. Proposed Impacts to Sensitive Plant Species

Species (in alphabetical order)	Existing Conditions Within Project Site (Onsite and Offsite)			Proposed Impacts (Onsite and Offsite)		
	Inside Preserve	Outside Preserve	Total	Inside Preserve	Outside Preserve	Total
*Ashy Spike-moss (<i>Selaginella cinerascens</i>)	0	2	2	0	1	1
Coast Barrel Cactus (<i>Ferocactus viridescens</i>)	1	1	2	0	0	0
Decumbent Goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	533	270	803	33	256	289
Orcutt's Bird's-beak (<i>Dicranostegia orcuttiana</i>)	705	206	911	90**	1	91
Otay Tarplant (<i>Deinandra conjugens</i>)	4,044	1,405	5,449	142	694	836
Palmer's Sagwort (<i>Artemisia palmeri</i>)	16	28	44	0	0	0
San Diego Bursage (<i>Ambrosia chenopodiifolia</i>)	7	17	24	0	16	16
San Diego County Needlegrass (<i>Stipa diegoense</i>)	9	1	10	0	1	1
San Diego County Viguiera (<i>Bahiopsis laciniata</i>)	2,745	4,902	7,647	1133	4825	5958
San Diego Marsh Elder (<i>Iva hayesiana</i>)	641	175	816	0	3	3
Small-flowered Bindweed (<i>Convolvulus simulans</i>)	91	0	91	0	0	0
Southwestern Spiny Rush (<i>Juncus acutus</i> ssp. <i>leopoldii</i>)	489	261	750	0	0	0

* = Prostrate ground cover herb quantified by number of patches

** = Impacts within Preserve are entirely within proposed Future Facility-Detention Basin footprint

Otay Tarplant

Otay tarplant is a federal and state listed species and MSCP Narrow Endemic and Covered Species. Otay tarplant occurs throughout the project site based on biological field surveys conducted by M&A in 2019 and 2020. In 2019, as provided in the Sunbow II Phase III constraints report (M&A 2020a), biological surveys were conducted in November and December of 2019 which is outside of the Otay tarplant flowering season (April-July). However remnant remains of Otay tarplant from the 2019 season were still highly detectable during these late surveys; and thus populations were counted and mapped. In 2020, focused Otay tarplant surveys were conducted onsite between late June and July 2020 during the flowering season when this annual species is most detectable. The 2020 Otay tarplant mapped locations and plant numbers were combined with the 2019 Otay tarplant survey results taking the largest numbers where locations overlapped to estimate the onsite Otay tarplant population. Based on the 2019-2020 Otay tarplant field surveys, the onsite population is estimated to be 5,449 plants predominately located in the western half of the project site within the existing Preserve (4,044 plants within the Preserve and 1,405 plants outside the Preserve). It is recognized that the number and locations of individual plants in an Otay tarplant population varies each year, due to a number of factors, including rainfall, temperature, soil conditions, and seed bank (USFWS 2004).

The proposed project would impact an estimated 836 Otay tarplant individual plants (142 inside Preserve; 694 outside the Preserve) out of the total 5,449 Otay tarplant within the onsite population (Table 5). Of the total Otay tarplant impacts, the proposed residential development would permanently impact 142 Otay tarplant inside the Preserve (Future Facility-Detention Basin) and 424 Otay tarplant outside the Preserve; further, construction related vegetation clearing and grading activities would temporarily impact 270 Otay tarplant outside the Preserve.

Based on the sensitivity of this federally endangered and narrow endemic species, the proposed impacts to Otay tarplant would be considered significant under CEQA and require appropriate mitigation that would consist of onsite habitat mitigation (i.e., native grassland-Otay tarplant occupied habitat) within appropriate onsite conserved lands in the City 100% Preserve, as discussed further in the Mitigation Requirement section.

The project also proposes habitat restoration efforts (soil salvage, seed transplant) within appropriate onsite areas proposed to be added to the City 100% Preserve. To this end, considerable clay soil exists within the current project development areas and could be used to develop suitable habitat to support Otay tarplant within an enhanced portion of the onsite Preserve. This effort would further benefit the Otay tarplant population and native grassland conservation onsite that could also support the goals of the City's Subarea Plan and the Conservation Recommendations of the 1995 BO.

Although USFWS designated critical habitat for Otay tarplant is mapped onsite and within the proposed project footprint, the project would not require a federal permit, funding, or any other federal action or nexus and therefore, USFWS critical habitat would not apply to the project on private land under Section 7 of the Endangered Species Act (84 Federal Register 44976) or under CEQA Section 15065, as currently designed.

Orcutt's Bird's-Beak

Implementation of the proposed project would impact approximately 10% of the Orcutt's bird's-beak estimated onsite population (91 out of 911 plants). The proposed impacts to Orcutt's bird's-beak would occur from the proposed detention basin located within Diegan coastal sage scrub just south of the previously restored slope along Poggi Creek where the majority of the Orcutt's bird's-beak is located onsite (Figure 5). The proposed impacts to Orcutt's bird's-beak, a CNDDDB Special Plant and MSCP Covered Species with a CRPR 2B.1 ranking, would be considered significant under CEQA based on the sensitivity of this species and the rarity of this species in the region and the extent of impacts to the onsite population. This species has a very limited U.S. distribution with nearly all of its documented populations occurring south of Poggi Canyon and west of Otay Mountain. Only one population has been documented north of the site, in Rice Canyon just south of the Rancho Del Rey development. The proposed significant impacts to Orcutt's bird's-beak would require appropriate mitigation that would consist of habitat mitigation (i.e., Diegan coastal sage scrub) and habitat restoration efforts (soil salvage, seed translocation) within appropriate onsite conserved lands in the City 100% Preserve, as discussed further in the Mitigation Requirement section.

Decumbent Goldenbush

Implementation of the proposed project would impact approximately 36% of the decumbent goldenbush onsite population (289 out of 803 plants). A majority of the impacts to this species are associated with non-native grassland habitat located within the proposed development (Figure 5). The proposed impacts to decumbent goldenbush, a CNDDDB Special Plant with a CRPR 1B.2 ranking, would be considered significant under CEQA based on the sensitivity of this species and the extent of impacts to the onsite population. The proposed impacts to decumbent goldenbush would be considered significant under CEQA and require appropriate mitigation that may consist of habitat mitigation (i.e., native grassland and Diegan coastal sage scrub) and habitat restoration efforts within appropriate onsite conserved lands in the City 100% Preserve, as discussed further in the Mitigation Requirement section.

San Diego Viguiera

Implementation of the proposed project would impact approximately 78% of the San Diego viguiera population (5,958 out of 7,647). Impacts to this species are associated with impacts to Diegan coastal sage scrub along the western edge of the proposed development (Figure 5.). The proposed impacts to San Diego viguiera, a CNDDDB Special Plant with a CRPR 4.3 ranking, would be considered significant under CEQA primarily due to the extent of impacts to the onsite population. The proposed significant impacts to San Diego viguiera would require appropriate mitigation that would consist of habitat mitigation (i.e., Diegan coastal sage scrub) and may also include habitat restoration within appropriate onsite conserved lands in the City 100% Preserve, as discussed further in the Mitigation Requirement section.

San Diego County Needlegrass

Implementation of the proposed project would impact approximately 10% of the San Diego County needlegrass population (1 out 10 plants). Impacts to this species are associated with impacts to Diegan coastal sage scrub along the western edge of the proposed development (Figure 5). The proposed impacts to San Diego County needlegrass, with a CRPR 4.2 ranking, would not be considered significant under CEQA based on the sensitivity of this species and the extent of impacts

to the onsite population. Although the proposed impacts to San Diego County needlegrass would not be considered significant under CEQA and require mitigation, this species may be included in habitat restoration efforts within appropriate onsite conserved lands in the City 100% Preserve to enhance native grassland restoration species diversity however it is not required to mitigate impacts.

Ashy Spike-moss

Implementation of the proposed project would impact 100% (2 patches) of ashy spike-moss onsite. Impacts to this species are associated with impacts to coastal sage scrub vegetation near the southeast corner and non-native grassland along the eastern boundary of the site. The proposed impacts to ashy spike-moss with a CRPR 4.1 ranking would not be considered significant under CEQA based on the limited amount of proposed impact, sensitivity of this species, and its local and regional abundance throughout the County.

Small-flowered Bindweed, Coast Barrel Cactus, San Diego bursage, Southwestern Spiny Rush, San Diego Marsh Elder, Palmer's Sagewort & Palmer's Grappling-hook

No project impacts are proposed by project implementation to the following species found onsite or have the potential to occur onsite: small-flowered bindweed, coast barrel cactus, San Diego bursage, southwestern spiny rush, San Diego marsh elder, or Palmer's sagewort. Further, the majority of these species occur in the existing or proposed Preserve that would be protected, some occur along the northern slopes of Poggi Creek closest to Olympic Parkway that are located outside the proposed project impact areas, and a few of these species such as coast barrel cactus and San Diego bursage occur in close proximity to the proposed impact areas but would be avoided through biological construction monitoring and implementation of construction best management practices.

In addition, although Palmer's grappling-hook was not observed onsite by M&A during the many biological field surveys, this species may still occur onsite in the Diegan coastal sage scrub or grassy open areas presumably in small numbers and as such the proposed project may impact but is not expected to have a significant impact on this species due to the limited potential impact that would not be expected to adversely affect the local long-term survival of this moderate sensitive species.

Sensitive Wildlife Species

Coastal California Gnatcatcher

Two coastal California gnatcatcher territories were determined to be present onsite during the USFWS gnatcatcher protocol surveys conducted by M&A in 2020 (Appendix 7). One gnatcatcher territory is located in the central portion of the site west of the proposed western access road within the larger area of high quality Diegan coastal sage scrub, while the other gnatcatcher territory is located along the southeastern property boundary where a small amount of Diegan coastal sage scrub occurs onsite along with more suitable habitat that extends offsite onto the County of San Diego landfill property to the south (Figure 5).

The one gnatcatcher territory along the southeastern parcel boundary would be directly impacted by the proposed project vegetation clearing, grubbing, and grading activities (Figure 5) through the loss of a portion of nesting habitat (i.e., Diegan coastal sage scrub) located onsite in the southeastern corner of the site. This project impact would be considered significant under CEQA

and require appropriate mitigation as provided in the Mitigation Requirements section below. Further, gnatcatcher specific MSCP Conditions of Coverage such as the avoidance of gnatcatcher breeding season and adjacency guidelines would apply to the project, as provided in the MSCP Consistency section below.

The other onsite gnatcatcher territory located in the central portion of the project site is not expected to be directly impacted by the project. The gnatcatchers observed in this area were limited to the Diegan coastal sage scrub west of the proposed western main access road largely within the existing 100% Preserve that would remain protected as proposed by the project. In addition, although suitable gnatcatcher habitat occurs in other surrounding areas, no gnatcatchers were observed during the protocol surveys and/or any of the other biological surveys onsite east, south, or north of this proposed western access road including the area of the proposed detention basin just east of this access roadway. Nonetheless, the reduction of potentially suitable and contiguous habitat and the potential for nesting failure due to the adjacent onsite construction related activities are potential direct impacts to gnatcatcher that would be considered significant under CEQA and would require mitigation to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section.

Least Bell's Vireo

The least Bell's vireo that occurs onsite is located entirely within Poggi Creek where no project impacts are proposed and within an existing conservation easement. Therefore, least Bell's vireo would not be directly impacted by the proposed project. Nonetheless, the potential for nesting failure due to the adjacent onsite construction related activities are potential direct impacts to vireo that would be considered significant under CEQA and would require mitigation to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section.

Quino Checkerspot Butterfly

Based on USFWS quino checkerspot butterfly protocol surveys conducted by M&A in 2020, no quino checkerspot butterfly (USFWS federally endangered), were observed or detected to be present within the project site and none are expected (Appendix 8). Therefore, the proposed project would not directly impact this species.

Yellow Warbler, Yellow-breasted Chat, & Nuttall's Woodpecker

The proposed project is not expected to directly impact yellow warbler, yellow-breasted chat, and Nuttall's woodpecker since these species occur in the riparian habitat within Poggi Creek (inside the existing and/or proposed Preserve; or existing conservation easements) where the project proposes to avoid direct impacts.

Sensitive Raptors

No nesting activities or potential nests of any sensitive raptor species including white-tailed kite, northern harrier, and Cooper's hawk were observed onsite and no potential nesting habitat for sensitive raptor species is proposed to be impacted as a result of the project. Further, no indirect impacts such as construction elevated noise levels during the breeding season would affect nesting sensitive raptors since none are expected to nest onsite.

The project will have direct impacts to potential raptor foraging habitat associated with the loss of 61.0 acres of grassland habitat (i.e., 53.28 acres of non-native grassland, 7.72 acres of native grassland). Raptors including sensitive species such as the white-tailed kite, northern harrier, and Cooper's hawk were observed flying over and potentially foraging onsite and may be negatively affected by the loss of this potential foraging habitat in the project area. The proposed impact to potential foraging habitat for white-tailed kite, northern harrier, and Cooper's hawk would be considered significant under CEQA and would require habitat mitigation (i.e., native grassland, open Diegan coastal sage scrub) to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section. As an important note, the potential raptor foraging habitat proposed to be impacted is located almost entirely inside the MSCP Development Area and is of lower habitat quality due to its densely thatched condition, while the proposed raptor foraging habitat mitigation consists of higher quality native grassland and patches of non-native grassland in a matrix of native habitats that is either currently or proposed to be in the 100% Preserve.

Birds Protected under the Federal Migratory Bird Treaty Act and California Fish and Game Code

The project site has the potential to support active nests for regionally common migratory birds and raptors that are not necessarily designated as special status species under CEQA but are protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game (CFG) Code Sections 3503 and 3513. The project could result in impacts to active bird and/or raptor nests protected under the federal MBTA and/or CFG Code Sections 3503 and 3513 if construction-related activities were to occur during the avian and/or raptor breeding season. The project construction activities undertaken for the project should comply with the regulatory requirements of the federal MBTA and CFG Codes Sections 3503 and 3513. As discussed previously, there is an abundance of grassland onsite which is a potentially suitable habitat for burrowing owl; however, much of the grassland is dense and/or thatched and thus not preferred by this species. Further, no burrowing owls were observed during the numerous surveys of the site throughout the burrowing owl nesting and migratory season. In addition, no potential burrows with evidence of burrowing owl sign (i.e., molted feathers, cast pellets, prey remains, eggshell fragments, excrement) were observed during the surveys. As such, this species is not expected to occur onsite. However, there is potential for burrowing owls to subsequently occupy the project site as a result of construction vegetation clearing and grading activities that may temporarily create attractive conditions for burrowing owl.

The potential impact to active nests of birds (including burrowing owl) protected under MBTA and/or CFG Codes would be considered significant under CEQA and would require that construction related vegetation clearing, grubbing, or grading activities avoid the avian breeding season (or if the breeding season is not feasible then pre-construction surveys for active nest surveys and applicable avoidance measures would be required where and when applicable) to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section

Orange-throated Whiptail & Two-striped Garter Snake

Both the orange-throated whiptail and two-striped garter snake were observed near the central portion of the property within the existing 100% Preserve. Both species are not expected to be abundant on-site as they were each only observed on one occasion during the numerous surveys that were conducted. Both species are expected to utilize riparian habitat associated with Poggi Creek as well as adjacent coastal sage scrub vegetation. All riparian habitat and much of the adjacent coastal sage scrub will be protected in open space.

No other sensitive wildlife species are expected to occur onsite based on recent negative focused surveys and/or the lack of suitable habitat and thus would not be impacted by the proposed project.

Wildlife Corridor Direct Impacts

The project site is not located within or in the vicinity of a known regional wildlife corridor and as such no impacts to a regional wildlife corridor would occur as a result of the proposed project. There are a few local wildlife corridors onsite including Poggi Creek along the northern extent of the site as well as game trails and small drainages throughout the upland habitats particularly in the western half of the project site. The current condition of the creek includes existing culverts and creek crossings in two locations that would remain with the proposed project. The project proposes to construct roadways on the existing crossings that currently support vegetation. Although the new access roadways would bisect the habitat on the south side of the creek including portions of the dirt trail along the creek, it is anticipated that wildlife movement would still be facilitated through the culverts under drier conditions as well as across the roadways where vehicular traffic is expected to be relatively slow due to the locations near the entrance and exit of the residential development. Further, the wildlife species known or expected to occur onsite consist of urban tolerant species such as coyote and raccoon that are expected to continue to move throughout the site and along Poggi Creek under the proposed project condition. Similar to the discussion above, the proposed project is not expected to significantly impact any of the function and use of the local wildlife corridors onsite predominately due the urban tolerant nature of the wildlife species that occur onsite.

In addition, the project site likely serves as part of a stepping stone corridor for avian species in the region due to the available habitat onsite that is generally surrounded by urban development. Although the entire site may provide habitat as part of a stepping stone corridor, the higher quality habitats are located in the western half and northern portions of the property that would remain in the 100% Preserve and thus no significant impacts to an avian stepping stone corridor is expected from implementation of the proposed project.

As an important note, the 1995 USFWS BO for the Sunbow II project required off-site habitat mitigation of coastal sage scrub habitat associated with the further fragmentation of the habitat connectivity associated with development of Sunbow II Phase 3. As a result, the anticipation of habitat connectivity impact associated with Phase 3 development has been captured in regional conservation planning and project specific regulatory actions.

INDIRECT IMPACTS

CEQA guidelines §15358 define an “indirect impact or secondary effect” as “effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable” that can produce a temporary or permanent biologically significant, “physical change” in the environment.

In association with direct impacts to native vegetation communities, there are usually indirect impacts to the remaining native vegetation and wildlife communities. Many of these are related to habitat fragmentation, which occurs when a native vegetation community is not entirely altered or developed, but what remains has a diminished wildlife habitat value due to edge effects and lack of connectivity. Fragmented habitats may no longer be able to support large predators. The presence of native predators has been demonstrated to hold in check populations of meso-predators such as domestic/feral cats. Without the presence of such predators, avian and small mammal diversity and abundance declines, presumably due to increased depredation pressure from non-native meso-predators (Crooks and Soule 2000). Edge effects may include increased predation pressure, increased brood parasitism, increased competition for nesting cavities from non-native species, and increased floral competition from weedy species. Outside of those effects associated with fragmentation, indirect impacts may include elevated noise above 60 dBA Leq, artificial night lighting within wildlife habitat, increased human disturbance, change in duration and amount of surface water within a floodplain, and increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or alter habitat use by sensitive species.

The project proposes to fill in gaps within the existing 100% Preserve along Poggi Creek as well as extend native habitat buffer widths between Poggi Creek and the proposed project footprint that will be included in the 100% Preserve. Although this contiguous and wider Preserve along Poggi Creek would not entirely avoid proposed indirect impacts, it is expected to minimize edge effects such as elevated noise, increased human disturbance, artificial night lighting from the proposed project site to the adjacent biological resources within Poggi Creek.

It is expected that the portions of the Preserve directly adjacent and closest to the proposed project development boundaries would potentially be negatively affected by edge effects such as invasive plant invasion, habitat degradation, increased predation pressure from domestic pets (i.e., cats), and human disturbance. These potential indirect impacts would be considered significant and would require mitigation to reduce impacts to a level below significance, as discussed further below in the Mitigation Requirements Section.

CITY OF CHULA VISTA MSCP CONSISTENCY

The proposed project was assessed to ensure consistency with the City of Chula Vista’s HLIT Ordinance and City of Chula Vista MSCP Subarea Plan. The proposed project is not a Covered Project and is located predominately within the City’s MSCP Development Area and partially within the City’s MSCP 100% Preserve. For projects within Development Areas outside of Covered Projects that contain sensitive biological resources, the HLIT Ordinance will require biological evaluation of all resources onsite. In addition, the HLIT does not limit encroachment into MSCP Tier I, II, and III except where necessary to avoid and/or minimize potential impacts to Narrow Endemic Species

and/or Wetlands. Projects within 100% Preserve areas outside Covered Projects are limited to certain Compatible Uses or Allowed Uses within the Preserve, as described in the City's MSCP Subarea Sections 6.1-6.3 and further discussed below.

100% Preserve Compatible and Conditionally Compatible Uses

Compatible uses and conditionally compatible uses in the 100% Preserve are land uses and activities that are compatible with the biological objectives of the MSCP Subregional Plan and the City's Subarea Plan. 100% Preserve compatible uses include public access and recreation, preserve management including scientific and biological activities, and emergency safety and police services. Conditionally compatible uses consist of mining, flood control, and road/infrastructure activities that include Planned and Future Facilities.

The project proposes a detention basin that partially overlaps with an area of the existing 100% Preserve onsite. The relocation of this basin was considered in the project design to avoid or minimize impacts to the Preserve but was determined to be site specific due to the necessary topography for drainage and the confined development configuration due to the avoidance of wetlands and Otay tarplant (a narrow endemic) in this area; however, the size and configuration of the basin was modified to reduce impacts to the Preserve to the maximum extent practicable. This encroachment would qualify as a Future Facility in the Preserve (a conditional compatible use and is analyzed in the project Functional Equivalency Criteria for the Facilities Siting Criteria report, dated February 2021.

Facilities Siting Criteria

The proposed project has been designed to completely avoid any wetland habitat impacts and predominately would result in impacts to non-native grassland that consist of densely thatched non-native grasses in the majority of this habitat. There are proposed unavoidable impacts to Diegan coastal sage scrub specifically for the proposed Future Facility-Detention Basin as well as impacts to native grassland for an area of residential buildings in the southwestern portion that is unavoidable due to the avoidance of a smaller wetland along the southern boundary in the same general area. The siting the proposed detention basin (MSCP Future Facility) within the Preserve is analyzed in the project Functional Equivalency Criteria for the Facilities Siting Criteria report, dated February 2021.

Narrow Endemic Policy and Wetland Protection Program Narrow Endemic Policy

The project would ensure consistency with the MSCP Narrow Endemic Policy Section 5.2.3.3 for Development Areas outside of Covered Projects, where applicable. Otay tarplant is the only narrow endemic species that is known and/or expected to occur onsite. To ensure consistency with the City's MSCP Narrow Endemic Policy, the project would minimize unavoidable impacts to Otay tarplant to less than 5% within the 100% Preserve and less than 20% within the Development Area.

Based on the 2019-2020 Otay tarplant field surveys, the onsite population is estimated to be 5,449 plants predominately located in the western half of the project site within the existing Preserve (4,044 plants within the Preserve and 1,405 plants outside the Preserve). The proposed project would impact an estimated 142 Otay tarplant plants (2.6%) inside Preserve and 694 Otay tarplant plants (12.7%) outside the Preserve/within Development Area out of the total 5,449 Otay tarplant

onsite population (Table 6). The proposed project would meet the MSCP Narrow Endemic Policy based on the estimated onsite Otay tarplant population onsite totals and estimated plants to be impacted in the 100% Preserve and the Development Area that are below the Narrow Endemic Policy impact thresholds, as provided in Table 8 below.

Table 8. Narrow Endemic Policy- Estimated Otay Tarplant Impact Assessment

Total Estimated Otay Tarplant Population In Project Area/Onsite	100% Preserve			Development Area (Outside Preserve)		
	Individual Impact	Percent	Narrow Endemic Policy (<5%)	Individual Impact	Percent	Narrow Endemic Policy (<20%)
5,449	142	2.6%	Consistent/ Meets Policy	694	12.7%	Consistent/ Meets Policy

Wetlands Protection Program

The project proposes to completely avoid any impacts to wetland; therefore, the project is consistent with the Wetlands Protection Program provided in Section 5.2.4 of the Subarea Plan.

MSCP Conditions of Coverage

Coastal California Gnatcatcher Condition of Coverage

The MSCP Condition of Coverage for coastal California gnatcatcher specifies that the area specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to avoid habitat degradation due to unplanned fire, management measures to maintain and improve habitat quality, and prohibit clearing of occupied habitat during gnatcatcher breeding season (March 1-August 15) within the Preserve. The project proposes to comply and address the applicable Conditions of Coverage as specified in the Mitigation Requirements section further below.

Least Bell's Vireo Condition of Coverage

The MSCP Condition of Coverage for least Bell's vireo specifies that the area specific management directives must include measures consistent with the ACOE 404(b)(1) Guidelines into the project where applicable. In addition, measures to provide appropriate successional habitat, upland buffers for known populations, cowbird control, and measures to reduce edge effects, as well as prohibit clearing of occupied habitat during vireo breeding season (March 15-September 15). The proposed project would completely avoid direct impacts to least Bell's vireo and provides an upland conserved buffer to the one vireo pair onsite that is limited to the northeastern most portion of riparian habitat onsite. Further, the project proposes measures such as vegetated barriers, fencing, and night light shielding to avoid and/or reduce potential edge effects to the vireo pair within Poggi Creek. Due to the limited vireo presence/population onsite and uncertainty regarding a vireo population within Poggi Creek upstream to the east, the project does not propose a brown-headed cowbird control program onsite. These cowbird control programs are typically implemented and most cost effective within a river system where a larger known vireo population within conserved

lands would benefit. Although the project does not propose any direct impacts to vireo occupied habitat, the project proposes to comply and address the applicable Conditions of Coverage as specified in the Mitigation Requirements section further below.

Orange-throated Whiptail Condition of Coverage

The MSCP Condition of Coverage for orange-throated whiptail specifies that the area specific management directives must include measures to address edge effects. The project proposes to comply and address the applicable Conditions of Coverage as specified in the Mitigation Requirements section further below.

Cooper's Hawk Condition of Coverage

The MSCP Condition of Coverage for Cooper's hawk specifies that the area specific management directives must include 300-foot impact avoidance areas around active nests and minimization of disturbance to oak woodlands and oak riparian forests. No Cooper's hawk potentially suitable nesting habitat including oak woodlands and oak riparian forests occurs within the proposed impact area. This species was not observed nesting or exhibiting any nesting behavior onsite. Therefore, the Conditions of Coverage are not applicable.

Northern Harrier Condition of Coverage

The MSCP Condition of Coverage for northern harrier specifies that the area specific management directives must include the following: (1) manage agricultural and disturbed lands (which become part of the Preserve) within four miles of nesting habitat to provide foraging habitat; (2) include an impact avoidance area (900 feet or maximum possible within the Preserve) around active nests; and (3) include measures for maintaining winter foraging habitat in Preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley. No nesting northern harrier occur onsite and none are expected. The northern harriers onsite were only flying over and potentially foraging onsite. No agricultural or disturbed lands occur within the proposed Preserve; however, the non-native grassland along with the other potential raptor foraging habitat within the onsite Preserve will be managed to provide potential foraging habitat for a variety of raptors including northern harrier. The project proposes to comply and address the Conditions of Coverage where applicable as specified in the Mitigation Requirements section further below.

Otay Tarplant Condition of Coverage

The MSCP Condition of Coverage for Otay tarplant specifies that the area specific management directives must include measures for monitoring of populations, adaptive management of preserves, and measures to protect against detrimental edge effects. The project proposes to comply and address the Conditions of Coverage where applicable as specified in the Mitigation Requirements section further below.

Orcutt's Bird's-Beak Condition of Coverage

The MSCP Condition of Coverage for Orcutt's bird's-beak specifies that strategies to provide protection for this species within the amendment area must be included at the time permit

amendments are proposed. The proposed project temporary work in the Minor Amendment Area directly south of the Sunbow property does not support Orcutt's bird's-beak.

Coast Barrel Cactus Condition of Coverage

The MSCP Condition of Coverage for coast barrel cactus specifies that the area specific management directives must include measures to address edge effects, unauthorized collection, and fire management/control practices. The project proposes to comply and address the Conditions of Coverage where applicable as specified in the Mitigation Requirements section further below.

Adjacency Management Guidelines

The City of Chula Vista requires that land uses adjacent to the MSCP Preserve be managed to avoid and minimize impacts to the preserve; therefore, project mitigation measures pertaining to lighting, noise, landscaping, access, and drainage would be required to ensure consistency with the MSCP Subarea Plan Section 7.5.2 Adjacency Management Guidelines and ensure the long-term viability of wildlife and sensitive habitats in the Preserve. These Guidelines and applicability to the proposed project are summarized below and incorporated where applicable into project mitigation measures as provided in the Mitigation Requirement section below.

Drainage:

1. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserve through the use of a variety of methods including natural detention basins, grass swales or mechanical trapping devices.
2. Develop and implement urban runoff and drainage plans which will create the least impact practicable for all development adjacent to the Preserve. All development projects will be required to meet NPDES standards and incorporate BMP as defined by the City's SUSMP.
3. Pursuant to the San Diego RWQCB Municipal Permit, and the City of Chula Vista Storm Water Management Standards Requirements Manual, all development and redevelopment located within or directly adjacent to or discharging directly to an environmentally sensitive area are required to implement site design, source control, and treatment control BMPs.
4. Require all NPDES-regulated projects to implement a combination of BMPs as close to potential pollutant sources as feasible.

The proposed project would comply with the applicable drainage and storm water permits and implement features such as vegetated detention basins to avoid the potential release of toxins, chemicals, and other elements from entering the Preserve and ensure consistency with the Guidelines.

Toxic Substances:

All agricultural uses, including animal-keeping activities, and recreational uses that use chemicals or general by-products that are impactive to biological resources or water quality need to incorporate methods on their site to reduce impacts caused by the application and/or drainage of such materials into the Preserve. Methods shall be consistent with requirements of the RWQCB and NPDES standards.

The proposed project does not include any agricultural uses or recreational uses that would result in potential impacts from toxic substances entering into the Preserve.

Lighting:

Lighting of all developed areas adjacent to the Preserve should be directed away from the Preserve wherever feasible and consistent with public safety. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting. Consideration should be given to the use of low-pressure sodium lighting.

Although the specificity of the proposed lighting plan is not available at this time, the proposed project would include the use of outdoor lighting along roadways and in association with proposed buildings that may have the potential to spill into the adjacent Preserve. Due to this potential impact, the project would incorporate applicable measures such as adequate shielding and the potential use of low-pressure sodium lighting if possible to ensure consistency with the Guidelines.

Noise:

Uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy uses or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan.

The Poggi Creek portion of the Preserve and the north-facing slope directly adjacent to the Creek are in close proximity to Olympic Parkway, a busy roadway that is a source of consistent noise from vehicular traffic. The northern portion of the project site likely has a higher ambient noise level than the southern portion of the site due to the Olympic Parkway traffic noise levels and thus the proposed noise levels may or may not result in substantially greater noise levels. Conversely, the proposed project may potentially introduce elevated noise levels into the Preserve particularly along the southwestern boundary of the proposed development where the current conditions are relatively quiet. Due to this potential impact, the project would incorporate applicable measures such as the avoidance of the breeding season for construction activities to ensure consistency with the Guidelines.

Invasives:

No invasive non-native plant species shall be introduced into areas immediately adjacent to the Preserve. All open space slopes immediately adjacent to the Preserve should be planted with native species that reflect the adjacent native habitat. The plant list contained in the Wildland/Urban Interface: Fuel Modification Standards, Appendix K, must be reviewed and utilized to the maximum extent practicable when developing landscaping plans in areas adjacent to the Preserve.

The proposed project includes fuel modification zones within the project development adjacent to the Preserve as well as landscape areas that have the potential to introduce invasive non-native species into the Preserve. Due to this potential impact, the project would incorporate applicable

measures such as the prohibition of invasive plant species in the planting palette as well as the maintenance and monitoring of the adjacent areas to ensure consistency with the Guidelines.

Buffers:

There are no requirements for buffers outside the Preserve, except as required for Wetlands pursuant to Federal and/or State permits, or by local agency CEQA mitigation conditions. All open space requirements for the Preserve shall be limited to the Preserve and do not include any buffers that extend beyond the Preserve boundary. Fuel modification zones must be consistent with Section 7.4.4 of the City's Subarea Plan.

The proposed project has incorporated appropriate wetland buffers to ensure avoidance from project construction and implementation. In addition, proposed fuel modification zones are included in the project development footprint as a proposed impact. The proposed Preserve includes open space to be conserved in perpetuity as well as some areas of proposed habitat restoration that will include sensitive plant species.

MSCP Minor Amendment Area

The City of Chula Vista owned property directly south of the proposed project site is designated a Minor Amendment Area (Figures 2 and 5). These designated areas throughout the City are not currently a part of the City's MSCP and do not receive any take authorization or coverage benefits until it is amended into the MSCP Plan through the Minor Amendment Process described in the MSCP Section 5.1.3.1.

The project proponent is working with the City of Chula Vista as the property owner to request a Minor Amendment to allow offsite temporary project impacts that would encroach 25 feet onto the City's property and within this Minor Amendment Area. This request for a Minor Amendment would also require wildlife agency concurrence.

These potential impacts onto the City property would consist of a 25-foot grading buffer for temporary construction equipment access and grading as well as a minor excavation and fill for a buttress to address slope stability that would be located entirely within the 25-foot construction buffer. The temporary impact areas in the 25-foot grading buffer within the Minor Amendment Area from Sunbow project construction activities and buttress construction would be revegetated with a native erosion control hydroseed mix acceptable to the City and wildlife agencies to ensure soil stability and prevent subsequent erosion; further, these temporary impacts would be fully mitigated within the proposed Sunbow project site inside the 100% Preserve. The natural ground along the southwest boundary between Sunbow II Phase 3, and property owned by the City, is underlain by geologic conditions that are below industry standards with respect to slope stability. Minor excavations are planned in this area as part of the development of Sunbow II Phase 3. To bring this area in compliance with code, a buttress fill will be required which consists of over-excavating weak materials from the natural ground and replacing them with soils of higher strength. The dimension of the over-excavation was calculated during slope stability analysis for the proposed project and resulted in the proposed encroachment into the City's property to construct the buttress. The resulting condition after grading will be in compliance with code and also improve the existing stability of the City's property.

The requested offsite temporary impacts onto City property are included in the total proposed project impacts and proposed mitigation located within the Sunbow property as provided above in the impact analysis and quantified in Tables 4 and 7.

HLIT Draft Findings

In order for the City of Chula Vista to approve or conditionally approve a HLIT permit, all of the draft Section 17.35.080 HLIT Findings such as those that demonstrate the project and associated mitigation are consistent with the Subarea Plan and the project results in minimum disturbance to sensitive biological resources, except impacts to natural vegetation in mapped development areas, shall be made by the decision maker.

The project is consistent with the HLIT Ordinance including the Findings the City needs to make for Issuance of HLIT Permit (Section 17.35.080) and applicable MSCP Subarea Plan Sections 5.2.3 and 5.2.4 that addresses impacts to Narrow Endemics and Wetlands, as discussed above. Further, the project is consistent with applicable general and specific MSCP development regulations/standards as specified in Section 17.35.090 of the HLIT including but not limited to those summarized below:

- Project impacts located on the least environmentally sensitive portions of the site to minimize impacts to sensitive biological resources to the maximum extent practicable;
- Wetland impacts shall be avoided;
- Grading during applicable wildlife breeding seasons shall be avoided; and
- Temporary impact areas to sensitive biological resources shall be revegetated with native species.

The draft HLIT Findings for the project are included in Appendix 9 of this report. The City will finalize the HLIT Findings during the HLIT Permit process.

CUMULATIVE IMPACTS

CEQA guidelines §15355 define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts”.

The MSCP was designed to compensate for the loss of biological resources throughout the program’s region; therefore, projects that conform to the MSCP would not result in a cumulatively considerable impact for those biological resources adequately covered by the program. The aforementioned direct and indirect impacts resulting from the proposed project will not be cumulatively considerable once the project mitigation measures are implemented to ensure conformance to the City of Chula Vista MSCP Subarea Plan and HLIT Ordinance.

MITIGATION REQUIREMENTS

Implementation of the following project mitigation measures would reduce potentially significant biological impacts to a level below significance and ensure conformance with CEQA, City of Chula Vista MSCP Subarea Plan, and City of Chula Vista HLIT.

