

West Parcel Solar Project at Mt. San Antonio College

Biological Technical Report

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TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	INTRODUCTION	1
1.1	Project Location	1
1.2	Site Description.....	1
1.3	Surrounding Land Use	1
2.0	SURVEYS AND METHODS	2
3.0	RESULTS OF RESEARCH, SURVEYS, AND MAPPING	3
3.1	Vegetation Communities	3
3.1.1	Mule Fat Scrub	4
3.1.2	Venturan Coastal Sage Scrub	4
3.1.3	Extensive Agriculture	4
3.1.4	Disturbed Habitat	5
3.1.5	Developed Land	5
3.2	Sensitive Resources	5
3.2.1	Sensitive Vegetation Communities	5
3.2.2	Sensitive Plant Species	5
3.2.3	Sensitive Animal Species	8
3.3	Jurisdictional Areas.....	10
4.0	REGIONAL AND REGULATORY CONTEXT.....	11
4.1	Federal Government.....	11
4.2	State of California	12
4.3	Wildlife Corridors	13
5.0	IMPACTS	13
5.1	Thresholds of Significance	13
5.2	Direct Impacts	14
5.2.1	Vegetation Communities and Developed Land.....	14
5.2.2	Sensitive Vegetation Communities	14
5.2.3	WUS and WS Jurisdictional Wetlands.....	15
5.2.4	Sensitive Plants.....	15
5.2.5	Sensitive Animals.....	15

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
5.0	IMPACTS (cont.)	
	5.3 Indirect Impacts	16
	5.3.1 Water Quality	16
	5.3.2 Fugitive Dust	16
	5.3.3 Non-native Plant Species.....	17
	5.3.4 Human Activity/Edge Effects	17
	5.3.5 Roadkill	17
	5.3.6 Night Lighting	17
	5.3.7 Errant Construction Impacts.....	18
	5.3.8 Noise.....	18
6.0	MITIGATION.....	18
	6.1 Direct Impacts.....	18
	6.1.1 Sensitive Vegetation Communities	18
	6.1.2 Sensitive Animals.....	19
	6.2 Indirect Impacts	20
	6.2.1 Non-native Plant Species.....	20
	6.2.2 Night Lighting	21
	6.2.3 Errant Construction Activities.....	21
7.0	WETLAND PERMITTING.....	21
	7.1 Federal Permitting.....	21
	7.2 State Permitting.....	21
8.0	SIGNIFIGANCE AFTER MITIGATION.....	22
9.0	CERTIFICATION/QUALIFICATION	23
10.0	REFERENCES	24

LIST OF APPENDICES

A	Federal Jurisdictional Information
B	State Jurisdictional Information
C	Data Form
D	Representative Site Photos
E	Explanation of Status Codes for Plant and Animal Species
F	West Parcel Coastal Sage Scrub and Least Bell’s Vireo Analysis

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Follows Page No.</u>
1	Regional Location Map.....	2
2	Project Location Map (USGS Topography)	2
3	Project Location Map (Aerial Photograph).....	2
4	National Wetland Inventory.....	2
5	Habitat and Sensitive Species Map/Project Footprint	4
6	Waters of the U.S.....	10
7	Waters of the State	10

LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page No.</u>
1	Existing Vegetation Communities	4
2	Potentially Occurring Sensitive Plant Species.....	6
3	Listed or Sensitive Animal Species with Potential to Occur	8
4	Existing Vegetation Communities	14
5	Jurisdictional Impacts	15
6	Vegetation Mitigation Analysis	19

1.0 INTRODUCTION

Mt. San Antonio College (Mt. SAC) plans to construct a power generation station on the west parcel of their campus (referred to as West Parcel hereinafter). Impacts from this project will affect habitat occupied by the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) and portions of two streambeds. These resources were initially mapped as part of the 2008 Master Plan Update (Lindmark 2008). The purpose of this report is to provide updated survey information and impact analysis for this part of the campus. The West Parcel comprises approximately 27.65 acres of the 420-acre campus.

1.1 PROJECT LOCATION

Mt. SAC is located in the San Gabriel Valley, in southeast Los Angeles County, California (Figure 1). The college is situated near the intersection of North Grand and Temple Avenues in the City of Walnut. It is within un-sectioned land, Township 2 South, Range 9 East on the U.S. Geological Survey (USGS) 7.5-minute San Dimas quadrangle map (Figure 2).

1.2 SITE DESCRIPTION

The study area is approximately 27.65 acres and is currently undeveloped (Figure 3). The West Parcel is roughly triangular with the hypotenuse on the east side of the triangle and along Grand Avenue. A small area (approximately 0.71 acre) at the northern tip of the property has been graded flat. The remainder of the site consists of rolling hills with intervening swales. Elevations within the study area range from approximately 690 to 875 feet above mean sea level.

Two streambeds occur on site. The northern streambed traverses the site from west to east. It enters the site from an unimproved streambed and exits the site via a culvert under North Grand Avenue. The culvert connects the drainage to Snow Creek, which flows north to south, just east of North Grand Avenue. The southeastern streambed originates on site and also drains to the east and flows into Snow Creek via a culvert under North Grand Avenue.

The National Wetland Inventory (NWI) maps show freshwater forested/shrub wetlands and a riverine, intermittent streambed, temporarily flooded (Figure 4) along the northern drainage. No forested/shrub wetlands, however, exist on site. There is a patch of southern willow scrub located in this drainage, just off site to the west. The eastern portion of the canopy for these trees overhangs the western boundary, but no willows are rooted on site. The streambed mapping from NWI reflects what exists on the West Parcel.

1.3 SURROUNDING LAND USE

Residential land uses exist on the south and west sides of the West Parcel. North Grand Avenue exists along the eastern boundary of the parcel. A small area of commercial land use exists west of the northern tip of the parcel.

2.0 SURVEYS AND METHODS

Prior to conducting biological field surveys, HELIX Environmental Planning, Inc. (HELIX) performed a review of existing literature, including searches of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB; 2011, 2012a and b) and the California Native Plant Society (CNPS; 2014) online database for information regarding sensitive species reported in the project vicinity. Results of previous analyses of the 2008 and 2012 Master Plan Updates (HELIX 2008a, b, and c; 2012) were also consulted.

Vegetation mapping, rare plant, general botanical, and zoological surveys, and a jurisdictional delineation of the site were conducted on February 17, 2014, by HELIX biologist W. Larry Sward. Vegetation communities and sensitive species observed or detected were mapped on a 1"=200' scale aerial photograph map.

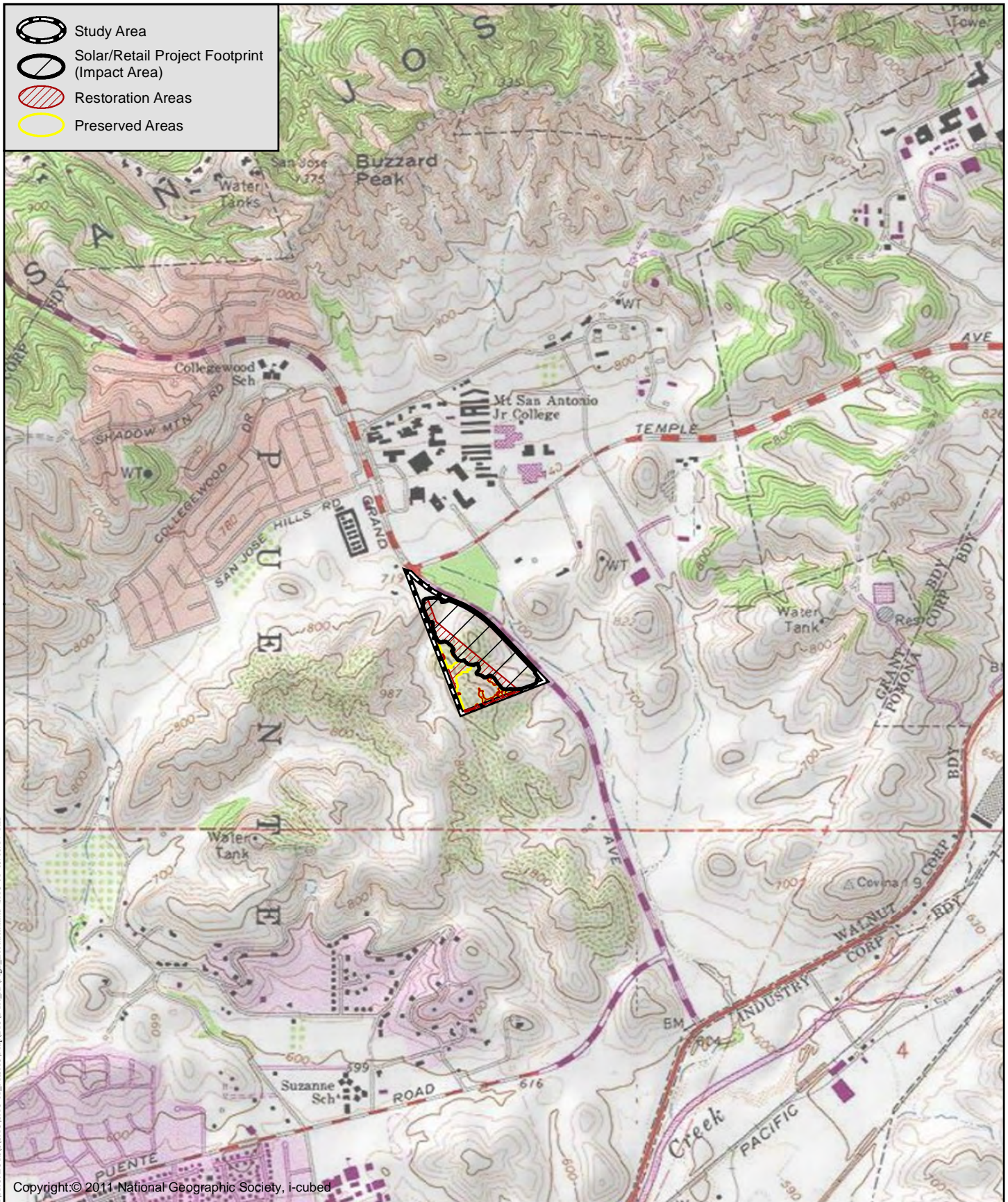
Vegetation community classifications follow Holland (1986). Plants were identified according to Baldwin, et. al. (2012), while common names are derived from either Baldwin, et. al., CNPS (2014), or Calflora (2014). Sensitive plant status follows the CNPS (2014) and CDFW CNDDDB (2012a and b). Animal nomenclature used in this report is taken from Crother (2001) for amphibians and reptiles, American Ornithologists' Union (2007) for birds, and Baker et al. (2003) for mammals. Sensitive animal status follows the CDFW CNDDDB (2011). Wetland affiliations of plant species follow The National Wetland Plant List (Lichvar, et. al. 2014).

