Appendix 3.0

General Biological Resources Assessment

Palomar Street Improvement Project

General Biological Resources Assessment

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ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
BMPs	Best Management Practices
BUOW	Burrowing Owl
CASSA	Criteria Area Species Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
City	City of Wildomar
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Riverside
CRPR	California Rare Plant Rank
CWA	Clean Water Act
Dudek	Dudek & Associates
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
HANS	Habitat Acquisition and Negotiation Strategy
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
LBVI	Least Bell's Vireo
LDMF	Local Development Mitigation Fee
LF	linear feet
MBTA	Migratory Bird Treaty Act
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPSSA	Narrow Endemic Plant Species Survey Area
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Palomar Street Improvement Project

ACRONYMS AND ABBREVIATIONS (cont.)

RCA	Western Riverside County Regional Conservation Authority
RPW	Relatively Permanent Water Body
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
TNW	Traditional Navigable Waters
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
WUS	Waters of the U.S.

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SUMMARY

The 31.00-acre Palomar Street Improvement Project (project) is located in the City of Wildomar, Riverside County, California as well as within unincorporated Riverside County. The project and a 20-foot survey buffer make up the 36.96-acre study area which is located within the Elsinore Area Plan of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The study area is not located within or adjacent to an MSHCP Criteria Area or MSHCP Conservation Area. The study area is located within the Burrowing Owl (*Athene cunicularia*; BUOW) Survey Area and supports suitable habitat for least Bell's vireo (*Vireo bellii pusillus*; LBVI). HELIX Environmental Planning, Inc. (HELIX) conducted a general biological survey, including vegetation mapping and a general habitat assessment; an MSHCP Riparian/Riverine and Vernal Pool habitat assessment; a habitat assessment and a jurisdictional delineation, including mapping of any MSHCP Riparian/Riverine and Vernal Pool Areas encountered on the study area. HELIX is currently conducting focused surveys for BUOW and LBVI which will conclude at the end of the 2020 survey season.

The study area contains seven vegetation communities and land uses, including coast live oak woodland, southern willow scrub, southern cottonwood-willow riparian forest, non-native vegetation, ornamental habitat, disturbed land, and developed land. The study area also supports suitable habitat for nesting migratory bird species. Three sensitive plant communities (coast live oak woodland [0.45 acre], southern cottonwood-willow riparian forest [0.07 acre] and southern willow scrub [0.10 acre]) were mapped on the study area. The study area supports three ephemeral drainage features (Drainage A, Drainage B, and Drainage C). The study area supports a total of 0.011 acre of U.S. Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB) waters of the U.S. (WUS) and 0.79 acre of California Fish and Wildlife (CDFW) jurisdictional streambed and associated riparian vegetation. MSHCP Riparian Areas were identified within the study area, which are consistent with the limits of CDFW jurisdiction. No wetlands or other special aquatic sites were observed on the study area.

Potential significant impacts were identified for BUOW (if present during focused surveys or the 30-day pre-construction survey), jurisdictional resources, MSHCP Riparian Areas, and nesting bird species. The project is required to comply with regulations of the MSHCP and Habitat Conservation Plan (HCP) for Stephens' kangaroo rat (*Dipodomys stephensi*). The project would permanently impact 0.08 acre of non-wetland USACE/RWQCB WUS. The project would also permanently impact 0.64 acre of CDFW jurisdictional streambed and associated vegetation.

Measures related to the following topics are proposed herein to fully mitigate potential impacts of the project: BUOW, sensitive vegetation communities, jurisdictional resources and MSHCP Riparian Areas, City-protected street trees, migratory nesting bird species, compliance with MSHCP landscaping restrictions, and payment of MSHCP and Stephens' kangaroo rat HCP fees. Successful implementation of these measures would mitigate potential impacts to below a level of significance.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