Impacts to Sensitive Upland Habitats Consisting of Native Grassland, Diegan Coastal Sage Scrub, Non-native Grassland that support Sensitive Wildlife and Plant Species and Raptor Foraging Habitat would be mitigated by **MM-BIO-1** and **MM-BIO-2** (Habitat Impacts and Mitigation are summarized in Table 9 and shown in Figure 6 further below):

MM-BIO-1 The Applicant shall include an irrevocable offer of dedication (IOD) to the City of Chula Vista on the first final map for 62.16 acres of onsite Preserve land within Preserve Management Area 3, Subunits 3-1a, 3-1b, and 3-1c of the Chula Vista Central City Preserve lands. The MSCP Preserve land shall be conserved, maintained, and managed by the City of Chula Vista or its designee in perpetuity as directed in the Chula Vista Central City Preserve Area-Specific Management Directives (ASMDs) for Preserve Management Area 3 (PMA 3) (RECON Environmental, April 26, 2004) and funded by the Sunbow Preserve Community Facilities District (No. 98-3). The City of Chula Vista Preserve Habitat Manager shall be responsible for the long-term Preserve management activities identified in the Central City Preserve ASMD. Said IOD for the 62.16 acres Proposed MSCP Preserve shall include 48.95 acres to mitigate for significant habitat impacts to 7.79 acres of native grassland, 8.55 acres of Diegan coastal sage scrub, and 55.61 acres of non-native grassland as well as the following sensitive species significant impacts:

- *Coastal California Gnatcatcher*- occupied Diegan coastal sage scrub to mitigate for significant direct impacts to coastal California gnatcatcher occupied habitat;
- *Otay Tarplant*- 0.34 acre of Otay tarplant occupied habitat (i.e., native grassland) to mitigate for direct impacts to 0.34 acre of Otay tarplant occupied habitat that currently supports 836 Otay tarplant individual plants;
- *Orcutt's Bird's-beak*- Orcutt's bird's-beak habitat (i.e., Diegan coastal sage scrub) to mitigate for significant direct impacts to onsite Diegan coastal sage scrub that currently supports 91 Orcutt's bird's-beak individual plants;
- *Decumbent Goldenbush*- Decumbent goldenbush habitat (i.e., Diegan coastal sage scrub and native grassland), that includes at least 289 decumbent goldenbush individual plants) to mitigate for significant direct impacts to onsite native grassland and Diegan coastal sage scrub that currently supports 289 decumbent goldenbush individual plants; and
- *San Diego Viguiera*- San Diego viguiera habitat (i.e., Diegan coastal sage scrub) that includes at least 2,979 San Diego viguiera individual plants) to mitigate for significant direct impacts to onsite Diegan

coastal sage scrub that currently supports 5,958 San Diego viguiera individual plants.

MM-BIO-2 Prior to initiation of construction related activities including clearing and grubbing or prior to vegetation/ground disturbance or prior to site mobilization activities or issuance of a grading permit, the Applicant shall submit documentation to the City demonstrating that the Applicant has contracted with a qualified biologist(s) to monitor the project construction activities and avoid any inadvertent impacts to sensitive biological and ensure complete avoidance of jurisdictional resources. Each qualified biologist shall have demonstrated expertise with the sensitive habitats, special status species of the project region. The qualified biologist(s) shall monitor the installation of the construction temporary fencing and/or flagging, silt fencing, and other best management practices (BMPs) along the construction limits prior to construction activities. The qualified biologist shall be present full-time during all initial vegetation clearing and grubbing activities, and potentially on a less frequent basis during grading activities to ensure construction remains within the approved project development area. The Applicant shall report results of biological monitoring activities to the City on a regular basis through the preparation and submission of summary monitoring reports.

Impacts to Sensitive Plant Species (Otay tarplant, Orcutt's bird's-beak, decumbent goldenbush, and San Diego County viguiera) would be mitigated by **MM-BIO-1 to MM-BIO-3**.

MM-BIO-3 Prior to the issuance of any land development permits including for clearing and grubbing or grading, the Applicant shall prepare a Restoration Plan prepared by a qualified biologist to mitigate for impacts to sensitive plant species consisting of Otay tarplant, Orcutt's bird's-beak, decumbent goldenbush, and San Diego County viguiera consistent with the conceptual Restoration Plan (Merkel & Associates, February 2021). The Applicant shall implement the 5-year maintenance and monitoring activities consistent with the Conceptual Restoration Plan to the satisfaction of the Development Services Director (or their designee). The revegetation plan must be prepared by a qualified City approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee). NOTE: Since the revegetation is critical to approving the MSCP Boundary Line Adjustment, the applicant will be required to enter into a Secured Agreement with the City and will be required to provide a cash deposit.

Impacts to coastal California gnatcatcher territories and coastal California gnatcatcher potential suitable habitats would be mitigated by **MM-BIO-1 to MM-BIO-2 above and MM-BIO-4 to MM-BIO-5 below**.

MM-BIO-4 To avoid any direct impacts to nesting coastal California gnatcatcher, all vegetation clearing, grubbing and grading activities within gnatcatcher occupied habitat (i.e., Diegan coastal sage scrub) shall be conducted outside of the gnatcatcher breeding season (February 15 to August 15).

MM-BIO-5 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall delineate coastal California gnatcatcher occupied habitat located adjacent to the proposed project development area during the breeding season (February 15 to August 15) by orange biological fencing or comparable materials to ensure that no work shall occur within these habitats. In addition, a minimum 300-foot buffer and on-site noise reduction/attenuation techniques shall be incorporated, as appropriate to avoid impacts to breeding gnatcatcher from elevated construction noise levels. The City Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. Noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 A-weighted decibels (dBA) or ambient at the edge of occupied habitat).

Impacts to potentially suitable and contiguous habitat for least Bell's vireo and nesting least Bell's vireo would be mitigated by **MM-BIO-6**.

MM-BIO-6 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall delineate least Bell's vireo occupied habitat by orange biological fencing or comparable to avoid direct impact to vireo within occupied habitat located adjacent to the proposed project during the breeding season (March 15 to September 15). In addition, a minimum 300-foot buffer and on-site noise reduction/attenuation techniques shall be incorporated, as appropriate to avoid impacts to breeding vireo from elevated construction noise levels. The City Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. Noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 dBA or ambient at the edge of occupied habitat).

Impacts to nesting birds protected under MBTA and CDFG Code Sections 3503 and 3513 would be mitigated by **MM-BIO-7**.

MM-BIO-7 To avoid any direct impacts to migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3513, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species. The breeding season is defined as January 15–August 31 for raptor species and February

15–August 15 for other non-raptor birds (excluding listed species). If removal of habitat on the proposed area of disturbance must occur during the breeding season, then prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

To reduce potential impacts to burrowing owl during construction, the City-approved biologist shall perform pre-construction inspection of potential habitat, and, at minimum, twice weekly inspections be performed while rough grading is ongoing. All pre-construction survey efforts shall be conducted prior to any project activities that could result in habitat disturbance to soil, vegetation or other sheltering habitat for burrowing owl. If any burrowing owls or sign of burrowing owls are detected, the Wildlife Agencies (jointly, CDFW and USFWS) shall be contacted; efforts shall be made to determine the breeding status of the species on site, and whether it is safe at that point to exclude burrowing owls from occupied burrows. Active or passive relocation methods shall only be employed with concurrence by CDFW and USFWS.

Indirect impacts including edge effects would be mitigated by **MM-BIO-4 to MM-BIO-6** above and further reduced and mitigated in accordance with the City's MSCP Adjacency Guidelines by **MM-BIO-8 through MM-BIO-11**:

MM-BIO-8 Prior to approval of the first final map, the Applicant shall submit a Landscape Master Plan for the entire project which shall demonstrate compliance with the proposed fence and wall plan for the project. The proposed fence and wall plan shall include appropriate fencing and barriers (e.g., vegetation) where applicable to shield human presence and deter human intrusion into the Preserve.

MM-BIO-9 Concurrent with design review and prior to issuance of a building permit for any development located adjacent to the Preserve, the Applicant shall prepare, a lighting plan and photometric analysis for review and approval the Development Services Director (or their designee). The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee).

MM-BIO-10 Prior to approval of the first final map, the Applicant shall submit a Landscape Master Plan for the entire project which shall demonstrate compliance with the proposed plant palette for the project. The proposed plant palette shall prohibit invasive non-native plant species on the California Exotic Pest Plant Council List of Exotic Pest Plants of Greatest Ecological Concern in California that could spread into the adjacent Preserve. No invasive non-native plant species shall be introduced into areas immediately adjacent to the preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat. Further, the proposed plant palette shall be consistent with the plant list contained in the "Wildland/Urban Interface: Fuel Modification Standards," and provided as Appendix L of the Subarea Plan, must be reviewed and utilized to the maximum extent practicable when developing landscaping plans in areas adjacent to the Preserve.

MM-BIO-11 To avoid habitat degradation to the adjacent Preserve lands, project irrigation shall be contained to the project development and fuel modification zones and shall not drain or overspray resulting in potential erosion/sedimentation, spread of invasive plant species, and/or non-native species such as Argentine ants.

Inadvertent direct impacts to habitat and sensitive species would be mitigated by **MM-BIO-123** and **MM-BIO-13**.

MM-BIO-12 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall demonstrate how the project would avoid or minimize applicable inadvertent impacts during construction. To ensure the avoidance and minimization of impacts to biological resources during construction the following construction BMPs shall be implemented:

- a) Prior to ground disturbance, all permanent and temporary disturbance areas shall be clearly delineated by orange construction fencing and the identification of environmentally sensitive areas with flagging and/or fencing.
- b) To minimize disturbance of areas outside the project site, all construction and operation vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas shall be included in pre-construction surveys and, to the extent possible, shall be established in locations disturbed by previous activities to prevent further impacts.
- c) Construction and operation vehicles shall observe appropriate safe speed limits and adhere to safety practices.
- d) Dust suppression shall occur during construction activities when necessary to meet air quality standards and protect biological resources.
- e) No vehicles or equipment shall be refueled or undergo maintenance within 100 feet of a jurisdictional waters feature. Spill kits shall be maintained on the site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of contaminated fluids.

- f) All general trash, food-related trash items (wrappers, cans, bottles, food scraps, cigarettes, etc.), and other human-generated debris scheduled to be removed shall be stored in animal-proof containers and removed from the site on a regular basis (weekly during construction, and at least monthly during operations). No deliberate feeding of wildlife shall be allowed.
- g) Use of chemicals, fuels, lubricants, or biocides shall comply with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation. Use of first- and second- generation rodenticides shall not be permitted except for the limited use of zinc phosphide, or a rodenticide approved by the City, and only after other means of pest control (e.g. rodent traps) have proven to be ineffective.

MM-BIO-13 Prior to issuance of a grading permit, prior to vegetation clearing, grubbing, grading, or any ground disturbing activities, the Applicant shall submit evidence to the City that the Applicant has retained qualified biologists to prepare a Worker Environmental Awareness Program that shall be presented to all construction personnel and employees before any ground-disturbing activities commence at the project site and shall be continued through the construction phase for all new construction personnel. The program shall consist of a brief presentation going over the on-site sensitive biological resources and compliance with project impact and open space boundaries, and applicable environmental laws and requirements with all personnel involved in the project. This presentation shall explain to construction personnel how best to avoid impacts sensitive resources during construction. The program shall include a description of all special status species potentially on the project site and their habitat needs; an explanation of the status of the species and their protection under the state and federal regulations; specific mitigation measures applicable to listed and other special status species; permit conditions, and the penalties for violation of applicable laws. The program shall also explain to construction personnel how to avoid impacts to jurisdictional waters, including wetlands. The program shall include a map and description of jurisdictional waters on the site to be avoided and measures to implement to ensure the protection and avoidance of jurisdictional waters.

Temporary impacts to the Minor Amendment Area would require implementation of **MM-BIO-14**:

MM-BIO-14 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall prepare a revegetation plan for the temporary impact areas within the 25-foot grading buffer in the Minor Amendment Area that utilizes a native erosion control hydroseed mix acceptable to the City and the Wildlife Agencies (U.S. Fish and Wildlife Service and California Department of Fish and Wildlife) to ensure soil stability and prevent subsequent erosion. The revegetation plan must be prepared by a qualified City approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation

method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

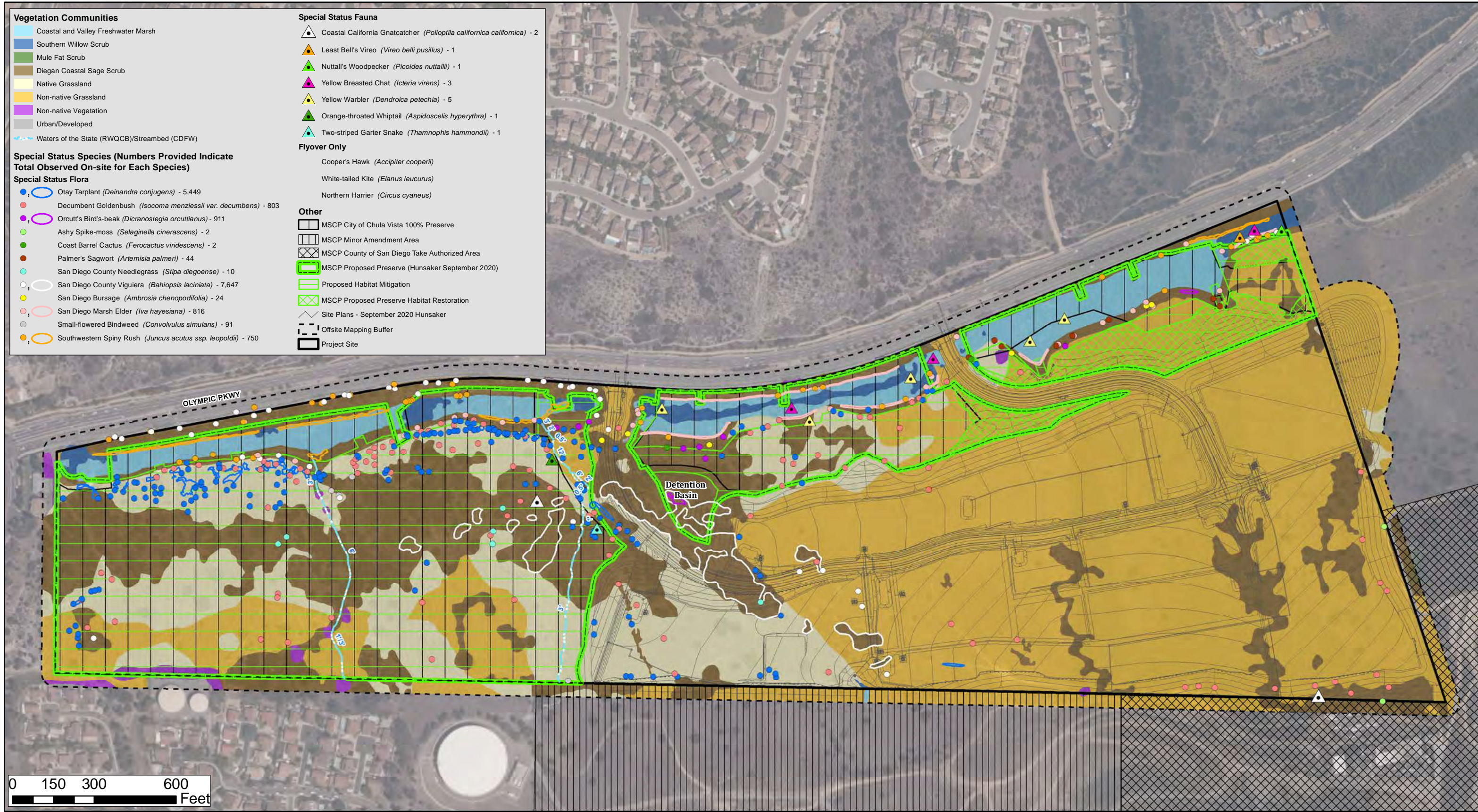
The proposed project MSCP BLA and Minor Amendment would require implementation of the following mitigation measures:

- MM-BIO-15** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall receive approval by the City and Wildlife Agencies for the MSCP BLA. The Applicant shall be required to implement conditions associated with the BLA subject to the oversight and approval of the Development Services Director (or their designee).
- MM-BIO-16** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall receive approval by the City and Wildlife Agencies for the MSCP Minor Amendment. The Applicant shall be required to implement conditions associated with the Minor Amendment subject to the oversight and approval of the Development Services Director (or their designee).

Table 9. Project Habitat Mitigation Ratios and Acreages

Vegetation Type	MSCP Tier Habitat Type	Total Onsite (acres)	Proposed Onsite and Offsite Impacts (acres)					Mitigation Ratio	Required Project Mitigation (acres)			Available in Existing Preserve for Onsite Mitigation (acres)	Proposed Onsite Habitat Mitigation/ Surplus Preserved Habitat (acres)
			Inside Preserve		Outside Preserve		Total		Impact Inside Preserve	Impact Outside Preserve	Total		
			Perm	Temp	Perm	Temp							
Southern Willow Scrub	Wetland	2.06	0.00	0.00	0.00	0.00	0.00	1:1 to 2:1	0.00	0.00	0.00	1.14	n/a
Mule Fat Scrub	Wetland	0.03	0.00	0.00	0.00	0.00	0.00	1:1 to 2:1	0.00	0.00	0.00	0.03	n/a
Coastal and Valley Freshwater Marsh	Wetland	7.66	0.00	0.00	0.00	0.00	0.00	1:1 to 2:1	0.00	0.00	0.00	6.31	n/a
Native Grassland	I	24.09	3.22	0.18	4.22	0.17	7.79	2:1 (Impact Inside Preserve) 1:1 (Impact Outside Preserve)	6.80	4.39	11.19	15.98	11.19 (Existing Preserve)/ 4.79 (Surplus)
Diegan Coastal Sage Scrub	II	37.08	2.24	0.39	5.15	0.77	8.55	1.5:1 (Impact Inside Preserve) 1:1 (Impact Outside Preserve)	3.94	5.92	9.86	21.83	9.86 (Existing Preserve)/ 11.97 (Surplus)

Non-native Grassland	III	64.19	1.66	0.10	49.62	3.63	55.01	1:1 (Impact Inside Preserve) 0.5:1 (Impact Outside Preserve)	1.76	26.62	28.38	8.55	8.55 (NNG Existing Preserve) and 16.76 (Surplus NG & DCSS Existing Preserve), and 3.07 (NNG Proposed Preserve)
Non-native Vegetation	IV	0.53	0.00	0.00	0.02	0.00	0.02		0.00	0.00	0.00	0.44	0.00
Urban/ Developed	n/a	0.06	0.00	0.00	0.00	0.01	0.01		0.00	0.00	0.00	0.00	0.00
	Total:	135.70	7.12	0.67	59.01	4.58	71.38		12.50	36.93	49.43	54.33	46.36 (Existing Preserve) 3.07 (Proposed Preserve)



Aerial Source: Merkel & Associates Jan. 2020

Created on: April 30, 2021

LITERATURE CITED

- AECOM, California Department of Fish and Wildlife, Conservation Biology Institute. 2011. Vegetation Classification Manual for Western San Diego County, First Edition. Prepared for San Diego Association of Governments.
- California Department of Fish and Wildlife (CDFW). 2020a. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. RareFind 3; GIS shapefile; update CD January 2020. Sacramento, California.
- _____. 2020b. California Department of Fish and Wildlife, Natural Diversity Database. January 2020. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 140 pp. Available from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>
- _____. 2019. California Department of Fish and Wildlife, Natural Diversity Database. August 2019. Special Animals List. Periodic publication. 67 pp. Available from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline>
- California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> (accessed March 2020)
- City of Chula Vista. 2019a. GIS Data Portal. Updated October 29, 2019 <https://chulavista-cvgis.opendata.arcgis.com/>
- _____. 2019b. Chula Vista Municipal Code. Chapter 17.35 Habitat Loss and Incidental Take (HLIT). Passed November 12, 2019, pp. 1-22.
- _____. 2003. City of Chula Vista MSCP Subarea Plan. February 2003. <https://www.chulavistaca.gov/home/showdocument?id=7106>
- Crother, B.I. (ed.). 2017. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding, pp. 1–102.
- Crother, B.I., J. Boundy, J.A. Campbell, K. De Quieroz, D. Frost, D.M. Green, R. Highton, J.B. Iverson, R.W. McDiarmid, P.A. Meylan, T.W. Reeder, M.E. Seidel, J.W. Sites, Jr., S.G. Tilley, D.B. Wake. 2003. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico: Update. *Herpetological Review* 2003, 34(3), 196-203.
- Chesser, R.T., K.J. Burns, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen, Jr., D.F. Stotz, and K. Winker. 2019. Check-list of North American Birds (online). American Ornithological Society. <http://checklist.aou.org/taxa>

- Dudek and Associates, Inc.. 2006. Biological Resources Report and Impact Assessment for Otay Ranch Villages 2 & 3, City of Chula Vista, San Diego County, California. Prepared for the Otay Ranch Company. February 2006. 97pp.
- Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical Report Y-87-1, US Army Engineer Waterways Experimental Station, Vicksburg, MS. 117 pp.
- Google Earth™. V 7.3.3.7699 [Software]. 2020. Available from: <http://www.earth.google.com>. Accessed 2020.
- Hall, E.R. 1981. The mammals of North America. 2nd Edition. John Wiley & Sons. New York, New York. Two volumes. 1,181 pp.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Resources Agency, Department of Fish and Game. Sacramento, California. 157pp.
- Klein, M.W., San Diego Natural History Museum. 2002. Butterflies of San Diego County [Internet]. Available from: <http://www.sdnhm.org/research/entomology/sdbutterflies.html>.
- Merkel & Associates, Inc. (M&A). 2020. Biological Constraints/Due Diligence Report for the Sunbow II Phase III Development Report. Prepared for Lennar-San Diego Division. Dated February 24, 2020. 25 pp.
- Munsell Color. 2000. Munsell® Soil Color Charts. Revised Edition. Munsell® Color/GretagMacBeth, New York.
- National Water and Climate Data Center (USDA-NRCS 2019). USDA-NRCS. Available from: <https://www.wcc.nrcs.usda.gov/>
- Oberbauer, T., M. Kelly, J. Buegge. 2008, Revised 1996 and 2006. Draft Vegetation Communities of San Diego County [Internet]. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Holland RF, PhD., 1986. Available from: http://www.sdcountry.ca.gov/dplu/docs/Veg_Comm_SDCountry_2008.pdf.
- Rebman, J.P. and M.G. Simpson. 2014. Checklist of the Vascular Plants of San Diego County, 5th Edition [Internet]. ISBN 0-918969-08-5. Available from: [file:///C:/Users/gkrantz/Downloads/SDCoChecklist5ed2014%20\(13\).pdf](file:///C:/Users/gkrantz/Downloads/SDCoChecklist5ed2014%20(13).pdf)
- San Diego Natural History Museum (SDNHM) Plant Atlas Data Base. 2020. Available from: <http://sdplantatlas.org/publicsearch.aspx>
- State Water Resources Control Board (SWRCB). 2016. San Diego Regional Water Quality Control Board, Clean Water Act Sections 305(B) and 303(D) Integrated Report for the San Diego Region. Draft Staff Report 2016; approved by USEPA April 6, 2018. Clean Water Act Sections 303(d) List and 305 (b) Report and interactive Map, Accessed 2018. Available from: http://www.waterboards.ca.gov/rwqcb9/water_issues/programs/303d_list/index.shtml

Supreme Court of the United States. 2001. Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers et al. 531 U.S. 159 (2001). Available from: <http://www.supremecourt.gov/opinions/boundvolumes/531bv.pdf>

_____. 2006. Rapanos v. U.S. and Carabell v. U.S. 547 U.S. 715 (2006). Available from: <http://www.supremecourt.gov/opinions/boundvolumes/547bv.pdf>

U.S. Army Corps of Engineers (USACOE)..2018. National Wetland Plant List, version 3.4. Available from <http://wetland-plants.usace.army.mil/>. U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH.

_____. 2016 Oct. Regulatory Guidance Letter No. 16-01, Subject: Jurisdictional Determinations. Available from: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/juris_info.aspx

_____. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. [Internet]. JS Wakeley, RW Lichvar, and CV Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. Available from: <http://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/Wetland-Delineations/>

_____. 2008b Jun 26. Regulatory Guidance Letter No. 08-02, Subject: Jurisdictional Determinations. Available from: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/juris_info.aspx

_____. 2008c. Aug. A Delineation Manual, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. July 2010, Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Available from: <http://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/OHWM-Delineations/>

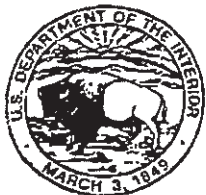
U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2016. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.0 [Internet]. L.M Vasilas, G.W Hurt, and J.F Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils. Available from: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>

_____. 2007. Soil Survey Geographic (SSURGO) database for San Diego County, California [Internet]. Natural Resources Conservation Service (NRCS). Available from: <http://SoilDataMart.nrcs.usda.gov/>.

- _____. 2002. Soil Survey Geographic (SSURGO) database for San Diego County, California [Internet]. Natural Resources Conservation Service (NRCS). Available from: <http://SoilDataMart.nrcs.usda.gov/>.
- U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACOE). 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook [Internet]. Available from: <http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Related-Resources/CWA-Guidance/>
- U.S. Fish and Wildlife Service (USFWS), Carlsbad Fish and Wildlife Office (CFWO). 2019a. GIS Division Species Occurrence Data Download (zip) updated May 2019. <http://www.fws.gov/carlsbad/giswebpage/giswebpage.htm>.
- _____. 2019b. GIS Division Critical Habitat Data Download (zip) updated May 2019. <https://www.fws.gov/carlsbad/GIS/CFWOGIS.html>
- _____. 2014 Dec. 15. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Guidelines. 8 pp.
- _____. 2004. Recovery Plan for *Deinandra conjugens* (Otay Tarplant). Portland, Oregon. vii + 65 pp. Available at: http://ecos.fws.gov/docs/recovery_plan/041228.pdf
- _____. 1997 Jul 28. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5 pp.
- U.S. Geological Service (USGS). 2007. Preliminary Integrated Geological Map Databases for the United States; Western States: California, Nevada, Arizona, Washington, Oregon, Idaho, and Utah. Version 1.2. GIS Data Download California (zip) [Internet]. Available from: <http://pubs.usgs.gov/of/2005/1305/#CA>.
- Wilson DE, Reeder DM (eds). 2005. Mammal Species of the World. Johns Hopkins University Press. 2,142 pp. Available from Johns Hopkins University Press at: 1-800-537-5487 or (410) 516-6900, or <http://www.press.jhu.edu/> or <http://nrmnhgoph.si.edu/msw/>.
- Wilson DE, Reeder DM (eds). 2005. Mammal Species of the World. Johns Hopkins University Press. 2,142 pp. Available from Johns Hopkins University Press at: 1-800-537-5487 or (410) 516-6900, or <http://www.press.jhu.edu/> or <http://nrmnhgoph.si.edu/msw/>.

APPENDIX 1. SUNBOW II USFWS 1995 BIOLOGICAL OPINION

Permits



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California 92008

February 13, 1995

Colonel Michal Robinson
District Engineer
Corps of Engineers, Los Angeles District
P.O. Box 2711
Los Angeles, California 90053

Re: Biological Opinion on Impacts to the Coastal California Gnatcatcher
(*Polioptila californica californica*) to Result From Construction of the
Sunbow Planned Community #1-6-95-F-17

Attn: Regulatory Branch (Ms. White)

Dear Colonel Robinson:

The U.S. Fish and Wildlife Service (Service) has reviewed the project plans for Sunbow Planned Community located in the City of Chula Vista, California. Your June 27, 1994, request for formal consultation was received on June 30, 1994. On November 8, 1994, the applicant requested a 90-day extension of the consultation in order to accommodate changes in Corps, applicant and consulting staff. This request was verbally confirmed and granted by the Corps. This document represents the Service's biological opinion on the effects of that action on the coastal California gnatcatcher (*Polioptila californica californica*), a federally listed threatened bird, in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (the Act).

This biological opinion is based on information provided in the 1993 Biological Assessment and Mitigation Program for the Coastal California Gnatcatcher (Pacific Southwest Biological Services), Revised Project Phasing Plans (BHA, Inc. 1995), East Orange Avenue Detention Basin Grading Plans (BHA, Inc. 1995), Summary Impact Table for the Sunbow Project (Merkel & Associates, Inc. 1995), and Multiple Species Conservation Planning (MSCP) maps and analyses (City of San Diego, Clean Water Program 1994-1995).

BIOLOGICAL OPINION

It is the opinion of the Service that the proposed project is not likely to jeopardize the continued existence of the coastal California gnatcatcher. No critical habitat has been designated for this species. Therefore, the proposed action would not adversely modify critical habitat.

DESCRIPTION OF PROPOSED ACTION

The proposed project consists of the construction of 1,946 single and multi-family dwelling units and development of additional land for commercial, park, open space, business park, and community recreation uses. The project also involves construction of several roads (East Orange Avenue extension, East Palomar Street, Medical Center Drive, Paseo Ladera, and others) to serve residential and business park development. This project would occur in three phases, the first of which would remove 3.6 acres of coastal sage scrub (Figure 1). The second phase would remove 4.9 acres of coastal sage scrub and the third phase, which would involve construction of East Orange Avenue and the commercial development at the south end of the subject property, would remove 2.5 acres of coastal sage scrub.

The following measures have been proposed by the project applicant to avoid and/or mitigate take of coastal California gnatcatchers.

1. No clearing shall occur during the nesting season (15 February through 31 July).
2. All construction areas within or adjacent to sage scrub habitat shall be marked by flagging and will be temporarily fenced with construction fencing where ground disturbance is to occur.
3. Adequate fire fighting equipment shall be kept on-site during the construction period and until hydrants and other public fire suppression service is available.
4. To mitigate for direct impacts to gnatcatchers and 8.5 acres of coastal sage scrub resulting from development of phases I and II, 17.0 acres of coastal sage scrub (2:1 for direct habitat loss) will be preserved on-site. To mitigate for impacts to gnatcatchers and 2.5 acres of coastal sage scrub resulting from development of phase III, 5.0 acres will be acquired and preserved off-site in O'Niell Canyon.
5. To mitigate for indirect impacts to gnatcatchers and 2.4 acres of coastal sage scrub resulting from development of Phases I and II, 2.4 acres of sage scrub will be preserved on-site. To mitigate for indirect impacts to gnatcatchers and 60.1 acres of sage scrub resulting from development of Phase 3, 60.1 acres of sage scrub will be acquired and preserved off-site, in O'Neill Canyon.
6. All cut and fill slopes in natural open space north of the East Orange Avenue Extension shall be revegetated with coastal sage scrub.
7. The long-term maintenance of existing coastal sage scrub and the revegetated areas will be the responsibility of the open space maintenance district.
8. The extent and condition of the sage scrub shall be monitored by a qualified biologist funded by the open space maintenance district. The biologist shall report the status of the natural open space habitats and

Colonel Michal Robinson

gnatcatcher populations to the Service. The biologist may recommend remedial clean-up, maintenance or management actions not to exceed a cost of \$65,000 (adjusted for inflation) per 5 year period. Work would be funded or executed by the open space maintenance district. Any management actions are to be coordinated with the Service prior to initiating work.

STATUS OF THE SPECIES/ENVIRONMENTAL BASELINE

The coastal California gnatcatcher is a recognized subspecies of the California gnatcatcher (Polioptila californica [Brewster]) and is endemic to coastal southern California and northwestern Baja California, Mexico (American Ornithologists' Union 1983, 1989: 535; Atwood 1980, 1988, 1990, 1991). Primarily because of substantial, recent reductions in the habitat and range of the species and the inadequacy of existing regulations, the Service has listed the gnatcatcher as threatened (Federal Register 58: 16742-16757, March 30, 1993). Pursuant to section 4(d) of the Act, a special rule authorizes incidental take of the gnatcatcher in conjunction with an approved California Natural Community Conservation Planning Program plan (NCCP). The gnatcatcher, a small, gray songbird, is an obligate resident of coastal sage scrub dominated plant communities from Los Angeles County generally south along the coast to the United States/Mexico border (see, for instance, Grinnell and Miller 1944; Garrett and Dunn 1981). The appropriate habitat type, however, apparently occurs in patchy or mosaic distribution. The distribution and size of these patches of suitable habitat varies throughout the range of the species from year to year due to the expressed effects of a variety of variables.

Typical coastal sage scrub habitat constituents are relatively low-growing, drought-deciduous, and succulent plant species. Representative plant taxa in this plant community include coastal sagebrush (Artemisia californica), several species of sage (Salvia spp.), California buckwheat (Eriogonum fasciculatum), California encelia (Encelia californica), various species of cactus and cholla (Opuntia spp.), and several species of Haplopappus (Munz 1974, Kirkpatrick and Hutchinson 1980). Of the 11 subassociations of coastal sage scrub identified by Kirkpatrick and Hutchinson (1977), the gnatcatcher apparently routinely occupies only three of these.

The gnatcatcher is primarily insectivorous and defends breeding territories ranging in size from approximately 2 to 40 acres (Atwood 1990). Atwood's comprehensive studies (1988, 1991) and status review (1990) further reveal that the breeding season of the species extends from February through July, and apparently peaks in April. However, substantial data exists indicating fledging can successfully occur into August. Juveniles associate with their parents for several weeks or even months after fledging.

Although considered locally common fewer than 50 years ago (Grinnell and Miller 1944), Atwood (1990) has concluded that current United States population is almost certainly less than 2,000 pairs. Although the documented decline of the gnatcatcher undoubtedly is the result of numerous factors, including nest depredation and brood parasitism by the essentially non-native brown-headed cowbird (Molothrus ater), habitat destruction, fragmentation or

modification must be principal reasons for the gnatcatcher's current, precarious status. It has been estimated that as much as 90 percent of coastal sage scrub vegetation has been lost as a result of development and land conversion (see Westman 1981a, 1981b; Barbour and Major 1977), leaving coastal sage scrub as one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977, Axelrod 1978, Klopatek et al. 1979, Westman 1987, O'Leary 1990). For references that contain thorough accounts of the gnatcatcher and its coastal sage scrub habitat, please see the section entitled "References and Literature Cited" at the conclusion of this document.

Status of the Species in the Action Area

According to results of biological surveys of the project site conducted by Pacific Southwest Biological Services in 1994, six pairs of California gnatcatcher occupy the 57.7 acres of coastal sage scrub on-site.

EFFECTS OF THE ACTION

Phase I of the project would directly impact 3.6 acres of coastal sage scrub and indirectly impact 2.1 acres of sage scrub through construction-related activities and increased long-term edge effects, thus directly and indirectly impacting three gnatcatcher pairs. Phase II would remove 4.9 acres of sage scrub and indirectly impact 0.3 acres in an area occupied by three gnatcatcher pairs. Phase III would remove 5.0 acres of coastal sage scrub in an area where gnatcatchers were not observed during surveys of the subject property. However, Phase III would be expected to indirectly impact 60.1 acres of sage scrub on-site, occupied by six gnatcatcher pairs, by isolating the on-site habitat from open space to the southeast.

The applicant proposes to mitigate sage scrub and gnatcatcher impacts concurrent or preceding each of the three consecutive phases. Proposed mitigation addresses both direct and secondary impacts to gnatcatchers and sage scrub habitat. Phase I and II of project development would be mitigated through on-site habitat restoration. The proposed on-site mitigation of Phase I and II impacts is believed to be in the interest of achieving long-term protection goals for multiple species in addition to gnatcatchers which occur within the open space of the property. The project applicant has further proposed to relocate a portion of the development at the far southeastern portion of the residential development to assist in maximizing connectivity to scrublands to the east. This would be expected to improve the viability of the on-site sage scrub lands in conformance with current MSCP linkage plans. Phase III would be mitigated through off-site restoration and would include mitigation for secondary impacts to both preserved sage scrub and on-site restoration conducted as mitigation for earlier phases. Because of the lesser mitigation ratio being used for secondary impacts, it is recognized that with the construction of Phase III improvements, some reduced value of on-site mitigation lands will remain.

