

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

**FUNCTIONAL EQUIVALENCY ANALYSIS FOR A
MSCP BOUNDARY LINE ADJUSTMENT AND
FACILITIES SITING CRITERIA REPORT**

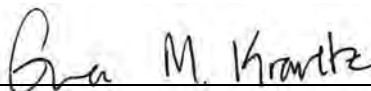
**Revised February 2021
December 2020**

Prepared for:

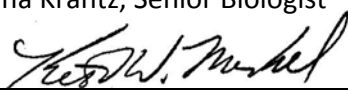
Lennar- San Diego Division
16465 Via Esprillo, Suite 150
San Diego, CA 92127
Contact: David Shepherd
Phone: 858-618-4942
E-mail: David.Shepherd@lennar.com

Prepared by:

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



Gina Krantz, Senior Biologist



Keith W. Merkel, Principal Consultant

TABLE OF CONTENTS

INTRODUCTION.....	1
LOCATION	1
PROJECT DESCRIPTION	2
BACKGROUND.....	4
<i>City of Chula Vista MSCP</i>	5
METHODS	8
LITERATURE REVIEW.....	8
SURVEY DATES, TIMES, AND CONDITIONS	8
GENERAL BIOLOGICAL SURVEY	10
PROTOCOL QUINO CHECKERSPOT BUTTERFLY SURVEYS.....	11
PROTOCOL CALIFORNIA COASTAL GNATCATCHER SURVEYS	11
RARE PLANT SURVEYS.....	12
JURISDICTIONAL WETLAND DELINEATION	12
<i>Wetland Parameters</i>	13
Hydrophytic Vegetation.....	13
Hydric Soils.....	14
Wetland Hydrology.....	14
<i>Jurisdiction of Wetlands and Waterways</i>	14
U.S. Army Corps of Engineers	14
California State Water Resources Control Board/Regional Water Quality Control Board	15
California Department of Fish and Wildlife	15
City of Chula Vista	16
<i>Wetland Functions and Values</i>	16
GENERAL SURVEY LIMITATIONS	16
RESULTS.....	18
REGIONAL CONTEXT AND PHYSICAL CHARACTERISTICS	18
VEGETATION COMMUNITIES AND BOTANICAL RESOURCES	18
<i>Habitat/Vegetation Community Types</i>	20
Diegan Coastal Sage Scrub.....	20
Native Grassland.....	21
Non-native Grassland	21
Non-native Vegetation	21
Southern Willow Scrub	22
Mule fat Scrub	22
Coastal and Valley Freshwater Marsh	22
<i>Zoological Resources</i>	22
Butterflies	22
Amphibians	23
Reptiles	23
Birds.....	23
Mammals	24
JURISDICTIONAL WETLANDS AND NON-WETLANDS RESOURCES	25
<i>Southern Willow Scrub</i>	27
<i>Mule Fat Scrub</i>	27
<i>Coastal and Valley Freshwater Marsh</i>	27
<i>NWW/Streambeds</i>	27
Functions and Values of Jurisdictional Resources	28
RARE, THREATENED, ENDANGERED, ENDEMIC AND/OR SENSITIVE OR MSCP-COVERED SPECIES	28

<i>Sensitive Flora</i>	28
Other Potentially Occurring Sensitive Flora	29
<i>Sensitive Fauna</i>	29
Least Bell's Vireo	30
Coastal California Gnatcatcher	30
Quino Checkerspot Butterfly	31
Other Potentially Occurring Sensitive Fauna	31
Nesting Sensitive Raptor Species	31
<i>Wildlife Corridors and Connectivity</i>	32
MSCP PRESERVE BOUNDARY LINE ADJUSTMENT AND FINDINGS	33
PRESERVE BOUNDARY ADJUSTMENT DESCRIPTION	34
APPLICABLE BIOLOGICAL FUNCTIONAL EQUIVALENCY	34
Effects on significantly and sufficiently conserved habitats	34
Effects on preserve configuration and management	38
Effects on ecotones or other conditions affecting species diversity	38
Effects to species of concerns not on the covered species list	40
Effects to covered species	40
Effects on habitat linkages and function of preserve areas	41
FACILITIES SITING CRITERIA	42
100% Preserve Compatible and Conditionally Compatible Uses	42
Narrow Endemic Policy and Wetland Protection Program	53
Wetlands Protection Program	53
LITERATURE CITED	54

LIST OF TABLES

Table 1. Summary of Survey Dates, Times, Conditions, and Staff	8
Table 2. Habitats/Vegetation Communities within Project Study Area	20
Table 3. Summary of Jurisdictional Resources Present Within the Project Site	25
Table 4. Sensitive Plants Inside and Outside Preserve Boundaries	29
Table 5. Sensitive Animals Located Inside and Outside Preserve Boundaries	30
Table 6. City of Chula Vista MSCP Preserve Boundary Line Adjustment Habitats and Acreages	37
Table 7. Cumulative Impacts to Covered Habitat from Future Facilities within City of Chula Vista	42
Table 8. MSCP Future Facilities Siting Criteria Project Assessment	44
Table 9. Narrow Endemic Policy- Estimated Otay Tarplant Impact Assessment	53

LIST OF FIGURES

Figure 1. Project Vicinity Map	3
Figure 2. Environmental Setting/MSCP Map	7
Figure 3. Vegetation Communities/Biological Resources Map	19
Figure 4. Jurisdictional Resources Map	26
Figure 5. Proposed Project Impacts	35
Figure 6. Proposed MSCP BLA	36
Figure 7. Proposed Habitat Restoration	39

LIST OF APPENDICES

Appendix 1. Sunbow II USFWS 1995 Biological Opinion

SUNBOW II PHASE 3 SPA PLAN AMENDMENT

CITY OF CHULA VISTA

SAN DIEGO COUNTY, CALIFORNIA

**FUNCTIONAL EQUIVALENCY ANALYSIS FOR A MSCP BOUNDARY LINE ADJUSTMENT AND
FACILITIES SITING CRITERIA**

Merkel & Associates, Inc.

Revised February 2021

December 2020

INTRODUCTION

Merkel & Associates, Inc. (M&A) has prepared this Functional Equivalency Analysis report for MSCP Boundary Line Adjustment and Facilities Siting Criteria for the proposed Sunbow II, Phase 3 Sectional Planning Area (SPA) Plan Amendment Project (project). The purpose of this report is to demonstrate how the proposed MSCP Preserve Boundary Line Adjustment (BLA) within the project property would result in equal or higher biological value as compared to the existing Preserve in accordance with meeting the six BLA functional equivalency criteria, as provided in the Regional MSCP Plan (August 1998). 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 was 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. Due to this conflict between the currently proposed development boundaries and the mapped MSCP 100% Preserve onsite prior to project development plan finalization, the project proposes a MSCP Preserve BLA.

Further, the proposed project includes a MSCP Future Facility (i.e., detention basin) that would be located partially in the existing 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. The proposed development of the Future Facility would result in unavoidable permanent impacts to a portion of the existing Preserve onsite. Chapter 6.0 of the MSCP Subarea Plan identifies permitted uses including Future Facilities within the Preserve. Future Facilities are subject to the MSCP Facilities Siting Criteria which ensures that the facilities located within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical. This document provides a discussion and rationale for the proposed location of this facility as well as the required compensation for applicable impacts to narrow endemic species per the MSCP Subarea Plan.

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).