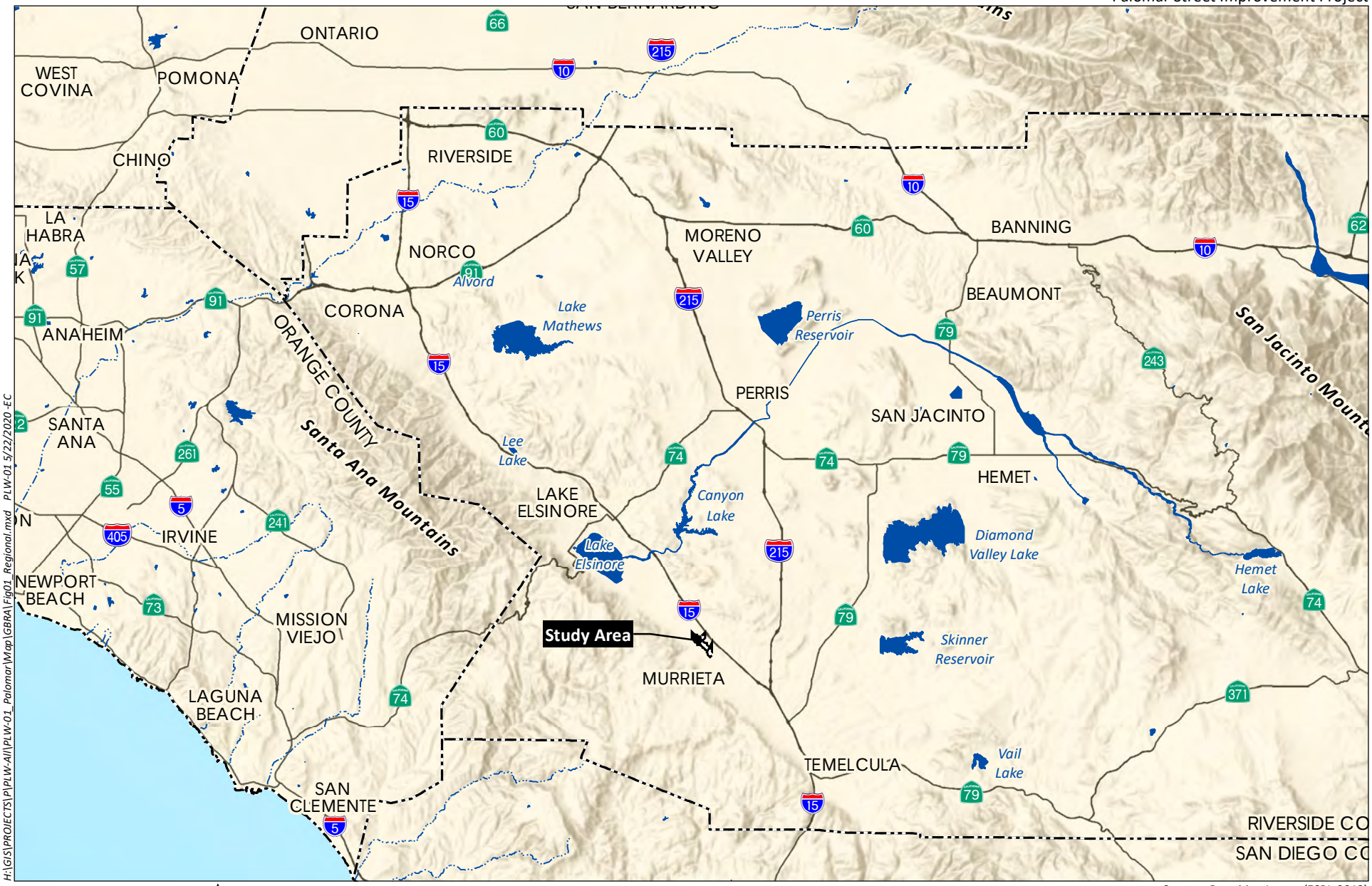
This report provides the City of Wildomar (City; California Environmental Quality Act [CEQA] lead agency), resource agencies, and the public with current biological data to satisfy review of the proposed Palomar Street Improvement Project (project) located in Riverside County (County), California. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project site, and to provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for project review under CEQA by the City and demonstrates project consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP; Dudek and Associates [Dudek] 2003).