To best ensure persistence of the species, gnatcatcher impacts should be analyzed in terms of consistency with long-term conservation plans. The State of California, under the Natural Community Conservation Planning Act of 1991 (NCCP), has initiated a program to conserve populations of California native

Colonel Michal Robinson

animal and plant species, and their habitats, in areas large enough to ensure their long-term viability. The NCCP is initially focusing on coastal sage scrub in a pilot project intended to eventually serve as a model for similar approaches with other habitat types. The Service, in recognition of the NCCP program, published a special rule under section 4(d) of the Act. Under this special rule, a limited amount of coastal sage scrub can be lost while a regional conservation plan is being developed, provided that such losses do not preclude planning options for a viable long-term preserve system. Therefore, in order for the subject project to maintain consistency with NCCP, a determination must be made that project impacts will not conflict with regional coastal sage scrub conservation plans.

Maps generated through the Clean Water Program's Multi-Species Conservation Plan (MSCP), intended to serve as an NCCP subregional plan, are helpful in determining whether projects are likely to be consistent with long-term conservation planning. These maps rate coastal sage scrub on the subject property as very high quality, based on elevation, slope, and proximity to a large habitat block. The gnatcatchers on-site constitute a portion of a core gnatcatcher population identified in the Otay area. Much of the habitat on the subject site appears to fall within a 100% preservation area identified on the current MSCP Multiple Habitat Preserve Alternative, although at the scale of this mapping it is uncertain whether all the proposed residential and commercial development is excluded from the 100% preservation area. It is certain that East Orange Avenue would run through the 100% preservation area identified on the Multiple Habitat Preserve Alternative map. NCCP data analyzed by the Service independently of MSCP indicates that habitat on the Sunbow site has relatively low long-term conservation value, largely due to its relatively fragmented nature.

Although habitat on the subject site is surrounded by development on three sides and is a fairly small patch, the habitat retains considerable wildlife quality due to its proximity to the coast and the presence of extremely sensitive species on-site. Coastal habitats have been depleted at a considerably greater rate than inland habitats in San Diego County, thus sage scrub tends to be rarer near the coast. Habitat on the subject property constitutes some of the most coastally located sage scrub in the Otay area. The subject property also supports large populations of San Diego thornmint (*Acanthomintha illicifolia*) and Otay tarplant (*Hemizonia confugens*) which are candidates for federal listing as endangered species. For these reasons, it is the goal of the mitigation for Phases I and II of the project to maximize the on-site value of the subject property. Phase III would diminish the on-site habitat value by isolating approximately 60 acres of habitat on-site from habitat to the southeast, and these indirect impacts would need to be mitigated. Because the project applicants are currently uncertain as to whether all of Phase III will be implemented, they are unwilling to mitigate for these large indirect impacts at the project's inception. For this reason they adopted the phased approach which maximizes on-site habitat value and detains any off-site mitigation until any actual isolation effects are expected to occur.

Cumulative Effects

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

The vast majority of activities anticipated to effect this species within the foreseeable future are local urban development projects. These projects could result in significant cumulative effects to the species. However, section 9 of the ESA prohibits the unlawful "take" (e.g., harm, harass) of the California gnatcatcher.

The need for habitat conservation on a regional scale has prompted efforts by the Service and the State of California to cooperate on conservation efforts. In recognition of the State's NCCP, the Service has proposed a special rule under section 4(d) of the ESA that would facilitate use of the NCCP program to develop regional multi-species conservation programs while providing adequate protection of the California gnatcatcher through habitat conservation. In addition, several regional planning efforts including the MSCP, the North County Wildlife Forum's MHCP, and the County of San Diego's Open Space and Wildlife Habitat Management program have been initiated and are expected to be integrated into the NCCP process. The ultimate result of the NCCP process will be subject to the Service review. If successful, such efforts could preclude significant cumulative effects upon the gnatcatcher.

CONCLUSION

After reviewing the current status of the coastal California gnatcatcher, the environmental baseline for the action area, the effects of the proposed Sunbow Planned Community and the cumulative effects, it is the Service's biological opinion that the Sunbow Planned Community, as proposed, is not likely to jeopardize the continued existence of the California gnatcatcher. No critical habitat has been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit the take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as an action that creates the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying on an otherwise lawful activity conducted by the federal agency or applicant. Under the terms and conditions of section 7(b)(4) and section 7(o)(2), taking that is incidental

to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Amount and Extent of Take

The Service anticipates six individuals of California gnatcatcher could be taken as a result of this proposed action. This take may come in the form of:

1. Two pairs of gnatcatchers would be lost through harm by destruction of essential breeding habitat. Approximately 11.0 acres of sage scrub habitat will be subject to destruction.
2. Up to four additional pairs could be taken through harassment associated with construction related indirect impacts to birds in breeding habitat. These impacts are anticipated as a result of activities within the construction area. In addition, all or a portion of these birds may be lost from the site over the long-term by secondary partial degradation of open space sage scrub resources associated with encroachment by housing development, East Orange Avenue, and the industrial development in Poggi Canyon. These secondary impacts may occur to as much as 62.5 acres of land including 19.4 acres of on-site mitigation lands.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take:

1. Minimization of impacts through construction period techniques and timing of specific work.
2. Compensation for habitat losses through on-site restoration and preservation and management of compensatory habitat as well as management of gnatcatcher resources therein.
3. Compensation for habitat degradation of remaining on-site habitats by on-site management and off-site habitat acquisition in defensible reserve areas.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the Corps or the applicant shall ensure compliance with the following mandatory terms and conditions, which implement the Reasonable and Prudent Measures described above.

The terms and conditions described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant- document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

1. The Corps or the permittee shall provide the biological mitigation or assurances as described, implied, or suggested in the Biological Assessment, dated November 15, 1993 (BA) except as modified by these Terms and Conditions.
2. No clearing of sage scrub habitat shall occur during the gnatcatcher nesting season (15 February through 31 July) unless it is first demonstrated to be un-occupied by California gnatcatchers or other nesting avian species.
3. During construction, all sage scrub which is to be preserved shall be marked by flagging and shall be temporarily fenced with construction fencing or a single strand wire with flagging or bright polypropylene rope. Where sage scrub is to be cleared, top-soil is to be salvaged and used in the on-site restoration areas.
4. Adequate fire fighting equipment shall be kept on-site during the construction period and until hydrants and other public fire suppression service is available.
5. To mitigate for direct impacts to gnatcatchers and coastal sage scrub a combination of on-site and off-site measures shall be employed in accordance with Table 1. Sunbow Project Impacts and Mitigation Phasing Program. The on-site restoration mitigation shall be conducted concurrent or preceding the phase for which mitigation is required. Off-site mitigation must be acquired and under long-term management prior to initiation of impacts for the project phase for which mitigation is required.
6. A post-impact survey shall be conducted to map the extent of sage scrub impacts and ensure that direct impacts did not exceed the 11.0 acres of anticipated loss. Any impacts above this expected loss shall be mitigated at a 4:1 ratio (mitigation:impact).
7. All cut and fill slopes in natural open space north of the East Orange Avenue extension shall be revegetated with coastal sage scrub.
8. The long-term maintenance of existing on-site revegetation areas shall be the responsibility of the area open space maintenance district. The district shall be adequately funded to ensure long-term viability of the maintenance program. The on-site coastal sage scrub shall be monitored

for a five year establishment period and thereafter every 5 years by a qualified biologist who shall be charged with reporting the status of the sage scrub and on-site biological resources, including gnatcatchers. The biologist shall further assess the need for any remedial maintenance or management action. Reports are to be submitted to the Service, Department of Fish and Game, and City of Chula Vista. Action recommended by the monitoring biologist and subsequently accepted by the Service shall be implemented by the maintenance district, but in no instance shall these maintenance actions (after a five year establishment period) exceed \$65,000 (adjusted for inflation) per five year period. Any management actions are to be coordinated with the Service prior to initiating work.

9. Off-site mitigation shall be conducted at the O'Niell Canyon mitigation area in southern San Diego County. An alternative site may be proposed and utilized at the discretion of the Service in consultation with the Department of Fish and Game. Any alternative site proposed shall have a demonstrable value to the California gnatcatcher and long-term strategic planning value for multi-species and habitat protection in San Diego County.
10. In the event that Phase III of the project work is delayed for a period of more than 5 years beyond the date of this Biological Opinion, the Service is to be notified and given the opportunity to re-evaluate the appropriateness of the off-site mitigation program in light of the status of the gnatcatcher and conservation planning efforts and habitat preservation objectives at that time.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than six California gnatcatchers will be incidentally taken. If, during the course of action, this minimized level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effect of a proposed action on listed species or critical habitat, to help implement recovery plans, to develop information, or to benefit unlisted sensitive species in order to avoid future federal listing of such species.

1. The open space habitats proposed for the Sunbow site are considered to be important for numerous species which are candidates or future candidates for federal listing. Many of these species currently carry

state listing status and are a focus of multi-species planning efforts intended to reduce the need for future listings. Among the most important resources within the open space are coastal cactus wrens and Otay tarplant. Potential exists for the compatible enhancement of these resources along with the restoration of on-site sage scrub habitats. In addition, there is a good potential for restoration of San Diego thornmint to some of the open space clay lenses. The Service would look favorably on such multi-species enhancement efforts should the Corps or applicant incorporate consideration of these species into the on-site restoration and maintenance program.

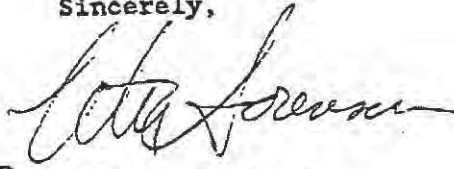
2. In evaluating future permitting actions on properties to the east of the Sunbow site, the Corps should consider in its public interest evaluation, the objectives of the Natural Communities Conservation Planning (NCCP) to provide linkages between natural habitats including the Sunbow site. This objective should be considered when evaluating project impacts, alternatives, and mitigation proposals.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

This concludes formal consultation on the Sunbow Planned Community. As provided in 50 CFR section 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Ellen Berryman of my staff at (619) 431-9440.

Sincerely,


Gail C. Kobetich
Field Supervisor

Enclosures

Colonel Michal Robinson

LITERATURE CITED

- American Ornithologists' Union. 1957. Checklist of North American Birds, 5th ed. American Ornithologists' Union, Washington, D.C.
- American Ornithologists' Union. 1983. Checklist of North American Birds, Sixth Edition. American Ornithologists' Union. Printed by Allen Press, Lawrence, Kansas. 877 pages.
- American Ornithologists' Union. 1989. Thirty-seventh Supplement to the American Ornithologists' Union Checklist of North American Birds. Auk 106 (3): 532-538.
- Atwood, J. 1980. The United States Distribution of the California Black-tailed Gnatcatcher. Western Birds 11: 65-78.
- Atwood, J. 1988. Speciation and geographic variation in black-tailed gnatcatchers. Ornithological Monographs No. 42. American Ornithologists' Union, Washington, D.C.
- Atwood, J. 1990. Status review of the California gnatcatcher (Polioptila californica). Manomet Bird Observatory, Manomet, Massachusetts.
- Atwood, J. 1991. Subspecies limits and geographic patterns of morphological variation in California gnatcatchers (Polioptila californica). Bulletin of the Southern California Academy of Sciences 90 (3) 118-133.
- Axelrod, D. 1978. The Origin of Coastal Sage Vegetation, Alta and Baja California. American Journal of Botany 65 (10): 1117-1131.
- Barbour, M. and J. Major 1977. Terrestrial Vegetation of California. John Wiley and Sons, New York.
- Dawson, W. 1923. The Birds of California. Volume 1. South Moulton Company, San Diego.
- Dunn, J., E. Blom, G. Watson, and J. O'Neill. 1987. Cactus Wren Account. Pp. 318-319 in Field Guide to the Birds of North America (S.L. Scott, ed.). National Geographic Society, Washington, D.C.
- Garrett, K. 1992. Correspondence to the U.S. Fish and Wildlife Service Dated February 3, 1992. Natural History Museum to Los Angeles County, Los Angeles, California.
- Garrett, K. and J. Dunn. 1981. The Birds of Southern California: Status and Distribution. Los Angeles Audubon Society; 407 pages.
- Grinnell, J. 1915. A distributional list of the birds of California. Pacific Coast Avifauna No. 11.

- Grinnell, J. and A. Miller 1944. The Distribution of the Birds of California. Pacific Coast Avifauna 27.
- Kirkpatrick, J. and C. Hutchinson. 1977. The Community Composition of California Coastal Sage Scrub. Vegetation 35: 21-33.
- Kirkpatrick, J. and C. Hutchinson. 1980. The Environmental Relationships of Californian coastal sage scrub and some of its component communities and species. Journal of Biogeography 7: 23-28.
- Klopatek, J., R. Olson, G. Emerson, and J. Jones. 1979. Land Use Conflicts with Natural Vegetation in the United States. Environmental Conservation: 6: 191-199.
- O'Leary, J. 1990. Californian Coastal Sage Scrub: General Characteristics and Considerations for Biological Conservation. Pages 24-41 in "Endangered Plant Communities of Southern California", A. Schoenherr (ed.). Southern California Botanists Special Publication Number 3.
- Pacific Southwest Biological Services 1993. Sunbow Planned Community Biological Assessment and Mitigation Program for the Coastal California Gnatcatcher. TPM No. 90-7. November.
- Rea, A., and K. Weaver. 1990. The Taxonomy, Distribution, and Status of Coastal California Cactus Wrens. Western Birds 21: 81-126.
- Salata, L.R. 1992. A Status Review of the Coastal Cactus Wren. Unpublished Draft Report. U.S. Fish and Wildlife Service, Carlsbad, California.
- Terrill, S.B. 1988. Cactus wren. Pp. 344-345 in The Audubon Society Master Guide to Birding (J. Farrand, Jr., ed.). Alfred A. Knopf, New York.
- Transportation Corridor Agencies. 1991. San Joaquin Hills Transportation Corridor biological assessment for cactus wren and California gnatcatcher.
- Transportation Corridor Agencies. 1992b. Supplement to San Joaquin Hills Transportation Corridor biological assessment for cactus wren and California gnatcatcher.
- Westman, W. 1981a. Diversity Relations and Succession in California Coastal Sage Scrub. Ecology 62: 170-184.
- Westman, W. 1981b. Factors influencing the distribution of species of California Coastal Sage Scrub. Ecology 62: 439-455.
- Westman, W. 1987. Implications of Ecological Theory for Rare Plant Conservation in Coastal Sage Scrub. Pages 133-1490 in "Proceedings of the Conference on Conservation and Management of Rare and Endangered Plants", T. Elias (ed.); California Native Plant Society, Sacramento.
- Willett, G. 1912. Birds of the Pacific Slope of Southern California. Pacific Coast Avifauna No. 7.

Colonel Michal Robinson

13

Willet, G. 1933. A Revised List of the Birds of Southwestern California. Pacific Coast Avifauna No. 21.

TABLE 1.

**SUNBOW PROJECT IMPACTS AND MITIGATION
PHASING PROGRAM**

HABITATS		PHASE I	PHASE II	PHASE III	TOTAL ALL PHASES
Sage Scrub	IMPACTS				
	Direct	3.6	4.9 *	2.5 **	11.0
	Secondary	2.1	0.3	40.7	43.1
	Total by Phase	5.7	5.2	43.2	
	Grand Total Impact				54.1
	MITIGATION REQUIREMENTS				
	Direct (2:1)	7.2	9.8	5.0	22.0
	Secondary (1:1)	2.1	0.3	60.1 ***	62.5
	Total by Phase	9.3	10.1	65.1	
	Grand Total Mitigation Requirement				84.5
	MITIGATION PROPOSED				
	On-site				
	Eastern Area	6.5	0.0	0.0	6.5
	North of E. Orange Ave	2.8	10.1	0.0	12.9
	Off-site				
	O'Neill Canyon****	0.0	0.0	65.1	65.1
	Total by Phase	9.3	10.1	65.1	
	Grand Total Mitigation Requirement				84.5
Wetlands and Other Waters	IMPACT				
	Willow Scrub	0.84	0.00	0.00	0.84
	Willow Woodland	0.14	0.00	0.00	0.14
	Mulefat Scrub	0.90	0.00	0.78	1.68
	Herbaceous Wetland	0.75	0.09	0.05	0.89
	Emergent Wetland	0.06	0.00	0.00	0.06
	Non-wetland Waters	0.92	0.65	0.84	2.41
	Total by Phase	3.61	0.74	1.67	
	Grand Total Impact				6.02
	MITIGATION PROPOSED				
	Riparian Wetlands	6.8	****	****	
	Total by Phase	6.8	0.0	0.0	
	Grand Total Mitigation				6.8

Notes:

* Impacts illustrated include a reduction of canyon fill associated with the relocation of development from the Eastern Area.

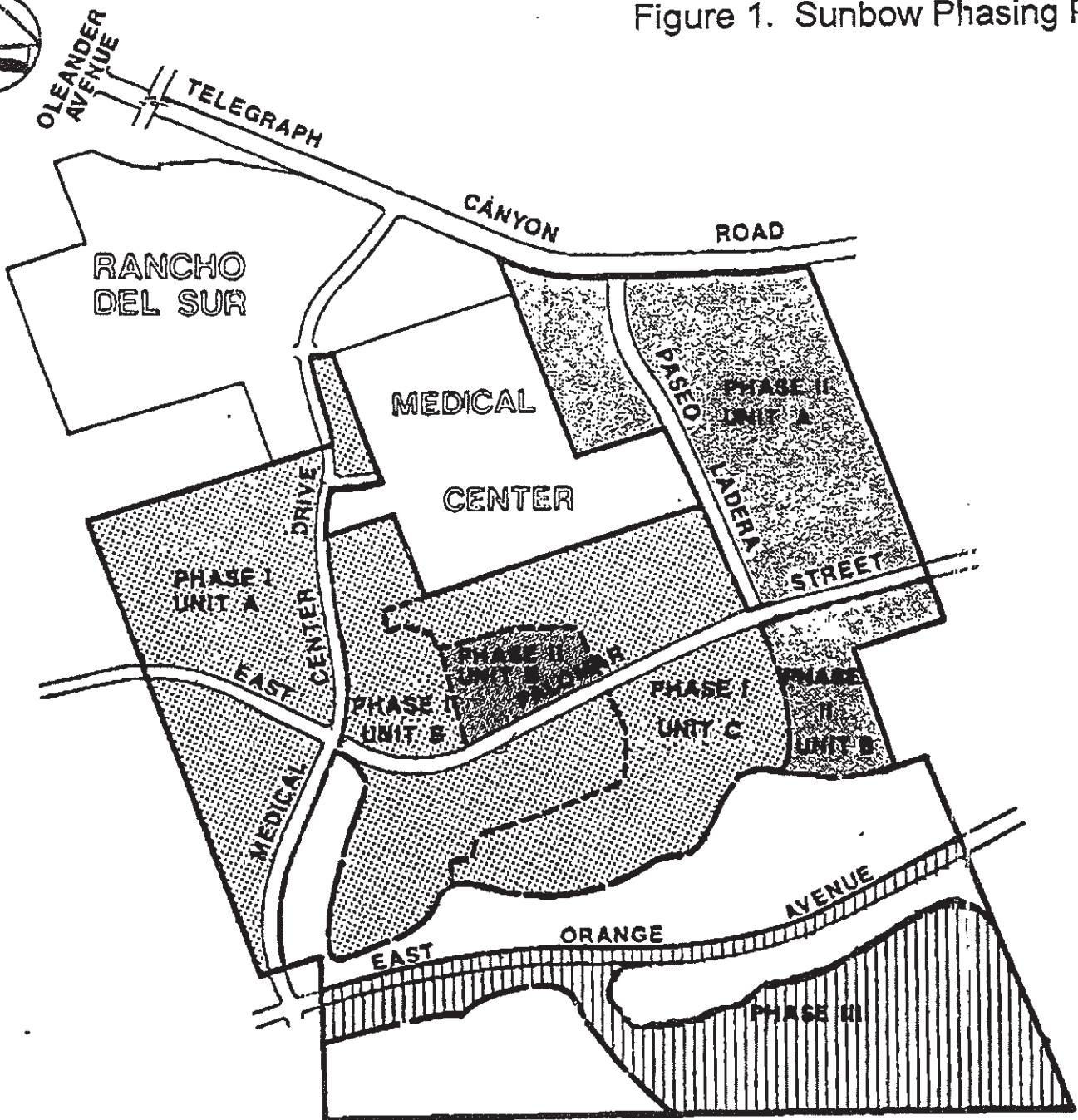
** Impacts illustrated are based on revised grading plans for East Orange Avenue which pulls the roadway south and incorporates designs for wetland mitigation at eastern end of Poggi Canyon.

*** Secondary impacts include a consideration of potential partial degradation of on-site mitigation by further encroachment by later phase development.

**** The O'Neill Canyon Mitigation Bank has been identified as an acceptable mitigation area for the Sunbow Project, however, alternatives may be proposed and could be used if found acceptable by the Service in consultation with the CDFG.

***** Wetland mitigation for all phases is to be conducted concurrent with construction of Phase I.

Figure 1. Sunbow Phasing Plan



LEGEND

		DWELLING UNITS	CUMULATIVE UNITS
PHASE I	UNIT A	405	405
	UNIT B	363	768
	UNIT C	667	1435
PHASE II	UNIT A	399	1834
	UNIT B	112	1946
PHASE III		0	1946
	TOTAL		1946



SUNBOW

BUILDING CONSTRUCTION PHASING
EXHIBIT 12

bha, Inc.

land planning, civil engineering, surveying

(619) 295-3001 (619) 941-1881
1815 Murray Canyon Road 120 Escalante Avenue
Suite 210 Suite 209
San Diego, California 92108 Vista, California 92084

APPENDIX 2. FLORA SPECIES OBSERVED ON-SITE

Habitat Types:

- D = Diegan Coastal Sage Scrub
- G = Valley Needlegrass Grassland
- W = Southern Willow Scrub
- F = Coastal and Valley Freshwater Marsh
- N = Non-native Grassland
- V = Non-native Vegetation

* = Denotes non-native flora species.

Scientific Name	Common Name	Habitat
GYMNOSPERMS		
Pinaceae - Pine Family		
<i>Pinus</i> sp.	pine	V
DICOTYLEDONS		
Adoxaceae – Adoxa Family		
<i>Sambucus nigra</i> L. subsp. <i>caerulea</i> (Raf.) Bolli	blue elderberry	D
Amaranthaceae – Amaranth Family		
* <i>Amaranthus albus</i> L.	tumbleweed	N
Anacardiaceae – Sumac Family		
<i>Malosma laurina</i> (Nutt.) Abrams	laurel sumac	
<i>Rhus integrifolia</i> (Nutt.) Brewer & S. Watson	lemonadeberry	D
* <i>Schinus molle</i> L.	Peruvian pepper tree	V
Apiaceae – Carrot Family		
<i>Apiastrum angustifolium</i> Nutt.	mock parsley	D
* <i>Apium graveolens</i> L.	celery	W
* <i>Foeniculum vulgare</i> Miller	fennel	N
<i>Sanicula arguta</i> J. Coulter & Rose	sharp-tooth sanicle	G
<i>Sanicula bipinnatifida</i> Hook.	purple sanicle	G
Asteraceae – Sunflower Family		
<i>Achillea millefolium</i> L.	yarrow, milfoil	G
<i>Ambrosia chenopodiifolia</i> (Benth.) Payne	San Diego bur-sage	D
<i>Ambrosia confertiflora</i> DC.	weak-leaf bur ragweed	N
<i>Ambrosia psilostachya</i> DC.	western ragweed	S
<i>Artemisia californica</i> Less.	California sagebrush	D
<i>Artemisia douglasiana</i> Besser	mugwort	W
<i>Artemisia palmeri</i> A. Gray	Palmer's sagewort	W
<i>Baccharis pilularis</i> DC.	coyote brush, chaparral broom	D
<i>Baccharis salicifolia</i> (Ruíz Lopez & Pavón) Pers.	mule fat, seep-willow	W
<i>Baccharis sarothroides</i> A. Gray	broom baccharis	D
<i>Bahiopsis laciniata</i> (A. Gray) E. E. Schilling & Panero	San Diego County viguiera	D
* <i>Carduus pycnocephalus</i> L.	Italian thistle	W
* <i>Centaurea melitensis</i> L.	tocalote	D
<i>Corethrogyne filaginifolia</i> (Hook. & Arn.) Nutt.	California-aster, sand-aster	N
* <i>Cynara cardunculus</i> L.	Artichoke thistle, cardoon	N
<i>Deinandra conjugens</i> (D.D. Keck) B. G. Baldwin	Otay tarplant	G
<i>Deinandra fasciculata</i> (DC.) Greene	fascicled tarplant	G

Scientific Name	Common Name	Habitat
<i>*Dittrichia graveolens</i> (L.) Greuter	stinkwort	
<i>Encelia californica</i> Nutt.	California encelia	D
<i>*Erigeron bonariensis</i> L.	flax-leaf fleabane	N
<i>Eriophyllum confertiflorum</i> (DC.) A. Gray var. <i>confertiflorum</i>	long-stem golden-yarrow	D
<i>Euthamia occidentalis</i> Nutt.	western goldenrod	W
<i>*Gazania linearis</i> (Thunb.) Druce	treasure flower	N
<i>*Glebionis coronaria</i> (L.) Spach	garland, crown daisy	N
<i>Grindelia camporum</i> Greene	rayless gumplant	G
<i>Gutierrezia sarothrae</i> (Pursh) Britton & Rusby	matchweed	G
<i>Hazardia squarrosa</i> (Hook & Arn.) Greene var. <i>grindelioides</i> (DC.) W. Clark	saw-toothed goldenbush	D
<i>*Hedypnois cretica</i> (L.) Dum.-Cours.	Crete hedypnois	N
<i>*Helminthotheca echioides</i> (L.) Hoplub	bristly ox-tongue	N
<i>Heterotheca grandiflora</i> Nutt.	telegraph weed	N
<i>*Hypochaeris glabra</i> L.	smooth cat's-ear	N
<i>Isocoma menziesii</i> (Hook. & Arn.) G. L. Nesom var. <i>decumbens</i> (Greene) G. L. Nesom	decumbent goldenbush	N, V
<i>Isocoma menziesii</i> (Hook. & Arn.) G. L. Nesom var. <i>vernonioides</i> (Nutt.) G. L. Nesom	coastal goldenbush	D
<i>Iva hayesiana</i> A. Gray	San Diego marsh-elder	W
<i>*Lactuca serriola</i> L.	prickly lettuce	
<i>Lasthenia gracilis</i> (DC.) E. Greene	common goldfields	D
<i>Logfia filaginoides</i> (Hook. & Arn.) Morefield	California cottonrose	N
<i>*Logfia gallica</i> (L.) Coss. & Germ.	narrow-leaf filago	N
<i>*Maticaria descoidea</i> (DC.)	pineapple weed	N
<i>Osmadenia tenella</i> Nutt.	Osmadenia	N
<i>Pluchea odorata</i> (L.) Cass.	salt marsh fleabane	W
<i>Pseudognaphalium biolettii</i> Anderb.	bicolor cudweed	D
<i>*Pseudognaphalium luteoalbum</i> (L.) Hilliard & B.L. Burt	everlasting cudweed	W
<i>Pseudognaphalium microcephalum</i> (Nutt.) Anderb.	white everlasting	D
<i>*Sonchus asper</i> (L.) Hill ssp. <i>asper</i>	prickly sow thistle	N
<i>*Sonchus oleraceus</i> L.	common sow thistle	N
<i>Stephanomeria diegensis</i> Gottlieb	San Diego wreath-plant	D
<i>Stylocline gnaphalioides</i> Nutt.	everlasting neststraw	N
<i>Uropappus lindleyi</i> (DC.) Nutt.	silver puffs	D
<i>Xanthium strumarium</i> L.	cocklebur	
Boraginaceae – Borage Family		
<i>Amsinckia intermedia</i> Fischer & C.A. Mey	common fiddleneck	N
<i>Cryptantha intermedia</i> (A. Gray) Greene var. <i>intermedia</i>	nievitas cryptantha	D
<i>Cryptantha micromeres</i> (A. Gray) Greene	minute-flowered cryptantha	D
Brassicaceae – Mustard Family		
<i>*Brassica nigra</i> (L.) Koch	black mustard	N
<i>*Hirschfeldia incana</i> (L.) Lagr.-Fossat	short-pod mustard	N

Scientific Name	Common Name	Habitat
* <i>Lepidium didymum</i> L.	lesser swine cress	N
* <i>Lepidium latifolium</i> L.	broad-leaf peppergrass	W
<i>Lepidium nitidum</i> Nutt	shining peppergrass	G
* <i>Lepidium virginicum</i> L. ssp. <i>virginicum</i>	Virginia pepperweed	G
* <i>Nasturtium officinale</i> W.T. Aiton	water cress	W
* <i>Raphanus sativus</i> L.	wild radish	N
* <i>Sisymbrium irio</i> L.	London rocket	N
Cactaceae – Cactus Family		
<i>Cylindropuntia prolifera</i> (Engelm.) F. M. Knuth	coast cholla	D
<i>Ferocactus viridescens</i> (Torrey & A. Gray) Britton & Rose	coast barrel cactus	D
Caryophyllaceae – Pink Family		
<i>Cardionema ramosissima</i> (J. A. Weinm.) Nelson & J. F. Macbr.	tread lightly	N
* <i>Polycarpon tetraphyllum</i> (L.) L. ssp. <i>tetraphyllum</i>	four-leaf allseed	N
* <i>Silene gallica</i> L.	common catchfly	N
Chenopodiaceae – Goosefoot Family		
<i>Atriplex canescens</i> (Pursh) Nutt. var. <i>canescens</i>	four-wing saltbush, shadescale	D
* <i>Atriplex semibaccata</i> R. Br.	Australian saltbush	N
* <i>Atriplex suberecta</i> I. Verd.	peregrine saltbush	N
* <i>Chenopodium murale</i> L.	nettle-leaf goosefoot	N
Cleomaceae – Spiderflower Family		
<i>Peritoma arborea</i> (Nutt.) H.H. Iltis	bladderpod	D
Convolvulaceae – Morning-Glory Family		
<i>Calystegia macrostegia</i> (E. Greene) Brummitt ssp. <i>cyclostegia</i> (House) Brummitt	coast morning-glory	N
<i>Calystegia macrostegia</i> (E. Greene) Brummitt ssp. <i>intermedia</i> (Abrams) Brummitt	south coast morning-glory	N
* <i>Convolvulus arvensis</i> L.	field bindweed	N
<i>Convolvulus simulans</i> Perry	small-flower bindweed	G, N
Crassulaceae – Stonecrop Family		
<i>Crassula connata</i> (Ruíz Lopez & Pavón) A. Berger	dwarf stonecrop, pygmyweed	D
Cucurbitaceae – Gourd Family		
<i>Marah macrocarpus</i> (E. Greene) E. Greene var. <i>macrocarpus</i>	manroot, wild-cucumber	D
Euphorbiaceae – Spurge Family		
<i>Chamaesyce polycarpa</i> (Benth.) Millsp.	small-seed sandmat	D
<i>Croton setigerus</i> Hook.	Doveweed	N

Scientific Name	Common Name	Habitat
Fabaceae – Pea Family		
* <i>Acacia cyclops</i> G. Don	cyclops acacia	V
<i>Acmispon glaber</i> (Vogel) Brouillet var. <i>glaber</i>	coastal deerweed	D
<i>Acmispon micranthus</i> (Torr. & A. Gray) Brouillet	grab lotus	D
<i>Amorpha fruticosa</i> L.	western false-indigo	D
<i>Astragalus trichopodus</i> (Nutt.) A. Gray var. <i>lonchus</i> (M. E. Jones) Barneby	ocean locoweed	D
<i>Lupinus bicolor</i> Lindley	miniature lupine	G
<i>Lupinus succulentus</i> Koch	arroyo lupine	G
* <i>Medicago polymorpha</i> L.	California burclover	N
* <i>Melilotus indicus</i> (L.) All.	Indian Sweetclover, sourclover	N
Fagaceae – Oak Family		
<i>Quercus agrifolia</i> Neé var. <i>agrifolia</i>	coast live oak, encina	D
Gentianaceae – Gentian Family		
<i>Zeltnera venustum</i> (A. Gray) G. Mans.	Canchalagua	D
Geraniaceae – Geranium Family		
* <i>Erodium botrys</i> (Cav.) Bertol.	long-beak filaree	N
* <i>Erodium cicutarium</i> (L.) L'Hér.	red-stem filaree	N
* <i>Erodium moschatum</i> (L.) L'Hér.	white-stem filaree	N
* <i>Geranium dissectum</i> L.	cut-leaf geranium	N
Lamiaceae – Mint Family		
* <i>Marrubium vulgare</i> L.	horehound	N
<i>Salvia apiana</i> Jepson	white sage	D
<i>Salvia mellifera</i> Greene	black sage	D
<i>Scutellaria tuberosa</i> Benth.	Danny's skullcap	N
Malvaceae – Mallow Family		
<i>Malacothamnus fasciculatus</i> (Torrey & A. Gray) E. Greene	mesa bush mallow, chaparral mallow	D
<i>Sidalcea sparsifolia</i> (C.L. Hitchc.) S.R. Hill	checker-bloom	G
Myrtaceae – Myrtle Family		
* <i>Eucalyptus globulus</i> Labill.	blue gum	V
* <i>Eucalyptus</i> sp.	eucalyptus	V
Myrsinaceae – Myrsine Family		
* <i>Lysimachia arvensis</i> (L.) U. Manns & Anderb	scarlet pimpernel	N

Scientific Name	Common Name	Habitat
Nyctaginaceae – Four-O’Clock Family		
<i>Mirabilis laevis</i> (Benth.) Curran var. <i>crassifolia</i> (Choisy) Spellenb.		D
Oleaceae – Olive Family		
<i>Camissoniopsis bistorta</i> (Torr. & A. Gray) W.L. Wagner & Hoch	California sun cup	N
<i>Camissoniopsis intermedia</i> (P.H. Raven) W.L. Wagner & Hoch		
	intermediate sun cup	N
<i>Epilobium ciliatum</i> Raf. ssp. <i>ciliatum</i>	willow herb	W
<i>Oenothera elata</i> Kunth ssp. <i>hirsutissima</i> (S. Watson) W. Dietr.		
	great marsh evening primrose	W
Orobanchaceae – Broom-Rape Family		
<i>Dicranostegia orcuttiana</i> (A. Gray) Pennell	Orcutt's bird's-beak	D
Oxalidaceae – Oxalis Family		
* <i>Oxalis pes-caprae</i> L.	Bermuda buttercup	N
Papaveraceae – Poppy Family		
<i>Eschscholzia californica</i> Cham.	California poppy	G
Plantaginaceae – Plantain Family		
<i>Antirrhinum nuttallianum</i> Benth ssp. <i>subsessile</i> (A. Gray) D. Thompson		
	big-gland Nuttall's snapdragon	D
<i>Nuttallanthus texanus</i> (Scheele) D.A. Sutton	blue toadflax	D
<i>Plantago erecta</i> E. Morris	dot-seed plantain	G, N
Platanaceae – Sycamore Family		
<i>Platanus racemosa</i> Nutt.	western sycamore	S
Plumbaginaceae – Leadwort Family		
* <i>Limonium ramossimum</i>	Algerian rosemary	W
Polemoniaceae - Phlox Family		
<i>Eriastrum sapphirinum</i> (Eastw.) H. Mason ssp. <i>sapphirinum</i>		
	sapphire woolly-star	D
<i>Linanthus dianthiflorus</i> (Benth.) Greene	farinose ground pink	G,D
<i>Navarretia hamata</i> E. Greene ssp. <i>leptantha</i> (E. Greene) H. Mason		
	hooked pincushion plant	D
Polygonaceae – Buckwheat Family		
<i>Chorizanthe procumbens</i> Nutt.	prostrate spineflower	D, N
<i>Eriogonum fasciculatum</i> Benth. var. <i>fasciculatum</i>	coastal California buckwheat	D
<i>Lastarriaea coriacea</i> (Goodman) Hooever	leather-spineflower	N
* <i>Rumex crispus</i> L.	curly dock	W