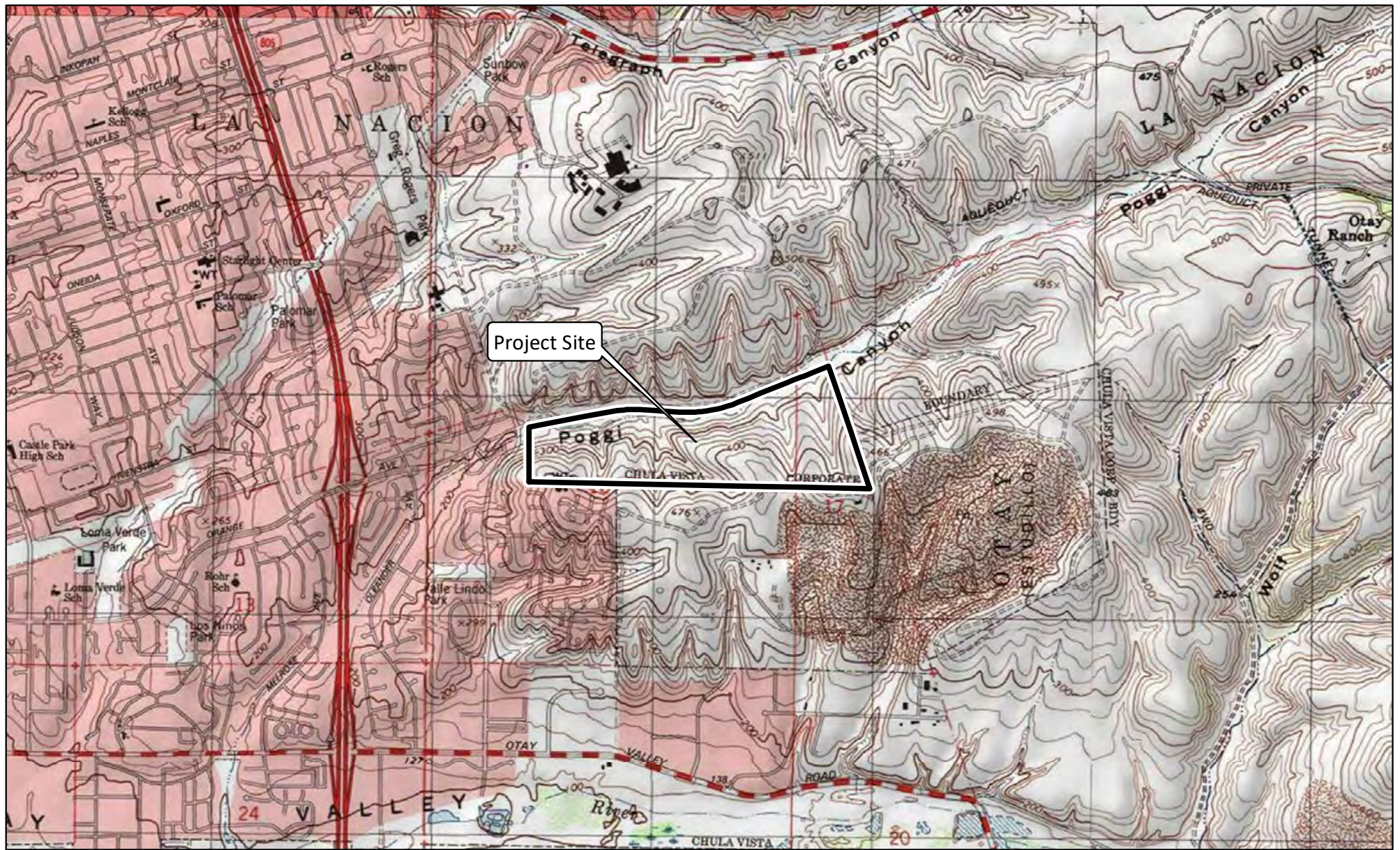
PROJECT DESCRIPTION

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/wetland resources and associated buffer area. 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 project area. 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.

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.

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; unrecorded conservation easement for Olympic Parkway). 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 onsite 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 at the time of MSCP adoption (See Figure 6). None of the conservation easement areas are proposed as Give to the Preserve in the proposed BLA.



Project Site

Poggi

CHULA VISTA

CORPORATE

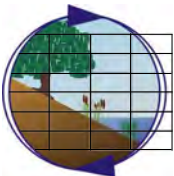
BOUNDARY

OTAY

ESTRADA

CHULA VISTA CORP & RDY

WOLF



1:24000

Project Vicinity Map

Sunbow II Phase 3 SPA Amendment

Source: USGS 7.5' Imperial Beach, CA Quadrangle

Figure 1

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 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.

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.

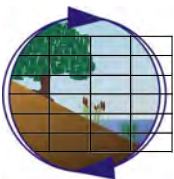
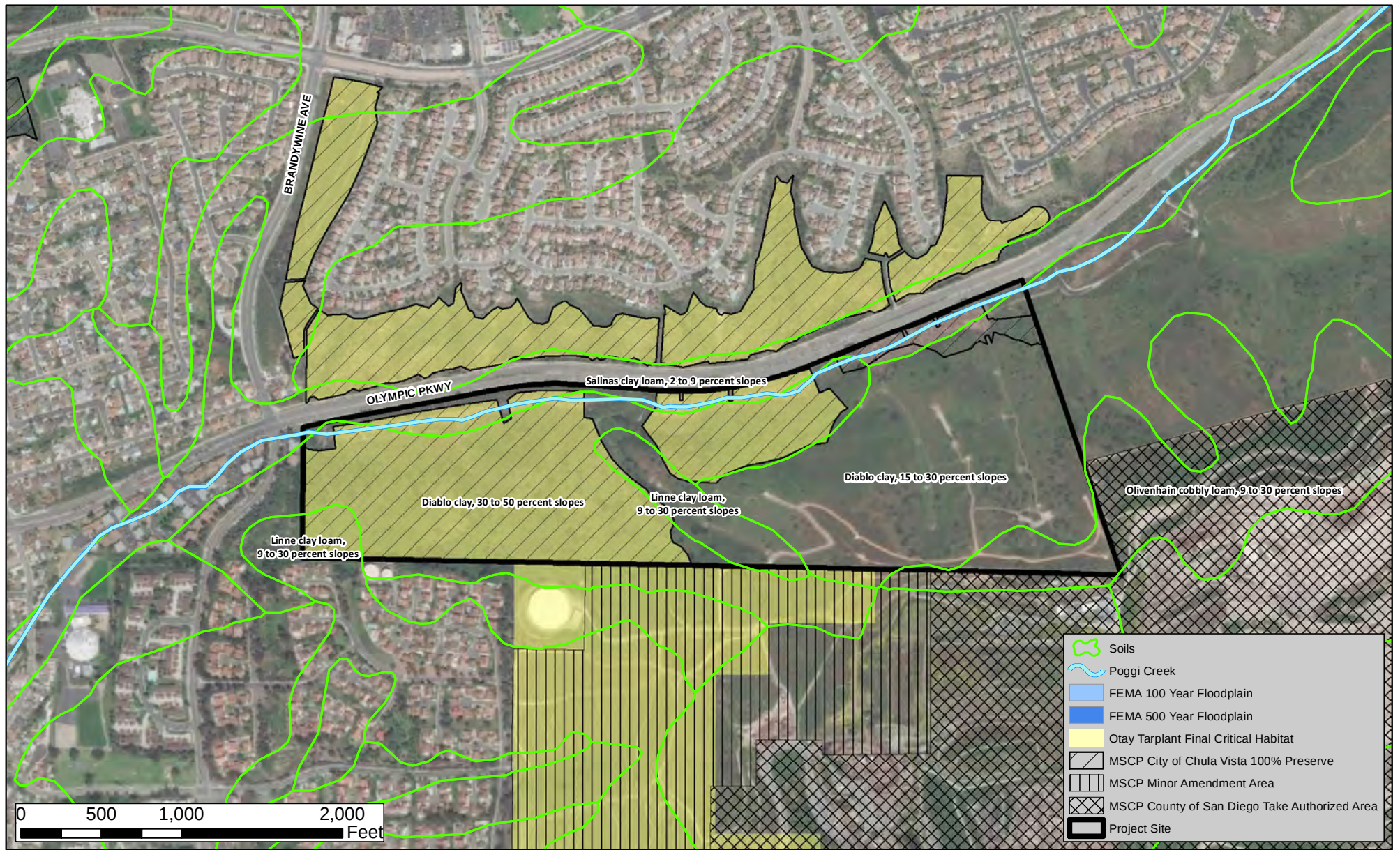
The western half of the project site and much of the northern edges along Poggi Creek are located within the City's MSCP 100% Preserve while generally the eastern half of the site is located within a Chula Vista MSCP Development Area (Figure 2). In addition, there are adjacent MSCP designations to the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

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 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 had 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 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.

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 through a biological functional equivalency analysis that the proposed adjustment to the proposed Preserve boundary would result in the same or higher biological value of the present preserve boundary. The project proposes an MSCP Preserve BLA as discussed further below.