1.2 STUDY AREA LOCATION

The 31.00-acre project site comprises the right of way for Palomar Street, Clinton Keith Road from McVicar Street to the north, to Laura Drive to the south, and along both sides of Clinton Keith Road extending a short distance east and west from the intersection with Palomar Street in the City of Wildomar, Riverside County, California. The project is located in the City of Wildomar and within unincorporated portions of southwestern Riverside County (Figure 1, *Regional Location*). The project is located within an unsectioned area of Township 7 South, Range 4 West and a portion in Range 3 West, on the U.S. Geological Survey (USGS) 7.5' Murrieta and Wildomar quadrangles (Figure 2, *USGS Topography*). The 36.96-acre study area extends 20 feet beyond the project site along both sides of Palomar Street/Washington Avenue and along both sides of Clinton Keith Road extending a short distance east and west from the intersection with Palomar Street (Figure 3, *Aerial Photograph*).

1.3 PROJECT DESCRIPTION

The project proposes to improve connectivity for active transportation users by filling in sidewalk/trail gaps and adding bicycle lanes along portions of two major roadways in the City of Wildomar- Palomar Street and Clinton Keith Road. On Palomar Street, 4,100 linear feet of Class II bicycle lanes and 2-foot-wide buffers are proposed between McVicar Street and Clinton Keith Road. In addition, approximately 530 linear feet of sidewalks/trails will be filled in along the south side of Palomar Street to create a continuous barrier free path along this segment to connect to newly constructed bike lanes on Clinton Keith Road. On Clinton Keith Road, 630 linear feet of sidewalk is proposed to fill in a sidewalk gap which will increase connectivity for pedestrians accessing the various business and retail stores along Clinton Keith Road. A portion of the proposed improvements that include connecting Jefferson Avenue to Palomar Street fall within the Camelia Project and will be built by the project proponent (Figure 4, *Site Plan*).



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Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1

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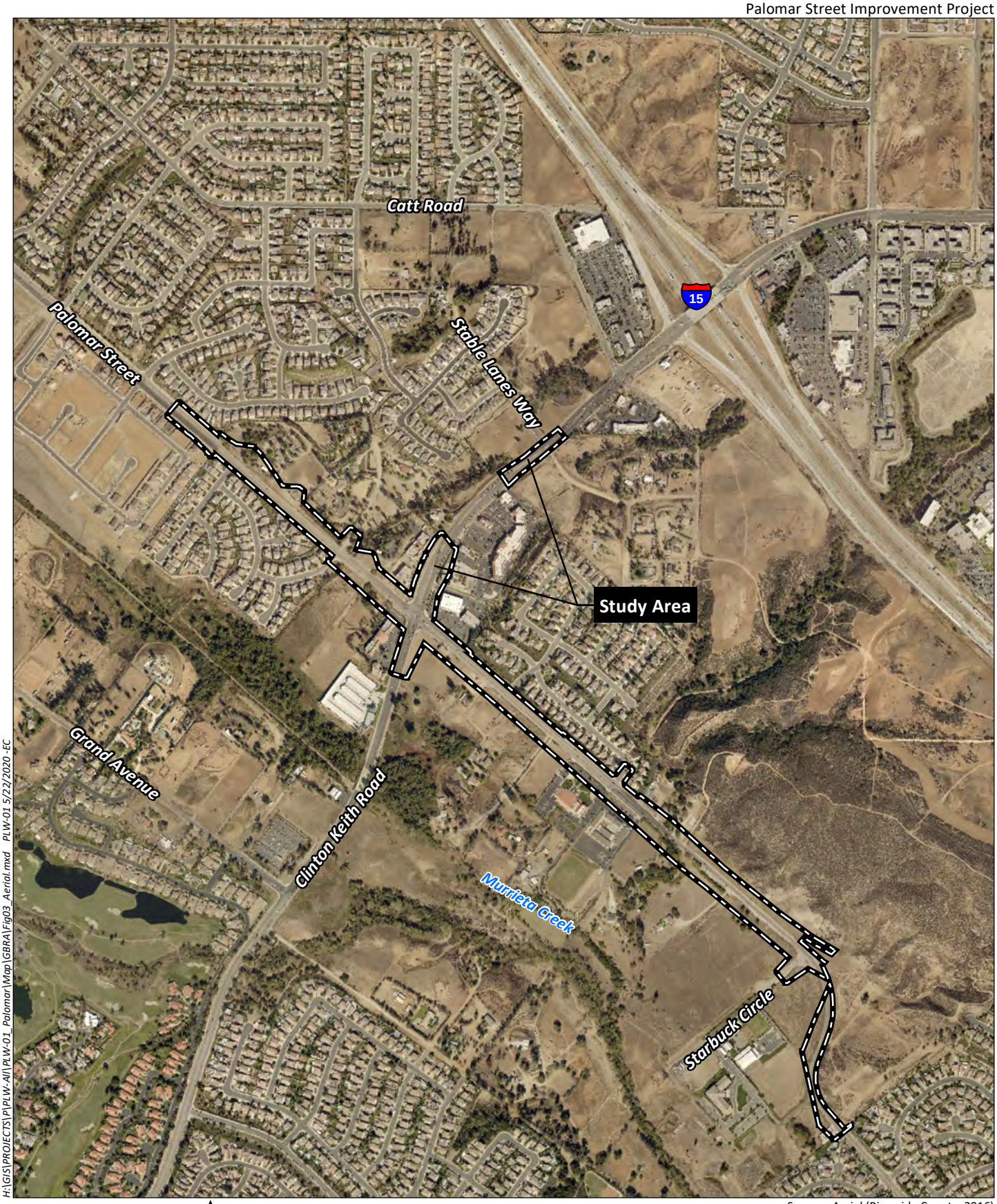
0 2,000 Feet