Scientific Name	Common Name	Habitat
Primulaceae – Primrose Family		
<i>Dodecatheon clevelandii</i> E. Greene ssp. <i>clevelandii</i>	padre's shooting star	G
Rhamnaceae - Buckthorn Family		
<i>Rhamnus crocea</i> Nutt.	spiny redberry	D
Rosaceae – Rose Family		
<i>Heteromeles arbutifolia</i> (Lindley) M. Roemer	toyon, Christmas berry	D
<i>Rosa californica</i> Cham. & Schldl.	California rose	D
<i>Rubus ursinus</i> Cham. & Schldl.	California blackberry	W
Rubiaceae – Madder Family		
<i>Galium angustifolium</i> Nutt. ssp. <i>angustifolium</i>	narrowly leaved bedstraw	D
<i>Galium nuttallii</i> A. Gray ssp. <i>nuttallii</i>	San Diego/Nuttall's bedstraw	D
Salicaceae – Willow Family		
<i>Salix exigua</i> Nutt.	narrow-leaved willow	W
<i>Salix gooddingii</i> C. Ball	Goodding's black willow	W
<i>Salix laevigata</i> Bebb	red willow	W
<i>Salix lasiolepis</i> Benth.	arroyo willow	W
<i>Salix lasiandra</i> Benth. ssp. <i>lasiandra</i>	Pacific willow	W
Saxifragaceae – Saxifrage Family		
<i>Jepsonia parryi</i> (Torr.) Small	coast jepsonia	G
Simmondsiaceae – Jojoba Family		
<i>Simmondsia chinensis</i> (Link) C. Schneider	goat-nut, jojoba	D
Solanaceae – Nightshade Family		
<i>Datura wrightii</i> Regel	western jimsonweed	D
<i>Lycium andersonii</i> A. Gray	waterjacket	D
<i>Lycium brevipes</i> Benth. var. <i>brevipes</i>	common desert thorn	D
* <i>Nicotiana glauca</i> Graham	tree tobacco	N
* <i>Solanum americanum</i> Miller	white nightshade	D
* <i>Solanum nigrum</i> L.	black nightshade	D
Tamaricaceae – Tamarisk Family		
* <i>Tamarix parviflora</i> DC.	small-flower/four-petal European tamarisk	W
Urticaceae – Nettle Family		
* <i>Urtica urens</i> L.	dwarf nettle	N
Verbenaceae – Vervain Family		
<i>Verbena menthifolia</i> Benth.	mint-leaf vervain	D

Scientific Name	Common Name	Habitat
Zygophyllaceae – Caltrop Family <i>Fagonia laevis</i> Standley	California fagonbush	D
MONOCOTYLEDONS		
Agavaceae – Century Plant Family <i>Chlorogalum parviflorum</i> S. Watson <i>Yucca schidigera</i> K.E. Ortgies	small-flower soap plant Mojave yucca	D
Alliaceae – Onion Family <i>Allium praecox</i> Brandegee	early onion	G
Areaceae – Palm Family * <i>Washingtonia robusta</i> H. Wendl.	Mexican fan palm	W
Asphodelaceae – Asphodel Family * <i>Asphodelus fistulosus</i> L.	asphodel	N
Cyperaceae – Sedge Family <i>Cyperus eragrostis</i> Lam. <i>Eleocharis montevidensis</i> Kunth <i>Schoenoplectus californicus</i> (C.A. Meyer) Soják	tall flatsedge Dombey's spikerush southern bulrush	W W F
Iridaceae – Iris Family <i>Sisyrinchium bellum</i> S. Watson	western blue-eyed grass	G
Juncaceae – Rush Family <i>Juncus acutus</i> L. ssp. <i>leopoldii</i> (Parl.) Snogerup	southwestern spiny rush	W
Liliaceae – Lily Family <i>Calochortus splendens</i> Benth. <i>Fritilaria biflora</i> Lindl.	splendid mariposa chocolate lily	G G
Melanthiaceae – Bunch Flower or Camas Family <i>Toxicoscordion fremontii</i> (Torr.) Rydb.	death camas	G
Poaceae – Grass Family * <i>Arundo donax</i> L. * <i>Avena barbata</i> Link * <i>Avena fatua</i> L. * <i>Brachypodium distachyon</i> (L.) P. Beauv. * <i>Bromus diandrus</i> Roth * <i>Bromus hordeaceus</i> L. * <i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husnot	giant reed slender wild oat wild oat purple falsebrome ripgut grass soft chess red brome, foxtail chess	W N N N N N N

Scientific Name	Common Name	Habitat
* <i>Cortaderia selloana</i> (Schult. And Schult. F.) Asch. & Graebn	pampas grass	W
* <i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	N
<i>Distichlis spicata</i> (L.) Greene	saltgrass	N
* <i>Ehrharta erecta</i> Lam.	panic veldt grass	W
<i>Elymus condensatus</i> J. Presl	giant wild rye	D
<i>Elymus triticoides</i> Buckley	beardless wild rye grass	G
* <i>Festuca myuros</i>	rattail sixweeks grass	N
* <i>Festuca temulenta</i> (L.) Columbus & J.P. Sm.	darnel	N
* <i>Gastridium phleoides</i> (Nees & Meyen) C.E. Hubbard	nit grass	N
* <i>Hordeum murinum</i> L. ssp. <i>leporinum</i> (Link) Arcang.	hare barley	N
* <i>Lamarckia aurea</i> (L.) Moench	goldentop	N
<i>Melica imperfecta</i> Trin.	little California melic	D
<i>Muhlenbergia rigens</i> (Benth.) Hitchc.	Deergrass	D
* <i>Parapholis incurva</i> (L.) C. E. Hubb.	sickle grass	N
* <i>Pennisetum setaceum</i> Forsskal	crimson fountain grass	N
* <i>Polypogon monspeliensis</i> (L.) Desf.	annual beard grass	W
* <i>Polypogon viridis</i> (Gouan) Breistr.	water beardgrass	W
<i>Stipa diegoensis</i> (Swallen) Barkworth	San Diego needle grass	D
<i>Stipa lepida</i> Hitchc.	foothill needle grass	G
* <i>Stipa miliacea</i> (L.) Hoover var. <i>miliacea</i>	smilo grass	N
<i>Stipa pulchra</i> Hitchc.	purple needle grass	G
Themidaceae – Brodiaea Family		
<i>Bloomeria crocea</i> (Torrey) Coville	common goldenstar	G
<i>Brodiaea terrestris</i> Kellog ssp. <i>kernensis</i> (Hoover) T. Niehaus	dwarf brodiaea	G
<i>Dichelostemma capitatum</i> Alph.Wood ssp. <i>capitatum</i>	blue dicks	G
Typhaceae - Cat-Tail Family		
<i>Typha domingensis</i> Pers.	southern cattail	F
MAGNOLIIDS-PIPERALES		
Saururaceae – Lizard-tail Family		
<i>Anemopsis californica</i> (Nutt.) Hook. & Arn.	yerba mansa	F, W
LYCOPHYTES		
Selaginellaceae – Spike-Moss Family		
<i>Selaginella cinerascens</i> Maxon	ashy spike-moss	D

APPENDIX 3. FAUNA SPECIES OBSERVED OR DETECTED WITHIN THE STUDY AREA***Habitat Types:***

- D = Diegan Coastal Sage Scrub
- G = Valley Needlegrass Grassland
- W = Southern Willow Scrub
- F = Coastal and Valley Freshwater Marsh
- N = Non-native Grassland
- V = Non-native Vegetation

- FO = fly over

* = denotes introduced species

Abundance Codes (birds only):

- A = Abundant: Almost always encountered in moderate to large numbers in suitable habitat and the indicated season.
- C = Common: Usually encountered in proper habitat at the given season.
- U = Uncommon: Infrequently detected in suitable habitat. May occur in small numbers or only locally in the given season.
- R = Rare: Applies to species that are found in very low numbers.

“Numbers” indicate the number of individuals observed during the field survey work.

Status Codes (birds only):

- M = Migrant: Uses the site for brief periods of time, primarily during the spring and fall months.
- R = Year-round resident: Probable breeder on-site or in the vicinity.
- S = Spring/summer resident: Probable breeder on-site or in the vicinity unless combined with transient status.
- T = Transient: Uses site irregularly in summer but unlikely to breed. Not a true migrant and actual status often poorly known.
- W = Winter visitor: Does not breed locally.
- V = Casual vagrant: Not expected; out of normal geographic or seasonal range and by definition rare.

Common Name	Scientific Name	Habitat	Abundance	Status
BUTTERFLIES				
Papilionidae (Swallowtails)				
anise swallowtail	<i>Papilio zelicaon</i>		G	
western tiger swallowtail	<i>Papilio rutulus</i>		G	
Pieridae (Whites and Sulfurs)				
checkered (common) white	<i>Pontia protodice</i>		G	
cabbage white	<i>Pieris rapae</i>		G	
Pacific Sara orangetip	<i>Anthocharis sara sara</i>		G	
Lycaenidae (Gossamer-wing Butterflies)				
gray hairstreak	<i>Strymon melinus pudica</i>		D	
marine blue	<i>Leptotes marina</i>		D	
western tailed-blue	<i>Everes amyntula</i>		D	
Riodinidae (Metalmarks)				
Behr's metalmark	<i>Apodemia mormo virgulti</i>		D	
Nymphalidae (Brushfoots)				
mourning cloak	<i>Nymphalis antiopa</i>		D	
painted lady	<i>Vanessa cardui</i>		N, D, G	
west coast lady	<i>Vanessa annabella</i>		N, D, G	
common buckeye	<i>Junonia coenia grisea</i>		D	
Lorquin's admiral	<i>Limenitis lorquini</i>		G	
common California ringlet	<i>Coenonympha californica californica</i>		G	
monarch	<i>Danaus plexippus</i>		D, V	
Hesperiidae (Skippers)				
funereal duskywing	<i>Erynnis funeralis</i>		N, D	
white checkered-skipper	<i>Pyrgus albescens</i>		N	
fiery skipper	<i>Hylephila phyleus muertovalle</i>		D	
AMPHIBIANS				
Hylidae (Treefrogs and Relatives)				
Pacific treefrog	<i>Pseudacris regilla</i>		F, N	
REPTILES				
Phrynosomatidae				
western fence lizard	<i>Sceloporus occidentalis</i>		D	
side-blotched lizard	<i>Uta stansburiana</i>		N	

Common Name	Scientific Name	Habitat	Abundance	Status
Teiidae (Whiptails and Relatives)				
orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	W		
Anguidae (Alligator Lizards and Relatives)				
southern alligator lizard	<i>Elgaria multicarinata</i>	N		
San Diego alligator lizard	<i>Elgaria multicarinata webbii</i>			
Colubridae (Colubrids)				
California striped racer	<i>Masticophis lateralis lateralis</i>	D		
gophersnake	<i>Pituophis catenifer</i>	G		
two-striped gartersnake	<i>Thamnophis hammondi</i>	D		
Viperidae (Vipers)				
Southern Pacific rattlesnake	<i>Crotalus oreganus helleri</i>	N, D		
BIRDS				
Accipitridae (Hawks and Harriers)				
northern harrier	<i>Circus cyaneus</i>	N	U	M, R
white-tailed kite	<i>Elanus leucurus</i>	N	C	R
Cooper's hawk	<i>Accipiter cooperii</i>	N	C	M, R
red-shouldered hawk	<i>Buteo lineatus</i>	FO	C	R
red-tailed hawk	<i>Buteo jamaicensis</i>	N	C	R, M, W
Falconidae (Caracaras and Falcons)				
American kestrel	<i>Falco sparverius</i>		C	R
Rallidae (Rails, Gallinules, and Coots)				
Virginia rail	<i>Rallus limicola</i>	F	U	R, M, W
Laridae (Gulls and Terns)				
California gull	<i>Larus californicus</i>	FO	C	M, W, T
western gull	<i>Larus occidentalis</i>	FO	A	R, T
Columbidae (Pigeons and Doves)				
mourning dove	<i>Zenaida macroura</i>	D	C	R
Psittacidae (Parrots)				
*red-crowned parrot	<i>Amazona viridigenalis</i>		U	R
Trochilidae (Hummingbirds)				
Anna's hummingbird	<i>Calypte anna</i>	D	C	R
Costa's hummingbird	<i>Calypte costae</i>	D	C	R
Allen's hummingbird	<i>Selasphorus sasin</i>	D	C	M, R

Common Name	Scientific Name	Habitat	Abundance	Status
Picidae (Woodpeckers and Wrynecks)				
Nuttall's woodpecker	<i>Picoides nuttallii</i>		C	R
Tyrannidae (Tyrant Flycatchers)				
Pacific-slope flycatcher	<i>Empidonax difficilis</i>	D	C	M, S
black phoebe	<i>Sayornis nigricans</i>		C	R
Say's phoebe	<i>Sayornis saya</i>	D	C	W
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	D	C	M, S
Cassin's kingbird	<i>Tyrannus vociferans</i>	N	C	R, M
western kingbird	<i>Tyrannus verticalis</i>	N	C	M, S
Vireonidae (Typical Vireos)				
least Bell's vireo	<i>Vireo bellii pusillus</i>	W	U	M, S
warbling vireo	<i>Vireo gilvus</i>	W	C	M
Corvidae (Jays, Magpies, and Crows)				
western scrub-jay	<i>Aphelocoma californica</i>	D	C	R
American crow	<i>Corvus brachyrhynchos</i>	D	A	R
common raven	<i>Corvus corax</i>	V	C	R
Hirundinidae (Swallows)				
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	FO	C	M, S
Aegithalidae (Bushtit)				
bushtit	<i>Psaltirparus minimus</i>	D	C	R
Troglodytidae (Wrens)				
marsh wren	<i>Cistothorus palustris</i>	F	C	M, W, S
Bewick's wren	<i>Thryomanes bewickii</i>	D	C	R
house wren	<i>Troglodytes aedon</i>	D	C	M, W, S
Sylviidae (Sylviid Warblers and Gnatcatchers)				
coastal California gnatcatcher	<i>Polioptila californica californica</i>	D	U	R
wrentit	<i>Chamaea fasciata</i>	D	C	R
Turdidae (Bluebirds and Thrushes)				
western bluebird	<i>Sialia mexicana</i>	N	C	R, W
Mimidae (Mockingbirds and Thrashers)				
California thrasher	<i>Toxostoma redivivum</i>	D	C	R
northern mockingbird	<i>Mimus polyglottos</i>	D	C	R
Parulidae (Warblers)				
orange-crowned warbler	<i>Oreothlypis celata</i>	D	C	M, W, S

Common Name	Scientific Name	Habitat	Abundance	Status
common yellowthroat	<i>Geothlypis trichas</i>	F	C	M, R
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	W	C	M
yellow warbler	<i>Dendroica petechia</i>	W	C	M, S
yellow-rumped warbler	<i>Dendroica coronata</i>	D	C	M, W, S
black-throated gray warbler	<i>Dendroica nigrescens</i>	W	C	M, W, S
Wilson's warbler	<i>Wilsonia pusilla</i>	W	C	M
yellow-breasted chat	<i>Icteria virens</i>	W	C	M, S
Thraupidae (Tanagers)				
western tanager	<i>Piranga ludoviciana</i>	W	C	M, W, S
Cardinalidae (Grosbeaks, Buntings, and Relatives)				
lazuli bunting	<i>Passerina amoena</i>	G	C	M, S
blue grosbeak	<i>Passerina caerulea</i>	W, D	C	M, S
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	W	C	M, S
Emberizidae (Sparrows, Blackbirds and Relatives)				
spotted towhee	<i>Pipilo maculatus</i>	D	C	R
California towhee	<i>Melospiza crissalis</i>	D	C	R
lark sparrow	<i>Chondestes grammacus</i>	D		C, W, S
song sparrow	<i>Melospiza melodia</i>	W	A	R
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	D	C	M, W
Icteridae (Blackbirds, Meadowlarks, Orioles, and Relatives)				
hooded oriole	<i>Icterus cucullatus</i>	V	C	M, S
red-winged blackbird	<i>Agelaius phoeniceus</i>	F	C	R
*brown-headed cowbird	<i>Molothrus ater</i>		C	S, M, W
Fringillidae (Finches)				
house finch	<i>Haemorhous mexicanus</i>	D	A	R
lesser goldfinch	<i>Spinus psaltria</i>	D	C	M, R
spice finch	<i>Lonchura punctulate</i>	W, G	R	R
Passeridae (Weaver Finches)				
*house sparrow	<i>Passer domesticus</i>		C	R
MAMMALS				
Sciuridae (Squirrels)				
California ground squirrel	<i>Spermophilus beecheyi nudipes</i>	D		
Geomyidae (Pocket Gophers)				
Valley or Botta's pocket gopher	<i>Thomomys bottae</i>	G		

Common Name	Scientific Name	Habitat	Abundance	Status
Leporidae (Hares and Rabbits)				
desert cottontail	<i>Sylvilagus audubonii sanctidiegi</i>	D, G, N		
Canidae (Coyotes, Dogs, Foxes, Jackals, and Wolves)				
coyote	<i>Canis latrans clepticus</i>	D, G, N		
Procyonidae (Cacomistle, Coatis, Raccoons, and Relatives)				
raccoon	<i>Procyon lotor psora</i>	D, W		

¹**Nomenclature from:**

Oklahoma State University Department of Animal Science. 2000. Scientific Names of Domestic Animals. Available from:

<http://www.ansi.okstate.edu/resource-room/general/all/scientificnames.htm>.

American Ornithologists' Union, et al. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington D.C.

_____. 2014. Fifty-fifth Supplement to the American Ornithologists' Union *Check-list of North American Birds* [Internet]. Auk 131, 2014, pp. Csi-CSxv. Available from: <http://www.aou.org/>.

Crother, B. I. 2012. Scientific and standard English names of amphibians and reptiles of North America North of Mexico, with comments regarding confidence in our understanding. Seventh ed. SSAR Herpetological Circular No. 39. pp. 92.

Hall ER. 1981. The mammals of North America. 2nd Edition. John Wiley & Sons. New York, New York. Two volumes. 1,181 pp.

Klein MW, San Diego Natural History Museum. 2002. Butterflies of San Diego County [Internet]. Available from: <http://www.sdnhm.org/science/entomology/projects/checklist-of-butterflies-of-san-diego-county/>.

Wilson DE, Reeder DM (eds). 2005. Mammal Species of the World. Johns Hopkins University Press. 2,142 pp. Available from Johns Hopkins University Press at: 1-800-537-5487 or (410) 516-6900, or <http://www.press.jhu.edu/> or <http://nmgoph.si.edu/msw/>.

APPENDIX 4. OCCURRENCE OR POTENTIAL OF SPECIAL STATUS SPECIES ON THE PROJECT SITE

Key to abbreviations:

Federal Endangered Species Act (ESA)

FE = Federally-listed as Endangered

FT = Federally-listed as Threatened

FPE = Federally proposed for listing as Endangered

FPT = Federally proposed for listing as Threatened

FPD = Federally proposed for delisting

FC = Federal candidate species

SC = Species of concern

Delisted species are monitored for 5 years

BCC = Birds of Conservation Concern

California Endangered Species Act (CESA)

SE = State-listed as Endangered

ST = State-listed as Threatened

SCE = State candidate for listing as Endangered

SCT = State candidate for listing as Threatened

SCD = State candidate for de-listing

SR = California Rare Species

California Natural Diversity Database (CNDDB)

SP = Special Plant

SA = Special Animal

California Department of Fish and Game (DFG)

SSC = Species of Special Concern

FP = California fully protected species

WL = Watch List

U.S. Forest Service (USFS)

S = Sensitive

California Rare Plant Rank (CRPR)

List 1A = Plants presumed extinct in California

List 1B = Plants rare, threatened, or endangered in California and elsewhere

List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere

List 3 = Plants about which more information is needed (a review list)

List 4 = Plants of limited distribution (a watch list)

Threat level

0.1-Seriously threatened in California (high degree/immediacy of threat)

0.2-Fairly threatened in California (moderate degree/immediacy of threat)

0.3-Not very threatened in California (low degree/immediacy of threats/ no current threats known)

Multiple Species/Habitat Conservation Program (MSCP)/(MHCP)

NE = Narrow Endemic

CS = Covered Species

CP = Critical Population

County of San Diego

Plant List A = Plants rare, threatened or endangered in California and elsewhere

Plant List B = Plants rare, threatened or endangered in California but more common elsewhere

Plant List C = Plants which may be quite rare, but need more information to determine their true rarity

Plant List D = Plants of limited distribution and are uncommon, but not presently rare or endangered

Animal Group 1 = Animals rare, threatened or endangered in California and elsewhere

Animal Group 2 = Animals rare, threatened or endangered in California but more common elsewhere

Scientific Name Common Name	Sensitivity Codes and Status ^{1, 2}	Habitat Preferences/Requirements ³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
PLANTS					
<i>Acanthomintha ilicifolia</i> San Diego thornmint	ESA: FT CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A MHCP: NE, CS	Native, annual herb that has a distinctive microhabitat, preferring grassy openings in chaparral or sage scrub on gabbroic substrate with friable or broken clay soils, including vernal pools; ranges in elevation from 10-960 meters (33-3,150 ft); blooming period April-June	No	Low	A population of this species was recorded from bentonite soils found at Sunbow II, Phase 1. Spring surveys did not reveal the presence of this plant on-site.
<i>Agave shawii</i> ssp. <i>shawii</i> Shaw's agave	CRPR 2.1 MSCP: NE, CS Cnty of SD List: B	Perennial succulent found in coastal Diegan sage scrub and maritime succulent scrub; elevation 10-75 meters (33-250ft.); blooming period September-May	No	Not expected	The site is outside the recorded range for this species. Known populations of this perennial succulent occur west of the property on coastal bluffs.
<i>Ambrosia chenopodiifolia</i> San Diego bursage	CRPR 2B.1 Cnty of SD List: B	Perennial shrub found in coastal sage scrub in southern San Diego County and Baja; elevation 55-155 meters (180-510 ft.); blooming period April-June	Yes	Present on-site	Populations of this species were mapped on revegetated coastal sage scrub slopes within open space areas adjacent to Olympic Parkway. This opportunistic species is relatively abundant on south-facing revegetated slopes north of Olympic Parkway, east of the property where it was planted and has naturally proliferated.
<i>Ambrosia pumila</i> San Diego ambrosia	ESA: FE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS	Native, perennial, rhizomatous herb that prefers creek beds, seasonally dry drainages, and floodplains; usually a protective	No	Low	Although this species has not been reported this far south in the county, nearby populations occur in National

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
	Cnty of SD List: A MHCP: NE, CS	tree canopy is absent and it grows on the periphery of willow woodland; ranges in elevation from 20-450 m (66-1,476 ft.); blooming period April-October.			City, Spring Valley, and Jamacha Valley. The similar looking weak-leaf bur-sage (<i>Ambrosia confertiflora</i>) was noted along the upper edge of Poggi Creek Channel.
<i>Arctostaphylos otayensis</i> Otay manzanita	CRPR 1B.1 MSCP: CS Cnty of SD List: A	Native, evergreen shrub that grows in chaparral and cismontane woodland on gabbro and metavolcanic peaks, blooming period January-April.	No	Not expected	No suitable habitat or soils occur on-site for this species.
<i>Artemisia palmeri</i> Palmer's sagewort	CRPR 4.2 CNDDB: SP Cnty of SD List: D	Native, deciduous, shrub most often found along perennial creeks and drainages near the coast; grows within a shaded understory beneath riparian woodland; inland it may occur in mesic chaparral conditions; blooming period May-September.	Yes	Present on-site	Populations were mapped within open space on revegetated slopes of Poggi Creek channel.
<i>Astragalus deanei</i> Dean's locoweed/ milk-vetch	CNDDB: SP CRPR 1B.1 Cnty of SD List: A	Native/CA endemic, perennial herb that occurs in sage scrub, chaparral, riparian forest, and sandy washes, particularly along Sweetwater, Otay, and Tijuana Rivers and tributaries in San Diego County; blooming period February-May.	No	Low	Sought but not found. Nearest population is from Dehesa Valley near the Sweetwater River and Singing Hills Golf Course
<i>Atriplex pacifica</i> south coast saltscale	CNDDB: SP CRPR 1B.2 Cnty of SD List: A	Annual herb usually found in Diegan sage scrub dominated by <i>Artemisia californica</i> but also in coastal bluff scrub and playas; elevation 0-140 meters (0-460 ft.); blooming period March-	No	Low	This species was sought but not found. Populations of this opportunistic saltscale have been observed by M&A biologists in the Otay River, just east of Heritage Road.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		October.			
<i>Baccharis vanessae</i> Encinitas baccharis	ESA: FT CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS MHCP: NE, CS Cnty of SD List: A	Native, deciduous shrub that prefers mature but relatively low-growing chaparral; at inland locales may be associated with large granitic boulders; blooming period August-November.	No	Not expected	The site is outside the range for this species which occurs in north San Diego County.
<i>Berberis nevini</i> Nevin's barberry	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Native/CA endemic, evergreen shrub that occurs in sandy/gravelly areas along the margins of dry washes and coarse soils in chaparral, at elevations ranging from 274-825 meters (898-2,706 ft.); current range extends from the foothills of the San Gabriel Mountains to the foothills of the Santa Ana and Palomar Mountains; blooming period March-June.	No	Not expected	The site is outside the range for this species. The only documented native locality recorded for this evergreen shrub is from the San Diego River, in Mission Valley.
<i>Bergerocactus emoryi</i> golden-spined cereus	CNDDDB: SP CRPR 2.2 Cnty of SD List: B	Perennial stem succulent shrub found in maritime succulent scrub; elevation 3-395 meters (10-1,300 ft.); blooming period May-June.	No	Low	This distinctive cactus was sought but not found. It has been planted east of the site on south-facing revegetated slopes of Olympic Parkway.
<i>Bloomeria (=Muilla) clevelandii</i> San Diego goldenstar	CRPR 1B.1 CNDDDB: SP MSCP: CS MHCP: NE Cnty of SD List: A	Native, perennial, corm/bulbiferous herb that prefers valley grasslands, particularly near mima mound topography or in the vicinity of vernal pools, in clay soils with good shrink/swell potential; does not typically grow in the shade of woody perennials, but	No	Low	This species was sought in native grassland habitat during spring surveys but was not found. The related but ubiquitous common goldenstar (<i>Bloomeria crocea</i>) was abundant in native grassland vegetation.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		rather in somewhat open locales; blooming period April-May.			
<i>Brodiaea filifolia</i> thread-leaved brodiaea	ESA: FT CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Perennial bulbiferous herb that prefers vernal moist grasslands and the periphery of vernal pools are the typical locales where this species has been found. Species such as <i>Sisyrinchium bellum</i> and <i>Nassella pulchra</i> may grow nearby; elevation 25-1,220 meters (82-4,000 ft.); blooming period March-June.	No	Not expected	The property occurs outside the documented range for this species.
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	CNDDDB: SP CRPR 1B.1 MSCP: NE (City of CV only), CS Cnty of SD List: A USFS List: Sensitive	Native, perennial, bulbiferous/corm sprouting herb that prefers vernal moist grasslands, mima mound topography, and the periphery of vernal pools, but will occasionally grow on streamside embankments, and has also been found in mesic grasslands and openings within chaparral, at elevations ranging from 30-1,692 meters (98-5,551 ft.); blooming period May-July.	No	Low	The nearest U.S. documented populations of this species are from Otay Mesa, San Miguel Mountain and Otay Mountain. This later blooming species was sought in appropriate habitat during the spring survey.
<i>Cisthanthe</i> (=Calandrinia) <i>maritima</i> seaside calandrinia	CRPR 4.2 Cnty of SD List: D	Annual herb typically found on Sandy bluffs near the beach and sandy openings in Diegan sage scrub; occurs at locales with moist sea breezes; flat-top buckwheat and coastal sagebrush are the dominant	No	Low	This species has been observed by M&A biologists on a mesa bordering Main Street, just south of the Sunbow site. It was sought during the spring survey.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		shrubs at most of these sites; however, steep slopes with open chaparral may also include potential populations; elevation 5-300 meters (16-1,000 ft.); blooming period February-August.			
<i>Calochortus dunnii</i> Dunn's mariposa lily	CESA: SR CNDDDB: SP CRPR 1B.2 MSCP: NE, CS Cnty of SD List: A USFS List: Sensitive	Native, perennial, bulbiferous herb that prefers gabbro and metavolcanic derived soils or sandstone in closed-cone coniferous forest, rocky openings in chaparral, and chaparral/grassland ecotone habitat, at elevations ranging from 380-1,830 meters (1,246-6,004 ft.); blooming period April-June.	No	Low	Populations of this plant are known from the west slopes of Otay Mountain (southeast of the site) and the Jamul Mountains (northeast of the site). Suitable habitat and soils are not found on-site.
<i>Ceanothus cyaneus</i> Lakeside ceanothus	CNDDDB: SP CRPR 1B.2 MSCP: NE, CS Cnty of SD List: A	Perennial evergreen shrub found in closed-cone coniferous forest, inland mixed chaparral; elevation 235-755 meters (770-2,500 ft.); blooming period April-June.	No	Not expected	The site is outside the known range for this species which occurs north near the community of Crest and the City of Lakeside.
<i>Chorizanthe orcuttiana</i> Orcutt's spineflower	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MHCP: NE, CS Cnty of SD List: A	Native, annual herb that prefers openings with a distinctive loose sandy substrate; blooming period March-May.	No	Not expected	The site is outside the known U.S. range for this species.
<i>Convolvulus simulans</i> small-flowered bindweed/ small-flowered morning glory	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Native, small annual grows on friable clay soils which are typically devoid of shrubs, in openings in chaparral, sage	Yes	Present on-site	Two populations of this cryptic annual plant were mapped within preserved areas of the property.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		scrub, and grasslands; blooming period March-July.			
<i>Deinandra (=Hemizonia) conjugens</i> Otay tarplant	ESA: FT CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Annual herb found in fractured clay soils of lightly vegetated coastal scrub, valley and foothill grassland; elevation 25-300 meters (82-985 ft.); blooming period May-June.	Yes	Present on-site	Populations of this endemic species were documented in mostly grassland habitat.
<i>Deinandra (=Hemizonia) floribunda</i> Tecate tarplant	CNDDDB: SP CRPR 1B.2 Cnty of SD List: A	Annual herb that is found in chaparral and coastal sage scrub; also found in sandy washes in the high desert; elevation 70-1,220 meters (230-4,000 ft.); blooming period August-October.	No	Low	Recorded populations of this species are found east of the site as close as Portreo. It was sought during the spring survey but was not detected.
<i>Dichondra occidentalis</i> western dichondra	CNDDDB: SP CRPR 4.2 CNDDDB: SP Cnty of SD List: D	Native, small, cryptic perennial, rhizomatous herb that occurs in southern mixed chaparral, chamise chaparral, sage scrub, rocky outcrops in grasslands, and especially in recently exposed areas of post-burn habitat; often grows almost completely hidden at the base of leafy shrubs; ranges in elevation from 50-500 meters (164-1,641 ft); blooming period (January) March-July.	No	Low	Perennial herb that has been documented by M&A biologists to occur on a mesa bordering Main Street, just south of the Sunbow site. It was sought within appropriate habitat but was not found.
<i>Dicranostegia orcuttiana</i> (=Cordylanthus orcuttianus) Orcutt's bird's-beak	CNDDDB: SP CRPR 2B.1 MSCP: CS Cnty of SD List: B	Annual herb (hemiparasitic) found in coastal scrub often in seasonally dry drainages and upland adjacent to riparian habitat; elevation 10-350 meters (33-1,150 ft.); blooming	Yes	Present on-site	Populations of this annual plant were recorded within coastal sage scrub and grassland habitats.