Waters of the U.S. (WUS) wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008).

The results presented here are also discussed in light of court decisions (i.e., *Rapanos v. United States*, *Carabell v. United States*, and *Solid Waste Agency of Northern Cook County v. USACE*), as outlined and applied by the U.S. Army Corps of Engineers (USACE; 2007; Grumbles and Woodley 2007), USACE and Environmental Protection Agency (EPA; 2007), and EPA and USACE (2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are relatively permanent water bodies (RPWs), which have year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation must be conducted to determine whether the non-RPW is jurisdictional. An overview of USACE wetlands and jurisdictional WUS definitions is presented in Appendix A.

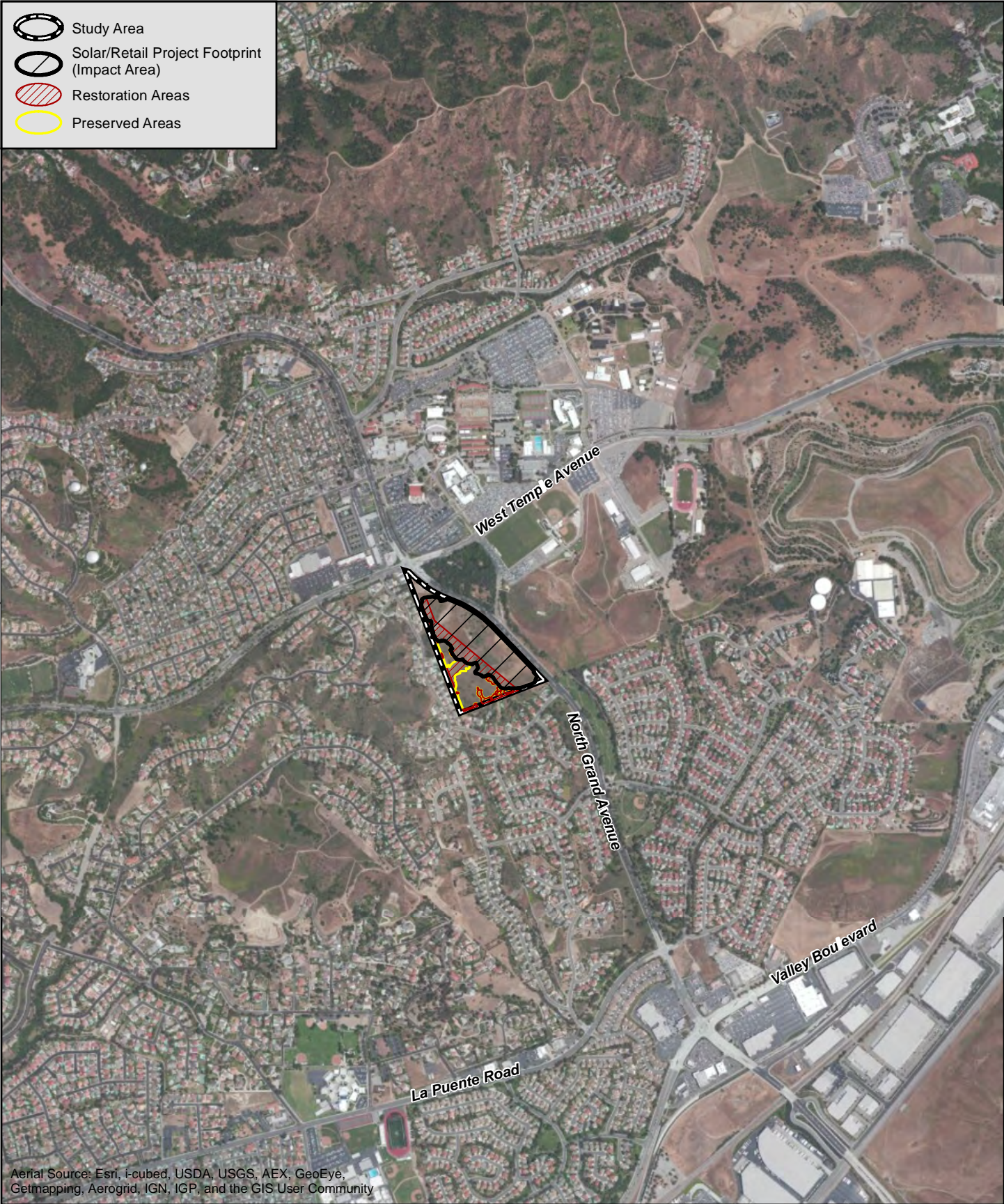
Soil samples were evaluated for hydric soil indicators (e.g., hydrogen sulfide [A4], sandy redox [S5], depleted matrix [F3], redox dark surface [F6], and depleted dark surface [F7]). Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen 1994).

Sample points were inspected for primary wetland hydrology indicators (e.g., surface water [A1], saturation [A3], water marks [non-riverine, B1], sediment deposits [non-riverine, B2], drift deposits [non-riverine, B3], surface soil cracks [B6], inundation visible on aerial imagery [B7], salt crust [B11], aquatic invertebrates [B13], hydrogen sulfide odor [C1], and oxidized



Project Location Map (USGS Topography)

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Project Location Map (Aerial Photograph)

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National Wetland Inventory

WEST PARCEL SOLAR PROJECT

rhizospheres along living roots [C3]) and secondary wetland hydrology indicators (e.g., water marks [riverine, B1], sediment deposits [riverine, B2], drift deposits [riverine, B3], drainage patterns in wetlands [B10], shallow aquitard [D3], and positive FAC neutral test [D5]).

Areas were determined to be non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank), but neither the vegetation nor soils criterion was met. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 CFR Section 329.11 as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas.” The USACE has issued further guidance on the OHWM (Riley 2005; Lichvar and McColley 2008), which also has been used for this delineation. The OHWM widths were measured to the nearest foot at various locations along mapped drainages.

Waters of the state (WS) jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a “surface or subsurface flow that supports riparian vegetation” (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Definitions of CDFW jurisdictional areas are presented in Appendix B. Streambed widths were measured to the nearest foot at various locations along the channel. The CDFW publication on dryland watersheds (Vyverberg 2010) was used as an aid to map streambeds.

One sample point was studied; a standard data form was completed in the field and is included in Appendix C. A photograph was taken of the sample point and is included in Appendix D. The WUS mapping was verified in the field on April 8, 2015, by Pamela K. Kostka, Regulatory Project Manager with USACE.

3.0 RESULTS OF RESEARCH, SURVEYS, AND MAPPING

3.1 VEGETATION COMMUNITIES

Two native vegetation communities occur within the study area (Table 1; Figure 5). The entire West Parcel is subjected to ongoing grazing, although the impact of grazing on this part of Mt. SAC is much less compared to other parts of the campus. These native vegetation communities retain significant native species cover. The areas that do not support a minimum amount of native vegetation have been mapped as extensive agricultural. The other non-vegetation types mapped on the West Parcel are disturbed habitat, which occurs at the northern end of the parcel, and developed.