Source: Murrieta, Wildomar 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



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0 1,000 Feet

Source: Aerial (Riverside County, 2016)

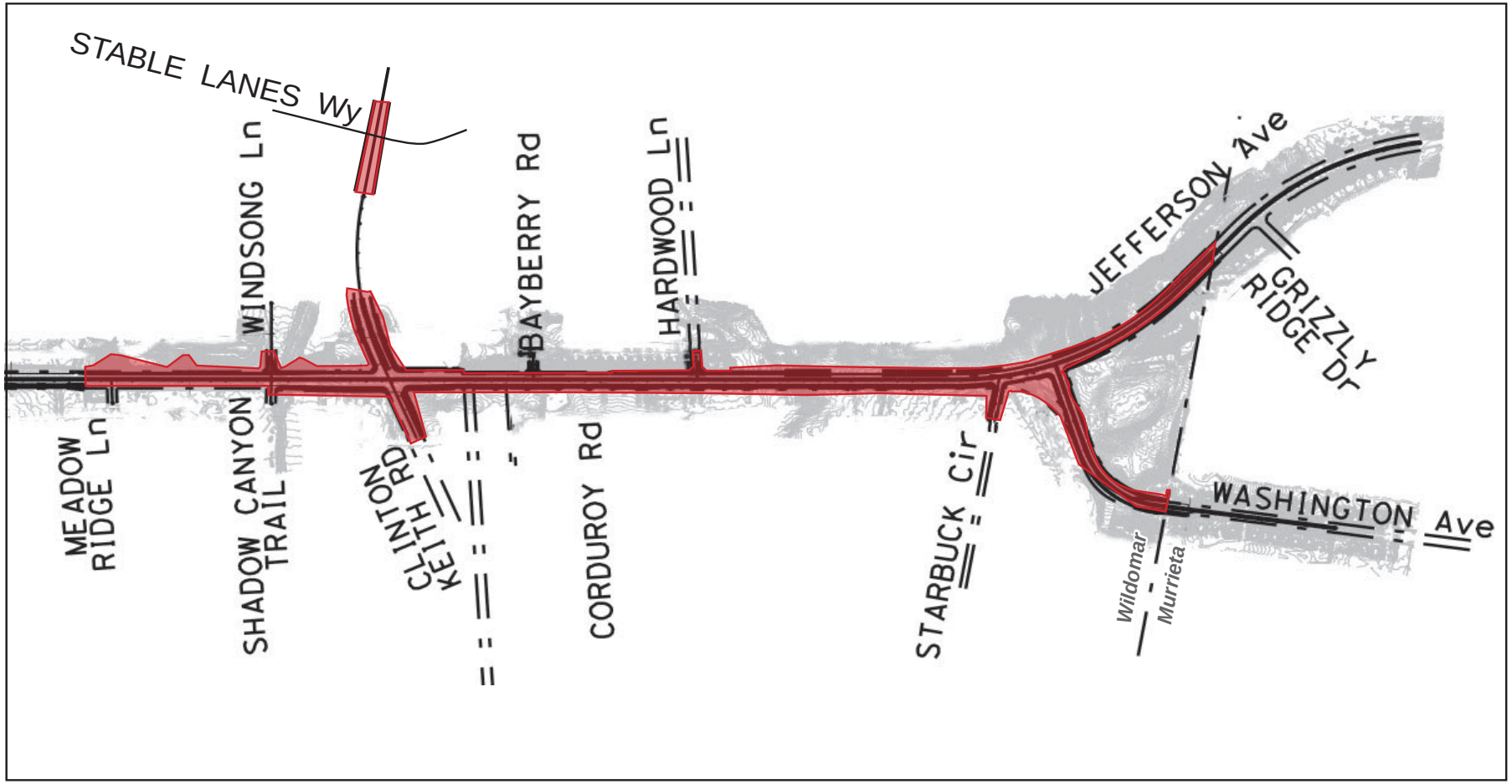
HELIX Environmental Planning

Aerial Photograph

Figure 3

PALOMAR STREET WIDENING PROJECT
CITY OF WILDOMAR

Figure 4 - Site Plan



Project Area

City Boundary

Source: AECOM, 2015

0 1,000
Scale (Feet)

PlaceWorks

Source: Place Works, 2019

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HELIX
Environmental Planning

Site Plan

Figure 4

2.0 METHODS

Project evaluation included a review of project plans; a literature review of biological resources occurring on the study area and surrounding vicinity; a general biological survey, including vegetation mapping and a general habitat assessment; a jurisdictional delineation, including mapping of MSHCP Riparian/Riverine and Vernal Pool Areas; and an MSHCP Riparian/Riverine and Vernal Pool Resources assessment. The methods used to evaluate the biological resources present on the study area are discussed in this section.

2.1 NOMENCLATURE

Nomenclature for this report follows Baldwin et al. (2012) for plants, and the MSHCP (Dudek 2003) for vegetation community classifications, with additional vegetation community information taken from Oberbauer (2008) and Holland (1986). Animal nomenclature follows Emmel and Emmel (1973) for butterflies, Center for North American Herpetology (Taggart 2019) for reptiles and amphibians, American Ornithological Society (2019) for birds, and Baker et al. (2003) for mammals. Rare plant and sensitive animal statuses are from the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (2019) and the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB; CDFW 2019). Rare plant species' habitats and flowering periods are from the Jepson Manual (Baldwin et al. 2012), MSHCP (Dudek 2003), CNPS (2019), and CNDDB (CDFW 2019). Soil classifications were obtained from the Natural Resources Conservation Service's (NRCS) Web Soil Survey (2019).