Local Environmental Setting Map

Sunbow II Phase 3 SPA Amendment

Aerial Source: ESRI 2020

Created on January 19, 2021

Figure 2

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 2019a);
- 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 2020a, 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 including 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-	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 of 1.66-acre area of 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 et al. (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 any other 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 2008a, 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 2008a, 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 2008a, 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 in the Biological Report dated February 2021.

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. *leopardii*) - 750

Special Status Fauna

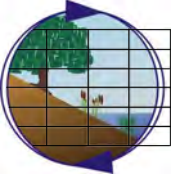
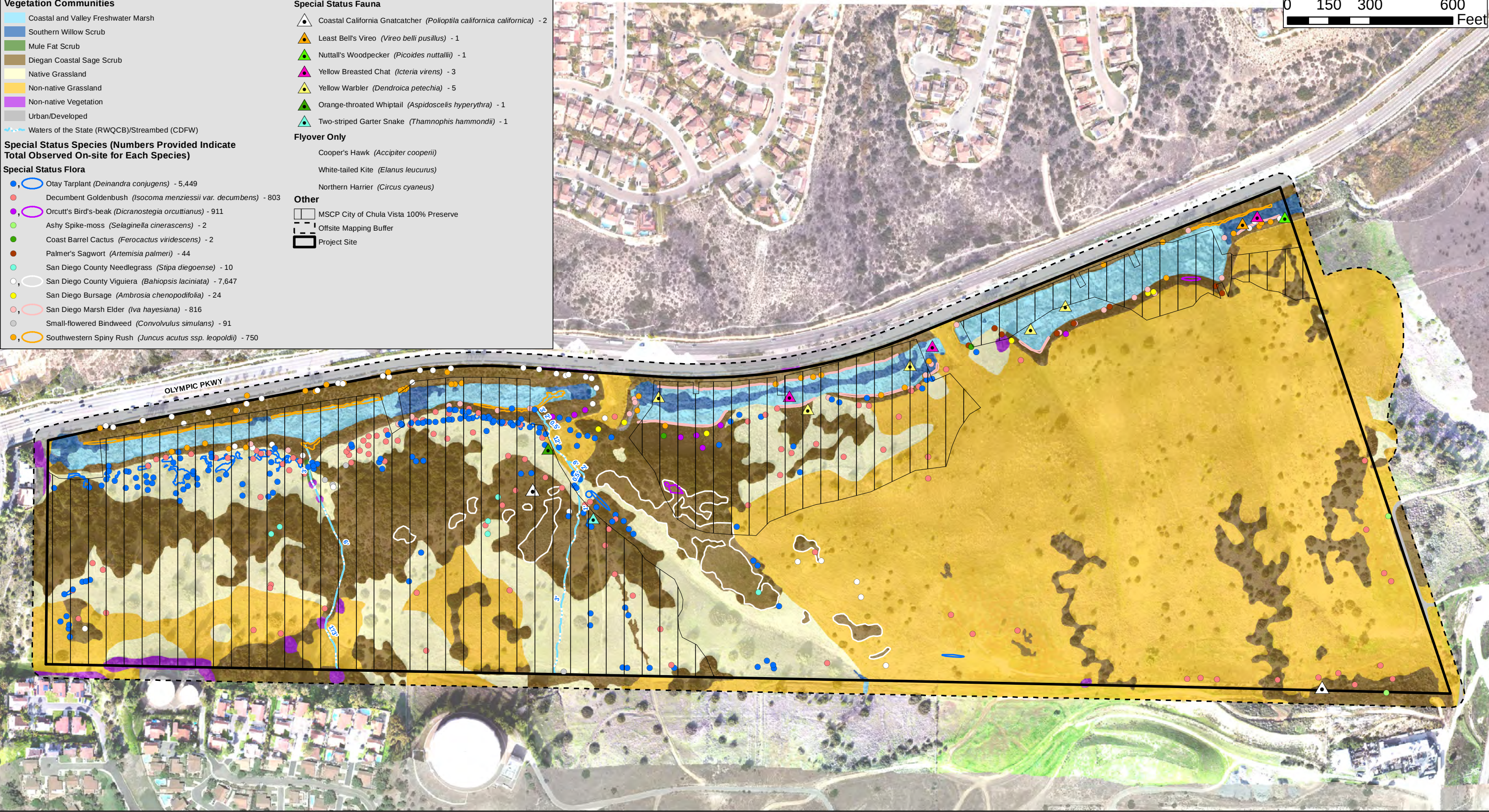
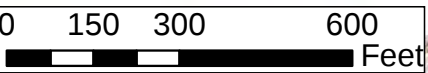
- Coastal California Gnatcatcher (*Poliopitila californica californica*) - 2
- Least Bell's Vireo (*Vireo belli pusillus*) - 1
- Nuttall's Woodpecker (*Picoides nuttallii*) - 1
- Yellow Breasted Chat (*Icteria virens*) - 3
- Yellow Warbler (*Dendroica petechia*) - 5
- Orange-throated Whiptail (*Aspidoscelis 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 eastern 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 maculatus*), bushtit (*Psaltiriparus minimus*), Bewick's wren (*Thryomanes bewickii*), Anna's hummingbird (*Calypte 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*).

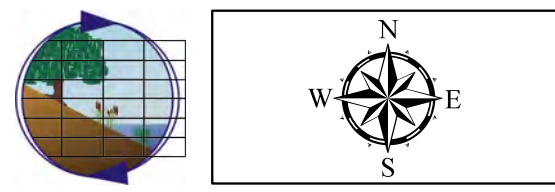
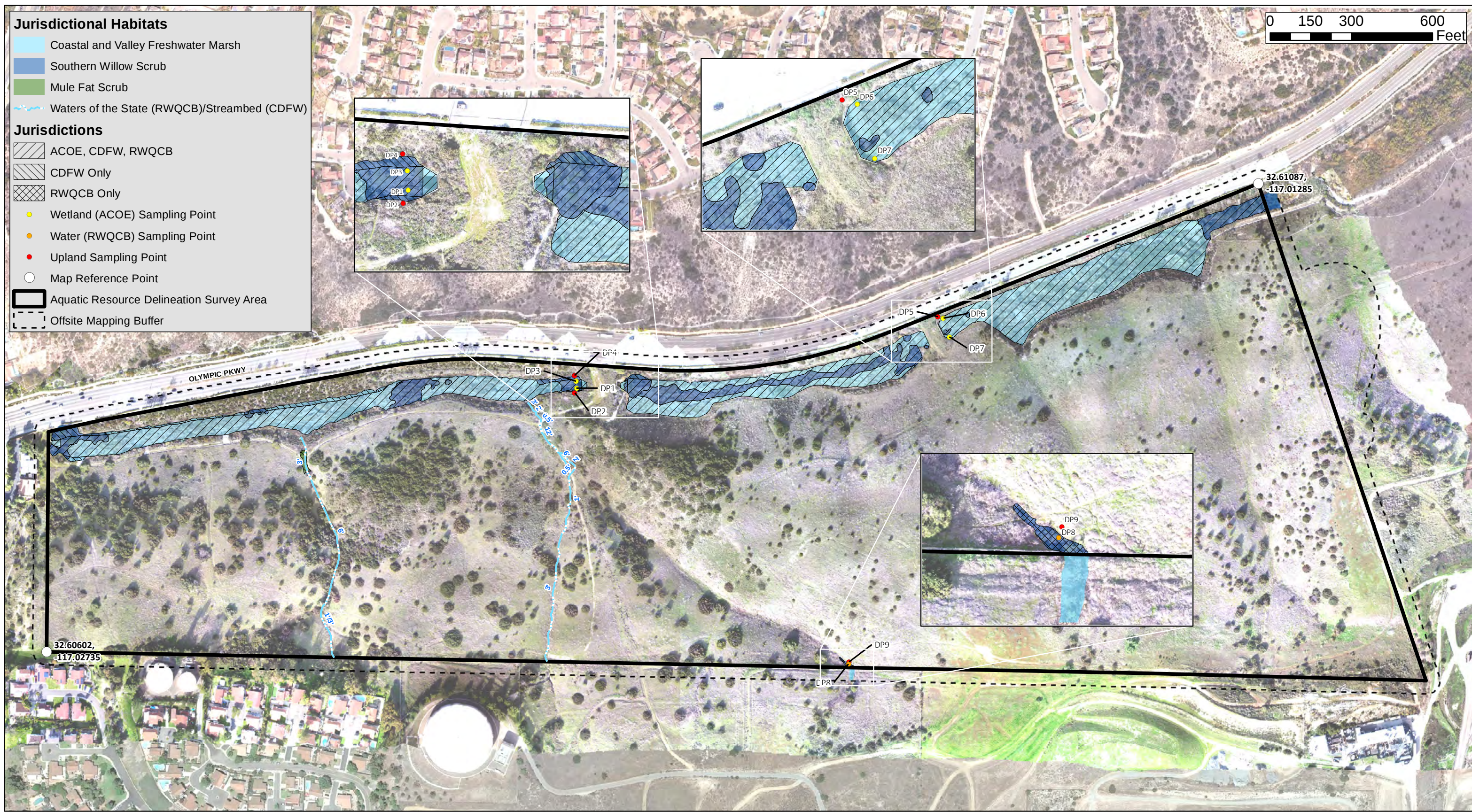
Watersheds found within the southern part of the County including the Tijuana River Valley, the Otay River Valley and the Sweetwater River Valley support a relatively large diversity of bat species (Stokes 2005). Relatively common species including the Mexican free-tailed bat (*Tadarida brasiliensis*) 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 4 and 5, respectively in the Biological Report dated February 2021.