Table 1 EXISTING VEGETATION COMMUNITIES	
NATIVE AND NATURALIZED VEGETATION	ACREAGE
Mule fat scrub	0.06
Venturan coastal sage scrub (including disturbed)	14.20
Subtotal	14.26
ACTIVE USE AND ALTERED AREAS	
Extensive agriculture	12.43
Disturbed habitat	0.71
Developed	0.25
Subtotal	13.39
TOTAL	27.65

3.1.1 Mule Fat Scrub

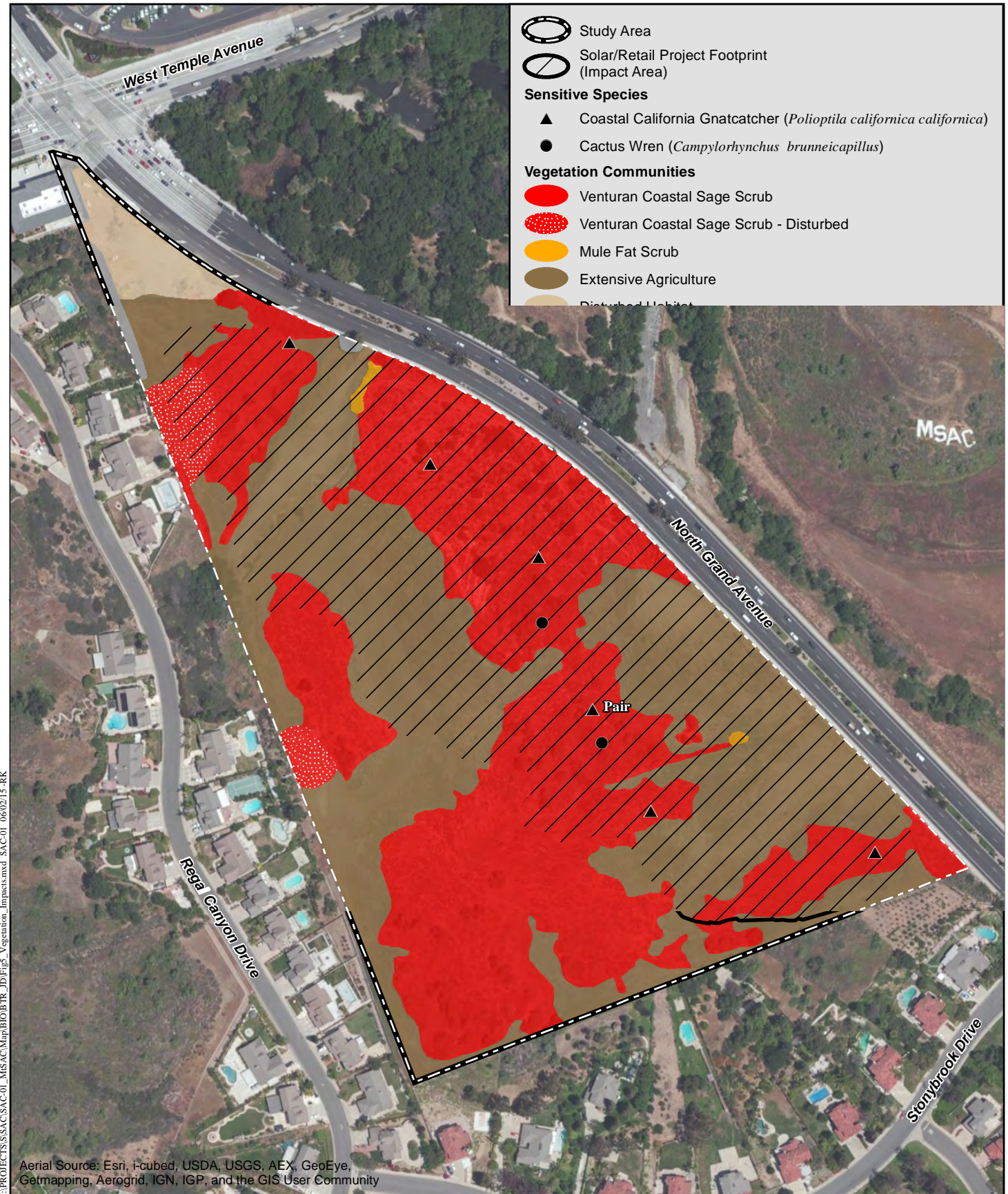
Mule fat scrub is a shrubby riparian scrub community dominated by mule fat and interspersed with shrubby willows (*Salix* spp.; Holland 1986). The mule fat scrub in the study area occurs along the northern drainage and is a potentially jurisdictional wetland. Approximately 0.06 acre of mule fat scrub occurs within the West Parcel.

3.1.2 Venturan Coastal Sage Scrub

Coastal sage scrub is one of the two major shrub types that occur in cismontane southern California, with the other shrub type being chaparral. Sage scrub occupies relatively xeric sites characterized by shallow soils. Significant portions of sage scrub habitat in southern California have been destroyed or modified, primarily as a result of urban expansion. Venturan coastal sage scrub is dominated by low, soft-woody shrubs with crowns usually touching (and typically with bare ground beneath and between them). Growth occurs in late winter and early spring, following the onset of the winter rains. Characteristic species of Venturan coastal sage scrub include California sagebrush (*Artemisia californica*), various buckwheats (*Eriogonum fasciculatum*, *E. cinereum*, and *E. parvifolium*), white sage (*Salvia apiana*), black sage (*S. mellifera*), and lemonade berry (*Rhus integrifolia*). This habitat type also occurs as a sparse, low-growing disturbed phase. Approximately 14.2 acres of Venturan coastal sage scrub (including the disturbed phase) occur within the West Parcel. This habitat occurs within the study area as a disturbed phase. These stands have a lower density of shrubs, which may also be smaller than the undisturbed stands, and a greater cover of weedy herbaceous species.

3.1.3 Extensive Agriculture

Extensive agriculture includes those parts of the study area that are actively grazed and currently support an herbaceous dominated community, including forbs (e.g., white-top [*Lepidium appelianum*], mustards [*Brassica* spp., *Hirschfeldia incana*, and *Sisymbrium* spp.], Italian thistle [*Carduus pycnocephalus*], bur clover [*Medicago polymorpha*], and tumbleweed [*Salsola tragus*])



Habitat and Sensitive Species Map/Project Footprint

WEST PARCEL SOLAR PROJECT

and non-native grasses (e.g., oats [*Avena* sp.] and bromes [*Bromus* sp.]). Approximately 12.43 acres of extensive agriculture occur within the West Parcel.

3.1.4 Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads) and land containing a preponderance of non-native ruderal species that colonize disturbed or previously cleared areas. Disturbed habitat totals approximately 0.71 acre within the study area.

3.1.5 Developed Land

Developed land was mapped where permanent structures, pavement, and/or maintained landscaping have been placed. Most of the developed land occurs along the western boundary, near the northern tip of the parcel. This area consists of landscaping. Also included in this category is a small stand of riparian trees along North Grand Avenue, just north of the northern gate. These trees exist near a leaky cattle watering station and are included in developed because they are sustained by artificial hydrology. Developed land within the West Parcel comprises approximately 0.25 acre.

3.2 SENSITIVE RESOURCES

3.2.1 Sensitive Vegetation Communities

Two vegetation communities found on the project site are considered sensitive by the resource agencies: mule fat scrub and Venturan coastal sage scrub.

3.2.2 Sensitive Plant Species

No sensitive plant species were observed during the current or previous surveys.

Sensitive Plant Species with Potential to Occur

A database search revealed that 33 sensitive plant species are known from the vicinity of Mt. SAC. Four of these are not expected to occur within the study area because they are only known from places with a higher elevation (Greata's aster [*Symphotrichum greatae*], lemon lily [*Lilium parryi*], San Bernardino grass-of-Parnassus [*Parnassia cirrata* var. *cirrata*], and San Gabriel bedstraw [*Galium grande*]). Nine others are not expected in the study area because their appropriate habitat is absent:

- alkaline soils near hot springs (hot-springs fimbristylis [*Fimbristylis thermalis*]);
- granitic cliffs and canyon walls (San Gabriel Mountains dudleya [*Dudleya densiflora*]);
- alkaline soils (chaparral ragwort [*Senecio aphanactis*]; smooth tarplant [*Centromadia pungens* spp. *laevis*]; Davidson's saltscall [*Atriplex serenana* var. *davidsonii*]; and salt spring checkerbloom [*Sidalcea neomexicana*]);
- chaparral with granitic soil (San Gabriel River dudleya [*Dudleya cymosa* ssp. *crebrifolia*]);

- recently burned or disturbed areas with sandstone soils with carbonate layers (Braunton's milk-vetch [*Astragalus brauntonii*,]);
- coastal salt marshes and swamps, playas, and vernal pools (Coulter's goldfields [*Lasthenia glabrata* ssp. *coulteri*]);
- freshwater marsh (California sawgrass [*Cladum californicum*]); and
- streams and springs, and meadows and seeps (San Bernardino aster [*Symphyotrichum defoliatum*], Sonoran maiden fern [*Thelypteris puberula* var. *sonorensis*]).

Eighteen other sensitive species potentially occur in the study area (Table 2). Surveys were done at the appropriate time of year to detect these species and none were observed. Differences in the climate from year-to-year can influence the size of certain herbaceous species. This is why the potential to occur for certain herbaceous species is rated low to moderate instead of simply just low, even though they were surveyed for at the time of year when they were best observed.

Table 2
POTENTIALLY OCCURRING SENSITIVE PLANT SPECIES

SPECIES	STATUS*	POTENTIAL TO OCCUR	NOTES
Chaparral sand-verbena (<i>Abronia villosa</i> var. <i>aurita</i>)	--/-- CRPR List 1B.1	Presumed Absent	Flowers from June to September. Coastal sage scrub, chaparral. Annual. Would have been observed if present.
Coulter's saltbush (<i>Atriplex coulteri</i>)	--/-- CRPR List 1B.2	Low	Flowers from May to October. Coastal sage scrub in clay soils. Perennial herb.
Nevin's barberry (<i>Berberis nevinii</i>)	FE/SE CRPR List 1B.1	Presumed Absent	Flowers March to June. Chaparral, woodland, coastal and riparian scrubs. Would have been observed if present.
Thread-leaved brodiaea (<i>Brodiaea filifolia</i>)	FT/SE CRPR List 1B.1	Low to Moderate	Flowers from March to June. Clay soils in woodlands, coastal sage scrub, and grasslands. Perennial herb.
Round-leaved filaree (<i>California macrophylla</i>)	--/-- CRPR List 1B.1	Low	Flowers from March to May. Clay soils in woodland and grassland. Annual.
Slender mariposa lily (<i>Calochortus clavatus</i> var. <i>gracilis</i>)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from March to June. Coastal sage scrub and grassland. Perennial herb.
Plummer's mariposa lily (<i>Calochortus plummerae</i>)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from May to July. Granitic, rocky soil in coastal sage scrub and grassland. Perennial herb.