2.2 LITERATURE REVIEW

Prior to conducting the site visit, HELIX Environmental Planning, Inc. (HELIX) reviewed regional planning documents, Google Earth aerials (2019), Web Soil Survey (NRCS 2019), and sensitive species database records, including the Inventory of Rare and Endangered Plants of California (CNPS 2019), CNDDB (CDFW 2019), and U.S. Fish and Wildlife Service's (USFWS) critical habitat maps (2019a). A two-quadrangle database search, which included Murrieta and Wildomar, was conducted on CNDDB and CNPS,. In addition, the MSHCP (Dudek 2003) and the Regional Conservation Authority's MSHCP Information Tool (Western Riverside County Regional Conservation Authority 2019) were consulted to determine project compliance with the MSHCP.

2.3 FIELD SURVEYS

Field surveys were conducted to document the existing condition of the study area and surrounding lands. The general biological survey included vegetation mapping, during which dominant plant species were noted. A habitat assessment was also conducted on the study area to determine habitat suitability for rare plant and animal species in addition to MSHCP Riparian/Riverine Species. A jurisdictional delineation was also conducted to determine the existing jurisdictional limits regulated by USACE, RWQCB, and CDFW; in addition to MSHCP Riparian/Riverine Areas. A list of plant and animal species observed and/or detected during the field surveys are provided as Appendix A, *Plant Species Observed* and Appendix B, *Animal Species Observed and/or Detected*. Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the list of animal species identified is not necessarily a comprehensive account of all species that use the study area, as species that are nocturnal, secretive, or seasonally restricted may not have been observed.