Scientific Name Common Name	Sensitivity Codes and Status ^{1, 2}	Habitat Preferences/Requirements ³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		period March-September.			
<i>Dudleya brevifolia</i> (= <i>blochmaniae</i> ssp <i>brevifolia</i>) short-leaf dudleya	CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS MHCP: NE Cnty of SD List: A	Native, cryptic, perennial herb that prefers open areas of chamise chaparral or Torrey Pine forest on Torrey sandstone with soils mapped as Carlsbad gravelly sandy loam; blooming period in April.	No	Not expected	The site is outside the known range of this species which occurs north in areas such as Carmel Mountain and Torrey Pines.
<i>Dudleya variegata</i> variegated dudleya	CNDDDB: SP CRPR 1B.2 MSCP: NE, CS MHCP: NE Cnty of SD List: A	Native, small, corm-like sprouting, succulent, perennial herb that occurs in openings in sage scrub and chaparral, isolated rocky substrates in open grasslands, as well as in vernal pools and mima mound topography; usually grows in small areas devoid of shrub cover, even though chamise, scrub oak, or sage scrub elements may occur nearby; blooming period May-June.	No	Low	This spring sprouting corm species was sought but not found.
<i>Ericameria palmeri</i> var. <i>palmeri</i> Palmer's goldenbush	CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: B	Native, evergreen, shrub that strongly prefers seasonally wet/moist locales, along coastal drainages, in mesic chaparral sites or rarely in sage scrub, and occasionally occurs as a hillside element (usually at higher elevations, inland on north-facing slopes); ranges in elevation from 30-600 meters (98-1,969 ft.); blooming period (July) September-November.	No	Low	Populations of this conspicuous shrub occur within the floodplain of the Sweetwater River Valley to the north and the Otay River Valley to the south. This species was sought along the banks of Poggi Creek channel but was not found.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
<i>Euphorbia misera</i> cliff spurge	CNDDDB: SP CRPR 2.2 MHCP: CS Cnty of SD List: B	Perennial shrub found in rocky areas of coastal bluff scrub, coastal scrub, and Mojavean desert scrub; elevation 10-500 meters (33-1,640 ft.); blooming period December-August.	No	Low	This shrub with succulent leaves was sought but not found. It has been recorded just south of the site in the Otay River Valley and has likely been planted on restored slopes north of Olympic Parkway.
<i>Ferocactus viridescens</i> coast barrel cactus	CNDDDB: SP CRPR 2B.1 MSCP: CS MHCP: CS Cnty of SD List: B	Native succulent; optimal habitat for this cactus appears to be sage scrub hillsides; often at the crest of slopes and growing among cobbles; occasionally is found on the periphery of vernal pools and mima mound topography; blooming period May-June.	Yes	Present on-site	This cactus occurs on re-vegetated coastal sage scrub slopes of the property.
<i>Harpagonella palmeri</i> Palmer's grappling hook	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Native, inconspicuous annual, herb that typically occurs on clay vertisols with open grassy slopes in open sage scrub or chaparral, at elevations ranging from 20-955 meters (65-3,133 ft.); blooming period March-May.	No	Moderate	Populations of this spring annual are documented to occur just south of the site in the Otay River Valley. This species was sought during spring surveys but was not found.
<i>Holocarpha virgata</i> ssp. <i>elongata</i> graceful tarplant	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Native/California endemic, annual herb that frequents annual and perennial grasslands; usually shrub cover is not well developed, with a heavy incidence of invasive non-native grasses and herbs; blooming period May-November.	No	Low	Populations of this plant are documented to occur near Sweetwater Reservoir, approximately 7.0 miles, northeast of the site. This species was sought during spring surveys but was not found.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
<i>Hosackia</i> (=Lotus) <i>crassifolius</i> var. <i>otayensis</i> Otay mountain lotus	Cnty of SD List: A	Native, perennial herb that occurs on metavolcanic soils in chaparral dominated by chamise and <i>ceanothus</i> species; mild soil disturbance may enable this species to pioneer on road cuts, and possibly on burns; found throughout Otay mountain; blooming period May-August.	No	Low	This species is found on Otay Mountain, approximately 7.5 miles east of the site. No metavolcanic derived soils occur on-site.
<i>Isocoma menziesii</i> var. <i>decumbens</i> clay-field goldenbush/ decumbent goldenbush	CNDDDB: SP CRPR 1B.2 Cnty of SD List: A	Perennial shrub found in sandy, often disturbed areas of chaparral and coastal sage scrub; elevation 10-135 meters (33-443 ft.); blooming period April-November.	Yes	Present on-site	This perennial shrub is found is found scattered within grassland habitat throughout the site
<i>Iva hayesiana</i> San Diego marsh elder	CNDDDB: SP CRPR 2B.2 MHCP: CS Cnty of SD List: B	Perennial herb that prefers creeks or intermittent streambeds, marshes, swamps, and playas; elevation 10-500 meters (33-1,640 ft.); blooming period April-October.	Yes	Present on-site	This perennial shrub occurs within wetland and bordering upland restoration areas of the Poggi Creek channel.
<i>Juncus acutus</i> ssp. <i>leopoldii</i> spiny rush/ southwestern spiny rush	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Perennial rhizomatous herb found in coastal salt marsh at brackish locales, alkaline meadows and seeps, and riparian marshes; elevation 3-900 meters (10-2,950 ft.); blooming period May-June.	Yes	Present on-site	This species occurs within wetland and bordering upland restoration areas of the Poggi Creek channel.
<i>Lepechinia ganderi</i> Gander's pitcher sage	CNDDDB: SP CRPR 1B.3 MSCP: NE, CS Cnty of SD List: A	Native shrub with a distinctive acicular calyx that is restricted to gabbroic or metavolcanic derived soils in chaparral, and prefers San Miguel-Exchequer rocky silt loams, with a low-	No	Not expected	The site lacks the gabbro or metavolcanic derived soils required of this species.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		growing but relatively dense chaparral dominated by chamise and black sage; is noted to occur on Otay and San Miguel Mountains, as well as in closed-cone coniferous forest, sage scrub, and grasslands; blooming period June-July.			
<i>Lycium californicum</i> California desert-thorn/ California box thorn	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Perennial shrub found in coastal bluff scrub and coastal sage scrub; elevation 5-150 meters (16-492 ft.); blooming period December-August.	No	Low	This shrub was sought but not found. It has been documented by M&A biologists to occur just south of the site in the Otay River Valley. The closely related but not sensitive <i>Lycium andersonii</i> and <i>L. brevipes</i> were noted in coastal sage scrub on the property.
<i>Microseris douglasii</i> <i>ssp. platycarpha</i> small-flower microseris	CNDDDB: SP CRPR 4.2 Cnty of SD List: D	Native, non-descript, annual herb that is typically found on clay lenses in perennial grasslands, on the periphery of vernal pools, or in broad openings in sage scrub; blooming period March-May.	No	Low	This annual herb was sought but not found. The closely related but more commonly occurring <i>Uropappus lindleyi</i> was abundant at the site.
<i>Monardella hypoleuca</i> <i>ssp. lanata</i> felt-leaved monardella	CNDDDB: SP CRPR 1B.2 MSCP: NE, CS Cnty of SD List: A USFS List: Sensitive	Native, rhizomatous herb that typically occurs on gabbro soils in the understory of chaparral, beneath mature stands of chamise in xeric situations, and cismontane woodland, at elevations ranging from 300-1,575 meters (984-5,167 ft.); blooming period June-August.	No	Not expected	The site lacks the required gabbro derived soils required of this species.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
<i>Monardella viminea</i> (<i>linioides</i> var. <i>viminea</i>) willow monardella	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: CS Cnty of SD List: A	Perennial herb found in alluvial ephemeral washes of closed-cone coniferous forest, chaparral, coastal sage scrub, riparian scrub, riparian woodland; elevation 50-225 meters (164-738 ft.); blooming period June-August.	No	Not expected	The site is south of this species known range which primarily includes areas north of State Route 52.
<i>Nolina interrata</i> Dehesa nolina (= beargrass)	CNDDDB: SP CESA: SE CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Native, distinctive, perennial herb that prefers chaparral habitat on gabbroic, metavolcanic, or serpentinite substrate; blooming period June-July.	No	Not expected	The site occurs outside the known range of this species and lacks suitable gabbroic or metavolcanic derived soils.
<i>Opuntia californica</i> var. <i>californica</i> (= <i>O. parryi</i> var. <i>serpentina</i> ; and = <i>Cylindropuntia californica</i>) snake cholla	CNDDDB: SP CNPS List: 1B.1 MSCP: NE, CS Cnty of SD List: A	Perennial stem succulent that grows in openings on dry slopes of chaparral and coastal sage scrub; elevation 30-150 meters (100-492 ft.); blooming period April-May.	No	Low	This cactus was sought but not found on-site. Planted populations are known from south-facing slopes abutting Olympic Parkway.
<i>Orcuttia californica</i> California Orcutt grass	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS MHCP: NE, CS Cnty of SD List: A	Annual herb found in vernal pools; elevation 15-660 meters (49-2,165 ft.); blooming period April-August.	No	Not expected	This species is associated with vernal pool habitat not found on-site.
<i>Pogogyne abramsii</i> San Diego mesa mint	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Annual herb found in vernal pools; elevation 90-200 meters (295-656 ft.); blooming period March-July	No	Not expected	This species is associated vernal pool habitat not found on-site.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
<i>Pogogyne nudiuscula</i> Otay Mesa mint	ESA: FE CESA: SE CNDDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Annual herb found in vernal pools; elevation 90-250 meters (295-820 ft.); blooming period May-July.	No	Not expected	This species is associated vernal pool habitat not found on-site.
<i>Rosa minutifolia</i> small-leaved rose	CESA: SE CNDDDB: SP CRPR 2.1 MSCP: CS Cnty of SD List: B	Perennial deciduous shrub found in chaparral and coastal sage scrub; originally known in CA from only one occurrence on Otay Mesa but has since been introduced into restoration projects within the vicinity of this site; elevation 150-160 meters (492-525 ft.); blooming period January-June.	No	Low	This shrub was sought but not found. The only known native population of this species is known from south of the site on Otay Mesa. Plants have been propagated from that population and introduced to restoration projects in that immediate vicinity.
<i>Salvia munzii</i> Munz's sage	CNDDDB: SP CNPS List: 2.2 Cnty of SD List: B	Native, evergreen, shrub that occurs in chaparral and sage scrub, and when found, is often a dominant plant in the area; blooming period February-April.	No	Low	This perennial shrub was sought but not found. It is known to occur east of the site in restored coastal sage scrub vegetation situated on slopes abutting Olympic Parkway.
<i>Clinopodium (=Satureja) chandleri</i> San Miguel savory	CNDDDB: SP CRPR 1B.2 MSCP: CS Cnty of SD List: A	Native, small, herbaceous shrub that is found in chaparral and cismontane woodland, and may be restricted to gabbroic and metavolcanic derived soils; may also occur in sage scrub, riparian woodland, and grassland; blooming period March-July.	No	Low	Required metavolcanic or gabbroic derived soil does not occur on-site.
<i>Selaginella cinerascens</i> ashy spike-moss	CNDDDB: SP CRPR 4.1	Native, perennial, prostrate, ground-cover herb that occurs	Yes	Present on-site	This low-growing herb was observed near the southeast

Scientific Name Common Name	Sensitivity Codes and Status ^{1, 2}	Habitat Preferences/Requirements ³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
	Cnty of SD List: D	in undisturbed chaparral and sage scrub; ranges in elevation from 20-640 meters (66-2,100 ft.).			corner of the site.
<i>Stipa</i> (=Achnatherum) <i>diegoense</i> San Diego County needlegrass	CRPR 4.2 Cnty of SD List: D	Perennial herb, monocot, that is found in rocky substates of chaparral and coastal sage scrub habitat; elevation 10-700 meters (33-2,300 ft.); blooming period May-June.	Yes	Present on-site	Populations of this perennial grass were detected on-site. Nearly all populations were found within preserved habitat west of the proposed development.
REPTILES					
<i>Aspidoscelis hyperythra</i> orange-throated whiptail	CNDDDB: SA CDFW: WL Cnty of SD Group: 2 MSCP: CS MHCP: CS USFS: S	This species is a diurnal reptile from early spring to late summer that prefers washes and other sandy areas with patches of brush and rocks in coastal scrub and chaparral.	Yes	Present on-site	This species was observed in a sandy wash area of Poggi Creek channel.
<i>Thamnophis hammondi</i> two-striped garter snake	CDFW: SSC CNDDDB: SA Cnty of SD Group: 1 USFS: S	Associated with semi-permanent and permanent bodies of water in a variety of habitats; requires a relatively dense riparian border	Yes	Present on-site	This species was observed in coastal sage scrub vegetation that is in proximity to Poggi Creek channel.
BIRDS					
<i>Accipiter cooperii</i> Cooper's hawk	CNDDDB ⁴ : SA CDFW : WL Cnty of SD Group: 1 MSCP: CS MHCP: CS	Year-round resident of San Diego County that frequently nests in dense stands of live oak, riparian deciduous or other forest habitats located near water and along broken woodland habitat and edges, where it can perch under cover and hunt prey, including amphibians, reptiles, and small	Yes	Present on-site	A Cooper's hawk pair was routinely observed foraging over the site during spring survey work. The only suitable nesting habitat observed occurs in large non-native trees located along the southern boundary of the site, west of the proposed development.

Scientific Name Common Name	Sensitivity Codes and Status^{1, 2}	Habitat Preferences/Requirements³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		birds and mammals.			
<i>Circus cyaneus</i> northern harrier	CDFW: SSC CNDDDB ⁴ : SA MSCP: CS Cnty of SD Group: 1	Year-round resident and winter visitor that nests and forages in open grassland and marshes; forages mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, and insects; nests built of a large mound of sticks in wet areas, and a smaller cup of grasses on dry sites; breeds Apr-Sep, with peak activity June-July.	Yes	Present on-site	A northern harrier was observed on several occasions foraging over grassland habitat on-site.
<i>Setophaga (=V Dendroica) petechia brewsteri</i> yellow warbler	CDFW: SSC CNDDDB ⁴ : SA Cnty of SD Group: 2 USFWS: BCC	Summer resident but can be found during migration and winter in small numbers; found in mature riparian woodlands; nesting occurs from May through July.	Yes	Present on-site	Yellow warbler was detected throughout much of the southern willow scrub habitat within Poggi Creek channel.
<i>Elanus leucurus</i> white-tailed kite	CDFW: FP CNDDDB ⁴ : SA Cnty of SD Group: 1 BLM: S	Year-round resident; prefers riparian woodland, oak groves or sycamore groves adjacent to grasslands for foraging. Diet consists of the California vole or meadow mouse. Nests mid-February through June.	Present	Present on-site	This species was observed on several occasions foraging over grassland habitat near the southwest corner of the proposed developed portion of the property.
<i>Icteria virens</i> yellow-breasted chat	CDFW: SSC CNDDDB: SA MHCP: CS Cnty of SD Group: 1	Summer resident to riparian woodland/scrub with dense undergrowth below 1500 feet elevation. Arrives in early April and departs by mid-September.	Present	Present on-site	Yellow-breasted chat was observed near the eastern end of the site within Poggi Creek channel.
<i>Picoides nuttallii</i> Nuttall's woodpecker	CNDDDB ⁴ : SA	Year-round resident; typically uses a mix of deciduous riparian and adjacent oak habitats, but is	Present	Present on-site	Nuttall's woodpecker was observed near the north east corner of the property within

Scientific Name Common Name	Sensitivity Codes and Status ^{1, 2}	Habitat Preferences/Requirements ³	Verified On-Site	Potential To Occur On-Site	Factual Basis for Determination of Occurrence Potential
		also using urban landscaping. Nests in tree cavities; breeds from late Mar to early July.			southern willow scrub vegetation associated with Poggi Creek channel.
<i>Poliophtila californica californica</i> coastal California gnatcatcher	ESA: FT CDFW: SSC CNDDDB: SA MSCP: NE (Cnty of SD only); CS MHCP: CS Cnty of SD Group: 1	Year-round resident in coastal areas below 500 m (1,500 ft); prefers coastal sage scrub habitat that is dominated by <i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i> and <i>Artemisia</i> <i>californica</i> as well as open chaparral.	Present	Present on-site	Two breeding pairs of coastal California gnatcatcher were observed on-site during protocol surveys for this species.
<i>Vireo bellii pusillus</i> least Bell's vireo	ESA: FE CESA: SE CNDDDB: SA MSCP: NE (Cnty of SD only), CS MHCP: CS Cnty of SD Group: 1	Summer visitor to southern willow scrub habitat and mesquite thickets. Arrives in San Diego County by late March or early April and leaves by the end of September.	Present	Present on-site	One least Bell's vireo was routinely detected near the north east corner of the property within willow scrub vegetation of Poggi Creek channel. This bird's breeding territory appeared to extend upstream to similar habitat planted within a constructed basin just upstream of the site.

¹References for Sensitivity Codes and Status: County 1997, Ogden et al. 1998, AMEC 2003a, County 2009b and d, CDFG 2011b-d

²California Natural Diversity Database Special Plants/Animals = A general term that refers to all taxa inventoried by the CDFG CNDDDB, regardless of their legal or protection status; these taxa include species, subspecies, or varieties that fall into one of the above categories and/or one or more of the following categories: 1) Taxa officially listed or proposed for listing under the federal and/or state ESA; 2) Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines, which may include California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) Lists 1 and 2, and some List 3 plants; 3) Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), or U.S. Forest Service (USFS) Sensitive (S) Species; 4) Taxa considered SSC by the CDFG; 5) Taxa listed by the CNPS; 6) Taxa that are biologically rare, very restricted in distribution, declining throughout their range but are not currently threatened with extirpation, or have a critical, vulnerable stage in their life cycle that warrants monitoring; 7) Populations in California that may be peripheral to the major portion of a taxon's range, but are threatened with extirpation in California; 8) Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, vernal pools, etc.); and 8) In addition to the above taxa, those taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or non-governmental organization (NGO) [e.g., The World Conservation Union (IUCN) Conservation Dependent (CD), Critically Endangered (CR), Data

Deficient (DD), Endangered (EN), Least Concern (LC), Near Threatened (NT), Vulnerable (V) species; California Department of Forestry and Fire Protection (CDF) Sensitive (S) species; National Marine Fisheries Service (NMFS) Species of Concern (SC); American Fisheries Society (AFS) Endangered (EN), Threatened (TH), Vulnerable (VU) species; Xerces Society (XERCES) Critically Imperiled (CI), Data Deficient (DD), Imperiled (IM), Vulnerable (VU) invertebrate species; USFWS Birds of Conservation Concern (BCC); American Bird Conservancy (ABC) U.S. Watch List of Birds of Conservation Concern (WLBCC); Marine Mammal Commission (MMC) Marine Mammal Species of Special Concern (SSC); and The Western Bat Working Group (WBWG) High (H), Low-Medium (LP), Medium (M), Medium-High (MH) Priority species].

³References for Habitat Preferences/Requirements: (plants) Reiser 2001, County 2009d, CNPS 2010; (butterflies) Faulkner and Klein 2004, Opler 2006; (amphibians and reptiles) Stebbins 2003, CDFG 2010a; (birds) AOU Birds of North America On-line 2010 and CDFG 2010a; (mammals) CDFG 2010a.

⁴CNDDDB only tracks the nesting locations of these bird species; the location of the nest or any indication of breeding (i.e., territorial males, adults carrying nest material, adults carrying food, the presence of newly fledged young, etc.) is acceptable evidence of nesting. County of San Diego listing is for breeding populations only.

⁵CNDDDB only tracks the wintering range of these bird species. County of San Diego listing is for wintering populations only

REFERENCES

U.S. Fish and Wildlife Service. 1998. Pacific Pocket Mouse (*Perognathus longimembris pacificus*) Recovery Plan. Portland, OR. 112pp.

U.S. Fish and Wildlife Service. 2000. Recovery plan for bighorn sheep in the Peninsular Ranges, California. U.S. Fish and Wildlife Service, Portland, OR. xv+251 pp.

California Native Plant Society (CNPS). 2012. Inventory of Rare and Endangered Plants (online edition, v8-01a). California Native Plant Society. Sacramento, CA. Accessed on Thursday, November 01, 2012.

**APPENDIX 5. WETLAND DELINEATION DATA FORMS
(DECEMBER 20, 2019; APRIL 28, 2020)**

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 12/20/19
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 1
 Investigator(s): Kyle Ince; Gina Krantz Section, Township, Range: S17 & 18, T18S, R1W
 Landform (hillslope, terrace, etc.) canyon valley Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRR): LRR-C Lat: 32.6060 Long: -117.0178 Datum: WGS84
 Soil Map Unit Name: Linne Clay Loam, 9-30% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 8')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)
1. -				
2. -				
3. -				
4. -				
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30' x 8')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <i>Salix gooddingii</i>	30	Y	FACW	
2. <i>Tamarix parviflora</i>	30	Y	FACW	
3. -				
4. -				
	<u>60</u>	= Total Cover		
Herb Stratum (Plot size: 30' x 8')				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <i>Brachypodium distachyon</i>	90	Y	UPL	
2. <i>Helminthotheca echioides</i>	13	N	FAC	
3. <i>Bromus hordeaceus</i>	5	N	FACU	
4. <i>Festuca perennis</i>	2	N	FAC	
5. <i>Erigeron bonariensis</i>	1	N	FACU	
6. <i>Epilobium ciliatum</i>	1	N	FACW	
7. -				
8. -				
	<u>112</u>	= Total Cover		
Woody Vine Stratum (Plot size: 30' x 8')				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. -				
2. -				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>-</u>				
Remarks:				

SOIL

Sampling Point: 1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/2	100	-	-	-	-	silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒**Remarks:**

Pit hits water at 5-6" deep. No mottles/redox indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1"

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photos

Remarks:

Surface water seeping from offsite hillside to north (uphill that supports Typha and willows). Surface water doesn't continue downstream - turns into swale with no hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 12/20/19
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 2
 Investigator(s): Kyle Ince; Gina Krantz Section, Township, Range: S17 & 18, T18S, R1W
 Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): LRR-C Lat: 32.6060 Long: -117.0178 Datum: WGS84
 Soil Map Unit Name: Linne Clay Loam, 9-30% slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10' x 10'</u>) 1. <u>-</u> 2. <u>-</u> 3. <u>-</u> 4. <u>-</u> <u>0</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>10' x 10'</u>) 1. <u>-</u> 2. <u>-</u> 3. <u>-</u> 4. <u>-</u> 5. <u>-</u> <u>0</u> = Total Cover Herb Stratum (Plot size: <u>10' x 10'</u>) 1. <u>Bromus diandrus</u> 80 Y UPL 2. <u>Bromus hordeaceus</u> 10 N FACU 3. <u>Stipa pulchra</u> 10 N UPL 4. <u>Foeniculum vulgare</u> 5 N UPL 5. <u>-</u> 6. <u>-</u> 7. <u>-</u> 8. <u>-</u> <u>105</u> = Total Cover Woody Vine Stratum (Plot size: <u>30' x 8'</u>) 1. <u>-</u> 2. <u>-</u> <u>0</u> = Total Cover % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>-</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

SOIL

Sampling Point: 2

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Present?	
Primary Indicators (minimum of one required: check all that apply)			Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)		
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Aerial photos				
Remarks:				
No hydrology indicators present.				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 1
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.) in channel; s. edge Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR): LRR-C Lat: 32.6087382035 Long: -117.021024643 Datum: WGS84
 Soil Map Unit Name: Diablo Clay, 30-50% slopes NWI classification: PSS1D

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: DP located within Poggi Creek, along the southern edge. Hydrophytic vegetation dominant; hydric soils present; wetland hydrology present.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20' x 20')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	50	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)
2. <u>Salix gooddingii</u>	30	Y	FACW	
3. _____				
4. _____				
	80	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum (Plot size: 20' x 20')</u>				
1. <u>Iva hayesiana</u>	15	Y	FACW	
2. <u>Baccharis pilularis</u>	15	Y	UPL	
3. <u>Salix lasiandra</u>	1	N	FACW	
4. _____				
	30	= Total Cover		
<u>Herb Stratum (Plot size: 20' x 20')</u>				
1. <u>Typha domingensis</u>	40	Y	OBL	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. <u>Juncus acutus</u>	25	Y	FACW	
3. <u>Nasturtium officinale</u>	10	N	OBL	
4. <u>Juncus mexicanus</u>	5	N	FACW	
5. <u>Melilotus indicus</u>	<1	N	FACU	
6. <u>Lysimachia arvensis</u>	<1	N	FAC	
7. <u>Pseudognaphalium luteoalbum</u>	<1	N	FAC	
8. <u>Oenothera elata</u>	<1	N	FACW	
9. <u>Apium graveolens</u>	<1	N	UPL	
	80	= Total Cover		
<u>Woody Vine Stratum (Plot size: 20' x 20')</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. -				
2. _____				
	0	= Total Cover		
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>-</u>				

Remarks:
 DP located within Poggi Creek; within channel bed on south edge. Canopy dominated by willows with cattail in center within main flow channel.

SOIL

Sampling Point: 1

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Present?	
Primary Indicators (minimum of one required: check all that apply)			Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)		
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)		
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Aerial photos				
Remarks:				
DP located within channel bed but outside flow of water; within 5' of water (~5-8" deep in center); soil at pit is moist and glistening. Large storm events winter 2020; last one early April. On west side of double box culvert (~8 x 8' each)				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 2
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.): slope/bank Local relief (concave, convex, none): slope Slope (%): 2:1
 Subregion (LRR): LRR-C Lat: 32.60869514 Long: -117.021042834 Datum: WGS84
 Soil Map Unit Name: Diablo Clay, 30-50% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: DP located within upland.	

VEGETATION – Use scientific names of plants.

<p>Tree Stratum (Plot size: <u>20' x 20'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. -</td><td></td><td></td><td></td></tr> <tr><td>2. -</td><td></td><td></td><td></td></tr> <tr><td>3. -</td><td></td><td></td><td></td></tr> <tr><td>4. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">0 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Sapling/Shrub Stratum (Plot size: <u>20' x 20'</u>)</p> <table border="1"> <tbody> <tr><td>1. <u>Artemisia californica</u></td><td>75</td><td>Y</td><td>UPL</td></tr> <tr><td>2. <u>Iva hayesiana</u></td><td>5</td><td>N</td><td>FACW</td></tr> <tr><td>3. <u>Baccharis pilularis</u></td><td>5</td><td>N</td><td>UPL</td></tr> <tr><td>4. <u>Bahiopsis lacinata</u></td><td>5</td><td>N</td><td>UPL</td></tr> <tr><td>5. <u>ncelia californica</u></td><td><1</td><td>N</td><td>UPL</td></tr> <tr><td colspan="2">90 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Herb Stratum (Plot size: <u>20' x 20'</u>)</p> <table border="1"> <tbody> <tr><td>1. <u>Melilotus indicus</u></td><td>5</td><td>Y</td><td>FACU</td></tr> <tr><td>2. <u>irschfeldia incana</u></td><td>2</td><td>Y</td><td>UPL</td></tr> <tr><td>3. <u>Bromus rubens</u></td><td>1</td><td>N</td><td>UPL</td></tr> <tr><td>4. <u>Bromus hordeaceus</u></td><td><1</td><td>N</td><td>FACU</td></tr> <tr><td>5. -</td><td></td><td></td><td></td></tr> <tr><td>6. -</td><td></td><td></td><td></td></tr> <tr><td>7. -</td><td></td><td></td><td></td></tr> <tr><td>8. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">10 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Woody Vine Stratum (Plot size: <u>20' x 20'</u>)</p> <table border="1"> <tbody> <tr><td>1. -</td><td></td><td></td><td></td></tr> <tr><td>2. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">0 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust <u>-</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. -				2. -				3. -				4. -				0 = Total Cover				1. <u>Artemisia californica</u>	75	Y	UPL	2. <u>Iva hayesiana</u>	5	N	FACW	3. <u>Baccharis pilularis</u>	5	N	UPL	4. <u>Bahiopsis lacinata</u>	5	N	UPL	5. <u>ncelia californica</u>	<1	N	UPL	90 = Total Cover				1. <u>Melilotus indicus</u>	5	Y	FACU	2. <u>irschfeldia incana</u>	2	Y	UPL	3. <u>Bromus rubens</u>	1	N	UPL	4. <u>Bromus hordeaceus</u>	<1	N	FACU	5. -				6. -				7. -				8. -				10 = Total Cover				1. -				2. -				0 = Total Cover				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Test is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present.</p> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																														
1. -																																																																																																	
2. -																																																																																																	
3. -																																																																																																	
4. -																																																																																																	
0 = Total Cover																																																																																																	
1. <u>Artemisia californica</u>	75	Y	UPL																																																																																														
2. <u>Iva hayesiana</u>	5	N	FACW																																																																																														
3. <u>Baccharis pilularis</u>	5	N	UPL																																																																																														
4. <u>Bahiopsis lacinata</u>	5	N	UPL																																																																																														
5. <u>ncelia californica</u>	<1	N	UPL																																																																																														
90 = Total Cover																																																																																																	
1. <u>Melilotus indicus</u>	5	Y	FACU																																																																																														
2. <u>irschfeldia incana</u>	2	Y	UPL																																																																																														
3. <u>Bromus rubens</u>	1	N	UPL																																																																																														
4. <u>Bromus hordeaceus</u>	<1	N	FACU																																																																																														
5. -																																																																																																	
6. -																																																																																																	
7. -																																																																																																	
8. -																																																																																																	
10 = Total Cover																																																																																																	
1. -																																																																																																	
2. -																																																																																																	
0 = Total Cover																																																																																																	
Remarks: DP located on slope; dominated by DCSS; 100% vegetation coverage.																																																																																																	

SOIL

Sampling Point: 2

[illegible]

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Aerial photos					
Remarks: DP on slope; within upland.					

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 3
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.): Poggi Creek Local relief (concave, convex, none): concave Slope (%): 5%
 Subregion (LRR): LRR-C Lat: 32.6088189505 Long: -117.021025859 Datum: WGS84
 Soil Map Unit Name: Salinas Clay Loam, 2-9% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: DP located within Poggi Creek. Hydrophytic vegetation dominant; hydric soils present; wetland hydrology present.	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: <u>20' x 20'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Absolute % Cover</th> <th style="width: 10%;">Dominant Species?</th> <th style="width: 20%;">Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Salix lasiolepis</u></td> <td style="text-align: center;">50</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>2. <u>Salix gooddingii</u></td> <td style="text-align: center;">30</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">80</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>20' x 20'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Absolute % Cover</th> <th style="width: 10%;">Dominant Species?</th> <th style="width: 20%;">Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Iva hayesiana</u></td> <td style="text-align: center;">15</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>2. <u>Baccharis pilularis</u></td> <td style="text-align: center;">15</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">UPL</td> </tr> <tr> <td>3. <u>Salix lasiandra</u></td> <td style="text-align: center;">1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">30</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>20' x 20'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Absolute % Cover</th> <th style="width: 10%;">Dominant Species?</th> <th style="width: 20%;">Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Typha domingensis</u></td> <td style="text-align: center;">40</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">OBL</td> </tr> <tr> <td>2. <u>Juncus acutus</u></td> <td style="text-align: center;">25</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>3. <u>Nasturtium officinale</u></td> <td style="text-align: center;">10</td> <td style="text-align: center;">N</td> <td style="text-align: center;">OBL</td> </tr> <tr> <td>4. <u>Juncus mexicanus</u></td> <td style="text-align: center;">5</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>5. <u>Melilotus indicus</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FACU</td> </tr> <tr> <td>6. <u>Lysimachia arvensis</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FAC</td> </tr> <tr> <td>7. <u>Pseudognaphalium luteoalbum</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FAC</td> </tr> <tr> <td>8. <u>Oenothera elata</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>9. <u>Apium graveolens</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td style="text-align: center;">UPL</td> </tr> <tr> <td>10. <u>Polypogon viridis</u></td> <td style="text-align: center;"><1</td> <td style="text-align: center;">N</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">80</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: <u>20' x 20'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Absolute % Cover</th> <th style="width: 10%;">Dominant Species?</th> <th style="width: 20%;">Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>-</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Salix lasiolepis</u>	50	Y	FACW	2. <u>Salix gooddingii</u>	30	Y	FACW	3. _____				4. _____					80	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Iva hayesiana</u>	15	Y	FACW	2. <u>Baccharis pilularis</u>	15	Y	UPL	3. <u>Salix lasiandra</u>	1	N	FACW	4. _____					30	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Typha domingensis</u>	40	Y	OBL	2. <u>Juncus acutus</u>	25	Y	FACW	3. <u>Nasturtium officinale</u>	10	N	OBL	4. <u>Juncus mexicanus</u>	5	N	FACW	5. <u>Melilotus indicus</u>	<1	N	FACU	6. <u>Lysimachia arvensis</u>	<1	N	FAC	7. <u>Pseudognaphalium luteoalbum</u>	<1	N	FAC	8. <u>Oenothera elata</u>	<1	N	FACW	9. <u>Apium graveolens</u>	<1	N	UPL	10. <u>Polypogon viridis</u>	<1	N			80	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. _____					0	= Total Cover		<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>6</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> <p>Prevalence Index = B/A = _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Test is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																								
1. <u>Salix lasiolepis</u>	50	Y	FACW																																																																																																																								
2. <u>Salix gooddingii</u>	30	Y	FACW																																																																																																																								
3. _____																																																																																																																											
4. _____																																																																																																																											
	80	= Total Cover																																																																																																																									
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																								
1. <u>Iva hayesiana</u>	15	Y	FACW																																																																																																																								
2. <u>Baccharis pilularis</u>	15	Y	UPL																																																																																																																								
3. <u>Salix lasiandra</u>	1	N	FACW																																																																																																																								
4. _____																																																																																																																											
	30	= Total Cover																																																																																																																									
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																								
1. <u>Typha domingensis</u>	40	Y	OBL																																																																																																																								
2. <u>Juncus acutus</u>	25	Y	FACW																																																																																																																								
3. <u>Nasturtium officinale</u>	10	N	OBL																																																																																																																								
4. <u>Juncus mexicanus</u>	5	N	FACW																																																																																																																								
5. <u>Melilotus indicus</u>	<1	N	FACU																																																																																																																								
6. <u>Lysimachia arvensis</u>	<1	N	FAC																																																																																																																								
7. <u>Pseudognaphalium luteoalbum</u>	<1	N	FAC																																																																																																																								
8. <u>Oenothera elata</u>	<1	N	FACW																																																																																																																								
9. <u>Apium graveolens</u>	<1	N	UPL																																																																																																																								
10. <u>Polypogon viridis</u>	<1	N																																																																																																																									
	80	= Total Cover																																																																																																																									
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																								
1. _____																																																																																																																											
	0	= Total Cover																																																																																																																									
Total % Cover of:	Multiply by:																																																																																																																										
OBL species _____	x 1 = _____																																																																																																																										
FACW species _____	x 2 = _____																																																																																																																										
FAC species _____	x 3 = _____																																																																																																																										
FACU species _____	x 4 = _____																																																																																																																										
UPL species _____	x 5 = _____																																																																																																																										
Column Totals: _____	(A) _____ (B) _____																																																																																																																										
Remarks: DP located within Poggi Creek; within channel bed. Canopy dominated by willows with cattail in center within main flow channel.																																																																																																																											

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	77	10YR 6/6	3	D	M	loamy sand	
			Gley2 5BG	20	D	M	organic	decomposed organic material
								roots intermixed

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

DP located within channel bed; on north side; unable to dig deeper; likely grouted rip rap under; soft bottom further downstream. Flowing water in channel.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Aerial photos

Remarks:

DP located within channel bed but outside flow of water; within 5' of water (~5-8' deep in center); soil at pit is moist and glistening. Large storm events winter 2020; last one early April. On west side of double box culvert (~8 x 8' each)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 4
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.) on bank/slope Local relief (concave, convex, none): slope Slope (%): 2:1
 Subregion (LRR): LRR-C Lat: 32.6088712665 Long: -117.021044977 Datum: WGS84
 Soil Map Unit Name: Salinas Clay Loam, 2-9% slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: DP located within upland.	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: <u>15' x 15'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. -</td><td></td><td></td><td></td></tr> <tr><td>2. -</td><td></td><td></td><td></td></tr> <tr><td>3. -</td><td></td><td></td><td></td></tr> <tr><td>4. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">0 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>15' x 15'</u>)</p> <table border="1"> <tbody> <tr><td>1. <u>Baccharis pilularis</u></td><td>50</td><td>Y</td><td>UPL</td></tr> <tr><td>2. <u>Artemisia californica</u></td><td>20</td><td>Y</td><td>UPL</td></tr> <tr><td>3. <u>Bahiopsis laciniata</u></td><td>10</td><td>N</td><td>UPL</td></tr> <tr><td>4. <u>hus integrifolia</u></td><td>5</td><td>N</td><td>UPL</td></tr> <tr><td>5. <u>ncelia californica</u></td><td>5</td><td>N</td><td>UPL</td></tr> <tr><td colspan="2">90 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>15' x 15'</u>)</p> <table border="1"> <tbody> <tr><td>1. <u>Melilotus indicus</u></td><td>70</td><td>Y</td><td>FACU</td></tr> <tr><td>2. <u>entaurea melitensis</u></td><td>15</td><td>N</td><td>UPL</td></tr> <tr><td>3. <u>Sonchus asper</u></td><td>5</td><td>N</td><td>FAC</td></tr> <tr><td>4. <u>arduus pycnocephalus</u></td><td><1</td><td>N</td><td>UPL</td></tr> <tr><td>5. <u>Brassica nigra</u></td><td><1</td><td>N</td><td>UPL</td></tr> <tr><td>6. -</td><td></td><td></td><td></td></tr> <tr><td>7. -</td><td></td><td></td><td></td></tr> <tr><td>8. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">90 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: <u>15' x 15'</u>)</p> <table border="1"> <tbody> <tr><td>1. -</td><td></td><td></td><td></td></tr> <tr><td>2. -</td><td></td><td></td><td></td></tr> <tr><td colspan="2">0 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust <u>-</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. -				2. -				3. -				4. -				0 = Total Cover				1. <u>Baccharis pilularis</u>	50	Y	UPL	2. <u>Artemisia californica</u>	20	Y	UPL	3. <u>Bahiopsis laciniata</u>	10	N	UPL	4. <u>hus integrifolia</u>	5	N	UPL	5. <u>ncelia californica</u>	5	N	UPL	90 = Total Cover				1. <u>Melilotus indicus</u>	70	Y	FACU	2. <u>entaurea melitensis</u>	15	N	UPL	3. <u>Sonchus asper</u>	5	N	FAC	4. <u>arduus pycnocephalus</u>	<1	N	UPL	5. <u>Brassica nigra</u>	<1	N	UPL	6. -				7. -				8. -				90 = Total Cover				1. -				2. -				0 = Total Cover				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species</td><td>x 1 =</td></tr> <tr><td>FACW species</td><td>x 2 =</td></tr> <tr><td>FAC species</td><td>x 3 =</td></tr> <tr><td>FACU species</td><td>x 4 =</td></tr> <tr><td>UPL species</td><td>x 5 =</td></tr> <tr><td>Column Totals:</td><td>(A) (B)</td></tr> </tbody> </table> <p>Prevalence Index = B/A =</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Test is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present.</p> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species	x 1 =	FACW species	x 2 =	FAC species	x 3 =	FACU species	x 4 =	UPL species	x 5 =	Column Totals:	(A) (B)
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																												
1. -																																																																																																															
2. -																																																																																																															
3. -																																																																																																															
4. -																																																																																																															
0 = Total Cover																																																																																																															
1. <u>Baccharis pilularis</u>	50	Y	UPL																																																																																																												
2. <u>Artemisia californica</u>	20	Y	UPL																																																																																																												
3. <u>Bahiopsis laciniata</u>	10	N	UPL																																																																																																												
4. <u>hus integrifolia</u>	5	N	UPL																																																																																																												
5. <u>ncelia californica</u>	5	N	UPL																																																																																																												
90 = Total Cover																																																																																																															
1. <u>Melilotus indicus</u>	70	Y	FACU																																																																																																												
2. <u>entaurea melitensis</u>	15	N	UPL																																																																																																												
3. <u>Sonchus asper</u>	5	N	FAC																																																																																																												
4. <u>arduus pycnocephalus</u>	<1	N	UPL																																																																																																												
5. <u>Brassica nigra</u>	<1	N	UPL																																																																																																												
6. -																																																																																																															
7. -																																																																																																															
8. -																																																																																																															
90 = Total Cover																																																																																																															
1. -																																																																																																															
2. -																																																																																																															
0 = Total Cover																																																																																																															
Total % Cover of:	Multiply by:																																																																																																														
OBL species	x 1 =																																																																																																														
FACW species	x 2 =																																																																																																														
FAC species	x 3 =																																																																																																														
FACU species	x 4 =																																																																																																														
UPL species	x 5 =																																																																																																														
Column Totals:	(A) (B)																																																																																																														
Remarks: DP located on cut slope/bank; just upslope from Poggi Creek and DP2.																																																																																																															

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 5/2	100	-	-	-	-	silty clay loam	on bank

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histic Sol (A1) ☐ Sandy Redox (S5)
☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C) ☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D) ☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11) ☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12) ☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1) ☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

DP located on bank; just upslope by Poggi Creek. Hydric soils not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1) ☐ Salt Crust (B11)
☐ High Water Table (A2) ☐ Biotic Crust (B12)
☐ Saturation (A3) ☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine) ☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine) ☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine) ☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6) ☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Inundation Visible on Aerial Imagery (B7) ☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9) ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photos

Remarks:

DP located on cut slope within upland; outside limit of OHWM.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 5
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.) in creek Local relief (concave, convex, none): concave Slope (%): ~2%
 Subregion (LRR): LRR-C Lat: 32.6095121671 Long: -117.016620631 Datum: WGS84
 Soil Map Unit Name: Salinas Clay Loam, 2-9% slopes NWI classification: PEM1D

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: DP located in Poggi Creek.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. -				
2.				
3.				
4.				
		<u>0</u>	= Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 10' x 10')				
1. Salix exigua	5	Y	FACW	
2.				
3.				
4.				
5.				
		<u>5</u>	= Total Cover	
Herb Stratum (Plot size: 10' x 10')				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. Typha domingensis	90	Y	OBL	
2. Anemopsis californica	10	N	OBL	
3.				
4.				
5.				
6.				
7.				
8.				
		<u>100</u>	= Total Cover	
Woody Vine Stratum (Plot size: 10' x 10')				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. -				
2.				
		<u>0</u>	= Total Cover	
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>-</u>		
Remarks: DP located within Poggi Creek. Dominated by FWM.				