**Table 2 (cont.)
POTENTIALLY OCCURRING SENSITIVE PLANT SPECIES**

SPECIES	STATUS*	POTENTIAL TO OCCUR	NOTES
Intermediate mariposa lily (<i>Calochortus weedii</i> var. <i>intermedius</i>)	--/-- CRPR List 1B.2	Low to Moderate	Flowers May to July. Coastal sage scrub and grassland. Perennial herb.
Southern tarplant (<i>Centromadia parryi</i> ssp. <i>australis</i>)	--/-- CRPR List 1B.1	Low to Moderate	Flowers from May to November. Margins of freshwater marsh and vernally mesic grasslands. Annual.
Parry's spineflower (<i>Chorizanthe parryi</i> var. <i>parryi</i>)	--/-- CRPR List 1B.1	Low	Flowers from May to July. Sandy or rocky soil in coastal sage scrub. Annual.
Slender-horned spineflower (<i>Dodecahema leptoceras</i>)	FE/SE CRPR List 1B.1	Low	Flowers from April to June. Sandy areas in woodlands. Annual.
Many-stemmed dudleya (<i>Dudleya multicaulis</i>)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from April to July. Coastal sage scrub and grassland. Perennial herb.
Mesa horkelia (<i>Horkelia cuneata</i> ssp. <i>puberula</i>)	--/-- CRPR List 1B.1	Low	Flowers from February to September. Sandy or gravelly soils in coastal sage scrub. Perennial herb.
California satintail (<i>Imperata brevifolia</i>)	--/-- CRPR List 2B.1	Presumed Absent	Flowers from September to May. Riparian scrub along Snow Creek. Perennial herb. Would have been observed if present.
California muhly (<i>Muhlenbergia californica</i>)	--/-- CRPR List 4.3	Low	Flowers from July to September. Mesic areas in chaparral, coastal scrub, coniferous forests, meadows and seeps. Perennial rhizomatous herb.
prostrate navarretia (<i>Navarretia prostrata</i>)	--/-- CRPR 1B.1	Low	Flowers from April to June. Mesic coastal sage scrub and grasslands. Annual.
Brand's star phacelia (<i>Phacelia stellaris</i>)	FC/-- CRPR List 1B.1	Low	Flowers from March to June. Coastal sage scrub. Annual
White rabbit-tobacco (<i>Pseudognaphalium leucocephalum</i>)	--/-- CRPR List 2B.2	Low to Moderate	Flowers from July to December. Sandy and rocky soils in woodlands, coastal sage scrub, and grasslands. Perennial herb.

*A listing and explanation of status and sensitivity codes can be found in Appendix E.

3.2.3 Sensitive Animal Species

Two sensitive animal species have been observed on the West Parcel: the federally listed threatened coastal California gnatcatcher and the California Species of Special Concern coastal cactus wren (Figure 5). Least Bell’s vireo (*Vireo pusillus bellii*), which is federally and state listed as endangered and a species of concern, was previously observed nearby on the Mt. SAC campus. An analysis of the Primary Constituent Elements (PCEs) for these species shows that the West Parcel is well suited to support the gnatcatcher but not the vireo (Appendix F).

Coastal California gnatcatcher (*Polioptila californica californica*)

Listing: FT/SSC

Distribution: Occurs throughout coastal lowlands.

Habitat(s): Coastal sage scrub and open chaparral.

Status on site: A minimum of one pair and one individual were observed in the coastal sage scrub on the West Parcel in 2008 (Figure 5). Protocol surveys are currently underway for this species at this time. Preliminary results are a pair and three juveniles currently inhabit the West Parcel.

Coastal cactus wren (*Campylorhynchus Brunneicapillus sandiegensis*)

Listing: --/SSC

Distribution: Subspecies occurs throughout desert and coastal areas of southern California.

Habitat(s): Restricted to clumps of native prickly pear (*Opuntia littoralis* and *O. oricola*) or cholla (*Cylindropuntia prolifera*) growing in coastal sage scrub or along washes.

Status on site: Individuals were heard vocalizing in the coastal sage scrub located on the West Parcel in 2008,2013, 2014, and 2015.

Eleven other sensitive animal species potentially occur on the West Parcel (Table 3). All of these are listed as Species of Special concern by CDFW: three species have a moderate potential to occur; two species have low to moderate potential to occur; five species have low potential to occur; and one is not expected.

Table 3		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS*	POTENTIAL TO OCCUR
Reptiles		
Red-diamond rattlesnake (<i>Crotalus exsul</i>)	--/SSC	Low to moderate. Favors rocky outcrops (limited on site) in coastal sage scrub, chaparral, creosote bush scrub, and areas dominated by cactus.
San Diego horned lizard (<i>Phrynosoma coronatum blainvillei</i>)	--/SSC	Low. Occurs in chaparral, open sage scrub, and away from development, in areas containing loose soil.

**Table 3 (cont.)
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR**

SPECIES	STATUS*	POTENTIAL TO OCCUR
Reptiles (cont.)		
Western patch-nosed snake (<i>Salvadora hexalepis virgulata</i>)	--/SSC	Low. Occurs primarily in chaparral and occasionally in coastal sage scrub.
Birds		
Burrowing owl (<i>Athene cunicularia hypugea</i>)	--/SSC	Low. Prefers flat grassland, open sage scrub, and desert habitats. Could be found in the flatter disturbed sage scrub, grassland, and parts of areas mapped as extensive agriculture.
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	--/SSC	Moderate. Occurs in coastal sage scrub on rocky hillsides and in open chaparral. Open areas of sage scrub occur on site.
California horned lark (<i>Eremophila alpestris actia</i>)	--/SSC	Moderate. Common in agricultural fields and disturbed grasslands throughout southern California. Small flock observed in 2008 elsewhere at Mt. SAC. Not observed on West Parcel.
Mammals		
American badger (<i>Taxidea taxus</i>)	--/SSC	Not expected. Upland grasslands, meadows, and fields. Not enough suitable habitat present to support this species.
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	--/SSC	Moderate. The northwestern San Diego pocket mouse inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. Inhabits open, sandy areas of both the Upper and Lower Sonoran life-zones of southwestern California and northern Baja California, Mexico.
Pallid bat (<i>Antrozous pallidus</i>)	--/SSC	Low to roost on site. Roosts in caves, mines, crevices, and abandoned buildings. Could forage on site.
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	--/SSC	Low. Occurs primarily in open habitats, including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.

Table 3 (cont.)		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS*	POTENTIAL TO OCCUR
Mammals (cont.)		
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	--/SSC	Low to Moderate. Occurs in open chaparral and coastal sage scrub, often building large stick nests in rock outcrops or around clumps of cactus or yucca.

*A listing and explanation of status codes for plant and animal species can be found in Appendix E

3.3 JURISDICTIONAL AREAS

A single wetland delineation point was sampled within the West Parcel (Figures 6 and 7). Only one point was necessary because the location sampled was the most mesic location on the West Parcel and it proved to not be a wetland. Sampling Point 1 was located in the northern streambed in mule fat scrub. Only one wetland plant was dominant at this location, mule fat¹ (*Baccharis salicifolia*), thus meeting the Dominance Test for wetland vegetation. A soil pit was excavated to a depth of 18 inches revealed three layers of sandy loam, with chromas of: 7.5 YR 2.5/2 (0 to 2 inches), 10YR 3/2 ((2 to 9 inches), and 10YR 2.5/3 (9 to 18 inches). No hydric soil indicators were present. One secondary indicator of wetland hydrology was present, drift deposits (B3, riverine), which is insufficient for the wetland hydrology criterion.

The Arid West Supplement notes that sandy soils such as the ones at this location may be problematic. However, given the lack of wetland soil indicators, strong wetland vegetation and wetland hydrology must be present to conclude this sampling point is in a wetland. Vegetation dominated by a FAC plant and only one secondary wetland hydrology indicator is insufficient to make that conclusion. This location is considered a non-wetland WUS and WS (mule fat scrub).

The WUS at the West Parcel consist of 0.08 acre of non-wetland WUS, along a total of 999 linear feet of streambed (Figure 6). The WUS exist as ephemeral streams. The northern stream comprises 0.05 acre and 585 linear feet of the on-site WUS. The southern stream comprises 0.02 acre and 414 linear feet of the on-site WUS.

The WS at the West Parcel total 0.20 acre and 999 linear feet (Figure 7). Of this total, 0.06 acre and 133 linear feet consist of mule fat scrub and 0.14 acre and 866 linear feet consist of streambed.

¹ Mule fat is FAC, or has a 50 percent probability of occurring in a wetland.



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Aerial Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Waters of the U.S.

WEST PARCEL SOLAR PROJECT



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Aerial Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Waters of the State

WEST PARCEL SOLAR PROJECT

4.0 REGIONAL AND REGULATORY CONTEXT

Biological resources are subject to regulatory review by the federal government and State of California. The federal government administers non-marine plant- and wildlife-related issues through the U.S. Fish and Wildlife Service (USFWS), while WUS issues are administered by the USACE. California law relating to wetland, water-related, and wildlife issues is administered by the CDFW. The State Water Resources Control Board (SWRCB) also has a role in permitting impacts to WUS.

4.1 FEDERAL GOVERNMENT

Administered by the USFWS, the federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a “take” under the ESA. Section 9(a) of the ESA defines take as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” and “harass” are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species’ behavioral patterns.