2.3.1 General Biological Survey

A general biological survey of the study area was conducted by HELIX Biologist Daniel Torres and Regulatory Specialist Ezekiel Cooley on December 19, 2019, in accordance with vegetation community classification described in Section 2.1.3 of the MSHCP (Dudek 2003) and with additional information from Holland (1986) and Oberbauer (2008). Vegetation was mapped on a 50-foot (1 inch = 50 feet) aerial photograph of the study area. Vegetation communities and land uses were mapped by HELIX to one-hundredth of an acre (0.10 acre). The entire study area was surveyed on foot with the aid of binoculars. Representative photographs of the site were taken, with select photographs included in this report as Appendix C, *Site Photographs*. Plant and animal species observed or otherwise detected were recorded in field notebooks. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs.

2.3.2 Jurisdictional Delineation

Prior to beginning fieldwork, aerial photographs (1 inch = 50 feet), topographic maps (1 inch = 50 feet), USGS quadrangle maps, and National Wetlands Inventory maps (USFWS 2019b) were reviewed to assist in determining the location of potential jurisdictional waters on the study area. Mr. Cooley conducted the jurisdictional delineation field work on December 19, 2019. The assessment was conducted to identify jurisdictional waters potentially subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), RWQCB jurisdiction pursuant to Section 401 of the CWA, and streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFG Code). Data collection was targeted in areas that were deemed to have the potential to support jurisdictional resources, such as the presence of an ordinary high water mark (OHWM), the presence of a bed/bank and streambed associated vegetation, and/or other surface indications of streambed hydrology.

Representative photographs were taken of jurisdictional features and are included as Appendix D, *Drainage Photographs*. A summary of the regulatory framework is provided below.

2.3.2.1 U.S. Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction

The USACE WUS were determined using current USACE guidelines (Environmental Laboratory 1987, USACE 2008a). Areas were determined to be WUS if there was evidence of regular surface flow (e.g., bed and bank). Jurisdictional limits for these areas were measured according to the presence of a discernible OHWM, which is defined in 33 Code of Federal Regulations 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; USACE 2008b), which also was considered in this jurisdictional delineation.

The jurisdictional delineation was conducted in accordance with 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 USACE (USACE 2007; Grumbles and Woodley 2007); and USACE and U.S. Environmental Protection Agency (EPA; 2007). These publications explain that the EPA and USACE will

assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are a relatively permanent water body (RPW), which has year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation is used to determine if the non-RPW is jurisdictional. As an alternative to the significant nexus evaluation process, a preliminary jurisdictional delineation may be submitted to the USACE. The preliminary jurisdictional delineation treats all waters and wetlands on a site as if they are jurisdictional WUS (USACE 2008a). A significant nexus evaluation or preliminary jurisdictional delineation are typically only required for projects that propose impacts to potentially jurisdictional features and, therefore, require a Section 404 permit from the USACE.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. Potential RWQCB jurisdiction found within the study area follows the boundaries of potential USACE jurisdiction for WUS. There are no areas supporting isolated waters of the State subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

2.3.2.2 California Department of Fish and Wildlife Jurisdiction

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow, if present. 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 with 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). Jurisdictional limits for CDFW streambeds were defined by the top of bank. Vegetated CDFW habitats were mapped at the limits of streambed-associated vegetation, if present.

2.3.3 Riparian/Riverine and Vernal Pool Habitat Assessment

In accordance with the MSHCP, a Riparian/Riverine and Vernal Pool habitat assessment was conducted by Mr. Cooley on December 19, 2019. This habitat assessment was conducted concurrently with the jurisdictional delineation. The identification of Riparian/Riverine habitats is based on potential for the habitat to support, or be tributary to habitat that support, Riparian/Riverine Covered Species identified in MSHCP Section 6.1.2.