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100	2.5YR 5/8	1	D	M	silty clay loam	
3-6	Gley2 7/5PB	80	Gley2 5BG	5	C	M	silty clay loam	Redox - black spots
			Gley1 8/10Y	3	D	M		Redox - white spots
			5YR 4/6	2	RM	PL		Redox - red along roots

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:
 Could have dug deeper because see hydric soil features within upper 10".

HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required: check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Aerial photos

Remarks:
 DP located within Poggi Creek bed; north side; no water at actual soil pit but flowing water within channel (~1-3" deep).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 6
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.) slope/bank Local relief (concave, convex, none): convex Slope (%): 2:1
 Subregion (LRR): LRR-C Lat: 32.6094975825 Long: -117.01669203 Datum: WGS84
 Soil Map Unit Name: Salinas Clay Loam, 2-9% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: DP located within upland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 15')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
1. -				
2. -				
3. -				
4. -				
		<u>0</u>	= Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 10' x 15')				
1. <u>ncelia californica</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Iva hayesiana</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Baccharis pilularis</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
4. <u>Artemisia californica</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
5. -				
		<u>90</u>	= Total Cover	
Herb Stratum (Plot size: 10' x 15')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>irschfeldia incana</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
2. <u>entaurea melitensis</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
3. -				
4. -				
5. -				
6. -				
7. -				
8. -				
		<u>10</u>	= Total Cover	
Woody Vine Stratum (Plot size: 10' x 15')				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. -				
2. -				
		<u>0</u>	= Total Cover	
% Bare Ground in Herb Stratum <u>90</u>		% Cover of Biotic Crust <u>-</u>		
Remarks: DP located within upland.				

SOIL

Sampling Point: 6

[illegible]

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Aerial photos					
Remarks: DP located on slope; just upslope from Poggi Creek and DP5.					

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sunbow II Phase III City/County: Chula Vista/San Diego Sampling Date: 4/28/20
 Applicant/Owner: Lennar Homes State: CA Sampling Point: 7
 Investigator(s): Kyle Ince; Amanda Gonzales Section, Township, Range: S18, T18S, R1W
 Landform (hillslope, terrace, etc.) in channel Local relief (concave, convex, none): concave Slope (%): ~1%
 Subregion (LRR): LRR-C Lat: 32.6092924011 Long: -117.01657497 Datum: WGS84
 Soil Map Unit Name: Diablo Clay, 30-50% slopes NWI classification: PSS1D

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: DP located within Poggi Creek; south side of channel. Area is a wetland.	

VEGETATION – Use scientific names of plants.

<p>Tree Stratum (Plot size: <u>10' x 15'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Salix lasiolepis</u></td> <td><u>40</u></td> <td><u>Y</u></td> <td><u>FACW</u></td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td><u>40</u></td> <td colspan="2">= Total Cover</td> </tr> </tbody> </table> <p>Sapling/Shrub Stratum (Plot size: <u>10' x 15'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Iva hayesiana</u></td> <td><u>10</u></td> <td><u>Y</u></td> <td><u>FACW</u></td> </tr> <tr> <td>2. <u>Baccharis pilularis</u></td> <td><u>10</u></td> <td><u>Y</u></td> <td><u>UPL</u></td> </tr> <tr> <td>3. <u>Artemisia palmeri</u></td> <td><u><1</u></td> <td><u>N</u></td> <td><u>UPL</u></td> </tr> <tr> <td>4. <u>Baccharis salicifolia</u></td> <td><u><1</u></td> <td><u>N</u></td> <td><u>FAC</u></td> </tr> <tr> <td>5. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td><u>20</u></td> <td colspan="2">= Total Cover</td> </tr> </tbody> </table> <p>Herb Stratum (Plot size: <u>10' x 15'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Schoenoplectus americanus</u></td> <td><u>50</u></td> <td><u>Y</u></td> <td><u>OBL</u></td> </tr> <tr> <td>2. <u>Anemopsis californica</u></td> <td><u>25</u></td> <td><u>Y</u></td> <td><u>OBL</u></td> </tr> <tr> <td>3. <u>Typha domingensis</u></td> <td><u>10</u></td> <td><u>N</u></td> <td><u>OBL</u></td> </tr> <tr> <td>4. <u>Nasturtium officinale</u></td> <td><u>5</u></td> <td><u>N</u></td> <td><u>OBL</u></td> </tr> <tr> <td>5. <u>Leymus triticoides</u></td> <td><u>3</u></td> <td><u>N</u></td> <td><u>FAC</u></td> </tr> <tr> <td>6. <u>Ambrosia psilostachya</u></td> <td><u>3</u></td> <td><u>N</u></td> <td><u>FACU</u></td> </tr> <tr> <td>7. <u>umex crispus</u></td> <td><u>3</u></td> <td><u>N</u></td> <td><u>FAC</u></td> </tr> <tr> <td>8. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td><u>99</u></td> <td colspan="2">= Total Cover</td> </tr> </tbody> </table> <p>Woody Vine Stratum (Plot size: <u>10' x 15'</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>-</u></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td><u>0</u></td> <td colspan="2">= Total Cover</td> </tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>~1</u> % Cover of Biotic Crust <u>-</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Salix lasiolepis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____		<u>40</u>	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Iva hayesiana</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	2. <u>Baccharis pilularis</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	3. <u>Artemisia palmeri</u>	<u><1</u>	<u>N</u>	<u>UPL</u>	4. <u>Baccharis salicifolia</u>	<u><1</u>	<u>N</u>	<u>FAC</u>	5. _____	_____	_____	_____		<u>20</u>	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Schoenoplectus americanus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	2. <u>Anemopsis californica</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	3. <u>Typha domingensis</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	4. <u>Nasturtium officinale</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	5. <u>Leymus triticoides</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	6. <u>Ambrosia psilostachya</u>	<u>3</u>	<u>N</u>	<u>FACU</u>	7. <u>umex crispus</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	8. _____	_____	_____	_____		<u>99</u>	= Total Cover			Absolute % Cover	Dominant Species?	Indicator Status	1. <u>-</u>	_____	_____	_____	2. _____	_____	_____	_____		<u>0</u>	= Total Cover		<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Test is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																										
1. <u>Salix lasiolepis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>																																																																																																										
2. _____	_____	_____	_____																																																																																																										
3. _____	_____	_____	_____																																																																																																										
4. _____	_____	_____	_____																																																																																																										
	<u>40</u>	= Total Cover																																																																																																											
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																										
1. <u>Iva hayesiana</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>																																																																																																										
2. <u>Baccharis pilularis</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>																																																																																																										
3. <u>Artemisia palmeri</u>	<u><1</u>	<u>N</u>	<u>UPL</u>																																																																																																										
4. <u>Baccharis salicifolia</u>	<u><1</u>	<u>N</u>	<u>FAC</u>																																																																																																										
5. _____	_____	_____	_____																																																																																																										
	<u>20</u>	= Total Cover																																																																																																											
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																										
1. <u>Schoenoplectus americanus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>																																																																																																										
2. <u>Anemopsis californica</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>																																																																																																										
3. <u>Typha domingensis</u>	<u>10</u>	<u>N</u>	<u>OBL</u>																																																																																																										
4. <u>Nasturtium officinale</u>	<u>5</u>	<u>N</u>	<u>OBL</u>																																																																																																										
5. <u>Leymus triticoides</u>	<u>3</u>	<u>N</u>	<u>FAC</u>																																																																																																										
6. <u>Ambrosia psilostachya</u>	<u>3</u>	<u>N</u>	<u>FACU</u>																																																																																																										
7. <u>umex crispus</u>	<u>3</u>	<u>N</u>	<u>FAC</u>																																																																																																										
8. _____	_____	_____	_____																																																																																																										
	<u>99</u>	= Total Cover																																																																																																											
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																										
1. <u>-</u>	_____	_____	_____																																																																																																										
2. _____	_____	_____	_____																																																																																																										
	<u>0</u>	= Total Cover																																																																																																											
Remarks: DP located within Poggi Creek; south side of channel.																																																																																																													

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100	2.5YR 5/8	1	D	M	silty clay loam	
3-6	Gley2 7/5PB	80	Gley2 5BG	5	C	M	silty clay loam	Redox - black spots
			Gley1 8/10Y	3	D	M		Redox - white spots
			5YR 4/6	2	RM	PL		Redox - red along roots

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:
 Generally the same as DP 5 but with more redox features.

HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required: check all that apply)			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2"</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Aerial photos

Remarks:
 DP located within Poggi Creek; flowing water.

**APPENDIX 6. WETLAND DELINEATION PHOTO POINTS
(DECEMBER 20, 2019; APRIL 28, 2020)**



Photo Point 1. Viewing northeast at Data Point 1 located in southern willow scrub vegetation on the south side of Poggi Creek channel.



Photo Point 2. Viewing southwest at Data Point 2 located above Data Point 1 in Diegan coastal sage scrub vegetation on the south bank of Poggi Creek channel.



Photo Point 3. Viewing south at Data Point 3 located in southern willow scrub vegetation on the north side of Poggi Creek channel.



Photo Point 4. Viewing northeast at Data Point 4 located above Data Point 3 in Diegan coastal sage scrub vegetation on the north bank of Poggi Creek channel.



Photo Point 5. Viewing northeast at Data Point 5 located at the edge of freshwater marsh vegetation on the north side of Poggi Creek channel.



Photo Point 6. Viewing hydric soils excavated at Data Point 5.



Photo Point 7. Viewing northeast at Data Point 6 located above Data Point 5 in Diegan coastal sage scrub vegetation.



Photo Point 8. Viewing west at Data Point 7 located in freshwater marsh vegetation on the south side of Poggi Creek channel.



Photo Point 9. Viewing southwest at Data Point 8 located in southern willow scrub vegetation that is supported by run off originating from a seep situated just south of the site on a City-owned property.



Photo Point 10. Viewing Data Point 9 located above Data Point 8 in non-native grassland vegetation.

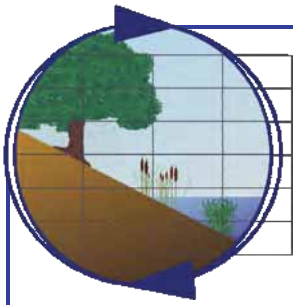


Photo Point 11. Viewing south at a non-wetland water of the U.S. drainage that is a tributary to Poggi Creek channel.



Photo Point 12. Viewing south at a non-wetland water of the U.S. drainage that is a tributary to Poggi Creek channel.

**APPENDIX 7. COASTAL CALIFORNIA GNATCATCHER
USFWS 45-DAY REPORT (MAY 11, 2020)**



Merkel Associates, Inc.

10000 Luffin Road San Diego, CA 92121
Tel (619) 441-1234 • Fax (619) 441-1235
e-mail associates@merkelinc.com

May 11, 2020
M&A #94-021-33

Ms. Stacey Love
Recovery Permit Coordinator
U.S. Fish and Wildlife Service – Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, CA 92008

Re: 45-day Letter Report of Coastal California Gnatcatcher Protocol Surveys for the Sunbow II Phase III Project, Located in the City of Chula Vista, San Diego County

Dear Ms. Love:

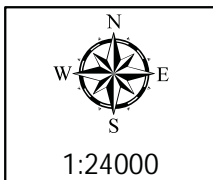
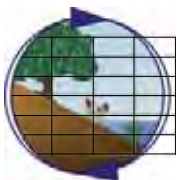
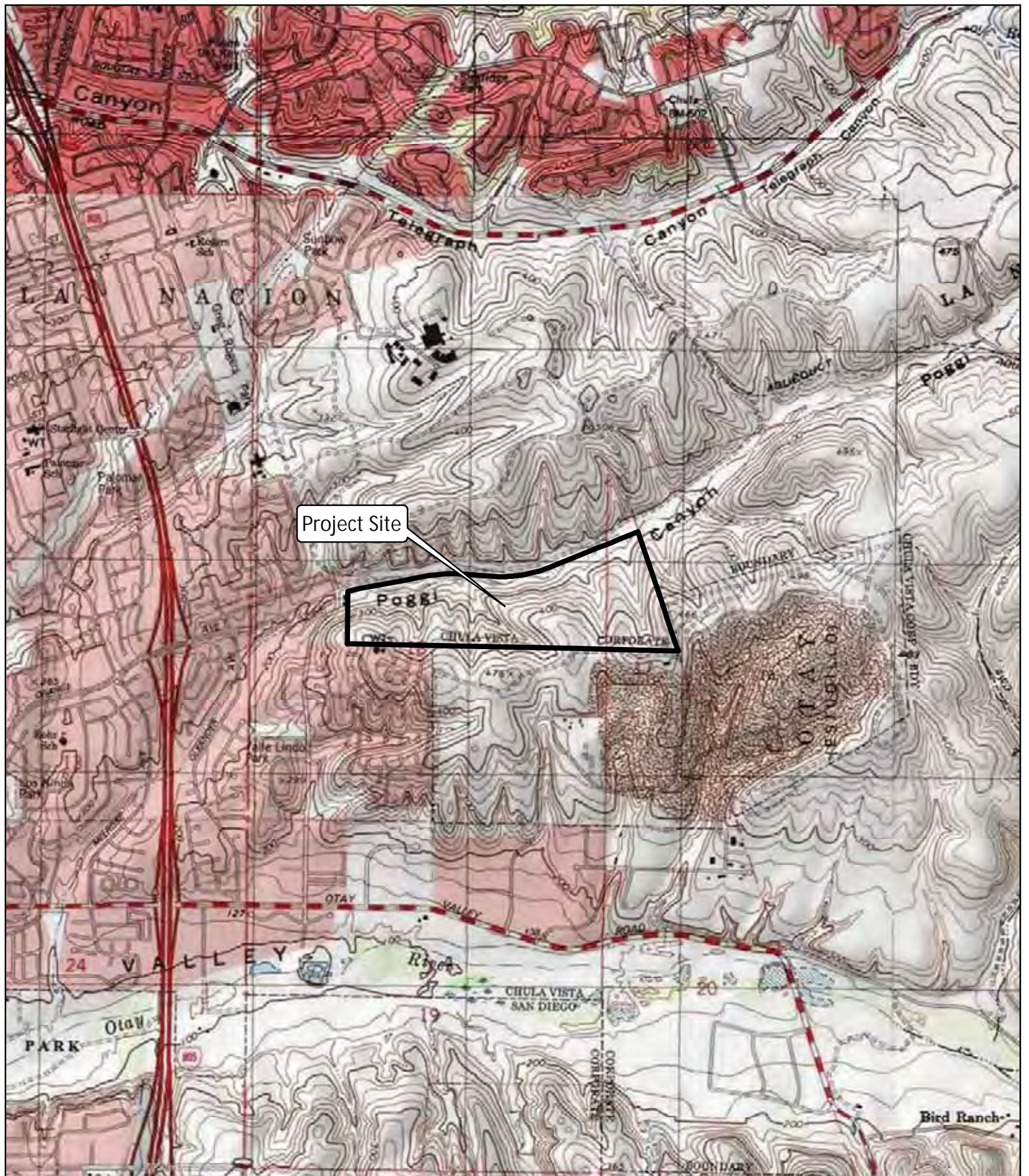
SUMMARY

Merkel & Associates, Inc. (M&A) conducted three protocol surveys for the federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*) for the purpose of determining the presence or absence of this species within the Sunbow II Phase III Project site. These surveys were conducted in accordance with the current U.S. Fish and Wildlife Service's *Coastal California Gnatcatcher Presence/Absence Survey Protocol* (USFWS 1997), as authorized under M&A's federal Endangered Species Act, Section 10(a)(1)(A) permit #797999-9 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). The project survey area contains 37 acres of potentially suitable gnatcatcher habitat. Two coastal California gnatcatcher territories were detected within the survey area during the protocol surveys. This letter report has been prepared and submitted to our client, USFWS, and CDFW in accordance with the requirements of M&A's 10a permit and MOU.

INTRODUCTION

Merkel & Associates, Inc. (M&A) conducted protocol surveys for the federally listed threatened, coastal California gnatcatcher (*Polioptila californica californica*) (gnatcatcher) for the purpose of determining the presence or absence of gnatcatcher within the Sunbow II Phase III Project site.

The approximately 135-acre project site property (Assessor's Parcel Numbers 644-011-06-00 and 644-020-11-00) is located south of Olympic Parkway (previously East Orange Avenue) and east of Brandywine in the City of Chula Vista. Further, the project site is situated within Sections 17 and 18, Township 18 South, Range 1 West of the U.S. Geological Survey Imperial Beach, California Quadrangle (Figure 1).



Project Vicinity Map
Sunbow Phase III Development Project
Source: USGS 7.5' Imperial Beach, CA Quadrangle

Figure 1

METHODS

M&A conducted three protocol surveys for the coastal California gnatcatcher, as authorized under M&A's federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #797999-9 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU) (Table 1). The surveys were conducted in accordance with the current USFWS *Coastal California Gnatcatcher Presence/Absence Survey Protocol* (USFWS 1997). Based on the Protocol, three protocol surveys were conducted at least one week apart. The survey area consisted of potentially suitable gnatcatcher habitat (e.g., Diegan coastal sage scrub) and any immediately adjacent habitat within the project site.

Table 1. Survey Dates, Times, and Conditions

Survey #	Date	Time	Conditions ¹ (start-end)	Permitted Biologist	Acres per Hour/Day ²	Taped Vocalizations Playback Frequency
1	2020 April 15	0830-1200	Weather: 0%-0%cc Wind: BS 0-1 Temp.: 63°F -75°F	Gina Krantz/ Kyle Ince	5.3/hour; 18.5/ day	1 per 12 minutes
2	2020 April 22	0835-1200	Weather: 0%-0%cc Wind: BS 0-1 Temp.: 62°F-72°F	Gina Krantz/ Kyle Ince (Adam Behle/ Brandon Stidum) ³	5.3/hour; 18.5/ day	1 per 23 minutes
3	2020 April 29	0840-1145	Weather: 100%-100%cc Wind: BS 0-1 Temp.: 63°F-67°F	Gina Krantz/ Kyle Ince (Adam Behle/ Brandon Stidum) ³	6.2/hour; 18.5/ day	1 per 14 minutes

¹ cc=cloud cover; BS=Beaufort Scale; F = Fahrenheit

² Acres of potentially suitable gnatcatcher habitat surveyed per permitted biologist

³ M&A biologists in training supervised by permitted biologists

Based on a visual habitat assessment prior to conducting the surveys for the project, there is approximately 37 acres of potential suitable coastal California gnatcatcher habitat (i.e., Diegan coastal sage scrub) within the project survey area. The total survey area was broken up into a western area and an eastern area. All on-site vegetation communities were mapped, and survey routes were slowly walked in potentially suitable gnatcatcher habitat. Taped recordings of gnatcatcher vocalizations, as well as "pishing", were used to elicit initial vocal responses, and an approximate 15 minute time interval was allowed for a response, particularly from advantageous viewpoints. The gnatcatcher tape was not played when any potential gnatcatcher predator was detected in the vicinity. A list of all detected avian species was recorded in a field notebook. Data collected from the surveys were digitized into current Geographical Information System (GIS) Environmental Systems Research Institute (ESRI) software platforms.

The scientific nomenclature used in this report is noted according to the following references: vegetation, Holland (1986) and Oberbauer (2008); flora, Rebman and Simpson (2014); and birds, American Ornithologists' Union (1998 and 2019).

RESULTS

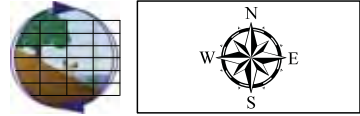
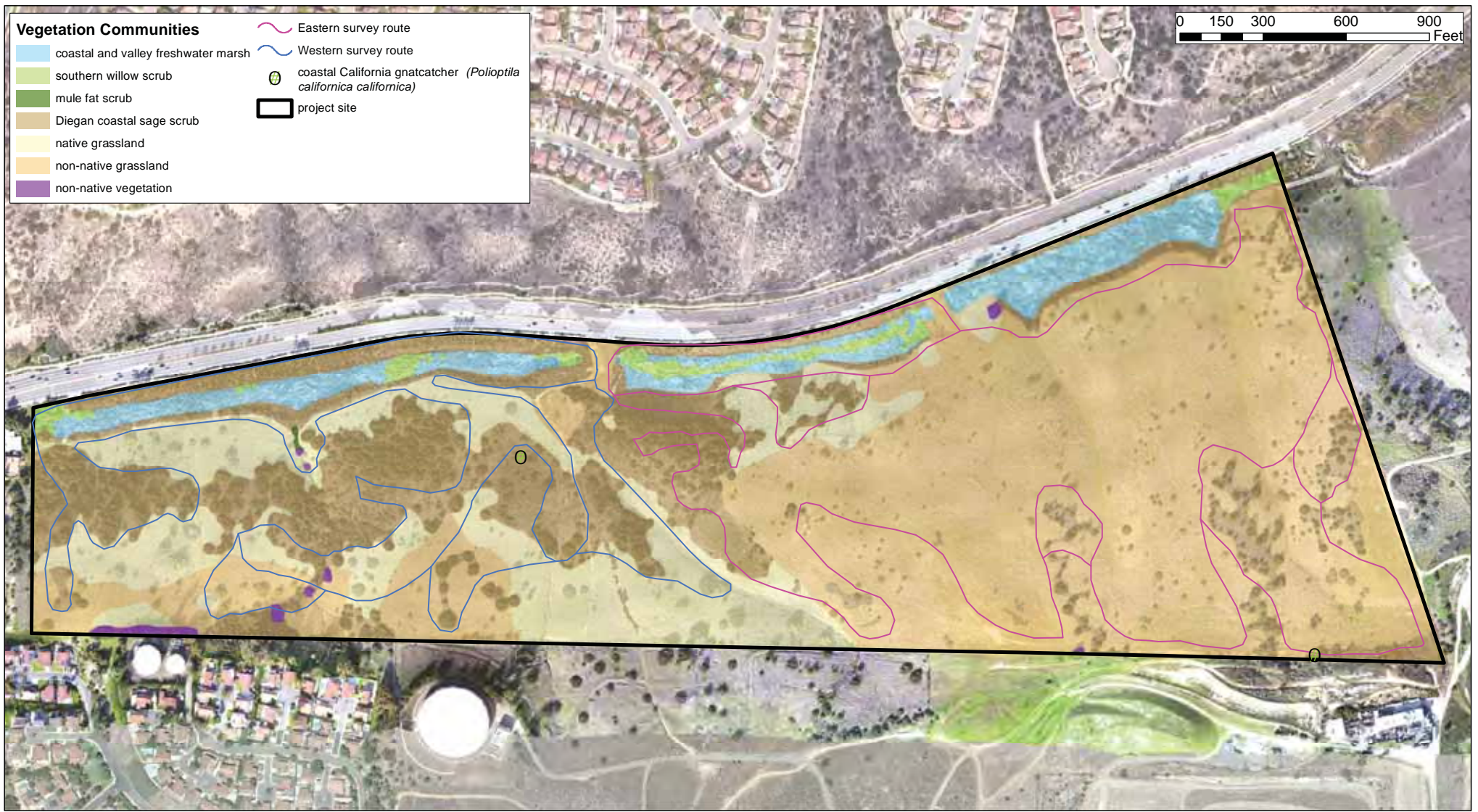
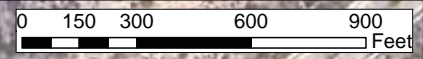
The survey area supports approximately 37 acres of suitable gnatcatcher habitat consisting of Diegan coastal sage scrub located predominately in the central portion of the site along four rolling hillsides north of Poggi Creek and Olympic Parkway. The dominant species within the Diegan coastal sage scrub habitat were California sagebrush (*Artemisia californica*) and California encelia (*Encelia californica*) as well as California buckwheat (*Eriogonum fasciculatum*), lemonadeberry (*Rhus integrifolia*), and San Diego viguiera (*Bahiopsis laciniata*) (Figure 2). There are also areas of Diegan coastal sage scrub that are dominated almost entirely by lemonadeberry mostly in the western portion but smaller patches also occur in the eastern portion of the site. The remainder of the Diegan coastal sage scrub occurs in smaller fragmented patches throughout the site as well as linear strips historically planted on slopes abutting Poggi Creek (Figure 2). The potentially suitable gnatcatcher habitat quality within the study area is moderate to high quality predominately due to the native species composition and diversity. There is a limited amount of contiguous Diegan coastal sage scrub offsite within adjacent open space areas (i.e., southeast, east); however, the open space directly north of Olympic Parkway supports Diegan coastal sage scrub.

Two coastal California gnatcatcher territorial males were observed or heard within the survey area in two separate areas of Diegan coastal sage scrub onsite. One gnatcatcher territory is located in the central portion of the site within the larger area of high quality Diegan coastal sage scrub (Figure 2). The other gnatcatcher territory is located both onsite and offsite within the southeastern corner of the project site where a small amount of Diegan coastal sage scrub occurs onsite with more suitable habitat that extends offsite onto the County of San Diego landfill property to the south (Figure 2).

Vegetation Communities

- coastal and valley freshwater marsh
- southern willow scrub
- mule fat scrub
- Diegan coastal sage scrub
- native grassland
- non-native grassland
- non-native vegetation

- Eastern survey route
- Western survey route
- coastal California gnatcatcher (*Poliopitila californica californica*)
- project site



Coastal California Gnatcatcher Survey Routes Map

Sunbow Phase III Development

Aerial Source: Merkel & Associates Jan. 2020

Created on: May 11, 2020

Figure 2

CONCLUSIONS

Two coastal California gnatcatcher territories were observed or detected onsite within Diegan coastal sage scrub during the protocol surveys.

No other pertinent observations pertaining to the coastal California gnatcatcher were noted during the survey efforts. Due to the limited nature of the work on this project (i.e., protocol presence/absence surveys, not long-term research), we have no additional recommendations for species recovery.

If you have any questions concerning this report, please do not hesitate to contact me at (858) 560-5465 or gkrantz@merkelinc.com.

Sincerely,



Gina Krantz
Senior Biologist/Project Manager



Keith W. Merkel
Principal Consultant

cc: Mr. Hans Sin, California Department of Fish and Wildlife, South Coast Region,
hans.sin@wildlife.ca.gov

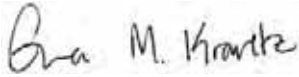
Mr. David Shepherd, Lennar, David.Shepherd@lennar.com

REFERENCES

- American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington D.C.
- _____. 2019. R Terry Chesser, Kevin J Burns, Carla Cicero, Jon L Dunn, Andrew W Kratter, Irby J Lovette, Pamela C Rasmussen, J V Remsen, Jr, Douglas F Stotz, Kevin Winker, Sixtieth Supplement to the American Ornithological Society's *Check-list of North American Birds*, *The Auk*, Volume 136, Issue 3, 1 July 2019, ukz042, <https://doi.org/10.1093/auk/ukz042>
- Holland RF. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program; State of California; Department of Fish and Game. Sacramento, California. 157pp.
- Oberbauer T, Kelly M, Buegge J. 2008, Revised 1996 and 2006. Draft Vegetation Communities of San Diego County [Internet]. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Holland RF, PhD., 1986. Available from: http://www.sdcountry.ca.gov/dplu/docs/Veg_Comm_SDCountry_2008.pdf.
- Rebman JP, Simpson MG. 2014. Checklist of Vascular Plants of San Diego County, 5th Edition [Internet]. ISBN 0-918969-05-0. San Diego Natural History Museum and San Diego State University. <https://www.sdnhm.org/science/botany/projects/checklist/>
- U.S. Fish and Wildlife Service (USFWS), Carlsbad Fish and Wildlife Office (CFWO). 1997 Jul 28. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5 pp.

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information as required pursuant to Recovery Permit TE-797999-9, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

1) Fieldwork Performed By:



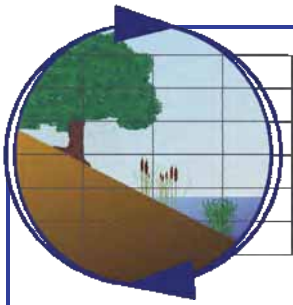
Gina Krantz, Senior Biologist
10(a) Permit Number 797999-9

2) Fieldwork Performed By:



Kyle Ince, Senior Biologist
10(a) Permit Number 797999-9

**APPENDIX 7. QUINO CHECKERSPOT BUTTERFLY
USFWS 45-DAY REPORT (MAY 21, 2020)**



Merkel Associates, Inc.

10000 Luffin Road San Diego, CA 92121
Tel (619) 441-1111 • Fax (619) 441-1112
e-mail associates@merkelinc.com

May 21, 2020
M&A #94-021-34

Ms. Stacey Love
Recovery Permit Coordinator
U.S. Fish and Wildlife Service – Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, CA 92008

Re: 45-day Letter Report of Quino Checkerspot Butterfly (*Euphydryas editha quino*) Protocol Surveys for the Sunbow II Phase III Project, Located in the City of Chula Vista within San Diego County

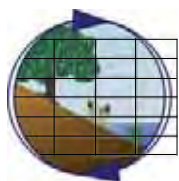
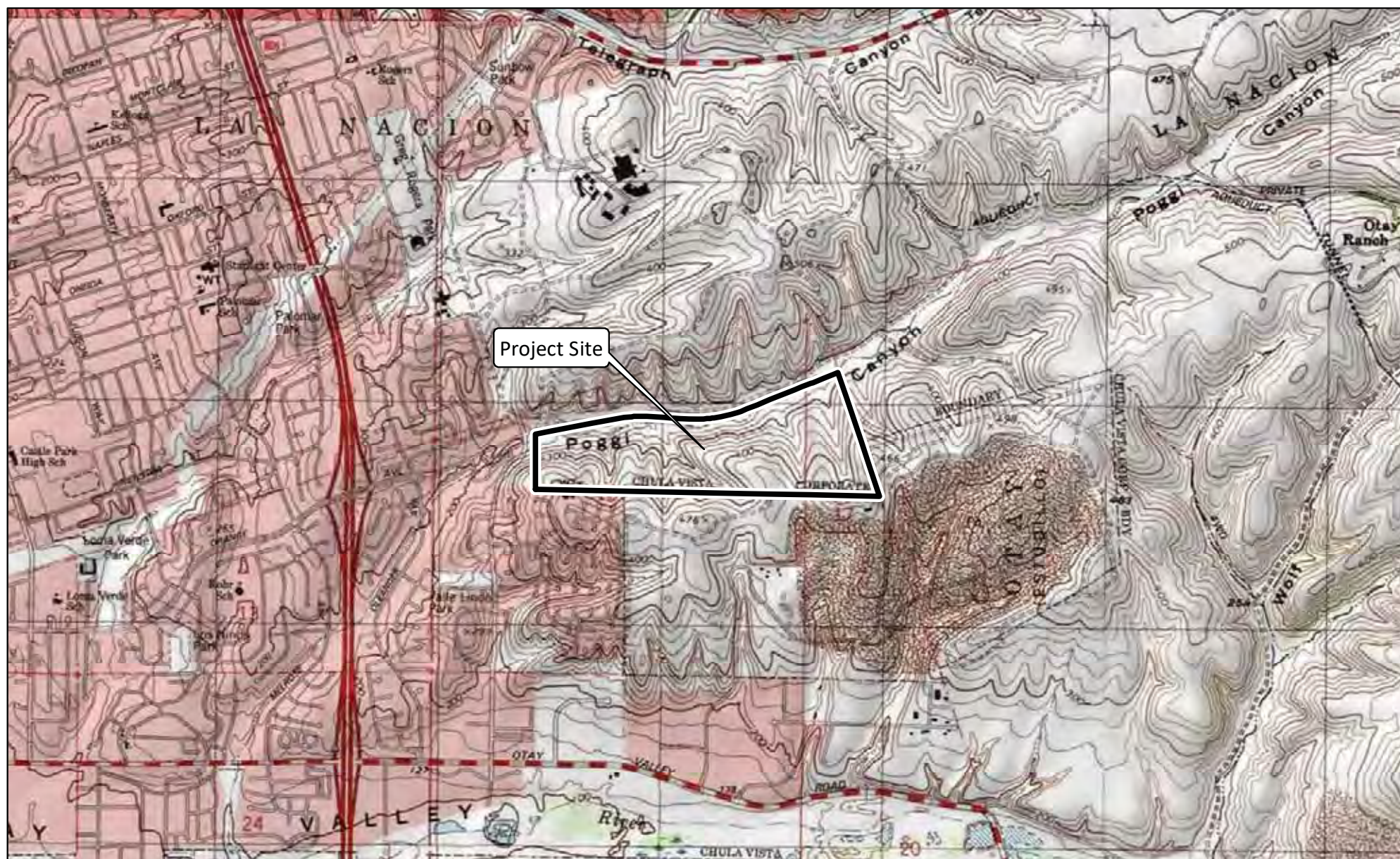
Dear Ms. Love:

SUMMARY

Merkel & Associates, Inc. (M&A) conducted protocol surveys for the federally listed endangered quino checkerspot butterfly (*Euphydryas editha quino*) (quino) on the Sunbow II Phase III Project site. These surveys were conducted in accordance with the current U.S. Fish and Wildlife Service's *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014), as authorized under M&A's federal Endangered Species Act, Section 10(a)(1)(A) permit #797999-9. Based on the Guidelines, protocol surveys should be initiated the third week of February; however, we did not initiate surveys at that time but did speak with Mr. Eric Porter on March 5, 2020 and Ms. Susan Wynn on March 9, 2020 regarding the potential to initiate quino surveys immediately (USFWS pers. comm. 2020). Ms. Wynn recommended starting protocol surveys as soon as possible and double up surveys in the first few weeks where applicable to still be able to conduct 12 surveys before the end of the quino flight season which is the second Saturday of May (USFWS pers. comm. 2020). The project site contains approximately 75 acres of potential quino habitat. Potential quino host plant consisting of dot-seed plantain (*Plantago erecta*) and Orcutt's bird's-beak (*Dicranostegia orcuttiana*) were detected throughout portions of the project site. No quino checkerspot butterflies were detected within the project survey areas during the protocol surveys. This letter report has been prepared and submitted to the client and USFWS in accordance with the requirements of M&A's 10a permit.