Sections 4(d), 7 and 10(a) of the federal ESA regulate actions that could jeopardize endangered or threatened species. A special rule under Section 4(d) was finalized, which authorizes incidental take of certain protected species within subregions that are actively preparing a Natural Communities Conservation Programs (NCCP) plan or under approved NCCPs, which are administered by the states. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. Federal actions by private, state, or local entities typically consist of activities that involve federal approvals/permits or federal funding. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species’ impacts and issuance of a Clean Water Act (CWA) permit by the USACE for work in jurisdictional areas or other federal actions. Section 10(a) allows issuance of permits for “incidental” take of endangered or threatened species with preparation of a habitat conservation plan (HCP). The term “incidental” applies if the taking of a listed species is incidental to (and not the purpose of) an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species’ survival must be submitted for issuance of Section 10(a) permits.

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127; USFWS 2004). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the USFWS places restrictions on disturbances allowed near active raptor nests.

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act (CWA). The Rivers and Harbors Act deals primarily with discharges

into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. Permitting for projects filling WUS (including wetlands) is overseen by the USACE under Section 404 of the CWA. Projects are permitted on an individual basis or by a general or nationwide permit. Individual permits are assessed individually based on the type of action, amount of fill, etc., and typically require substantial time (often longer than 6 months) to review and approve. Nationwide permits, on the other hand, are pre-approved if a project meets certain conditions and maximum areas of affect. A Section 401 certification or waiver under the federal CWA would also be required from the SWRCB in conjunction with any Section 404 permit that is required.

4.2 STATE OF CALIFORNIA

The California ESA is similar to the federal ESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of the California ESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes.

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates the collection, transport, and commerce in plants that are listed. The California ESA follows the NPPA and covers both plants and animals that are determined to be endangered or threatened with extinction. Plants listed as rare under the NPPA are also designated as rare under the California ESA.

The California Fish and Game Code (Sections 1600 et seq.) requires an agreement with the CDFW for projects affecting riparian and wetland habitats through issuance of a Streambed Alteration Agreement (SAA).

The California Environmental Quality Act (CEQA) and its implementing guidelines (CEQA Guidelines) require discretionary projects with potentially significant effects (or impacts) on the environment to be submitted for environmental review. Mitigation for significant impacts to the environment is determined through the environmental review process, in accordance with existing laws and regulations.

Mt. SAC is the Lead Agency for this project's CEQA review process. As Lead Agency, Mt. SAC will be responsible for certifying the CEQA document and making a decision on the West Solar Project.

Mt. SAC is not a participant in the NCCP, nor is it within an HCP planning area. The California NCCP Act (Section 2835) allows the CDFW to authorize take of species covered by plans in agreement with NCCP guidelines (CDFW 1997). An NCCP initiated by the State of California under Section 4(d) of the federal ESA focuses on conserving coastal sage scrub in order to avoid the need for future federal and state listing of coastal sage scrub- dependent species. The coastal California gnatcatcher is presently listed as threatened under the federal ESA, while several additional species inhabiting coastal sage scrub are candidates for federal listing. Because Mt. SAC is not enrolled as a participant in the NCCP, the proposed 2012 Master Plan cannot rely on a habitat loss permit under Section 4(d) of the federal ESA. Since there is not an existing HCP

for the study area, any projects that would cause “take” of a listed species would require an application to the USFWS for issuance of a Section 10(a) permit for “incidental” take of endangered or threatened species (with preparation of an HCP.).

4.3 WILDLIFE CORRIDORS

Wildlife corridors can be local or regional in scale and may function in different ways, depending on species and time of year. They represent areas where wildlife movement is concentrated due to natural or manmade constraints. Local corridors provide access to resources such as food, water, and shelter. Animals can use these corridors (such as hillsides and tributary drainages to main drainages) to travel among different habitats (i.e., riparian and upland habitats). Some animals require riparian habitat for breeding and upland habitat for burrowing. Regional corridors provide these functions and also link two or more large areas of open space. They provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations.

The 4-lane roadway to the east and residential development to the south and west create a barrier to reptiles, amphibians, and small mammals. Extant native habitat exists within a short distance of the West Parcel that is potentially available to medium-sized mammals (e.g., coyotes and raccoons) and birds.

5.0 IMPACTS

Impacts addressed in this section are considered either direct or indirect. A direct impact occurs when the primary effects of the project replace existing habitat with graded or developed areas. All of the project area is considered impacted for the purposes of this report. An indirect impact consists of secondary effects of a project such as exotic species invasion, increased lighting, noise, and increased human intrusion. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent. This impact analysis is based on the footprint for the grading and solar array on the West Parcel.

5.1 THRESHOLDS OF SIGNIFICANCE

Significance thresholds identified for biological resource issues include effects to rare, threatened, or endangered species or their associated habitats, and interference with the movements of resident or migratory fish or wildlife species. For purposes of this report, significance thresholds are summarized as follows: (1) a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS; (2) a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS; (3) a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means; (4) a substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native

wildlife nursery sites; (5) a conflict with any applicable policies protecting biological resources; and (6) a conflict with the provisions of an adopted HCP, NCCP, or other applicable habitat conservation plan. In response to the sixth threshold, it should be noted that there are no adopted plans applicable to the Mt. SAC study site.

5.2 DIRECT IMPACTS

5.2.1 Vegetation Communities and Developed Land

The solar power project on the West Parcel would directly impact two vegetation types, as well as extensive agriculture, disturbed habitat, non-native vegetation, and developed land (Table 4; Figure 5). A total of 17.22 acres would be impacted by the project.

Table 4 EXISTING VEGETATION COMMUNITIES			
NATIVE AND NATURALIZED VEGETATION	AREA		
	Existing	Impacted	Preserved
Mule fat scrub	0.06	0.06	0
Venturan coastal sage scrub (including disturbed)	14.20	8.36	5.84
Subtotal	14.26	8.42	5.84¹
ACTIVE USE AND ALTERED AREAS			
Extensive agriculture	12.43	8.78	3.65
Disturbed habitat	0.71	0.00	.71
Developed	0.25	0.02	0.23
Subtotal	13.39	8.80	4.59
TOTAL	27.65	17.22	10.43

¹ This total includes area within the fuel modification zone adjacent to the residential area to the west. The fuel zone areas will not be included as preserved for the purposes of calculating available mitigation on the West Parcel. The resulting amount of preservation available on the West Parcel is 5.07 acres.

5.2.2 Sensitive Vegetation Communities

Direct impacts will occur to 0.06 acre of mule fat scrub and 8.42 acres of Venturan coastal sage scrub (included the disturbed phase); these impacts are considered significant. The impacts to mule fat scrub are significant because it is a wetland habitat. The impacts to the sage scrub are considered significant because of the regional sensitivity of the sage scrub and the presence of a federally listed species, the coastal California gnatcatcher, and state sensitive species, the coastal cactus wren. The impacts to the remaining habitats or areas are not significant because the habitat is not regarded as sensitive habitat (extensive agriculture, disturbed habitat, and developed areas).

5.2.3 WUS and WS Jurisdictional Wetlands

All of the southern streambed and most of the northern streambed would be impacted by the project (Table 5). All of the mule fat scrub would be impacted. While the streambed impacts are not significant under CEQA they will require permitting by the USACE, CDFW, and SWRCB. The impact to mule fat scrub is significant under CEQA and would require a permit from CDFW.

Table 5			
JURISDICTIONAL IMPACTS (acres/linear feet)			
	EXISTING	IMPACTED	REMAINING
Waters of the U.S.			
Non wetland	0.08/999	0.08/976	0*/23
Waters of the State			
Mule fat scrub	0.06/133	0.06/133	
Streambed	0.14/999	0.14/843	0*/23
State Total	0.20/999	0.20/976	0*/23

* The small segment (i.e., 34 feet) of the southern drainage at the western boundary will remain; however, the area is too small to be reflected in these calculations, which are rounded to the second decimal place.

5.2.4 Sensitive Plants

No impacts to sensitive plant species are expected from the implementation of the West Parcel Solar Project.

5.2.5 Sensitive Animals

Construction of the various project elements would impact habitat on site that supports two sensitive animal species, the coastal California gnatcatcher and coastal cactus wren. Potential impacts to the non-federally listed species (i.e., cactus wren and horned lark) and their habitats would not be considered significant. Potential impacts to the gnatcatcher are regarded as significant.

A limited amount of potentially suitable habitat for burrowing owl (*Athene cunicularia hypugea*) exists in two places in the study area. Both areas are relatively flat. One occurs primarily north of the northern drainage. The other occurs adjacent to North Grand Avenue in the southeastern part of the parcel. Revised survey protocol (CDFW 2012c) could not be met for this report due to the seasonally timing requirements of the survey protocol, and so a definitive conclusion about the presence of burrowing owls cannot be made. The probability of this species inhabiting Mt. SAC appears low. No owls or evidence of their burrows were observed during the focused sensitive bird surveys, general biological survey, and rare plant surveys (HELIX 2008b). Furthermore, most of the West Parcel, with the exception of the two areas cited above, is too steep for these owls. The CNDDDB records show that the nearest burrowing owl record is

approximately 9 miles southwest of Mt. SAC, in the City of Chino Hills (Danbury Park). Protocol surveys for burrowing owl are underway and thus far have been negative. While it seems unlikely owls are present, potential impacts to this species remain unresolved in the absence of protocol surveys.

Raptors

Construction of the proposed project would potentially directly impact raptor foraging and nesting habitat through construction activity. Impacts to raptor foraging habitats would be adverse but not significant. Direct impacts to active raptor nests are prohibited under the federal MBTA, although raptor nesting habitat is extremely limited on the West Parcel and no nests were observed during the other surveys. There remains, however, a potential to impacts to raptors from nest disruption during project construction.