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



Wetland Delineation Map
Sunbow II Phase 3 SPA Amendment

Aerial Source: Merkel & Associates Jan. 2020

Created on: January 19, 2021

Figure 4

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 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 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) (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 previous year's growth 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 Plants 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 Viguiera (<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 of the Biological Report dated February 2021.

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 Animals Located 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 (Figure 3). The 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 2021, Appendix 7), 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 of M&A biological report). 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 (M&A 2021, 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 of the project biological report (M&A 2021).

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 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 of the project biological report (M&A 2021).

Although no nesting sensitive raptor species are expected to occur onsite, the project site does support potential foraging habitat for raptors including sensitive raptor species as discussed in above sections. 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 MSCP 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. Project compliance with the MBTA and CFG Code is provided in the project biological report.

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 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 III development has been captured in regional conservation planning and project specific regulatory actions.

MSCP PRESERVE BOUNDARY LINE ADJUSTMENT AND FINDINGS

Although the original Sunbow II project and the currently proposed Sunbow project are not MSCP Covered Projects, the western half and northern portions of the project property had been placed in the City MSCP 100% Preserve when the MSCP Subarea Plan was adopted in 2003. The proposed project includes a MSCP Preserve BLA to adjust the existing 100% Preserve boundary in areas onsite that overlap with the currently proposed project development footprint. The following definitions apply to the proposed MSCP BLA:

- Proposed MSCP Take Areas are those proposed permanent impact areas that would encroach into the existing Preserve onsite. In addition, there are three smaller distinct areas of proposed Take from temporary construction impacts that encroach into the existing Preserve where native habitat restoration is proposed. These three Take areas are surrounded and contiguous with the existing Preserve and proposed Give-habitat restoration areas that will be included in the Preserve and as such after habitat restoration is complete would provide a biological function to the ultimate Preserve, despite being a Take in this proposed BLA;
- Proposed MSCP Give Areas are those areas onsite that are currently outside the Preserve and are proposed to be added to the Preserve. The proposed Give areas are located generally along Poggi Creek and adjacent areas that support sensitive plant species as well as the 4.53-acre proposed habitat restoration area in the northeastern portion of the site;
- Existing Conservation Easements (one recorded easement, one unrecorded easement) are located onsite generally along Poggi Creek. As described in the project description, 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 onsite 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 at the time of MSCP adoption. These conservation easements are not a part of the proposed MSCP BLA;
- MSCP Future Facility-Preserve Allowed Uses. Future Facilities are identified in the MSCP Subarea Plan as a Conditional Compatible Use. 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 MSCP. The proposed Future Facility-Detention Basin (1.12 acres) partially overlaps with an area of the existing 100% Preserve onsite as shown in Figure 6; and
- MSCP Proposed Preserve- Habitat Restoration (4.53 acres) is the area onsite that is located outside of the existing Preserve that supports non-native grassland and no sensitive species where native habitat and sensitive plant species restoration would be implemented, and this area would be added to the Preserve.

The following findings are provided to describe how the proposed Sunbow Preserve BLA would ensure that the biological functions and values within the City MSCP Preserve, as intended and described in the City MSCP Subarea Plan, would be maintained or improved.

PRESERVE BOUNDARY ADJUSTMENT DESCRIPTION

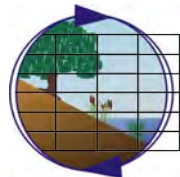
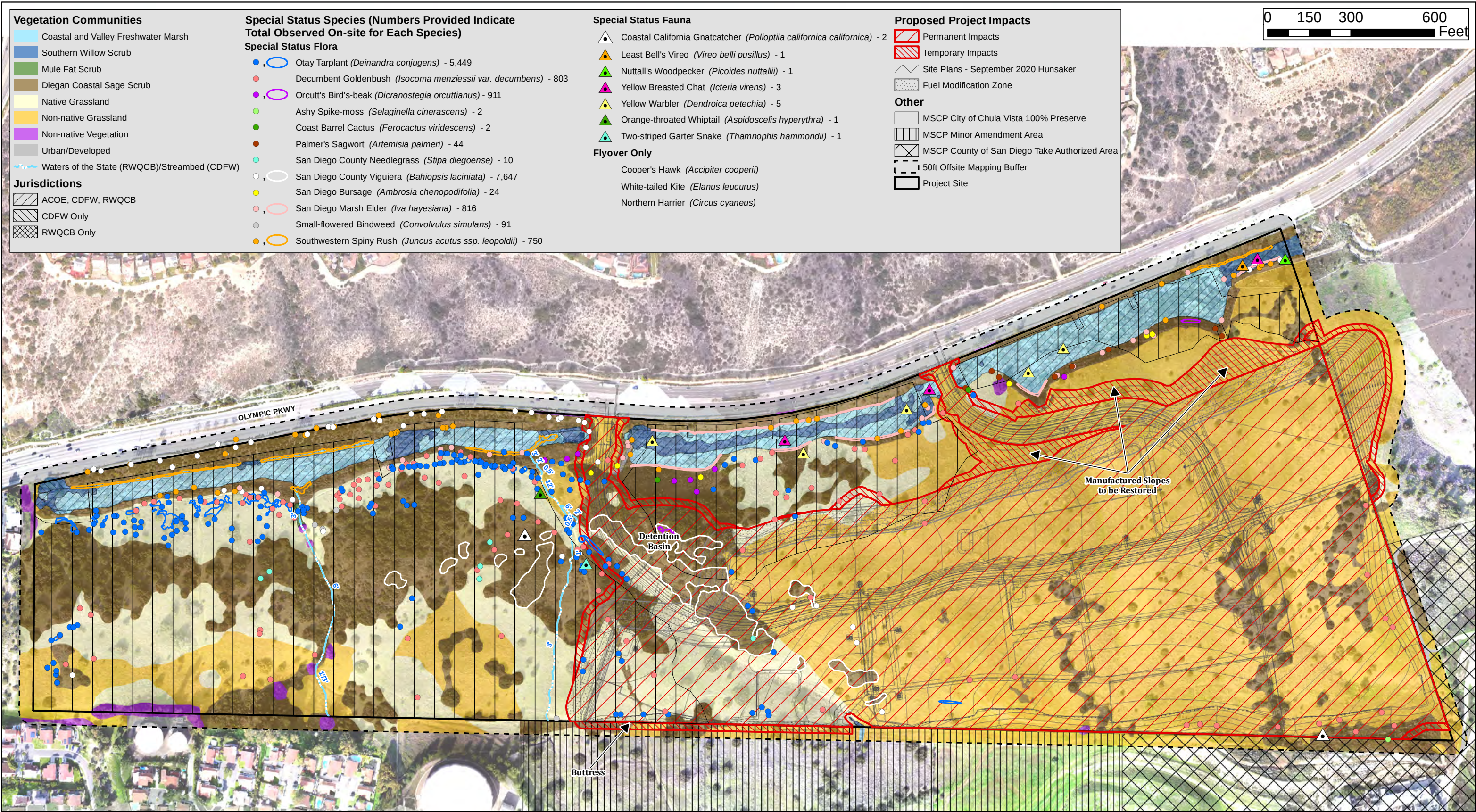
The proposed Preserve BLA would modify the existing Preserve boundary predominately in two distinct areas to accommodate the proposed project development footprint on either side of the main access road where these areas are different from the mapped MSCP Development Areas onsite (Figures 5 and 6). The proposed Preserve BLA provided as Give and Take areas is depicted in Figure 6.