INTRODUCTION

Merkel & Associates, Inc. (M&A) conducted protocol surveys for the federally listed endangered quino checkerspot butterfly (*Euphydryas editha quino*) (quino) for the purpose of determining the presence or absence of this species on the Sunbow II Phase III Project site. The project property (Assessor's Parcel Numbers 644-011-06-00 and 644-020-11-00) is located within the City of Chula Vista, within the western edge of the Carlsbad Fish and Wildlife Office (CFWO) recommended Quino Survey Area (USFWS 2014), in Sections 17 and 18, Township 18 South, Range 1 West of the U.S. Geological Survey Imperial Beach, California Quadrangle (Figure 1).



Project Vicinity Map

Sunbow II Phase III Development Project

Source: USGS 7.5' Imperial Beach, CA Quadrangle

Figure 1

METHODS

M&A conducted a pre-survey habitat site assessment and protocol surveys for the quino checkerspot butterfly in the winter of 2019 and spring of 2020, respectively, as authorized under M&A's federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #797999-9 (Table 1). The surveys were conducted in accordance with the current USFWS *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014) as well as in coordination with the Carlsbad Fish and Wildlife Office staff biologists (USFWS pers. comm. 2020), allowing protocol surveys to start the first week of March 2020 rather than the third week of February 2020 and were conducted less than a week apart when survey conditions were met to catch up to the protocol survey schedule. In addition, for the second week of April (April 5-11) none of the days met survey conditions due to inclement weather and as such two surveys were conducted during the third week of April to make up for the missed week (Table 1).

Table 1. Summary of Survey Dates, Times, Conditions, and Biologists

Survey #	Date	Time	Conditions ¹ (start-end)	Permitted Biologist(s) ²	Acres per Hour/Survey or/Day ³
Habitat Assessment	2019 Nov 18 & 2019 Dec 20	1130- 1530/ 1130-1230	Weather: 0%-0%cc/hazy Wind: 1-2 mph/1-6mph Temperature:85-82/73° F	GMK, KLI	NA
1	2020 Mar 6	1020-1340	Weather: 0%-0% cc Wind: 0-5 mph Temperature: 63°-64° F	GMK, AHB, KLI	7.7
2	2020 Mar 11	1245-1545	Weather: 30%-50% cc Wind: 1-5 mph Temperature: 62°-69° F	GMK, AHB, KLI	8.3
3	2020 Mar 17	1300-1645	Weather: 40%-10% cc Wind: 0-3 mph Temperature: 60°-62° F	GMK, KLI	10.0
4	2020 Mar 21	1115-1515	Weather: 50%-5% cc Wind: 0-3 mph Temperature: 66°-68° F	AHB, KLI	9.4
5	2020 Mar 24	1200-1600	Weather: 40%-10% cc Wind: 5-3 mph Temperature: 61°-62° F	GMK, AHB, KLI	6.3
6	2020 Mar 27	1045-1415	Weather: 40%-0% cc Wind: 0-5 mph Temperature: 60°-62° F	GMK, AHB, KLI	7.1
7	2020 April 3	1100-1500	Weather: 20%-30% cc Wind: 0-4 mph Temperature: 61°-74° F	GMK, AHB, KLI	6.3
8	2020 April 14	1100-1420	Weather: 5%-5% cc Wind: 1-7 mph Temperature: 64°-66° F	GMK, AHB, KLI	7.7

Survey #	Date	Time	Conditions ¹ (start-end)	Permitted Biologist(s) ²	Acres per Hour/Survey or/Day ³
9	2020 April 16	1000-1505	Weather: 0%-0% cc Wind: 3-7 mph Temperature: 65°-72° F	AHB, KLI	7.5
10	2020 April 23	0900-1235	Weather: 0%-0% cc Wind: 1-5 mph Temperature: 64°-78° F	GMK, AHB, KLI	7.1
11	2020 April 30	1100-1430	Weather: 100%-50% cc Wind: 1-3 mph Temperature: 70°-73° F	GMK, AHB, KLI	7.1
12	2020 May 7	0845-1215	Weather: 0%-0% cc Wind: 0-4mph Temperature: 64°-74° F	GMK, AHB, KLI	7.1

¹ cc=cloud cover; mph=miles per hour; F = Fahrenheit

² GMK = Gina M. Krantz; AHB = Adam H. Behle; KLI = Kyle L. Ince

³ Average acres of potentially suitable quino habitat surveyed per hour per surveyor per survey day

The project quino survey areas are depicted on Figure 2. Survey acres covered per survey area and survey date were consistent with the current *Quino Checkerspot Butterfly Survey Guidelines*. Since the survey area totaled approximately 75 acres, approximately 2-3 permitted biologists per week (e.g., 2-3 biologists per day for one survey day per week) were necessary to adequately cover the survey areas per week. Specific quino survey dates varied within the timeframe provided in the protocol according to weather conditions and scheduling needs. Biologists slowly walked a variable, winding course that generally followed 30-foot transects within suitable habitat in the pre-determined butterfly survey areas, carefully followed the movements of butterflies, and periodically stopped within areas that appeared most suitable.

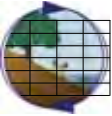
A list of detected nectar resources and butterfly species was recorded on datasheets or a field notebook, and the locations of potential Quino larval host plants were recorded/mapped using a mobile mapping application (e.g., Avenza Maps, Trimble GPS) and noted on the datasheets. Data collected from the surveys were digitized in Environmental Systems Research Institute (ESRI) Geographical Information System (GIS) software, using ArcGIS for Desktop.

The scientific nomenclature used in this report is noted according to the following references: vegetation, Holland (1986) and Oberbauer (2008); flora, Baldwin (2011); and butterflies, Klein and San Diego Natural History Museum (2002).

RESULTS

Vegetation Communities

Based on the quino habitat suitability assessment, vegetation communities determined to be potentially suitable quino habitat within the survey area consisted of Diegan coastal sage scrub native grassland, and only portions of the non-native grassland that were not heavily thatched.



Aerial Source: Merkel & Associates Jan. 2020

Quino Checkerspot Butterfly Survey Map Sunbow Phase III Development

Created on: May 13, 2020

Figure 2

Areas that were determined not to be potential quino habitat and thus excluded from the survey area included habitats such as southern willow scrub riparian, coastal and valley freshwater marsh, non-native vegetation, and the areas of non-native grassland that were heavily thatched predominately in the eastern portion of the project site. The onsite vegetation communities in relation to the survey areas are provided in Figure 2 and described below. A total of 75 acres of potentially suitable quino habitat occurs within the survey areas.

Diegan Coastal Sage Scrub

Diegan coastal sage scrub vegetation is primarily found in the western half of the property. It is also found in the eastern half of the property to a lesser extent where it is predominantly associated with the restored slopes of Poggi Creek channel that serve as a buffer to the wetland habitats that were created with the Sunbow II, Phase I development. In the western half of the property, Diegan coastal sage scrub is characterized by large stands of lemonadeberry (*Rhus integrifolia*) mixed with lower-growing shrubs such as coastal sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*), California encelia (*Encelia californica*), San Diego viguiera (*Bahiopsis laciniata*), and bladderpod (*Peritoma arborea*). Restoration areas along the slopes of Poggi Creek channel include a diverse mix of planted sage scrub shrubs and cacti species.

Native Grassland

Native grassland is found throughout most of the western half of the property in mostly open areas adjacent to Diegan coastal sage scrub vegetation. It is also found in patches along the bottom of the north-facing slope in the eastern half of the property where it gives way to non-native grassland to the south in more disturbed soils conditions. Clay soils accommodate fields of purple needlegrass (*Stipa pulchra*) as well as numerous geophytes including common goldenstar (*Bloomeria crocea*), blue dicks (*Dichelostemma capitatum* ssp. *capitatum*), and sharp-toothed sanicle (*Sanicula arguta*). The taller rayless gumplant (*Grindelia camporum*) and locally endemic Otay tarplant (*Deinandra conjugens*) are also associated with these grasslands. Non-native Eurasian grasses including ripgut grass (*Bromus diandrus*) and soft chess (*Bromus hordeaceus*) are common, but typically comprise less than 60 percent of the overall cover. In some areas, clumps of the non-native sweet fennel (*Foeniculum vulgare*) are also found.

Non-native Grassland

Much of the western half of the property is comprised of non-native grassland. A densely thatched cover of non-native, annual grass species including ripgut grass, purple-falsebrome (*Brachypodium distachyon*), soft chess, wild oat (*Avena barbata*), and red brome (*Bromus madritensis* ssp. *rubens*) dominate these areas. Numerous perennial and annual non-native forbs including short-pod mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), Russian thistle (*Salsola tragus*), Crete hedychnis (*Hedychnium cretica*), crown daisy (*Glebionis coronaria*), and wild radish (*Raphanus sativus*) are found throughout this habitat amongst the grasses. Some native annual forbs including silver puffs (*Uropappus lindleyi*), California cottonrose (*Logfia filaginoides*), everlasting bedstraw (*Stylocline gnaphaloides*) and tread lightly (*Cardionema ramosissimum*) occur occasionally in this habitat. Individual and small groupings of lemonadeberry surrounded by thatched non-native grasses are found in some locations within this habitat.

Quino Checkerspot Butterfly

No quino checkerspot butterflies were identified within the survey area during the protocol surveys. The most common butterflies observed throughout the survey area were painted lady (*Vanessa cardui*), anise swallowtail (*Papilio zelicaon*), white species such as checkered (common) white (*Pontia protodice*) and cabbage white (*Pieris rapae*). All of the butterflies observed during the survey are commonly found throughout San Diego County. Generally, there was a low abundance and diversity of butterflies detected and/or observed during the surveys onsite.

Two potential quino host plants were detected within the survey area and consisted of dot-seed plantain (*Plantago erecta*) and Orcutt's bird's-beak (*Dicranostegia orcuttiana*). Host plants were detected within the Diegan coastal sage scrub, native grassland, and only within the open areas of non-native grassland, as depicted in Figure 2. Host plant abundance is depicted in Figure 3 and has been classified as low (1-100 individuals), medium (100-1,000 individuals), and high (>1,000 individuals) based on an estimated count observed by the permitted biologists in the field. The height of the dot-seed plantain observed ranged from approximately 1" to 9" with an average height of approximately 3-4".

The survey area supported a moderate to high diversity and abundance of potential quino nectar plants that included (but not limited to): common goldfields (*Lasthenia gracilis*), blue dicks, common goldenstar, long-stem golden-yarrow (*Eriophyllum confertiflorum* var. *confertiflorum*), coastal California buckwheat, early onion (*Allium praecox*), miniature lupine (*Lupinus bicolor*), western blue-eyed grass (*Sisyrinchium bellum*), farinose ground pink (*Linanthus dianthiflorus*), silver puffs, and intermediate sun cup (*Camissoniopsis intermedia*).

A complete list of nectar plants observed within the survey areas during the protocol surveys is provided in Attachment 1; a list of the butterflies observed during the protocol surveys is provided as Attachment 2; and copies of the field notes from the permitted biologists who conducted the protocol surveys are provided in Attachment 3.



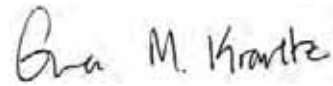
CONCLUSIONS

No quino checkerspot butterflies were identified within the survey area during the protocol surveys.

No other pertinent observations pertaining to the quino checkerspot butterfly were noted during the survey efforts. Due to the limited nature of the work on this project (i.e., protocol presence/absence surveys, not long-term research), we have no additional recommendations for species recovery.

If you have any questions concerning this report, please do not hesitate to contact me at (gkrantz@merkelinc.com) or (858) 560-5465.

Sincerely,



Gina M. Krantz
Senior Biologist/Lead Field Biologist



Keith W. Merkel
Principal Consultant

cc: Mr. David Shepherd, Lennar, David.Shepherd@lennar.com

REFERENCES

U.S. Fish and Wildlife Service (USFWS), Carlsbad Fish and Wildlife Office (CFWO). 2014 Dec. 15. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Guidelines. 8 pp.

_____. 2020. Phone conversations between Merkel & Associates, Inc. Principal Consultant Keith Merkel and Eric Porter of the U.S. Fish and Wildlife Service (USFWS) on March 5, 2020 and between Keith Merkel and Susan Wynn of USFWS on March 9, 2020 regarding M&A's request to start quino checkerspot butterfly protocol surveys later than the third week in February at the Sunbow II Phase III Project Site.

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information as required pursuant to Recovery Permit TE-797999-8.1, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

1) Fieldwork Performed By:



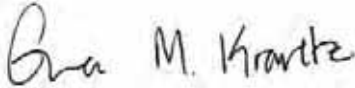
Adam Behle, Senior Biologist
10(a) Permit Number TE-797999-9

2) Fieldwork Performed By:



Kyle Ince, Senior Biologist
10(a) Permit Number TE-797999-9

3) Fieldwork Performed By:



Gina Krantz, Senior Biologist
10(a) Permit Number TE-797999-9

ATTACHMENT 1. LIST OF POTENTIAL QUINO NECTAR RESOURCES

Scientific Name	Common Name
DICOTYLEDONS	
Adoxaceae – Adoxa Family	
<i>Sambucus nigra</i> subsp. <i>caerulea</i>	blue elderberry
Anacardiaceae - Sumac Family	
<i>Rhus integrifolia</i>	lemonadeberry
Apiaceae - Carrot Family	
<i>Apiastrum angustifolium</i>	mock parsley
* <i>Apium graveolens</i>	celery
* <i>Foeniculum vulgare</i>	fennel
<i>Sanicula arguta</i>	sharp-tooth sanicle
<i>Sanicula bipinnatifida</i>	purple sanicle
Asteraceae - Sunflower Family	
<i>Achillea millefolium</i>	yarrow, milfoil
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage
<i>Ambrosia confertiflora</i>	weak-leaf bur ragweed
<i>Ambrosia psilostachya</i>	western ragweed
<i>Artemisia californica</i>	California sagebrush
<i>Artemisia palmeri</i>	Palmer's sagewort
<i>Baccharis pilularis</i>	coyote brush, chaparral broom
<i>Baccharis salicifolia</i>	mule fat, seep-willow
<i>Baccharis sarothroides</i>	broom baccharis
<i>Bahiopsis laciniata</i>	San Diego County viguiera
* <i>Carduus pycnocephalus</i>	Italian thistle
* <i>Centaurea melitensis</i>	tocalote
<i>Corethrogyne filaginifolia</i>	California-aster, sand-aster
<i>Deinandra conjugens</i>	Otay tarplant
<i>Deinandra fasciculata</i>	fascicled tarplant
* <i>Dittrichia graveolens</i>	stinkwort
<i>Encelia californica</i>	California encelia
* <i>Erigeron bonariensis</i>	flax-leaf fleabane
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	long-stem golden-yarrow
<i>Euthamia occidentalis</i>	western goldenrod
* <i>Gazania linearis</i>	treasure flower
* <i>Glebionis coronaria</i>	garland, crown daisy
<i>Grindelia camporum</i>	rayless gumplant
<i>Gutierrezia sarothrae</i>	matchweed
<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	saw-toothed goldenbush
* <i>Hedypnois cretica</i>	Crete hedypnois
* <i>Helminthotheca echioides</i>	bristly ox-tongue

Scientific Name	Common Name
<i>Heterotheca grandiflora</i>	telegraph weed
* <i>Hypochaeris glabra</i>	smooth cat's-ear
<i>Isocoma menziesii</i> var. <i>decumbens</i>	decumbent goldenbush
<i>Isocoma menziesii</i> var. <i>vernonioides</i>	coastal goldenbush
<i>Iva hayesiana</i>	San Diego marsh-elder
<i>Lasthenia gracilis</i>	common goldfields
<i>Logfia filaginoides</i>	California cottonrose
* <i>Logfia gallica</i>	narrow-leaf filago
* <i>Maticaria descoidea</i>	pineapple weed
<i>Osmadenia tenella</i>	Osmadenia
<i>Pluchea odorata</i>	salt marsh fleabane
<i>Pseudognaphalium biolettii</i>	bicolor cudweed
* <i>Sonchus asper</i> ssp. <i>asper</i>	prickly sow thistle
* <i>Sonchus oleraceus</i>	common sow thistle
<i>Stylocline gnaphalioides</i>	everlasting neststraw
<i>Uropappus lindleyi</i>	silver puffs
Boraginaceae - Borage Family	
<i>Amsinckia intermedia</i>	common fiddleneck
<i>Cryptantha intermedia</i>	nievitas cryptantha
<i>Cryptantha micromeres</i>	minute-flowered cryptantha
Brassicaceae - Mustard Family	
* <i>Brassica nigra</i>	black mustard
* <i>Hirschfeldia incana</i>	short-pod mustard
* <i>Lepidium didymum</i>	lesser swine cress
* <i>Lepidium latifolium</i>	broad-leaf peppergrass
* <i>Lepidium virginicum</i> ssp. <i>virginicum</i>	Virginia pepperweed
* <i>Nasturtium officinale</i>	water cress
* <i>Raphanus sativus</i>	wild radish
* <i>Sisymbrium irio</i>	London rocket
Cactaceae - Cactus Family	
<i>Cylindropuntia prolifera</i>	coast cholla
<i>Ferocactus viridescens</i>	coast barrel cactus
Caryophyllaceae - Pink Family	
<i>Cardionema ramosissima</i>	tread lightly
* <i>Silene gallica</i>	common catchfly
Chenopodiaceae – Goosefoot Family	
<i>Atriplex canescens</i> var. <i>canescens</i>	four-wing saltbush, shadscale
* <i>Atriplex semibaccata</i>	Australian saltbush
* <i>Chenopodium murale</i>	nettle-leaf goosefoot

<i>Scientific Name</i>	<i>Common Name</i>
Cleaceae — Spiderflower Family <i>Peritoma arborea</i>	bladderpod
Convolvulaceae - Morning-Glory Family <i>Calystegia macrostegia</i> ssp. <i>cyclostegia</i> <i>Calystegia macrostegia</i> ssp. <i>intermedia</i> * <i>Convolvulus arvensis</i> <i>Convolvulus simulans</i>	coast morning-glory south coast morning-glory field bindweed small-flower bindweed
Crassulaceae - Stonecrop Family <i>Crassula connata</i>	dwarf stonecrop, pygmyweed
Cucurbitaceae - Gourd Family <i>Marah macrocarpus</i> var. <i>macrocarpus</i>	manroot, wild-cucumber
Euphorbiaceae - Spurge Family <i>Chamaesyce polycarpa</i> <i>Croton setigerus</i>	small-seed sandmat doveweed
Fabaceae - Pea Family * <i>Acacia cyclops</i> <i>Acmispon glaber</i> var. <i>glaber</i> <i>Acmispon micranthus</i> <i>Amorpha fruticosa</i> <i>Astragalus trichopodus</i> var. <i>lonchus</i> <i>Lupinus bicolor</i> <i>Lupinus succulentus</i> * <i>Medicago polymorpha</i> * <i>Melilotus indicus</i>	cyclops acacia coastal deerweed grab lotus western false-indigo ocean locoweed miniature lupine arroyo lupine California burclover Indian sweetclover, sourclover
Geraniaceae - Geranium Family * <i>Erodium botrys</i> * <i>Erodium cicutarium</i> * <i>Erodium moschatum</i> * <i>Geranium dissectum</i>	long-beak filaree red-stem filaree white-stem filaree cut-leaf geranium
Lamiaceae - Mint Family * <i>Marrubium vulgare</i> <i>Salvia apiana</i> <i>Salvia mellifera</i> <i>Scutellaria tuberosa</i>	horehound white sage black sage Danny's skullcap

<i>Scientific Name</i>	<i>Common Name</i>
Malvaceae - Mallow Family <i>Malacothamnus fasciculatus</i> <i>Sidalcea sparsifolia</i>	mesa bush mallow, chaparral mallow checker-bloom
Myrsinaceae – Myrsine Family <i>*Anagallis arvensis</i>	scarlet pimpernel
Myrtaceae - Myrtle Family <i>*Eucalyptus globulus</i> <i>*Eucalyptus sp.</i>	blue gum eucalyptus
Nyctaginaceae - Four-O'Clock Family <i>Mirabilis laevis</i> var. <i>crassifolia</i>	coastal wishbone plant
Oleaceae - Olive Family <i>*Olea europea</i>	mission olive
Onagraceae - Evening-Primrose Family <i>Camissoniopsis bistorta</i> <i>Camissoniopsis intermedia</i> <i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	California sun cup intermediate sun cup willow herb
Orobanchaceae - Broom-Rape Family <i>Dicranostegia orcuttiana</i>	Orcutt's bird's-beak
Plantaginaceae - Plantain Family <i>Nuttallanthus texanus</i> <i>Plantago erecta</i>	blue toadflax dot-seed plantain
Platanaceae - Sycamore Family <i>Platanus racemosa</i>	western sycamore
Plumbaginaceae - Leadwort Family <i>*Limonium ramossimum</i>	Algerian rosemary
Polemoniaceae - Phlox Family <i>Linanthus dianthiflorus</i> <i>Navarretia hamata</i> ssp. <i>hamata</i>	farinose ground pink hooked skunkweed
Polygonaceae - Buckwheat Family <i>Chorizanthe procumbens</i> <i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i> <i>Lastarriaea coriacea</i> <i>*Rumex crispus</i>	prostrate spineflower coastal California buckwheat leather-spineflower curly dock

<i>Scientific Name</i>	<i>Common Name</i>
Primulaceae - Primrose Family <i>Dodecatheon clevelandii</i> ssp. <i>clevelandii</i>	padre's shooting star
Rhamnaceae - Buckthorn Family <i>Rhamnus crocea</i>	spiny redberry
Rosaceae - Rose Family <i>Heteromeles arbutifolia</i> <i>Rosa californica</i> <i>Rubus ursinus</i>	toyon, Christmas berry California rose California blackberry
Rubiaceae - Madder Family <i>Galium angustifolium</i> ssp. <i>angustifolium</i> <i>Galium nuttallii</i> ssp. <i>nuttallii</i>	narrowly leaved bedstraw San Diego/Nuttall's bedstraw
Salicaceae - Willow Family <i>Salix exigua</i> <i>Salix gooddingii</i> <i>Salix laevigata</i> <i>Salix lasiolepis</i>	narrow-leaved willow Goodding's black willow red willow arroyo willow
Saxifragaceae - Saxifrage Family <i>Jepsonia parryi</i>	coast jepsonia
Solanaceae - Nightshade Family <i>Lycium andersonii</i> <i>Lycium brevipes</i> var. <i>brevipes</i> * <i>Solanum americanum</i> * <i>Solanum nigrum</i>	waterjacket common desert thorn white nightshade black nightshade
Tamaricaceae - Tamarisk Family * <i>Tamarix parviflora</i>	small-flower/four-petal European tamarisk
Verbenaceae – Vervain Family <i>Verbena menthifolia</i>	mint-leaf vervain
Zygophyllaceae - Caltrop Family <i>Fagonia laevis</i>	California fagonbush

<i>Scientific Name</i>	<i>Common Name</i>
MONOCOTYLEDONS	
Agavaceae – Century Plant Family <i>Chlorogalum parviflorum</i>	small-flower soap plant
Alliaceae – Onion Family <i>Allium praecox</i>	early onion
Arecaceae - Palm Family * <i>Washingtonia robusta</i>	Mexican fan palm
Asphodelaceae – Asphodel Family * <i>Asphodelus fistulosus</i>	asphodel
Iridaceae - Iris Family <i>Sisyrinchium bellum</i>	western blue-eyed grass
Liliaceae - Lily Family <i>Calochortus splendens</i>	splendid mariposa
Melanthiaceae – Bunch Flower or Camas Family <i>Toxicoscordion fremontii</i>	death camas
Themidaceae – Brodiaea Family <i>Bloomeria crocea</i> <i>Brodiaea terrestris</i> ssp. <i>kernensis</i> <i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	common goldenstar dwarf brodiaea blue dicks
MAGNOLIIDS-PIPERALES	
Saururaceae - Lizard-tail Family <i>Anemopsis californica</i>	yerba mansa

* = Denotes non-native flora species

ATTACHMENT 2. LIST OF BUTTERFLIES OBSERVED DURING PROTOCOL SURVEYS

<i>Common Name</i>	<i>Scientific Name</i>
Papilionidae (Swallowtails)	
anise swallowtail	<i>Papilio zelicaon</i>
western tiger swallowtail	<i>Papilio rutulus</i>
pale swallowtail	<i>Papilio eurymedon</i>
Pieridae (Whites and Sulfurs)	
checkered (common) white	<i>Pontia protodice</i>
cabbage white	<i>Pieris rapae</i>
Pacific Sara orangetip	<i>Anthocharis sara sara</i>
orange sulphur	<i>Colias eurytheme</i>
Harford's sulphur	<i>Colias harfordii</i>
unidentified white sp.	
unidentified sulphur sp.	
Lycaenidae (Gossamer-wing Butterflies)	
gray hairstreak	<i>Strymon melinus pudica</i>
marine blue	<i>Leptotes marina</i>
western tailed-blue	<i>Everes amyntula</i>
Riodinidae (Metalmarks)	
Behr's metalmark	<i>Apodemia mormo virgulti</i>
Nymphalidae (Brushfoots)	
mourning cloak	<i>Nymphalis antiopa</i>
painted lady	<i>Vanessa cardui</i>
west coast lady	<i>Vanessa annabella</i>
common California ringlet	<i>Coenonympha cal. californica</i>
monarch	<i>Danaus plexippus</i>
common buckeye	<i>Junonia coenia grisea</i>
Lorquin's admiral	<i>Limenitis lorquini</i>
queen	<i>Danaus gilippus thersippus</i>
Hesperiidae (Skippers)	
funereal duskywing	<i>Erynnis funeralis</i>
fiery skipper	<i>Hylephila phyleus muertovalle</i>

ATTACHMENT 3. FIELD NOTES FOR PROTOCOL QUINO SURVEYS

Sunbow Quino Survey
3/6/20 - ICLI

1315 - 1515

0% CC - 0% CC

Winds - 0 - 5 mph

64° F - 64° F

Allium praecox

Dichelostemma capitatum

Dodecatheon clevelandii

Toxicoscordion fremonti

Amorpha fruticosa

Gallium angustifolium

Sanicula arguta

Anise Swallowtail 1

Lupinus succulentus

Lycium andersonii

Orange Crown Warbler

Jepsonia parryi

(AHB)

SUNBOW QCB SURVEY #1 03/06/20

START: 63° 0% CC

DICHELSTEMMA CAP.

10:20, 1-3 MPH

SISYRINCHIUM BELUM

STOP: 65° 0% CC

ANEMUM PRAECOX

13:40, 1-3 MPH

BRASSICA NIGRA

TRAIL SWANSONIA III

MEUMURUS INDICA

III SANA ORANGE TIP IIII

VERPIDIUM VIRIDIMUM

WHT COAT LADY III

HIRSCHFELDIA INCANA

ANISA SWANSONIA I

BACHANUS SAUCIFOLIA

WHITE SP. II

HETEROMERUS ARBUTUSMA

UNIDENTIFIED

ENOMA CALIFORNIA

PAINTED LADY III

* PLANTAGO ERIOGON - 1,000'S, 3-10 cm,

RENTOMA ARBOREA

250, 4-13 cm,

ANAGALLIS ARVENSIS (also in blue flower)

NICOTIANA GLAUCA

LESSINGIA FILIFOLIA

AMORPHA FORTICOSA

CORDELLA RIGIDA

DICRANOSTEGIA ORCUT

MEDICAGO POLYMERIA

ZIGADEMUS FREMONTII

MINABISUS LARVIS

FRITILLARIA BIFLORA

VIGVENS LACINIATA

AVENA SP.

(SUNBOW QCB #1 CONT.)

CANISTANIA MACRO.

LUPINUS SUCCULENTUS

NO QCB OBSERVED

3/6/20

Sunbow

QCB #1

Smk w/ AHB

Smk 10-20 / 0-155 / 63°F / 0.1 cc | End: 1340 / 0-155 / 65°F
0.1 cc

OLCS / NAME GRASS

(Neon plants)

broodm cic.

Blue cicus

BRASSICA MORA

Allium pterox

~~Herat~~ incant

Melra indig

Enchir al

~~WTS~~ sp? (photo) Zigadaw

Blue-eyed grass

Isomeris

Scarus pterone

Citro. luy

Ussingia fuciformis (boring out)

A Plumbago coccinea (3-12cm tall) GPSd w/ quantities

Colony/land us RIG? (sample/photo) or organize?

Mirabilis laevis

Lupinus succ.

CALYSTEGIA SP.

Anise SWT II

TIGER SWT I

SARAS OT NLI II

WHITE SP III

POINTER LADY III

MOUNTAIN GARDEN I

Ø QCB

AUB

SUNBOW QCB#2

March 11, 20

START: 12:45

NEEDLE SAVED:

WIND 1-3 MPH, 34% CC

DICHROSTEMMA CAP.

62°

SISYRINCHIUM BELUM

HIRSCHFELDIA INCANA

STOP: 15:45

CALYSTEGIA MACRO

WIND 0-1 MPH, 50% CC

ERODIUM FASCICULATUM 69°

ANILUM PRARCOX

PELTOMA ARBOREA BUTTERFLIES:

ENCORIA CALIFORNICA PAINTED LADY - III

RHUS INTEGRIFOLIA SARA ORANGESTED - IIII

FOENICULUM VULGARE WESTERN TIGER SWALLOWTAIL - I

ERODIUM CICUTARIUM ORANGE SKIPPER - I

VIGUERA LACINIATA - WOOLY BEAR CATERPILLAR -

SALVIA MELIFERA

NUMEROUS ON FOOTPATH

- NOT QCB

MELICOTUS INDICA

MIRABIS LAEVIS

SANTALUM BIPINNATIFIDA

ASTRAGALUS TRICHOPODUS

SAMBUCUS NIGRA

BRASSICA NIGRA

(SUNBOW QCB #2 CONT)

BAUCHARTS SALICIFOLIA

DODECATHEON CLEVELANDII

ZIGADENUS FREMONTII

NO QCB OBSERVED

3/11/20 Sunbow QCB #2

Source Port = GML w/ A+B + V.I.

START: 1230 / 62°F / 30% RH / 1-3 mph

END: 1545 / 69°F / 50% RH / 0-1 mph

DCS / NNG / HLR

Harvest Monitor

V.G. LAC

CANUSPORA

Bone milk

Ernaum

Alburn

DE form

LACUS

Meerlotus elter? (yellow)

Encelia cal

Lupinus

Silene? photo

Plantago elata (1" - 9" tall) - Average

Lotus Scordum

STARTS AT 1111

Amise start 11

Printed Lady N

UNE D'd sp
(gray small-mid)

Fluoresce DWI

UNID'd lane

Ø QCB

3/11/20

Sanbow

Quino

KLI

1200 - 1530

15% CC - 70%

66° F - 66°

Winds - 0 - Snp

* *Sara orangeti* p ✓

Dichelostemma pulchellum ✓

Allium praecox ✓

Eucalyptus calyc ✓

Hieracium v. ca ✓

Melilotus indicus ✓

Sisyrinchium ballum ✓

Toxicoscordion fremonti ✓

Erodium cicutarium ✓

Flery
S. Kipper

II ✓

Pentstemon isomeris ✓

Gutierrezia sarothra ✓

Rhamnus crocea ✓

Mourning Cloak ✓

Plantago sp.

Just starting ✓

Sanicula arguta flower ✓

Dodecatheon clevelandii ✓

3/11/20

Leymur stewarti

2

Acmispon glaber ✓

Funereal Duskywing III

From: Gina Krantz
Sent: Tuesday, May 19, 2020 1:14 PM
To: Gina Krantz
Subject: RE: Sunbow QCB #3

Sunbow QCB #3

3/17/20

GMK northern portion
Start: 1:00; 40%cc; 60F; 0-1BS
End: 4:45; 10%cc; 62F; 0-1BS

Common ringlet- IIII
(hilltopping and resting in native grassland n facing slope)
Sara's OT- III
Painted lady-III
Funereal DW-II

Same flowering nectar plants as last time unless added here: -bladderpod (*Isomeris arborea*)
-Sanicula sp.
-Astragalus sp. Photo
-Achillea millefolium Photo
-Zaga lily
-Shooting star(*Primula clevelandii*) closed buds- photo
-Onion weed (*Asphodelus fistulosus*) photo

0 QCB

Sent from my iPhone

Sunbow amino
1:50 — 4:30
61° — 62°
30% CC — 15% EC
Winds 0 — 3 mph

3/17/20
KLI

Flowers

Viguiera lacinia ✓
Plantago erecta ✓
Evodium cicutaria ✓
Anise Swallowtail ✓
Calystegia macrostegia ✓
Medicago polymorpha ✓
Melilotus indica ✓
Evodiam botrys ✓
Silene gallica ✓
Hypochaeris glabra ✓
Hedysarum creticum ✓
Lupinus bicolor ✓
Acmispon glabra ✓
Anagallis arvensis ✓
Linanthus dianthiflorus →

3/07

2

Blue Butterfly

Crassula conata ✓

Silene gallica ✓

CAGW - olive tree

Dichelostemma pulchellum ✓

Sisyrinchium bellum ✓

Eurelia californica ✓

Sanicula arguta ✓

Hirschfeldia cucurbitacea ✓

Sarban QC B 154. CC-01. 1

3/22/20

Winds - 1-34

13:55 - 14:45

61°F

No of Creek, East of ~~Western~~
Western Road Entrance

Sisymbrium irio ✓

Erigeron cal ✓

Hieracium ~~irio~~ ✓

Salix exigu ✓

Anise Smallflower ✓

Berchemia ~~salicifolia~~ ✓

Metricharia ~~ma~~ trichoribides ✓

Nicotiana glauca ✓

Viguiera ~~terminata~~ ✓

Amargolis ~~arvensis~~ ✓

Anise Smallflower ✓

Salvia nigra ✓

Salvia multiflora ✓

Painted Lady ✓

Bractean ~~angustifolia~~ ✓

Melaleuca ~~polyneura~~ ✓

Geranium dissectum ✓

MILANNA - 201793 - 201, 83.

SUNBORN QUB #4

(AHS) 03/21/22

CONFIRMED BIRCHET 11

START - 1115, 66°

ANISE SWAWNTAIL 111

50% CLOUD COVER,

WEST COAST LADY 111

0-2 MPH

LOQUINS ADMIRAL 1

PLANTAIN - 250 1-2 1/2" TAN, NEXT TO

BORING PIT - MAPPED ON AVENZA.

PLANTAGO - 1,000'S 3"-5" TAN, NORTH OF

FOOTPATH.

+ MANY MORE POPULATIONS

OF PLANTAGO MAPPED ON

AVENZA.

STOP - 1515, 65°

5% CC, 1-3 MPH

NECTAR SOURCES SAME AS PREVIOUS WEEK.

NO QUB OBSERVED

3/02/20

-

QCB

Sunbird

KLI

Upper Road - East End

64°F - 64°F

1400 - 1515

10% CC - 10% CC

Winds - 0-5 mph

Linaria canadensis

Plantago erecta

Evodium cicutarium

Gopher Snake

So Pacific Rattlesnake

Silene gallica

Acmispia glabra

Anagallis arvensis

Medicago polymorpha

Hedysarum creticum

Lupinus bicolor

Calystegia macrostegia

Sisyrinchium bellum

Hirschfeldia incana

Diachloa stemmura pulchra

Anise Swallowtail

~~8/~~

3/21

2

Allium Praecox

Ismarus arboreus

Painted Lady

Glebionis coronaria

Linanthus dianthus-flora

Funereal Dusty Gillyflower

3/22

From: Matthew Krantz <mattkrantz@me.com>
Sent: Friday, April 17, 2020 3:28 PM
To: Gina Krantz
Subject: Sunbow QCB #5

Sunbow QCB #5

3/24/20 GMK northern portion
Start: 1:15; 63F; 0-1BS; 30cc
End: 4:45; 61F; 0-2BS; 35cc

Anise ST I
Monarch I (next to houses west end)
Painted lady IIII IIII III
Ca Ringlet II
Funereal DW II

PE 600 2-9" avenza pt.