5.3 INDIRECT IMPACTS

Potential indirect impacts from project construction could include decreased water quality (i.e., through sedimentation, contaminants, or fuel release), fugitive dust, colonization of non-native plant species in previously undisturbed areas, edge effects, animal behavioral changes, roadkill, night lighting, errant construction impacts, and noise. The proposed project will be subject to the restrictions and requirements that address erosion and runoff, including the federal CWA. Best management practices also should be used throughout construction to further reduce impacts. A discussion of potential indirect impacts follows.

5.3.1 Water Quality

Water quality can be adversely affected by potential surface runoff and sedimentation. The use of petroleum products (i.e., fuels, oils, and lubricants) could potentially contaminate surface water and affect biological resources. Decreased water quality may adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend on these resources. However, Mt. SAC must comply with control requirements of the National Pollutant Discharge Elimination System (enforced by the SWRCB) during the construction and operation of the proposed facilities. Compliance with the water quality regulations would mean that the potential impacts to downstream biological resources would be less than significant.

5.3.2 Fugitive Dust

Fugitive dust can disperse onto sensitive vegetation, and a continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. In turn, this could affect animals that are dependent on these plants. Construction activities (including clearing and grading) occurring within or adjacent to the West Parcel could result in the deposition of significant amounts of dust on plants and trees, which could cause a significant impact. Implementation of dust control measures during clearing, grading, and construction (as required for air quality impacts) would reduce potential dust impacts on biological resources to less than significant levels.

5.3.3 Non-native Plant Species

Non-native plants can colonize disturbed areas and could potentially spread into adjacent native habitats. Many of these non-native plants are highly invasive and can displace native vegetation, reducing native species diversity. An abundance of non-native species could potentially increase flammability and fire frequency, change ground and surface water levels, or adversely affect native wildlife that are dependent on native plant species. Revegetation for erosion control and the use of landscaping could increase colonization by non-native plant species in non-impact areas that contain native vegetation. This impact could potentially occur to the native Venturan coastal sage scrub habitat if invasive landscaping plants are planted as part of the landscaping plans. Potential impacts by non-native plant species and the resulting degradation of habitat used by native species could be considered a significant impact.

5.3.4 Human Activity/Edge Effects

Urbanization and increases in human activity can result in degradation to sensitive vegetation by fragmenting the land and forming edges between developed areas and habitat. These edges make it easier for non-native plant species to invade native habitats and for native and non-native predators to access prey that may have otherwise been protected within large, contiguous blocks of habitat. In addition, secondary extinctions through disruption of predator-prey, parasite-host, and plant-pollinator relations can also occur (Soulé 1986). Edge effects can be particularly significant. For example, when a nest parasite such as the brown-headed cowbird (*Molothrus ater*) has easy access to other birds' nests, brood parasitism in that area will increase. Illegal dumping of trash may also increase in these areas.

Human activity and edge effects resulting from the proposed solar site are not considered significant. Once constructed, the solar site will not increase the level of human related activities over what currently exists there today.

5.3.5 Roadkill

This project is not expected to significantly increase the amount of traffic in area following construction; therefore, effects due to roadkill are not expected to be significant.

5.3.6 Night Lighting

Night lighting exposes wildlife species to an unnatural light regime and may alter their behavior patterns, which could result in a loss of species diversity. Night lighting on native habitats also can provide nocturnal predators with an unnatural advantage over their prey. This could cause an increased loss in native wildlife. This impact would only be significant if the facility is illuminated at night. Unless appropriate measures are taken during the building design phase to prevent release of light into adjacent habitat, night lighting could result in a significant impact.

5.3.7 Errant Construction Impacts

Another potentially significant indirect impact of project construction is errant construction impacts outside the limits of construction (i.e., construction vehicles encroaching beyond the limits of work and entering native habitat). Any such activities occurring outside the construction limits within sensitive habitat would be considered a significant indirect impact.

5.3.8 Noise

Noise can cause animals to flee, which could be especially significant to birds that may abandon active nests. Additionally, birds may be susceptible to disturbances other than noise from construction activity. For example, construction activity within 500 feet of an active raptor nest may cause the nest to be abandoned and that impact would be considered significant. Although no active raptor nests were observed on site during the general survey, it is possible that they may occur on or adjacent to the study site near areas where construction activity is planned.

6.0 MITIGATION

This section lists each of the significant impacts anticipated from construction of the proposed project. Following each impact is the corresponding mitigation measure(s) (MM) to reduce each impact to less than significant.

6.1 DIRECT IMPACTS

6.1.1 Sensitive Vegetation Communities

Impact 6.1.1 Impacts to two sensitive vegetation types were documented on site: mule fat scrub and Venturan coastal sage scrub (including the disturbed phase). Impacts to both of these habitats area regarded as significant. The impact to streambed was not regarded as significant due to small area affected. The impact to streambed will nonetheless be mitigated for as part of the CWA 404 Permit and 1602 SAA.

MM 6.1.1 The amount and type of mitigation required for these impacts varies on the habitat (Table 6). A 3:1 mitigation ratio, with no net loss of acreage is generally required for wetland impacts. For the impacts to mule fat scrub this means creation of 0.06 acre of mule fat scrub and enhancement of 0.12 acre of wetland habitat on site or nearby. The mitigation ratio for coastal sage scrub (including disturbed phases) is 2:1. For each acre of sage scrub impacted, 2 acres must be preserved or created.

Table 6 VEGETATION MITIGATION ANALYSIS			
VEGETATION COMMUNITY	IMPACT ACREAGE	MINIMUM MITIGATION RATIO	MITIGATION ACREAGE
Mule fat scrub	0.06	3:1 [‡]	0.18
Coastal sage scrub (all phases)	8.36	2:1 [§]	16.72
TOTAL	8.42	--	16.90

[‡]1:1 creation and 2:1 enhancement

[§]Preservation or restoration

6.1.2 Sensitive Animals

Impact 6.1.2.1 Construction of the proposed solar power generating station would directly impact occupied coastal California gnatcatcher habitat.

MM 6.1.2.1 Because Mt. SAC is not enrolled as a participant in the NCCP, the proposed Master Plan cannot rely on a habitat loss permit under Section 4(d) of the federal ESA. Since there is not an existing HCP for the study area, any projects that would cause “take” of a listed species would require an application to the USFWS for issuance of a Section 10(a) permit for “incidental” take of endangered or threatened species (with preparation of an HCP).

Impact 6.1.2.3 Construction generated noise may adversely affect nesting coastal California gnatcatchers.

MM 6.1.2.3 Construction activities known to generate noise levels capable of disrupting breeding birds will be restricted to their non-breeding season (September 1 to February 14).

Impact 6.1.2.4 Construction of the proposed solar power generating station would directly impact coastal cactus wren habitat.

MM 6.1.2.4 Impacts to coastal cactus wren habitat should be mitigated at 2:1 ratio. That is, for each acre of coastal sage scrub impacted, 2 acres should be created and/or preserved.

Impact 6.1.2.4 Construction of the proposed solar generating station poses unresolved impacts to burrowing owls.

MM 6.1.2.4 A phase one burrowing owl assessment will be conducted in the spring of 2015, if warranted protocol surveys will be done. If the protocol surveys reveal the presence of owls, a relocation plan will be developed in cooperation with CDFW.

Impact 6.1.2.5 Construction activities may cause nest abandonment by raptors.

MM 6.1.2.5 A preconstruction raptor survey will be conducted within 30 days of the start of construction. If a raptor active nest is found within 500 feet and it has a direct line of sight to the project area, construction activities will be modified to avoid disrupting the nest as long as it is active. An exception to this would be any raptor nests east of North Grand Avenue. North Grand Avenue is a four-lane road with a landscaped median. Any nests east of the road would likely be habituated to activity from this busy road and unaffected by construction on the West Parcel.

6.2 INDIRECT IMPACTS

Indirect impacts due to the following causes are less than significant due to compliance with state law or with project design features:

- Dust related to construction shall be controlled through implementation of measures required per dust control mandates, including the application of water on unvegetated, unpaved surfaces during construction.
- Degraded surface water quality will be prevented by implementation of Best Management Practices in accordance with SWRCB guidelines.

The following measures are required to avoid significant effects associated with human activities.

6.2.1 Non-native Plant Species

Impact 6.2.1 Non-native plant species have the potential to colonize non-impact areas and would result in degradation of habitat used by native species, which could be considered a significant impact.

MM 6.2.1 Erosion control seed mixes and landscape plans for the projects should be reviewed by a qualified biologist prior to final approval to ensure that no species on the California Invasive Plant Council (Cal-IPC) list of problem species would be incorporated into the plan(s).

6.2.2 Night Lighting

Impact 6.2.2 Night lighting on native habitats may result in altered behavioral patterns of wildlife species, and possibly a decrease in native species diversity of the site.

MM 6.2.2 All construction lighting and new campus lighting that is adjacent to undeveloped areas should be of low illumination and be shielded and directed downwards and away from adjacent native habitat.

6.2.3 Errant Construction Activities

Impact 6.2.3 Construction activities occurring outside the construction limits may significantly impact adjacent sensitive habitats.

MM 6.2.3 The limits of construction for projects adjacent to sensitive habitats should be delineated with silt fencing/fiber rolls and orange construction fencing. A qualified biologist should attend a pre-construction meeting to inform construction crews about the sensitivity of any adjacent habitat. A qualified biologist should also inspect the fencing upon installation and monitor clearing and grading of (and near) native habitat to prevent unauthorized impacts.)