APPLICABLE BIOLOGICAL FUNCTIONAL EQUIVALENCY

As a part of the MSCP BLA process, the project would need to propose a potentially suitable area(s) currently located outside of the MSCP 100% Preserve to “Give” to the Preserve of equal size to the portion of land that would “Take” from the Preserve (1:1 acreage ratio). In addition, a proposed Preserve BLA would need to result in equal or higher biological value as compared to the existing Preserve in accordance with meeting the six MHPA BLA functional equivalency criteria, as provided in the Regional MSCP Plan (August 1998). These six criteria consist of: 1) effects on significantly and sufficiently conserved habitats; 2) effects to covered species; 3) effects on habitat linkages and function of preserve areas; 4) effects on preserve configuration and management; 5) effects on ecotones of other conditions affecting species diversity; and 6) effects to species of concern not on the covered species list. As defined in the City’s Subarea Plan, biological functional equivalency is “a modification to a Preserve boundary which results in a Preserve configuration with a biological value that is equal to or higher than the original Preserve configuration. The comparison of biological value is based on the “like or equivalent” exchange concept for biological factors identified in Section 5.4.2 of the MSCP Subregional Plan.” The determination of biological value of the proposed MSCP Preserve BLA is made by the City of Chula Vista as the local jurisdiction and must have the concurrence of the wildlife agencies (i.e., U.S. Fish and Wildlife Service, California Department of Fish and Wildlife). Each of the six equivalency criteria are assessed below for the proposed project BLA and depicted in Figure 6 and summarized in Table 6.

Effects on significantly and sufficiently conserved habitats

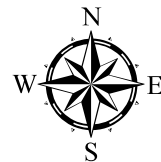
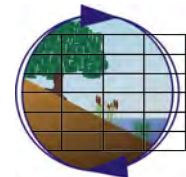
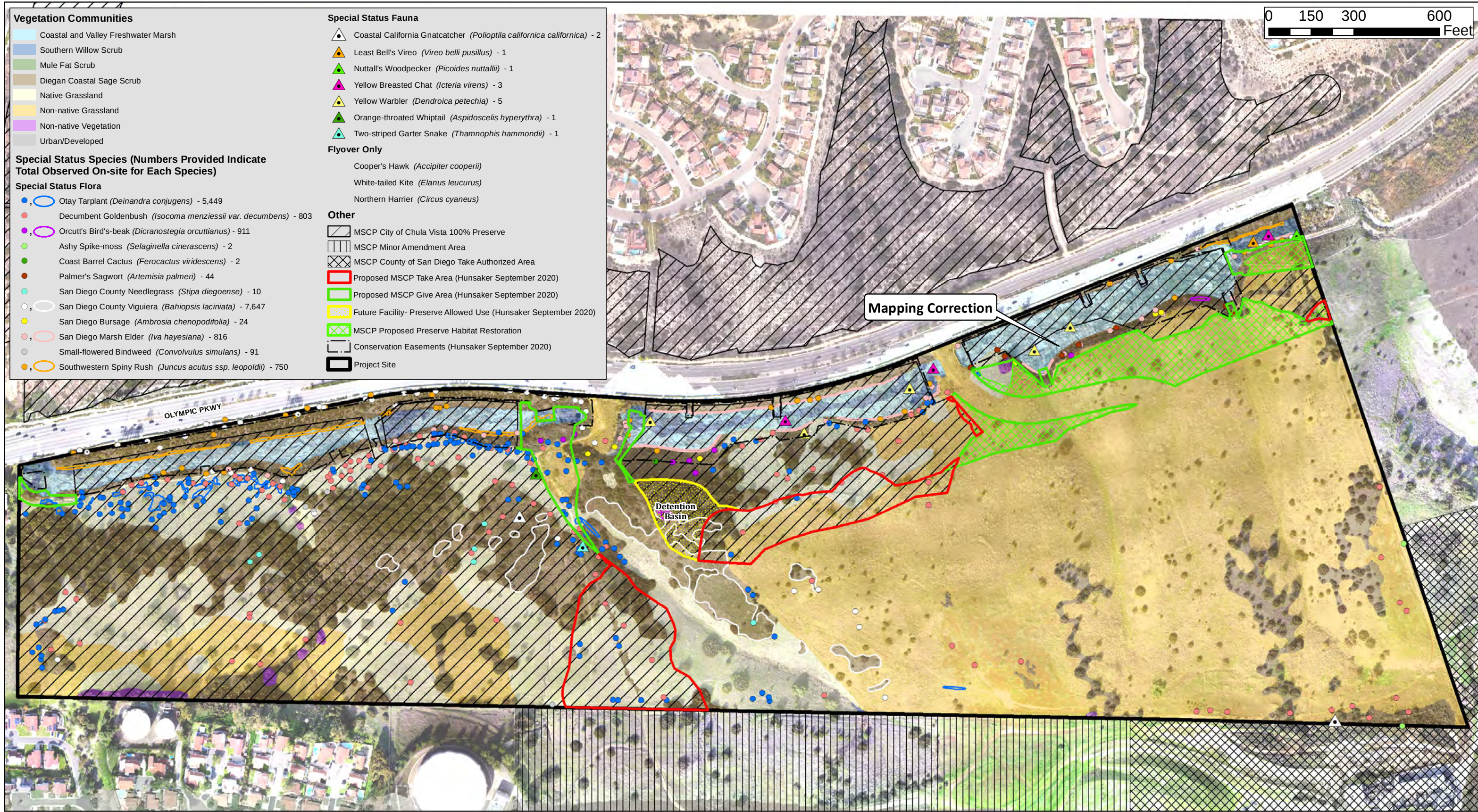
The MSCP Sub-regional Plan Section 4.2.4 identifies significantly and sufficiently conserved habitats. The applicable project site habitats that are considered significantly and/or sufficiently conserved include Diegan coastal sage scrub, riparian scrub, and freshwater marsh. The proposed project MSCP BLA as summarized in Table 6 would result in a higher acreage of conservation of riparian habitat (i.e., southern willow scrub), and freshwater marsh (i.e., coastal and valley freshwater marsh) through onsite preservation in the proposed Give; and equal conservation for Diegan coastal sage scrub through onsite preservation of Diegan coastal sage scrub within the proposed Give and habitat restoration of non-native grassland restored to Diegan coastal sage scrub within additional areas of proposed Give (Figures 6 and 7). It is estimated that 2.91 acres out of the total 4.53 acres of habitat restoration areas includes proposed manufactured that would be restored to support Diegan coastal sage scrub habitat. It is expected that the proposed BLA exchange would maintain the conservation acreage and status of these significantly and sufficiently conserved habitats.



Aerial Source: Merkel & Associates Jan. 2020

Biological Impacts Map
Sunbow II Phase 3 SPA Amendment

Created on: January 19, 2021



Aerial Source: Merkel & Associates Jan. 2020

MSCP Preserve BLA Map
Sunbow II Phase 3 SPA Amendment

Created on: September 18, 2020

Figure 6

Table 6. City of Chula Vista MSCP Preserve Boundary Line Adjustment Habitats and Acreages

Habitat Type/ Biological Resources	MSCP Tier Habitat Type	Total Onsite (acres)	City of Chula MSCP Preserve BLA				
			Existing		Proposed		
			100% Preserve (acres)	Develop- ment Area (acres)	Proposed 100% Preserve Addition/ Give (acres)	Proposed 100% Preserve Removal/ Take (acres)	Net Change to 100% Preserve (acres)
Southern Willow Scrub	Wetland	2.06	1.14	0.92	0.22	0.00	+0.22
Mule fat Scrub	Wetland	0.03	0.03	0.00	0.00	0.00	0.00
Coastal and Valley Freshwater Marsh	Wetland	7.66	6.31	1.35	0.24	0.00	+0.24
Native Grassland	I	24.09	19.38	4.71	0.37	3.40	-3.03
Diegan Coastal Sage Scrub	II	37.08	24.46	12.62	0.91	1.48 and 0.04 Habitat Restoration **	-0.61
Non-native Grassland	III	64.19	10.31	53.88	0.46 and 4.53 Habitat Restoration*	1.65 and 0.11 Habitat Restoration **	+3.23
Non-native Vegetation	IV	0.53	0.44	0.09	0.04	0.00	+0.04
Urban/Developed	n/a	0.06	0.00	0.06	0.00	0.00	0.00
TOTAL:		135.70	62.07	73.63	6.77	6.68	+0.09

*Proposed habitat restoration (4.53 acres) from non-native grassland to native grassland and Diegan coastal sage scrub within Give areas located in the eastern portion of the site. A portion of these habitat restoration areas (2.91 acres) are located within proposed manufactured slopes.