Same nectar plants as last times, except:
Black sage

Pacific tree frogs up on slope in grassland

0 QCB



Sent from my iPhone

SUNBOW QCB #5

(AHB) 03/24/20

START - 1200 61°

PAINTED LADY IHH 5-7 MPH, 40% CC

IHH IHH

IHH IHH

STOP - 1600

WHITE SWALLOWTAIL 1 1-3 MPH, 10% CC

NO QCB OBSERVED

* MANY MOON BEAR CATERpillARS ON BARE
DIRT PATHS

* NEW POPULATION OF PUANTAGO ERUTA x500
- " " " ≈ 25-3-4" 1"-2" TAN

- ALL MAPPED ON AVENUE FILE.

NECTARING SOURCES - SAME AS PREVIOUS WEEK

3/24/20 - Rainbow Quino 1
East mesa old roads with
host plant

1230 → 1330 2:25 → 445
62° → 62° 62° → 62°
Winds 1-Sup → 1-Sup
S. CC → S. 10% → 10%

Erodium cicutarium
Acnispia glabra ✓
Hedyotis crotcha
Chorizanthe coriacea ✓
Plantago erecta
Silene gallica
Hypochaeris glabra
Plantago erecta
Erodium botrys
Erodium moschatum
Sisyrinchium bellum
Linanthus dianthaeflorus

3/24/20

2

Allium purpureum
Pseudognaphalium barlettii (bicolor)
Aristida angustifolia
Filago californica
Medicago polymorpha
Glebionis coronaria
Anemone Swallowtail
Galystegia macrostegia
Toasted Lady III
Functional Duskwings
Silene Gallica
Lupinus bicolor
Alligator Lizard

MILEAGE - 202165 - 202185
(TO OFFICE)

SUNBOWL QCB #6 (AHB) 03/27/20

BUTTERFLIES

PAINTED LADY IIII
CALIFORNIA RINNET IIII
LOREQUIN'S ADMIRAL I
ANISE SWALLOWTAIL I

START : 10:45 60°

0-2 MPH 40% CC

STOP : 1415 62°

3-5 MPH 10% CC

NO QCB OBSERVED

NECTAR SOURCES

ERODIUM CICUTARIUM	ENCEDIA CAL.
BRASSICA NIGRA	TAMARIX PARV.
SISYRINCHIUM BELLUM	MEDICAGO POLY
DICHELIDOSTEMMA CAP.	*PLANTAGO - NEW POPS
ALLIUM PRAECOX	ANACARDIUS ARV.
SAMBUCUS NIGRA	MIRABILIS LATVIS
CALYSTEGIA MACRO.	ACMISPON G.
ERIDONNUM FASCICULATUM	AVENA SP.
ACHILLEA MILLEFOLIUM	BALNATMUS SALICIFOLIA
PENTOMMA ARBOREA	MEMUTUS INDICUS

(MORE ON AVENIA)

(QCB #6 CONT.)

AMORPHA FRUTICOSA

JUNUS ACUTUS

SALVIA MELIARIA

VIGUIERA LACINIATA

* DICRANOSTEGIA ORCUT, -4 @ 3-6" ON AVENUE

LEPIDIUM VIRG.

ZKADENUS FREMONTII

3/27/20

Sunbow QCB #6

6mL (SE portion)

Start: 1315; 1-2 BS; 35% 4L; 60°F

End: 1500; 1-2 BS; 5% 4L; 62°F

Printer Larry HHH III
Funeral DW II

Same rector plants as last time except:

Cher's weed

Silene galeana

PE drying up along access road

WT Kate (FL)

Ø QCB

3/27/20 Sanbow Quemo

1300 - 1700

Winds - O-Supr

GT = 62°F - 62°F

5 50% CC - 0% CC

Medicago poly

Geranium dissectum

Melilotus indicus

Brassica nigra

Hypochaeris glabra

Sisyrinchium bellum

Hirschfeldia incana

Dichelostemma capitatum

Allium - leaves flat in cross section

Hedysarum creticum

Erodium cicutarium

Calystegia macrostegia

Sonchus asper

Encelia californica

Painted Lady IIII

3/27

2

Convolvulus simulans ✓
Santellaria tuberosa ✓
Sidalcea malvaeflora ✓
Achillea millefolium
Sanicula arguta
Anagallis arvensis
Asphodelus fistulosus
Bahroopsis laciniata
Stipa pulchra
Tree frog

SUNBOW QCB #7

AMB 04/03/20

AREA: UPPER ELEVATIONS START: 1100, 61',
OF WEST SIDE 20% CC, 1-3 MPH

BUTTERFLIES:

STOP: 1500, 74°

PAINTED LADY IIII IIII 20% CC, 3-6 MPH

ANISE SWALLOWTAIL /

MONARCH /

SARA ORANGETIP /

CALIFORNIA RINGLET /

WID'D SULPHUR / (LARGE, PALE YELLOW)

NO QCB OBSERVED

NECTAR SOURCES: (SAME AS PREVIOUS WEEK)

SOLANUM

SIDALCEA

* PLANTAGO (~ 350, MAPPED ON AVENUE)

SUNBOW QCB #7 (CONT.)

OTHER:

Gopher snake - 1

RED TAILED HAWK (PAIR, SOARING)

CAGN - JUST WEST OF MAIN DRAINAGE IN DCSS

4/3/20 Sunbow QCB #7
Brew (Northern form)

Start: 1145 / 62°F / 20% CC / 0-8 mph
End: 1535 / 72°F / 30% CC / 0-4 mph

OLSS / NG

Same nectar / flowering sp.
as last survey except:

African daisy (photo)

Chrysanthemum
var. white

Sidalcea unguiflora

Bloomerz crocus (1st individual
observed in flower this season note)

Astragalus (white fls) - petals

Chrysanthemum

Abrise SW II

Primmer waxy III III

Comm. Ringlet II III III

White sp I II

Funereal DW III

Sulphur sp I
(large/yellow,
may be Harford's)

SARAH'S OT II

(1) CCB &
in OLSS -
Average 11

Ø QCB

4/3/20

Sunbow

Quino

KLI

1100 - 1530

5% CC - 10% CC

Winds - 0 - 6 mph

64°F → 64°F

Anise Swallowtail

Behr's metalmark

Hedynus cretica

Erodium cicutarium

Bathypsis laciniata

Calystegia macrostegia

Hustlerfieldia incana

Melilotus indicus

Medicago polymorpha

Encelia californica

Painted Lady IIII 11

Mirabilis leaves var. crassifolia

Pale Swallowtail 1

Lupinus bicolor

Silene gallica

Acmispon glaber

4/3/20

2

Anagalis arvensis

Lastarriaea coriacea

Linanthus dianthiflorus

Plantago erecta

Sisyrinchium bellum

Dichelostemma capitatum

Apiastrum angustifolium

Pseudognaphalium bisletti

Lasthenia coronaria

Muhlenbergia rigens

Chloragalum parviflorum (not in flr)

Cryptantha micromeres

SUNBOW QCB #8

AHB 07/14/20

AREA: POGGI TRAIL,
NORTH FAUNA SCOPES

START: 1100, 64°
5% CC, 1-3 mph

BUTTERFLIES:

STOP: 1420, 66°
5% CC, 5-7 mph

CALIFORNIA RINGLET	1
FUNERAL DUSKYWING	11
SARA ORANGETIP	1
PAINTED LADY	
ANISE SWALLOWTAIL	11
BUCKEYE	11

NO QCB OBSERVED

VEGETATING SOURCES: (IN ADDITION TO
DIMORPHOTHECA SINUATA PREVIOUS SURVEY)

BLOOMERIA CRUZA

SANICULA BIPINN.

HEDYPNOIS CRETICA

ROSA CALIFORNICA

* PUANTANA - NEW POPS < 250
500

SUNBOW QUB #8 (CONT.)

OTHER:

RED TAIL HAWK - III (SOAKING HIGH ABOVE
CENTRAL DRAINAGE)

Gopher Snake - II

4/14/20

Sun Bow QCB #3

GMR

(SIE portion)

W/AMBITION surveying other areas

START: 1100 / 63°F / 0% cc / 0-3 mph

END: 1430 / 66°F / 5% cc / 3-8 mph

NG/UNG/DCSS

Amise SW III

Printed Way III III III

W. tailed blue I

Sulphur sp

White sp

- Plantago erecta
burned out
on access path
some small areas
not burned or
Some nectar
plants as
last survey,
except:

- Eriogonum fasc.

- Chamae
procombens? or
LASSPALLIDA GRASS?

- Urn
diathra

- Blue
wings

- Bumble
bees

- Hyla rosalia
calling

- Chrysanthemum

- Grindelia sp
sprouts
not flowering
yet

- Copper snake

QCB

Rough-wing Swallow

4/14/20

Sunbow

Qain

11:15 - 2:30

62° F -

0% CC - 0%.

Winds O-S - 3-7

Orange Crowned
Warbler

Pacific Slope

Flycatcher

CAGW

Painted Lady ~~||||~~ ~~||||~~ ||

Anise Swallow tail |||

Bahopsis laciniata

Sisyrinchium bellum

Hedypneis cretica

Brassica nigra

Calyptegia macrostegi

Dichelostemma capitatum

Encelia californica

Chamaesyce polycarpa

Eriogonum cicutarium

~~Peritoma~~ Peritoma arborea

Achillea millefolium

Blumeria crocea

Turned Rastignas

Buckeye

Hazardia sp

N. Harrier

A. canescens

4/14/20 Sunbow

City Property - ~~Proposed~~ Buttrick
Area

2' wide NW - Eastern end
must avoid. Becomes a swale
on-site (Sunbow property) - Photos

~~Avena barbata~~

~~Brachypodium distachyon~~

~~Festuca perennis~~

~~Most of the site~~

Most of the offsite area
occurs on an old graded
road that has regrown
with NNG. A couple

Rhus integr

Bromus tectorum

mapped

Isoroma ~~maritima~~ decumbens

Syntherisma bell

Hedysarum creticum

SUNBOW QCB #9

AHB 04/16/20

AREA: EAST SITE,

START: 1000, 65'

EAST OF MAIN DRAINAGE

3-5 MPH, 0%
cc

BUTTERFLIES:

STOP: 1505, 72'

4-7 MPH, 0%cc

PAINTED LADY - IIII

BUCKEYE - II

ANISE SWALLOWTAIL - III

SARA ORANGUTIP - III

WEST COAST LADY - I

NO QCB OBSERVED

NECTARING SOURCES - (SAME AS PREVIOUS, PLUS)

ACHILLEA MILLEFOLIUM

SUNBOW QCB #9 (CONT.)

Other:

COOPER'S HAWK	-1	}	ON AVENZA
TREE TOAD	-NUMEROUS		
FEROCACTUS VIRIDESCENS	-11		

Sunbow

4/16

Quino

1611/1113

1000 — 1500

0% CC — 0%.

3-5 mph —

65° — 72° F

Mirabilis laevis crassifolia
~~*californica*~~

Bahinopsis laevis

Calystegia macrostegia

Glebbonia coronata

Encelia californica

Calochortus splendens

Sisyrinchium bellum

Achillea millefolium

Hedyscyma cretica

Prosopis juliflora

Medicago polymorpha

Dichelostemma capitatum

Sanicula arguta

Guzmania

4/16

2

Costa's Hummingbird

Painted Lady 111

Brassica nigra

Anagallis arvensis

Stipa millanensis

1

SUNBOW QCB #10

AHB 04/23/20

AREA: UPPER MESA STANT: 0900, 64°
WEST OF DRAINAGE 1-3 MPH, 0% CC

BUTTERFLIES: STOP: 1235, 78°
3-5 MPH, 0% CC

SARA ORANGUTIP - IIII II

PAINTED LADY - IIII II

MOORNING CLOAK - IIII I

FUNERAL DUSKY WING - III

HARTFORD'S SULPHUR - I

ANISE SWALLOWTAIL - IIII

NO QCB OBSERVED

NECTARING SOURCES SAME AS PREVIOUS SURVEY

(SUNBOW QCB #10 CONTINUED)

OTHER:

PAIR OF CAGN AT TRAIL TO
HINDERS ENCAMPMENT.

RED TAILED HAWK FLYOVER ABOVE MAIN
DRAIN NEAR CULVERT

4/23/20 Sun Bow QCB #10

Grnk (SOUTH EAST.)

Will AHB# KAI (rest of site)

START: 0920 / 0% cc / 64°F / 0-3 mph

END: 1310 / 0% cc / 78°F / 2-6 mph

DCSS / NG / PNG

Anise SW NLI (hilltopping)

PAINTED LADY 111

CHECKERED WHITE 1

WC LADY / FURNACE? (Fast Flying ^{meo} orange/blue)

WHITE SP1

FURNACE DW NLI (hilltopping)

SARAS 01

- Small patches of PE
residents among dandel
up PE zone (SE)

- NAVARETH 2 SP. starting
to sprout

- CONVULSIVE INVERNIS

COHA (FL)

RSHN ^{paris} (FL)

Ø QCB

4/23/20 Sunbow

Quino Surber

0930 — 1330

0% CC — 0%.

64° GT — 77° F

winds — 0 — 2 mph

Mel. litus indicus

Hershfeldia incana

Anagallis arvensis

Hedyotis cretica

Geranium dissectum

Erodium cicutarium

Brassica nigra

Blomeria coccinea

Sisymbrium officinale

Medicago polymorpha

Calceolaria splendens

Gazania

Sambucus mexicana

Smilax decaisneana

Calystegia macrostegia — acate
bracts

#123

2

Hypochaeris glabra

Achillea millefolium

Peritoma arborea

Mourning clover (Rhus) ||||

Gallium nuttallii

Apocynum angustifolium

Scutellaria tuberosa

Simmondsia chinensis

Erodium cicutarium

Encelia californica

Bahopsis laciniata

Sidalcea malviflora

Asphodelus fistulosus

Carduus pycnocephalus

Salvia mellifera

Hummingbird Hawk Moth

Sage Orange tip 1

Glebionis coronaria

Nicotiana glauca

Painted Lady ||||

White (Cabbage?) ||

4/23

3

Amorpha fruticosa

Salix gooddingii

Plantago erecta

Acemison ~~sabagum~~ gleber

Anise Swallowtail

Pseudognaphalium californicum

Stylocine anaphaloide

Rosa californica

Avena fatua

Calystegia macrostegia intermedia

Gallium nuttallii

4/20/20 Sunbow QCB #11

GMK (SE)

KI + AHB (not a site)

START: 1120 / 71°F / 100% RH / 0-4 mph

END: 1530 / 73°F / 10% LL / 0-8 mph

OLSS / NK / NAB

PAINTED LADY III

WHITE SP II

ANISE SW II

BLUE SP I

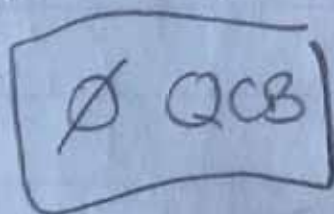
CABBAGE (♀) I

(2) Spots on FW

TURKISH DW I

GRAY HAREMARE I

W. COAST LADY I



NE ROBERT

LBY

Am KE (perched on extra snag)

Linaria canadensis

Grass Col.?

Fagopyrum laciniatum

Striped racer

Dicranostegia breutliana

Osmorhiza fruticosa

Elymus sp.

Apocynum androsaemifolium

Delphinium sp. Spots on

Lamium (dwarfed)

Juncus bufonifolius (moist areas)

Trend lightly

4/30/20 Quino
Survey

1120 — 1530

71°F — 73°

100% CC — 10%

Winds — 0-8 mph

Sage Sparrow?

Bloomeria dioica

Bahopsis laciniata

Hirshfeldia incana

Sisyrinchium bellum

Calystegia macrostegia

Hedyscopia cretica

Eucalyptus californica

Hirshfeldia incana

Melilotus indica

Salvia mellifera

Tarantula Hawk

Anagallis arvensis

Acmispon glaber

4/30/20

2

Fagonia laevis

Calachofa S Splendens

Achillea millefolium

Aphidius fistulosus

Chamaesyce polycarpa

Euphorbia pepulus

Sambucus caerulea

Anna's Swallowtail 111

Convolvulus simulans

Lark Sparrow

West Coast Lady 1

SUNBOW QCB #11
(WESTERN SLOPES / POCGI)

AHB 04/30/20

START: 1100, 71°

1-3 MPH, 100% CC

BUTTERFLIES:

ANISE SWALLOWTAIL - ||||

STOP: 1430, 73°

SARA ORANGE TIP - ||

1-3 MPH, 50% CC

BUCKEYE - |

MOORNING CLOAK - ||||

CHECKERED WHITE - ||

UN-ID'D WHITE - |||

NO QCB OBSERVED

NECTARINE SOURCES SAME AS PREVIOUS
SURVEY

SUNBOW QCB #12

ATB 05/07/20

(WESTERN MESA)

START: 0845, 64°

0 MPH, 0% CE

BUTTERFLIES:

STOP: 1215, 74°

WESTERN TIGER SWALLOWTAIL	- III	24 MPH, 0% CE
ANISE SWALLOWTAIL	- III III	
PAINTED LADY	- (
BOCKEYE	- III I	
UNID'D WHITE	- III	
CABBAGE WHITE	- III	
SALT ORANGETIP	- I	
MOURNING COCK	- III I	
FUNERAL DUSKY WING	- I	

No QCB observed

AFFECTING SOURCES SAME AS PREVIOUS SURVEY.

5/7/20 Sunbow QCB #12
GmL (Northway)

START: 0845 / 0% CC / 0-5 mph / 64°F
END: 1245 / 0% CC / 0-5 mph / 74°F

DCSS/NG/NNG

W. TIGER SWALLOWTAIL IIII

PAINTED LADY III

WHITE SP IIII

Queen? along Rye Crk I

ANISE SW II

MOURNING CLOAK TII

Common Buckeye II

CABBAGE WHITE I

STAR'S OT I

Ø QCB

GBHE (FL)

PRICKLY PEAR

CROCK (Pink flower)

Brodiaea freshtis kam
BTK (KAE vach)

Sunbow Quino

5/7/20

KLI

70° - 75°F

0845 - 1150

0% CC - 5%

Winds 0 - 3 mph

Mourning Cloak III

Bahioopsis laciniata

Brassica nigra

Acnispom glabrum

Hirschfeldia incana

Calystegia microstegia

Convolvulus arvensis

Erodium moschatum

Hedysarum cretica

~~Ant~~ Tiger Swallowtail II

~~Lotus strigosus~~ *Acnispom micranthos*

Atriplex suberecta

Melilotus indicus

Sonchus asper

Anagallis arvensis

West Coast Lady II

5/7/20

2

Sisyrinchium bellum

Blomiera crocea

Anise Swallowtail I - IIII

Sulphur I

Californian Buckeye I

Eumecurus satigerus I

Cabbage White III

Eriogonum fasciculatum

Silene gallica I

Schizanthus mollis ✓

Funeral Duskywing II

Pseudognaphalium microcephalum I

Calochortus splendens S ✓

Plantago erecta I

Blue I

Acmispon micranthus I

Navaretia hamata SSP. leptantha I

Centaurium venustum I

Linanthus dianthiflorus S

Apocynum angustifolium

Glebionis coronata

5/7/20

3

- Antechinus nathaliae* ✓
Stephanomeria diegensis (Wot in flower)
Side-blotch Lizard ✓
Camissonopsis bistorta ✓
Cynara cardunculus (Wot in flower) ✓
LBV
Burdiaea terrestris kernensis
Penstemon setaceus ✓

**APPENDIX 9. CITY OF CHULA VISTA HABITAT LOSS INCIDENTAL
TAKE DRAFT FINDINGS**

DRAFT SECTION 17.35.080 REQUIRED FINDINGS FOR ISSUANCE OF AN HABITAT LOSS INCIDENTAL TAKE (HLIT) PERMIT

A. In order to approve or conditionally approve a HLIT permit, all of the following written findings shall be made by the decision maker:

1. The proposed development in the project area and associated mitigation is consistent with the Chula Vista MSCP subarea plan, as adopted on May 13, 2003, and as may be amended from time to time, the MSCP implementation guidelines, and the development standards set forth in CVMC [17.35.100](#).

The Sunbow II Phase 3 SPA Plan Amendment Project complies with and is consistent with the Chula Vista MSCP Subarea Plan, the MSCP Implementation Guidelines, and the development standards as set forth in Section 17.35.100 of Chula Vista Ordinance No. 3004. The project consists of a residential development including a detention basin that is a MSCP Future Facility as defined in MSCP Section 6.3.3.1 of the City's MSCP Subarea Plan. The project site is located partially in the City's MSCP mapped 100% Preserve and partially in the City's MSCP Development Area, where land development was anticipated at the time of MSCP adoption.

2. The project area is physically suitable for the design and siting of the proposed development and the development results in minimum disturbance to sensitive biological resources, except impacts to natural vegetation in mapped development areas.

The Sunbow II Phase 3 SPA Plan Amendment Project area is physically suitable for the design and siting of the proposed project since it is predominately located within the mapped MSCP Development Area of the City's Subarea Plan. Site grading and development will result in disturbance to sensitive biological resources including sensitive species and natural vegetation as defined by the Chula Vista MSCP Subarea Plan. The majority of the proposed impacts are located within the onsite mapped Development Area. The proposed project completely avoids impacts to wetland habitats. The project is located in the least environmentally sensitive location feasible, primarily within non-native grassland that does not support sensitive species. The project has been designed to minimize and/or avoid impacts to sensitive biological resources to the maximum extent practicable. The following list details the sensitive habitats and sensitive species (federally and/or state listed, Narrow Endemic, and/or Covered Species only) that would potentially result in significant direct impacts by the project:

- 7.79 acres of native grassland (temporary and permanent impacts)
- 8.55 acres of Diegan coastal sage scrub (temporary and permanent impacts)
- 55.61 acres of non-native grassland (temporary and permanent impacts)
- coastal California gnatcatcher
- 2.6 percent of Otay tarplant onsite population (within Preserve)
- 12.7 percent of Otay tarplant onsite population (within Development Area)
- 61 acres of potential raptor foraging habitat
- Orcutt's bird's-beak
- Decumbent goldenbush
- San Diego viguiera

3. The nature and extent of mitigation required as a condition of the permit is reasonably related to and calculated to alleviate negative impacts created in the project area.

The Sunbow II Phase 3 SPA Plan Amendment Project has been conditioned to require habitat-based mitigation, species-specific mitigation, and/or avoidance, to the extent feasible, of sensitive biological resources including sensitive species and habitats related to and calculated to alleviate negative impacts created by the project.

The following project mitigation measures are required as conditions of the HLIT permit:

- MM-BIO-1** The Applicant shall include an irrevocable offer of dedication (IOD) to the City of Chula Vista on the first final map for 62.16 acres of onsite Preserve land within Preserve Management Area 3, Subunits 3-1a, 3-1b, and 3-1c of the Chula Vista Central City Preserve lands. The MSCP Preserve land shall be conserved, maintained, and managed by the City of Chula Vista

or its designee in perpetuity as directed in the Chula Vista Central City Preserve Area-Specific Management Directives (ASMDs) for Preserve Management Area 3 (PMA 3) (RECON Environmental, April 26, 2004) and funded by the Sunbow Preserve Community Facilities District (No. 98-3). The City of Chula Vista Preserve Habitat Manager shall be responsible for the long-term Preserve management activities identified in the Central City Preserve ASMD. Said IOD for the 62.16 acres Proposed MSCP Preserve shall include 48.95 acres to mitigate for significant habitat impacts to 7.79 acres of native grassland, 8.55 acres of Diegan coastal sage scrub, and 55.61 acres of non-native grassland as well as the following sensitive species significant impacts:

- *Coastal California Gnatcatcher*- occupied Diegan coastal sage scrub to mitigate for significant direct impacts to coastal California gnatcatcher occupied habitat;
- *Otay Tarplant*- 0.34 acre of Otay tarplant occupied habitat (i.e., native grassland) to mitigate for direct impacts to 0.34 acre of Otay tarplant occupied habitat that currently supports 836 Otay tarplant individual plants;
- *Orcutt's Bird's-beak*- Orcutt's bird's-beak habitat (i.e., Diegan coastal sage scrub) to mitigate for significant direct impacts to onsite Diegan coastal sage scrub that currently supports 91 Orcutt's bird's-beak individual plants;
- *Decumbent Goldenbush*- Decumbent goldenbush habitat (i.e., Diegan coastal sage scrub and native grassland), that includes at least 289 decumbent goldenbush individual plants) to mitigate for significant direct impacts to onsite native grassland and Diegan coastal sage scrub that currently supports 289 decumbent goldenbush individual plants; and
- *San Diego Viguiera*- San Diego viguiera habitat (i.e., Diegan coastal sage scrub) that includes at least 2,979 San Diego viguiera individual plants) to mitigate for significant direct impacts to onsite Diegan coastal sage scrub that currently supports 5,958 San Diego viguiera individual plants.

MM-BIO-2 Prior to initiation of construction related activities including clearing and grubbing or prior to vegetation/ground disturbance or prior to site mobilization activities or issuance of a grading permit, the Applicant shall submit documentation to the City demonstrating that the Applicant has contracted with a qualified biologist(s) to monitor the project construction activities and avoid any inadvertent impacts to sensitive biological and ensure complete avoidance of jurisdictional resources. Each qualified biologist shall have demonstrated expertise with the sensitive habitats, special status species of the project region. The qualified biologist(s) shall monitor the installation of the construction temporary fencing and/or flagging, silt fencing, and other best management practices (BMPs) along the construction limits prior to construction activities. The qualified biologist shall be present full-time during all initial vegetation clearing and grubbing activities, and potentially on a less frequent basis during grading activities to ensure construction remains within the approved project development area. The Applicant shall report results of biological monitoring activities to the City on a regular basis through the preparation and submission of summary monitoring reports.

- MM-BIO-3** Prior to the issuance of any land development permits including for clearing and grubbing or grading, the Applicant shall prepare a Restoration Plan prepared by a qualified biologist to mitigate for impacts to sensitive plant species consisting of Otay tarplant, Orcutt's bird's-beak, decumbent goldenbush, and San Diego County viguiera consistent with the conceptual Restoration Plan (Merkel & Associates, Inc. February 2021). The Applicant shall implement the 5-year maintenance and monitoring activities consistent with the Conceptual Restoration Plan to the satisfaction of the Development Services Director (or their designee). The revegetation plan must be prepared by a qualified City approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee). NOTE: Since the revegetation is critical to approving the MSCP Boundary Line Adjustment, the applicant will be required to enter into a Secured Agreement with the City and will be required to provide a cash deposit.
- MM-BIO-4** To avoid any direct impacts to nesting coastal California gnatcatcher, all vegetation clearing, grubbing and grading activities within gnatcatcher occupied habitat (i.e., Diegan coastal sage scrub) shall be conducted outside of the gnatcatcher breeding season (February 15 to August 15).
- MM-BIO-5** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall delineate coastal California gnatcatcher occupied habitat located adjacent to the proposed project development area during the breeding season (February 15 to August 15) by orange biological fencing or comparable materials to ensure that no work shall occur within these habitats. In addition, a minimum 300-foot buffer and on-site noise reduction/attenuation techniques shall be incorporated, as appropriate to avoid impacts to breeding gnatcatcher from elevated construction noise levels. The City Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. Noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 A-weighted decibels (dBA) or ambient at the edge of occupied habitat).
- MM-BIO-6** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall delineate least Bell's vireo occupied habitat by orange biological fencing or comparable to avoid direct impact to vireo within occupied habitat located adjacent to the proposed project during the breeding season (March 15 to September 15). In addition, a minimum 300-foot buffer and on-site noise reduction/attenuation techniques shall be incorporated, as appropriate to avoid impacts to breeding vireo from elevated construction noise levels. The City Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. Noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a

construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 dBA or ambient at the edge of occupied habitat).

- MM-BIO-7** To avoid any direct impacts to migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3513, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species. The breeding season is defined as January 15–August 31 for raptor species and February 15–August 15 for other non-raptor birds (excluding listed species). If removal of habitat on the proposed area of disturbance must occur during the breeding season, then prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.
- MM-BIO-8** Prior to approval of the first final map, the Applicant shall submit a Landscape Master Plan for the entire project which shall demonstrate compliance with the proposed fence and wall plan for the project. The proposed fence and wall plan shall include appropriate fencing and barriers (e.g., vegetation) where applicable to shield human presence and deter human intrusion into the Preserve.
- MM-BIO-9** Concurrent with design review and prior to issuance of a building permit for any development located adjacent to the Preserve, the Applicant shall prepare, a lighting plan and photometric analysis for review and approval the Development Services Director (or their designee). The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee).
- MM-BIO-10** Prior to approval of the first final map, the Applicant shall submit a Landscape Master Plan for the entire project which shall demonstrate compliance with the proposed plant palette for the project. The proposed plant palette shall prohibit invasive non-native plant species on the California Exotic Pest Plant Council List of Exotic Pest Plants of Greatest Ecological Concern in California that could spread into the adjacent Preserve. No invasive non-native plant species shall be introduced into areas immediately adjacent to the preserve. All slopes immediately adjacent to the Preserve shall be planted with native species that reflect the adjacent native habitat.

Further, the proposed plant palette shall be consistent with the plant list contained in the "Wildland/Urban Interface: Fuel Modification Standards," and provided as Appendix L of the Subarea Plan, must be reviewed and utilized to the maximum extent practicable when developing landscaping plans in areas adjacent to the Preserve.

MM-BIO-11 To avoid habitat degradation to the adjacent Preserve lands, project irrigation shall be contained to the project development and fuel modification zones and shall not drain or overspray resulting in potential erosion/sedimentation, spread of invasive plant species, and/or non-native species such as Argentine ants.

MM-BIO-12 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall demonstrate how the project would avoid or minimize applicable inadvertent impacts during construction. To ensure the avoidance and minimization of impacts to biological resources during construction the following construction BMPs shall be implemented:

- h) Prior to ground disturbance, all permanent and temporary disturbance areas shall be clearly delineated by orange construction fencing and the identification of environmentally sensitive areas with flagging and/or fencing.
- i) To minimize disturbance of areas outside the project site, all construction and operation vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas shall be included in pre-construction surveys and, to the extent possible, shall be established in locations disturbed by previous activities to prevent further impacts.
- j) Construction and operation vehicles shall observe appropriate safe speed limits and adhere to safety practices.
- k) Dust suppression shall occur during construction activities when necessary to meet air quality standards and protect biological resources.
- l) No vehicles or equipment shall be refueled or undergo maintenance within 100 feet of a jurisdictional waters feature. Spill kits shall be maintained on the site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of contaminated fluids.
- m) All general trash, food-related trash items (wrappers, cans, bottles, food scraps, cigarettes, etc.), and other human-generated debris scheduled to be removed shall be stored in animal-proof containers and removed from the site on a regular basis (weekly during construction, and at least monthly during operations). No deliberate feeding of wildlife shall be allowed.
- n) Use of chemicals, fuels, lubricants, or biocides shall comply with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation. Use of first- and second- generation rodenticides shall not be permitted except for the limited use of zinc phosphide, or a rodenticide

approved by the City, and only after other means of pest control (e.g. rodent traps) have proven to be ineffective.

- MM-BIO-13** Prior to issuance of a grading permit, prior to vegetation clearing, grubbing, grading, or any ground disturbing activities, the Applicant shall submit evidence to the City that the Applicant has retained qualified biologists to prepare a Worker Environmental Awareness Program that shall be presented to all construction personnel and employees before any ground-disturbing activities commence at the project site and shall be continued through the construction phase for all new construction personnel. The program shall consist of a brief presentation going over the on-site sensitive biological resources and compliance with project impact and open space boundaries, and applicable environmental laws and requirements with all personnel involved in the project. This presentation shall explain to construction personnel how best to avoid impacts sensitive resources during construction. The program shall include a description of all special status species potentially on the project site and their habitat needs; an explanation of the status of the species and their protection under the state and federal regulations; specific mitigation measures applicable to listed and other special status species; permit conditions, and the penalties for violation of applicable laws. The program shall also explain to construction personnel how to avoid impacts to jurisdictional waters, including wetlands. The program shall include a map and description of jurisdictional waters on the site to be avoided and measures to implement to ensure the protection and avoidance of jurisdictional waters.
- MM-BIO-14** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall prepare a revegetation plan for the temporary impact areas within the 25-foot grading buffer in the Minor Amendment Area that utilizes a native erosion control hydroseed mix acceptable to the City and the Wildlife Agencies (U.S. Fish and Wildlife Service and California Department of Fish and Wildlife) to ensure soil stability and prevent subsequent erosion. The revegetation plan must be prepared by a qualified City approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).
- MM-BIO-15** Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall receive approval by the City and Wildlife Agencies for the MSCP BLA. The Applicant shall be required to implement conditions associated with the BLA subject to the oversight and approval of the Development Services Director (or their designee).

MM-BIO-16 Prior to initiating any construction related activities requiring a clearing and grubbing or grading permit, the Applicant shall receive approval by the City and Wildlife Agencies for the MSCP Minor Amendment. The Applicant shall be required to implement conditions associated with the Minor Amendment subject to the oversight and approval of the Development Services Director (or their designee).

The following specific project mitigation measures with respect to wetlands are required as a condition of the HLIT permit:

The proposed project would completely avoid wetland impacts and thus would not require compensatory wetland habitat mitigation.

B. In order to approve or conditionally approve an HLIT permit where the project area contains narrow endemic species, all of the following additional written findings shall be made by the decision maker:

1. Narrow endemic species' populations within the project area have been avoided or total avoidance is infeasible.

Total avoidance of Otay tarplant, the only narrow endemic within the proposed project site, is infeasible.

2. If impacts to narrow endemic species have not been avoided, one of the following findings shall be made:

a. In cases where impacts to covered narrow endemic species' populations within the project area have been limited to five percent in 100 percent conservation areas, and 20 percent in 75 to 100 percent conservation areas and development areas outside of covered projects, the proposed project design, including mitigation, will result in conservation of the species that is functionally equivalent to its status without the project, including species numbers and area, and must ensure adequate preserve design to protect the species in the long-term; or

b. In cases where the five percent or 20 percent narrow endemic species impact threshold has been exceeded, the proposed project design, including mitigation, results in a preserve design for the narrow endemic species population within the project area that is biologically superior to the preserve design that would occur if the impact had been limited to five percent in 100 percent conservation areas or 20 percent in 75 to 100 percent conservation areas and development areas outside of covered projects.

The proposed project would limit impacts to the onsite population of Otay tarplant (narrow endemic) to less than five percent in 100 percent conservation areas and less than 20 percent in development areas outside covered projects; therefore, the project design, including mitigation, will result in conservation of the species that is functionally equivalent to its status without the project, including species numbers and area, and must ensure adequate preserve design to protect the species in the long-term.

C. In order to approve or conditionally approve an HLIT permit where the project area contains wetlands, all of the following additional written findings shall be made by the decision maker:

1. Prior to issuance of a land development permit or clearing and grubbing permit, the project proponent will be required to obtain any applicable state and federal permits, with copies provided to the director of planning and building, or his/her designee.

No applicable state and federal permits such as wetland regulatory permits are expected to be necessary for this project.

2. Where impacts are proposed to wetlands the following findings shall be made:

a. Impacts to wetlands have been avoided and/or minimized to the maximum extent practicable, consistent with the city of Chula Vista MSCP subarea plan Section 5.2.4; and

The project shall completely avoid wetland impacts.

b. Unavoidable impacts to wetlands have been mitigated pursuant to CVMC17.35.110. (Ord. 3004 § 1, 2005).

Not applicable. The project shall completely avoid wetland impacts.