7.0 WETLAND PERMITTING

7.1 FEDERAL PERMITTING

Temporary and permanent fills and discharges (impacts) to WUS are regulated by the USACE under Section 404 of the CWA (33 USC 401 et seq.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). Impacts would require a Clean Water Act Section 404 permit from the Los Angeles District USACE. Based on the existing acreage of potential USACE jurisdiction, impacts would be covered under Nationwide Permit (NWP) 39 for Institutional Developments or NWP 51 for Land-based Renewable Energy Generation Facilities, although a waiver would be required from the USACE because the impacts exceed 300 linear feet. Notification to the USACE through the preparation of a Pre-Construction Notification (PCN) requesting authorization under either of these NWP's would be required.

7.2 STATE PERMITTING

A Clean Water Act Section 401 Water Quality Certification administered by the SWRCB or Regional Water Quality Control Board (RWQCB) also must be issued prior to any 404 Permit. Submittal of Request for Water Quality Certification to the Los Angeles RWQCB is expected to be required prior to project activities. Applicants are allowed to submit this request prior to certification of the CEQA document; however, the RWQCB will not issue a 401 Certification until a certified CEQA document is provided. There are no isolated waters or wetlands under

RWQCB jurisdiction within the study area that would be subject to the State Porter-Cologne Water Quality Control Act only.

The CDFW regulates temporary and permanent alterations or impacts to streambeds or lakes under California Fish and Game Code 1602. The CDFW requires a SAA for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The SAA is a contract between the applicant and CDFW stating what activities can occur in the riparian zone and stream course (California Association of Resource Conservation Districts 2002). Notification of Lake or Streambed Alteration is expected to be required to the South Coast Region CDFW. Applicants are allowed to submit a SAA application prior to certification of the CEQA document; however, CDFW will not issue a 1602 permit until a certified CEQA document is provided.

8.0 SIGNIFIGANCE AFTER MITIGATION

With implementation of the mitigation measures for significant impacts to sensitive resources (listed in Section 6.0), impacts from implementation of the proposed Master Plan to sensitive biological resources would be less than significant.

9.0 CERTIFICATION/QUALIFICATION

The following individuals contributed to the fieldwork and/or preparation of this report.

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Appendix A

FEDERAL JURISDICTIONAL INFORMATION



Appendix A

FEDERAL JURISDICTIONAL INFORMATION

Wetlands and “Waters of the U.S.” Definitions

Wetlands. The U.S. Army Corps of Engineers (USACE; Federal Register 1982) and the Environmental Protection Agency (Federal Register 1980) jointly define wetlands as “[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (Environmental Laboratory 1987).

Waters of the U.S. The official definition of “Waters of the U.S.” and their limits of jurisdiction (as they may apply) are defined by the USACE’ Regulatory Program Regulations (Section 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. all interstate waters including interstate wetlands;
3. all other waters such as intrastate lakes, rivers, streams (including intermittent streams) , mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters,
 - i. which are or could be used by interstate or foreign travelers for recreation or other purposes; or
 - ii. from which fish or shellfish are or could be taken and sold in interstate commerce; or
 - iii. which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters ...;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands)...

Non-tidal Waters of the U.S. The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term ordinary high water mark (OHWM) means 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 (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Further guidance on identifying the OHWM in the Arid Southwest (Lichvar and McColley 2008). This publication provided geomorphic and vegetation OHWM indicators specific to the Arid Southwest.

.Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in *Rapanos v. United States*, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year round flow or continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics, annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, proximity of the subject reach to a TNW, drainage area, and the watershed.

Wetland Criteria

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

“Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative, facultative wetland, and obligate wetland as defined in the current list of wetland plants of the Arid Southwest (Lichvar, et. al. 2014; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the “Dominance Test,” “Prevalence Index,” or the vegetation has morphological adaptations for prolonged inundation.

Table A-1 DEFINITIONS OF PLANT INDICATOR CATEGORIES		
INDICATOR CATEGORIES	ABBREVIATION	QUALITATIVE DESCRIPTION
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands
Upland	UPL	Almost never occur in wetlands

Hydrology

“The term ‘wetland hydrology’ encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively” (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year (approximately 18 days for most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine)
- surface soil cracks (B6)
- inundation visible on aerial imagery (B7)
- water-stained leaves (B9)
- salt crust (B11)
- biotic crust (B12)
- aquatic invertebrates (B13)
- hydrogen sulfide odor (C1)
- oxidized rhizospheres along living roots (C3)
- presence of reduced iron (C4)
- recent iron reduction in tilled soils (C6)
- thin muck surface (C7)

Secondary

- watermarks (B1; riverine)
- sediment deposits (B2; riverine)
- drift deposits (B3; riverine)
- drainage patterns (B10)
- dry-season water table (C2)
- crayfish burrows (C8)
- saturation visible on aerial imagery (C9)
- shallow aquitard (D3)
- FAC-neutral test (D5)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

The USACE and Environmental Protection Agency, in their administration of Section 404 of the Clean Water Act, rely on the National Technical Committee for Hydric Soils (NTCHS) for a definition of hydric soils. According to the NTCHS "A hydric soil is 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." (Federal Register 1994)

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- depleted below dark surface (A11)
- thick dark surface (A12)
- sandy mucky mineral (S1)
- sandy gleyed matrix (S4)
- sandy redox (S5)
- stripped matrix (S6)
- loamy mucky mineral (F1)
- loamy gleyed matrix (F2)
- depleted matrix (F3)
- redox dark surface (F6)
- depleted dark surface (F7)
- redox depressions (F8)
- vernal pools (F9)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

Non-wetland Waters of the U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

USGS Mapping

The USGS Quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Luna Leopold. Leopold was a hydrologist with USGS from 1952 to 1972, Professor in the Department of Geology and Geophysics, and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to USGS maps, Dr. Leopold wrote "I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by nonprofessional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic." (1994)

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Appendix B

STATE JURISDICTIONAL INFORMATION



Appendix B

STATE JURISDICTIONAL INFORMATION

California Department of Fish and Wildlife Regulations

The California Department of Fish and Wildlife (CDFW; Department) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the Department before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers and streams as well as lakes in the state.

In order to notify the Department, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the Department regional office that serves the county where the activity will take place. A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the Department has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the Department will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the Department will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the Department will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than 5 years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the Department whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the Department. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the Department in writing and specify the measures that are not acceptable. Upon written request, the Department will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the Department may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the Department receives the signed draft SAA, the Department will make it final by signing the SAA; however, the Department will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality

Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project the agreement covers, provided that the applicant has obtained any other necessary federal, state and/or local authorizations.

Water Resource Control Board Regulations

Section 401 Water Quality Certification

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

Porter-Cologne Water Quality Control Act

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2008). The California Water Code is the State's version of the Federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

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California Department of Fish and Wildlife (CDFW). Fish and Game Code Sections 1600 through 1616.

Date unknown. Streambed/Lake Alteration Notification Guidelines.



Appendix C

DATA FORM



WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

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

VEGETATION – Use scientific names of plants.

<p>Tree Stratum (Plot size: <u>12'X60'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Absolute % Cover</th> <th style="width: 10%;">Dominant Species?</th> <th style="width: 10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p style="text-align: right; margin-right: 20px;">0% = Total Cover</p> <p>Sapling/Shrub Stratum (Plot size: <u>12'X30'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Baccharis salicifolia</u></td><td><u>70%</u></td><td><u>yes</u></td><td><u>FAC</u></td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p style="text-align: right; margin-right: 20px;">70% = Total Cover</p> <p>Herb Stratum (Plot size: <u>r=5'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p style="text-align: right; margin-right: 20px;">0% = Total Cover</p> <p>Woody Vine Stratum (Plot size: <u>12'X20'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p style="text-align: right; margin-right: 20px;">0% = Total Cover</p> <p>% Bare Ground in Herb Stratum <u>85%</u> % Cover of Biotic Crust <u>0%</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	1. <u>Baccharis salicifolia</u>	<u>70%</u>	<u>yes</u>	<u>FAC</u>	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____	1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____	6. _____	_____	_____	_____	7. _____	_____	_____	_____	8. _____	_____	_____	_____	1. _____	_____	_____	_____	2. _____	_____	_____	_____	<p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
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	<p>Prevalence Index worksheet:</p> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____																																																																																
	<p>Hydrophytic Vegetation Indicators:</p> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																																																																
	<p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p>																																																																																
Remarks: _____ _____ _____ Mule fat scrub. Habitat grazed by cattle. Grazing and low rain fall may have resulted in lack of herb layer. Inconsequential as vegetation meets dominant test.																																																																																	



Appendix D

REPRESENTATIVE SITE PHOTOS





Sampling point 1.
Sampling point located in mule fat scrub.



Northern drainage culvert inlet at North Grand Avenue.



Northern drainage at western property boundary.



Southern drainage culvert inlet at North Grand Avenue.



Leaky infrastructure near North Grand Avenue.



Appendix E

EXPLANATION OF STATUS CODES FOR
PLANT AND ANIMAL SPECIES



Appendix E
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE Federally listed endangered
FT Federally listed threatened

California Department of Fish and Game (CDFW)

SE State listed endangered
ST State listed threatened
SSC State species of special concern
Fully Protected May not be taken or possessed at any time, except for recovery activities for state-listed species.

CALIFORNIA RARE PLANT RANKS

Lists

1A = Presumed extinct.

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

2A = Plants presumed extinct in California, but more common elsewhere.