**Proposed habitat restoration within 3 distinct areas of Take from temporary impacts that encroach into the existing Preserve.

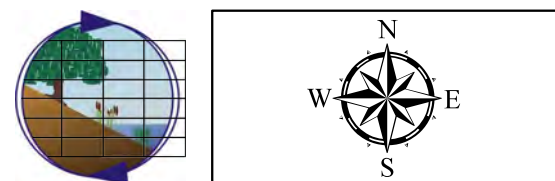
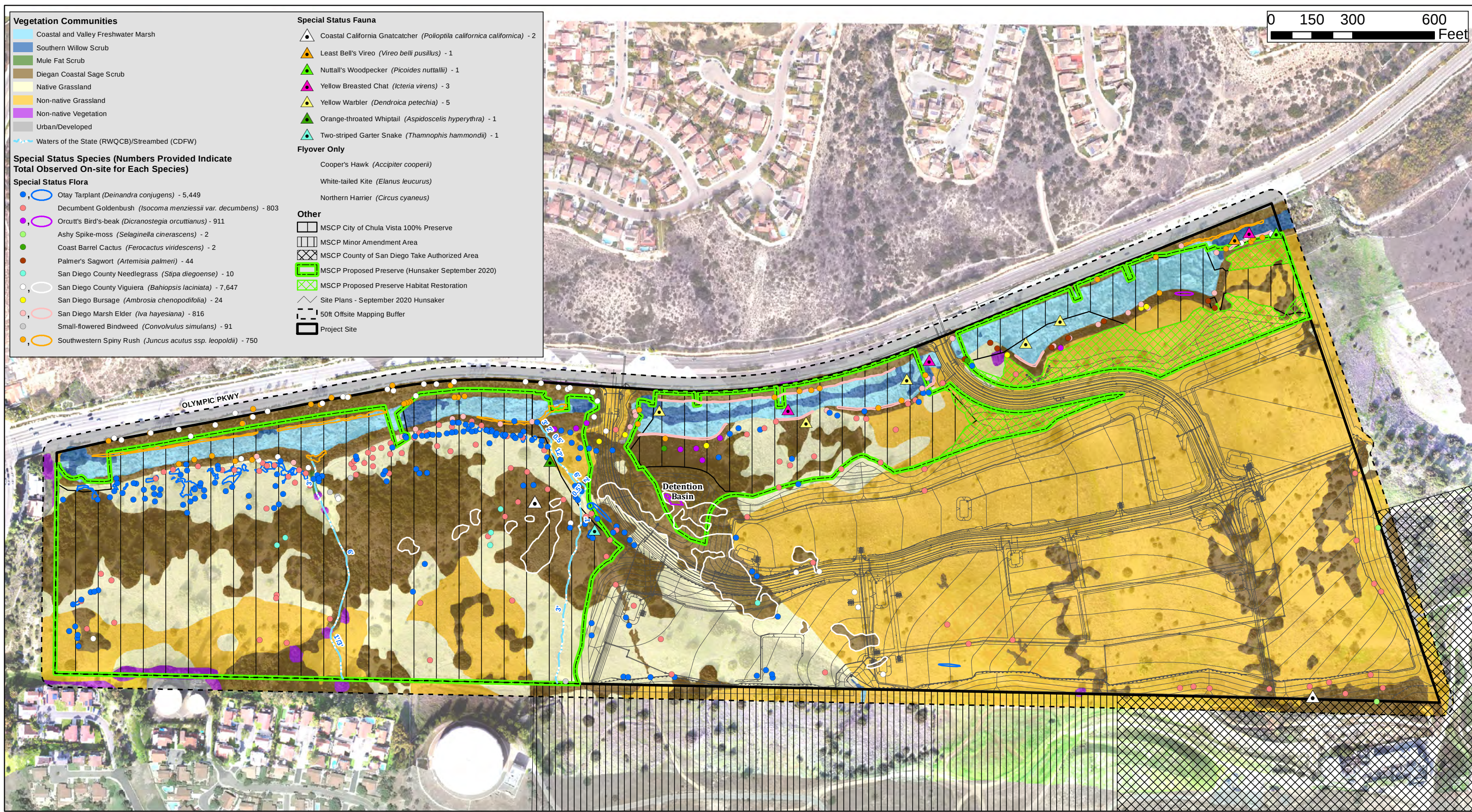
As a note, the proposed habitat restoration on manufactured slopes is not proposed within the existing Preserve but rather is currently located entirely outside the Preserve and proposed to Give to the existing Preserve through this BLA. Manufactured slopes and other modifications of lands to support native restoration and ultimately achieve success criteria and agency sign off occurs throughout the region as acceptable mitigation and subsequently added to the Preserve. For example, the Poggi Creek and slope creation and native habitat restoration effort onsite for the original Sunbow II project includes manufactured slopes on the south side of Poggi Creek where native habitat restoration including rare plants was successfully achieved in the late 1990's and subsequently included in the 2003 City 100% Preserve.

Effects on preserve configuration and management

The proposed project MSCP BLA as shown in Figure 6 and summarized in Table 6 would result in an equal to or greater Preserve conservation corridor and configuration as compared to the existing Preserve. The proposed MSCP Preserve BLA includes the addition of a wider conservation corridor along the easternmost portion of Poggi Creek, a slight reduction of the Preserve conservation corridor along the central reach of Poggi Creek, and an addition to the Preserve located just west of the main access entry that includes a portion of Poggi Creek itself as well as the adjacent upland habitat that supports sensitive species to the south resulting in an equal to or greater Preserve configuration. Further, the proposed BLA includes smaller areas along the Poggi Creek habitat corridor to fill in gaps of Preserve where they had not been included in the Preserve configuration in the 2003 City Subarea Plan. In addition, the proposed BLA would reduce the Preserve along the southeastern extent of the existing Preserve that connects with offsite MSCP Minor Amendment Area to the south but is generally consistent with the onsite Preserve boundary geometry. As mentioned above, there are three distinct areas of proposed Take from temporary construction impacts that encroach into the existing Preserve where native habitat restoration is proposed (Table 6, Figure 6). These three Take areas are surrounded and contiguous with the existing Preserve and proposed Give-habitat restoration areas that will be included in the Preserve and as such after habitat restoration is complete would provide a biological function to the ultimate Preserve, despite being a Take in this proposed BLA. It is expected that the proposed BLA exchange would maintain the Preserve general configuration and management as intended and provided in the City's MSCP Subarea Plan.

Effects on ecotones or other conditions affecting species diversity

The proposed project MSCP BLA would generally result in an equal or greater ecotone condition considering the wider habitat buffer between Poggi Creek and the proposed development area in the eastern half of the project site, the proposed addition of smaller areas to fill in the gaps of the existing Preserve, as well as the reduction of edge in the proposed Preserve in the location where the proposed western main access bisects the existing Preserve, as shown in Figure 6. In addition, the project proposes native habitat restoration in a majority of the Give areas that currently supports non-native grassland in the vicinity of the eastern access road. These habitat restoration areas are expected to improve the habitat quality, species diversity, and overall biological function within the ecotones located between the proposed development and the proposed Preserve including Poggi Creek.