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

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

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

Threat Code Extensions

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

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

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

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

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Appendix F

WEST PARCEL COASTAL CALIFORNIA
GNATCATCHER AND LEAST BELL'S VIREO
ANALYSIS



Appendix F
WEST PARCEL COASTAL CALIFORNIA GNATCATCHER
AND LEAST BELL'S VIREO ANALYSIS

The West Parcel is known to provide occupied habitat for the coastal California gnatcatcher (*Polioptila californica californica*) (Figure 1). This species is federally listed as threatened, and is a State Species of Special Concern.

Least Bell's vireo (*Vireo pusillus belli*) has been observed in the project vicinity (HELIX 2008). This species is federally listed as Endangered and a bird of special concern, and is State listed as endangered and is a State Species of Concern.

This appendix provides a brief analysis of these species' status on the West Parcel and its associated habitat.

Coastal California Gnatcatcher

Species Description: The coastal California gnatcatcher is a small, non-migratory songbird with a long tail that is mostly black above and below. Its plumage is dark blue-gray above and grayish-white below. Both sexes have a white eye ring, and the male has a black cap during the breeding season. Vocalizations of the subspecies include a call of a kitten-like mew (National Geographic Society 1983 *in* USFWS 1991).

Critical Habitat Description: There are 11 designated critical habitat units for the coastal California gnatcatcher that include 197,303 acres of federal, state, local, and private land in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties (72 FR 72010). Designated critical habitat includes habitat throughout the species' range in a variety of climatic zones and vegetation types to preserve the genetic and behavioral diversity that currently exists within the species. The individual units contain essential habitat for the coastal California gnatcatcher and help to identify special management considerations for the species.

Designated Critical Habitat does not occur on site. Unit 12 of the Designated Critical Habitat for this species does occur within a few miles to the north and west (72 FR 72010).

Primary Constituent Elements (PCEs) for the coastal California gnatcatcher are those habitat components that are essential for the primary biological needs of foraging, nesting, rearing of young, intra-specific communication, roosting, dispersal, genetic exchange, or sheltering (72 FR 72010). These include: 1) dynamic and successional sage scrub habitats (i.e., Venturan coastal sage scrub, Diegan coastal sage scrub, Riversidean sage scrub, maritime succulent scrub, Riversidean alluvial fan scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub) that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal, and foraging; and 2) non-sage scrub habitats such as chaparral, grassland, and riparian areas, in proximity to sage scrub habitats that provide space for dispersal, foraging, and nesting.

Many of the plant species that comprise the sage scrub on the West Parcel are also listed as constituents of gnatcatcher habitat in the PCEs section of the revised gnatcatcher critical habitat designation (72 FR 72010). Those species, California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), California encelia (*Encelia californica*), coyote brush (*Baccharis pilularis*), monkey flower (*Mimulus aurantiacus*) laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), deerweed (*Acmispon glaber*), and coast prickly-pear (*Opuntia littoralis*).

Habitat Characteristics/Use: The coastal California gnatcatcher is closely associated with coastal sage scrub vegetation and it utilizes this community for foraging and nesting. The coastal California gnatcatcher occurs most commonly in coastal sage scrub with high proportions of coastal sagebrush (*Artemisia californica*) and California buckwheat, and less commonly in sub-associations dominated by black sage (*Salvia mellifera*) or lemonadeberry (*Rhus integrifolia*; Atwood 1980, 1990; Mock et al. 1990; Bontrager 1991; Weaver 1998; USFWS 2010b). The birds remain on their territory throughout the year and expand their home range during non-breeding season. They will forage with neighboring individuals in habitats not defended (Preston et al. 1998, Grishaver et al. 1998 in Mock 2004).

Studies suggest that coastal California gnatcatchers avoid nesting on steep slopes, or those over 40 percent (72 FR 72010). Steep slopes may still be suitable for dispersal and foraging.

For purposes of this analysis, it is assumed that all Venturan coastal sage scrub (including disturbed) on the West Parcel is suitable habitat for the coastal California gnatcatcher. Therefore, potentially suitable habitat on the West Parcel totals approximately 14.2 acres.

Distribution: The northern and eastern limits of the coastal sage scrub used by the coastal California gnatcatcher are largely bound by mountains; the southern limit is defined by the transition to the Vizcaíno desert about 30 degrees north latitude in Baja California, Mexico (USFWS 2010).

Coastal California gnatcatchers are restricted to relatively low elevations. Ninety-four percent of sample of coastal California gnatcatcher localities in coastal southern California were at or below elevations of 820 feet amsl, and 80 percent of inland localities in Riverside County occurred at elevations of 400 to 820 feet amsl (Atwood 1990). This restriction appears to be due to an inability for the subspecies to tolerate areas where the January mean minimum temperature is less than 36 degrees Fahrenheit (Mock 1998). This constraint also appears to affect the eastern limit of the subspecies' distribution (Mock 1998).

Occurrences within the Project Area: One pair and at least one individual of coastal California gnatcatchers were observed on the West Parcel (Kurnow 2008). Given the amount of sage scrub on site and nearby, it is possible that up to two pairs of gnatcatchers may occupy the site. These observations encompassed the sage scrub from the southern property boundary to the northern limit of sage scrub, including the sage scrub that overlaps or occurs immediately adjacent to waters of the U.S. in the northern and southern drainages (Figure 1).

Least Bell's Vireo

Species Description: The least Bell's vireo is a small, migratory songbird. It is a rather non-descript vireo with one or two faint pale wing bars on otherwise dark wings, dark tail, indistinct spectacles, overall grayish color, with some olive-gray on the rump and upper tail coverts in fresh plumage, underparts nearly pure white, with the sides and flanks washed with pale olive-gray or grayish olive (NatureServe 2015). Diagnostic Characteristics: Differs from other subspecies primarily by being grayer above and whiter below.

Critical Habitat Description: There are 10 designated critical habitat units for the least Bell's vireo that include 38,000 acres of federal, state, local, and private land in Santa Barbara, Ventura, Los Angeles, Riverside, Riverside/San Bernardino, and San Diego counties (59 FR 4845, Feb. 2, 1994). Designated critical habitat includes habitat throughout the species' range in a variety of climatic zones and vegetation types to preserve the genetic and behavioral diversity that currently exists within the species. The individual units contain essential habitat for the least Bell's vireo and help to identify special management considerations for the species. Designated Critical Habitat does not occur on-site. The nearest Critical Habitat for the vireo is the Santa Ana River unit and it is approximately 13 miles to the southeast.

Primary Constituent Elements (PCEs) for the least Bell's vireo are those habitat components that are essential for the primary biological needs of foraging, nesting, rearing of young, inter-specific communication, roosting, dispersal, genetic exchange, or sheltering (72 FR 72010). Vireos are an obligate riparian species during the breeding season, and prefer diverse early successional riparian habitat, including southern willow scrubs and forests. Vireos use a number of riparian habitat types, including cottonwood-willow woodlands/forests, oak woodlands, and mule fat scrub. Occupied breeding habitats include dense cover within 3 to 6 ft of the ground, where nests are typically placed, and a dense, stratified canopy for foraging. Plant species composition does not appear as important a determinant in nesting site selection as habitat structure. For more information on habitat requirements during breeding and migration, please see the draft recovery plan (Service 1998).

Least Bell's vireo nest primarily in willows (*Salix* spp.) but also use a variety of other shrub and tree species for nest placement. Least Bell's vireo forage in riparian and adjoining upland habitats. They usually return to the same nesting territory.

Habitat Characteristics/Use: The least Bell's vireo is closely associated with dense riparian habitat, and it uses this community for foraging and nesting. Foraging may also occur in adjacent uplands. The bird winters in southern Baja California, Mexico, although a very small number of individuals have been known to overwinter in southern California in the past.

For purposes of this analysis, it is assumed that the least Bell's vireo does not occur on site due to a lack of dense riparian habitat in the project area. A single vireo was observed across Temple Avenue during surveys of the Mt. SAC campus in 2008 (Kahancza). It was observed in the campus' Wildlife Sanctuary. The Wildlife Sanctuary is located at the southeast corner of North Grand Avenue and Temple Avenue. This is a botanic garden with several manmade water features. Snow Creek and its associated riparian vegetation extend south from Temple Avenue

through the Wildlife Sanctuary, and then continue south along North Grand Avenue. Vireo surveys conducted as part of the recent Master Plan Update (Sward and Greene 2012) were done along Snow Creek. The survey area, which included all riparian habitat within 500 feet of any of the recent master plan elements, did not include all of the Wildlife sanctuary. No vireos were observed. Mule fat scrub, which can be habitat for the vireo occurs on the West Parcel. However, the canopy of this habitat is considered too sparse and patchy for vireos: potentially suitable habitat does not occur on the West Parcel.

Distribution: This subspecies formerly was a widespread and abundant breeder throughout Central Valley of California and other low-elevation river valleys; it also occurred in the Sierra Nevada foothills and the Coast Ranges; the range extended from Red Bluff (Tehama County) to northwestern Baja California, including populations in the Owens Valley, Death Valley, and the Mohave Desert. Now it is essentially extirpated from the Central Valley (rare recent nesting in the San Joaquin Valley), and most nesting occurs in southwestern California, from Santa Barbara County southward (mainly in San Diego and Riverside counties), and from northwestern Baja California south to at least Cataviña (USFWS 2006).

Occurrences within the Project Area: Habitat for this species does not occur on the West Parcel and it is not expected in the project area. It was previously observed east of North Grand Avenue, in the college's Wildlife Sanctuary. North Grand Avenue at this location is a 4-lane road, with a landscaped median. The improved roadway is approximately 100 feet wide.

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