Proposed Habitat Mitigation-MSCP Preserve Map
Sunbow II Phase 3 SPA Amendment

Aerial Source: Merkel & Associates Jan. 2020

Created on: September 28, 2020

Effects to species of concerns not on the covered species list

The proposed project MSCP BLA would result in an equal to greater Preserve that would include native grassland and Diegan coastal sage scrub habitat restoration within the proposed Give Preserve areas. The proposed Preserve BLA would benefit Covered Species as well as other sensitive species that are not covered under the City's MSCP Subarea Plan such as decumbent goldenbush, San Diego viguiera, San Diego marsh elder, southwestern spiny rush, and potentially grasshopper sparrow (not currently present but may potentially in future) within the Give areas including the proposed habitat restoration areas that are contiguous with existing Preserve that supports native habitat within a widened conservation buffer along Poggi Creek. These non-covered species within the proposed Give areas would be conserved and managed within the Proposed Preserve and as such benefit the onsite populations of these species. There are a few sensitive species not on the Covered Species list (i.e., decumbent goldenbush, San Diego viguiera) found onsite that will decrease in numbers due to the proposed Take; however, the proposed native habitat restoration within the proposed Give areas would include these species in the plant palette and therefore, it is expected that the onsite populations of these species would be maintained in the proposed Preserve.

Effects to covered species

The proposed project MSCP BLA would affect the following Covered Species: Otay tarplant and coastal California gnatcatcher. Approximately 142 Otay tarplant would be removed from the existing Preserve in the proposed BLA, as shown in Figure 6. The areas that are proposed to be added to the Preserve supports 718 Otay tarplant (400 percent greater counts) and the proposed Give-habitat restoration from non-native grassland to native grassland would be restored to support Otay tarplant and other rare plants through clay soil salvage and seed translocation (Figure 7). The combination of Give and Give-habitat restoration areas in the proposed project BLA exchange would increase the conservation of Otay tarplant in the Preserve.

USFWS designated Otay tarplant critical habitat in 2001. The City of Chula Vista MSCP Subarea Plan adopted in 2003 included the extent of Otay tarplant critical habitat that occurs on site within the City MSCP 100% Preserve. The proposed project BLA would overlap with Otay tarplant critical habitat in some areas (Figures 2 and 6). City MSCP Section 5.9 Critical Habitat, specifically addresses critical habitat for three Covered Species including Otay tarplant. It states that in approving the MSCP, the USFWS included in their BO for the MSCP findings regarding whether activities permitted under the Section 10(a)(1)(B) permit would result in the destruction or adverse modification of the critical habitat. The MSCP permits development in nonessential areas for each of the Covered Species, establishes a hardline Preserve, employs long-term conservation for the protection of Covered Species, and employs added protections for Narrow Endemic species (including Otay tarplant) and wetlands. Because of these factors, it is anticipated that no additional special management considerations or protection would be necessary for the Otay tarplant, as a result of either implementation of the MSCP or any future federally permitted Covered Activity within the areas designated as critical habitat for those species. Therefore, since the City MSCP provided for future BLAs, the proposed BLA Take of Otay tarplant critical habitat would be addressed by implementing the long-term conservation and added protections for Narrow Endemic Species in the MSCP.

The proposed BLA would affect coastal California gnatcatcher suitable habitat through the Take of Diegan coastal sage scrub in the existing Preserve; however, the proposed Give to the Preserve includes additional good quality Diegan coastal sage scrub located northeast of the gnatcatcher territory in the central portion of the project site (Figure 6). In addition, the proposed BLA includes habitat restoration from non-native grassland to Diegan coastal sage scrub within the northeastern portion of the site that are not currently occupied by gnatcatcher but are located in proximity to existing Diegan coastal sage that would benefit gnatcatcher through an increase in potential foraging and nesting habitat onsite.

Effects on habitat linkages and function of preserve areas

The proposed project MSCP BLA would generally maintain the habitat linkages and functions of the Preserve. In some areas of the proposed BLA, habitat linkages would be improved but in another area habitat linkages would be reduced. More specifically, the proposed BLA would result in a greater habitat linkage connectivity and function in the Preserve along Poggi Creek due to the addition of smaller areas within Poggi creek to the Preserve and the larger habitat buffers south of the creek that would better facilitate wildlife use and movement in this area of the Preserve (Figure 5.3-5). The proposed BLA along the southeastern extent of the Preserve would result in less conserved habitat connectivity along the southern boundary to other habitat to the south into the Minor Amendment Area.

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 consists of densely thatched non-native grasses located in the onsite MSCP Development Area. There are proposed unavoidable impacts within the existing 100% Preserve 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, as 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 MSCP. 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 proposed Future Facility-Detention Basin (1.12 acres) partially overlaps with an area of the existing 100% Preserve onsite. Future Facilities are identified in the MSCP Subarea Plan as a Conditional Compatible Use. 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. Future Facilities are identified in the MSCP Subarea Plan as a Conditional Compatible Use and would be allowed within the existing Preserve if the facility is less than 2 acres in size, has been avoided or minimized to the maximum extent practicable, and meets the Narrow Endemic and Wetlands Policy (assessed below), and applicable Covered Species and sensitive habitats impacted by the Future Facility are mitigated by the conservation strategies in the Subarea Plan and authorized under the MSCP Take Authorization. The City of Chula Vista is allotted up to 50 acres of impact/"Take" for Future Facilities. The cumulative impacts to covered habitats from Future Facilities, including the proposed Sunbow Future Facility (i.e., detention basin) within the City of Chula Vista are summarized in Table 7 below. The proposed Future Facility-Detention Basin (1.12 acres) is partially within an area of the existing Preserve on site. The Future Facility-Detention Basin can be seen in Figure 5.3-4.

Table 7. Cumulative Impacts to Covered Habitat from Future Facilities within City of Chula Vista

Project	Project Permanent Impacts to Covered Habitat (acres)
Village Eleven	0.50
Village Two	0.10

Village Eight West	0.09
Village Nine	0.20
Village Three North, Village Eight East, Village Ten	6.10
Village Four	1.23
UID	4.00
Sunbow II Phase 3	1.12
Total Cumulative Impacts	13.34
Remaining Acres (out of 50 acres)	36.66

The proposed Future Facility-Detention Basin meets these identified conditions as provided in the Facilities Siting Criteria assessment in Table 8 below.

Table 8. MSCP Future Facilities Siting Criteria Project Assessment

Facilities Siting Criteria	Proposed Sunbow Future Facility-Detention Basin
<i>Located in the least environmentally sensitive location feasible</i>	The proposed Future Facility-detention basin is proposed within an area of the existing Preserve that supports Diegan coastal sage scrub and Orcutt's bird's-beak. The relocation of the proposed Future Facility-detention basin was considered in the project design to avoid or minimize impacts to the Preserve, Diegan coastal sage scrub, and Orcutt's bird's-beak 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 where a detention basin is necessary; however, the size and configuration of the basin was modified to reduce impacts to the maximum extent practicable resulting in proposed impacts to 1.12 acres of Diegan coastal sage scrub, 90 out of 911 Orcutt's bird's-beak, and 705 out of 7,647 San Diego viguiera.
<i>Avoid, to the maximum extent practicable, impact to Covered Species and Wetlands</i>	The Future Facility completely avoids impacts to wetlands and avoids to the maximum extent practicable impacts to MSCP Covered Species: Otay tarplant, coast barrel cactus, orange-throated whiptail, Cooper's hawk, northern harrier, coastal California gnatcatcher. Proposed project impact avoidance and minimization for Covered Species are addressed in Project Mitigation Measures that include breeding season avoidance and biological monitoring requirements provided in the M&A Biological Impact Analysis Report, dated February 2021.
<i>Subject to the restrictions and mitigation requirements for Narrow Endemic species and Wetlands pursuant to Sections 5.2.3 and 5.2.4 of the Subarea Plan</i>	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. Proposed mitigation for Otay tarplant impacts include onsite preservation and habitat restoration within the Preserve in compliance with the MSCP and HLIT. 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 8 below). 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. 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.
<i>Where roads cross the Preserve, they should provide for wildlife movement for MSCP Subregional Plan Generalized Core Biological Resources Areas and Linkages map (Figure 1-4). Result in the least impact feasible to Covered Species and Wetlands. Where possible at wildlife crossings, road bridges for vehicular traffic should be employed. Crossings should be designed as follows: substrate left in natural condition or revegetated with native vegetation; a line-of-sight to the other end will be provided; and if necessary, low-light illumination will be installed in the tunnel.</i>	The proposed project does not propose any roads that would cross the Preserve. Road access was already provided in the MSCP Development Area configuration provided in the 2003 Subarea Plan. Therefore, no proposed impacts due to roads crossing the Preserve.
<i>Avoid impacts to Narrow Endemic species and</i>	The project has been designed to avoid (to maximum extent practicable) impacts to Narrow Endemic species including Otay tarplant; however, unavoidable impacts to

<i>quino checkerspot butterfly to the maximum extent practicable</i>	Otay tarplant are proposed as provided in the project Biological Impact Analysis Report, dated February 2021. Quino checkerspot butterfly is not present within the project site and thus would not be impacted by the project, as discussed further in the project Biological Impact Analysis Report, dated February 2021.
<i>Unavoidable impacts to Narrow Endemics within the Preserve are subject to equivalency findings and the limitations/provisions of Section 5.2.3.6.</i>	It is expected that unavoidable impacts to Otay tarplant within the Preserve would meet the Narrow Endemic Equivalency Findings in MSCP Section 5.2.3.6. Otay tarplant is the only narrow endemic species that is known and/or expected to occur onsite (project Biological Report dated February 2021). 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 estimated onsite Otay tarplant population consists of 5,449 plants. 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 Biological Report dated February 2021). 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. The proposed impacts are consistent with the Narrow Endemic Policy and limitations as discussed further in the section above. The proposed impacts to Otay tarplant require appropriate mitigation that consists of the following applicable project mitigation measures:

	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: • <i>Coastal California Gnatcatcher</i>- occupied Diegan coastal sage scrub to mitigate for significant direct impacts to coastal California gnatcatcher occupied habitat; • <i>Otay Tarplant</i>- 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; • <i>Orcutt's Bird's-beak</i>- 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; • <i>Decumbent Goldenbush</i>- 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 • <i>San Diego Viguiera</i>- 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, 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-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-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: 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. Based on the impact and mitigation analysis and the proposed Give in the project BLA, it is expected that the project would meet the Narrow Endemic Equivalency Findings.
<i>Unavoidable impacts to quino checkerspot butterfly are subject to provisions in Section 5.2.8.</i>	The Project would not impact quino checkerspot butterfly and thus is not subject to provisions in Section 5.2.8. Quino checkerspot butterfly protocol surveys were conducted in 2020 for the project site and were negative, as provided in the project Biological Impact Analysis Report, dated February 2021.

Narrow Endemic Policy and Wetland Protection Program

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 completed on the project site, 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). Of the 5,449 on-site Otay tarplant population, the proposed project would impact an estimated 142 Otay tarplant plants (2.6%) inside the Preserve and 694 Otay tarplant plants (12.7%) outside the Preserve/within Development Area (Table 8). 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 9 below.

Table 9. 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 the City's MSCP Section 5.2.4.

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 (CNDDDB). 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)
- 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>
- 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.
- 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). 2021. Biological Impact Analysis Report for the Sunbow II Phase III Development Report. Prepared for Lennar-San Diego Division. Date Revised February 2021 (December 2020, June 2020). 66 pp.
- _____. 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 Geographic Information Source (SanGIS). 2012. Ecology, Vegetation Download (zip) [Internet]. Available from: <http://www.sangis.org/>.
- 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 (USACE). 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 (*Poliophtila 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

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

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

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 delays 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.

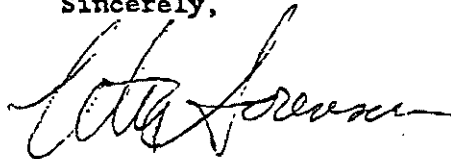
2. In evaluating future permitting actions on properties to the east of the Sunbow site, the Corps should consider in its public interest evaluation, the objectives of the Natural Communities Conservation Planning (NCCP) to provide linkages between natural habitats including the Sunbow site. This objective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

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, C. 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

Willett, 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.

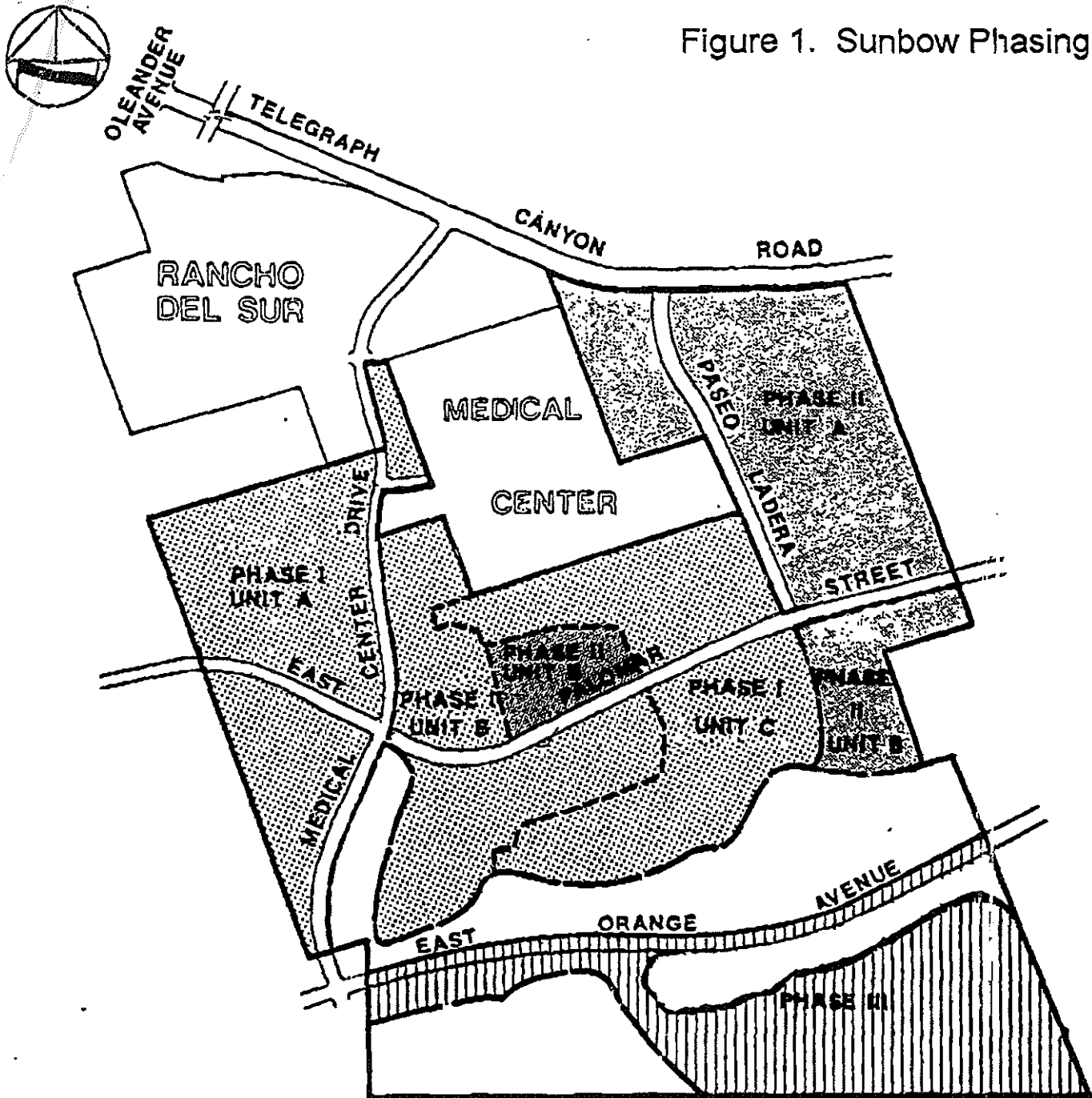
** Impacts illustrated are based on revised grading plans for East Orange Avenue which pulls the roadway south and incorporates designs for wetland mitigation at eastern end of Poggi Canyon.

*** 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) 295-3881 (619) 841-1881
1815 Murley Canyon Road 138 Escondido Avenue
Suite 918 Suite 209
San Diego, California 92108 Vista, California 92084