3.0 RESULTS

3.1 ENVIRONMENTAL SETTING

The study area mostly consists of paved roads including Palomar Street and Clinton Keith Road. The study area also supports undeveloped land and some areas of rural residential use. Palomar Street has existed on the study area since at least 1938 (Historic Aerials 1938) and Clinton Keith Road was built after 1982 (Historical Aerials 1982). The study area supports three drainage features (Drainage A, Drainage B, and Drainage C). Drainage A is an ephemeral drainage feature dominated by coast live oak woodland. Drainage B is an ephemeral drainage feature dominated by southern willow scrub. Drainage C northeast of Palomar Street is dominated by coast live oak woodland and southwest of Palomar Street is dominated by southern cottonwood-willow riparian forest.

3.2 TOPOGRAPHY AND SOILS

The topography of the study area is mostly flat with some gentle slopes throughout. Elevations on the study area range from approximately 1,184 feet (361 meters) above mean sea level (AMSL) near the southern boundary to a high of approximately 1,310 feet (399 meters) AMSL near the southeastern boundary. Surrounding land uses include mostly rural and low-density residential. Commercial development exists adjacent to the intersection of Palomar Street and Clinton Keith Road. The eastern portion of the study area is bounded by developed land to the north.

The MSHCP lists nine sensitive soil types that occur within the Plan Area (Dudek 2003). None of the MSHCP sensitive soils occur on or immediately adjacent to the study area. Soils on the study area are mapped primarily as Arlington and Greenfield fine sandy loams (2 to 8 percent slopes, eroded), Chino silt loam (drained), Chino silt loam (drained, saline-alkali), Greenfield sandy loam (2 to 8 percent slopes, eroded), Gullied land, Hanford coarse sandy loam (2 to 8 percent slopes; NRCS 2019), Hanford coarse sandy loam (8 to 15 percent slopes, eroded), Monserate sandy loam (8 to 15 percent slopes, eroded), Monserate sandy loam (shallow, 15 to 25 percent slopes, severely eroded), Pachappa fine sandy loam (2 to 8 percent slopes, eroded), San Timoteo loam (8 to 25 percent slopes), and Tujunga loamy sand (channeled, 0 to 8 percent slopes). The majority of these soil types consist of well-drained soils and are associated with alluvial fans. The Chino soil component, however, is somewhat poorly drained and is associated with floodplains.

3.3 VEGETATION COMMUNITIES

A total of seven vegetation communities and land uses were mapped on the study area, including southern cottonwood-willow riparian forest, southern willow scrub, coast live oak woodland, developed, disturbed, non-native vegetation, and ornamental (Table 1, *Vegetation and Land Uses*; Figure 5, *Vegetation*). A brief description of each vegetation community and land use mapped on the study area is provided below.

Table 1
VEGETATION AND LAND USES

MSHCP Vegetation Community Classification[1]		Holland	Acres[2]
Collapsed	**Uncollapsed**		
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian	Southern Cottonwood-Willow Riparian Forest	0.07
	Southern Willow Scrub	Southern Willow Scrub[3]	0.10
Woodland and Forests	Coast Live Oak Woodland	Coast Live Oak Woodland	0.45
Developed/Disturbed Land	Residential/Urban/Exotic	Developed	19.47
		Disturbed	2.93
		Non-native Vegetation	12.81
		Ornamental	1.13
		TOTAL	**36.96**

[1] Collapsed and uncollapsed community classifications are terms from MSHCP Table 2-1.
[2] Acreages are rounded to the nearest hundredth.
[3] Sensitive community pursuant to CDFW's Natural Communities List (CDFW 2018).

Source: Aerial (Riverside County, 2016)

HELIX Environmental Planning

Vegetation

Figure 5

3.3.1 Southern Cottonwood-Willow Riparian Forest

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

Southern cottonwood-willow riparian forest was observed within the western portion of the survey area, which totaled 0.07 acre. This community consisted of cottonwood trees (*Populus fremontii*) and black willow (*Salix gooddingii*) with the non-native species in the understory, such as red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), and tree tobacco (*Nicotiana glauca*).

3.3.2 Southern Willow Scrub

Southern willow scrub (also southern willow scrub under the MSCHP classification) consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat and scattered Fremont cottonwoods (*Populus fremontii*) and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest.

Southern willow scrub was observed within the western portion of the survey area, which totaled 0.10 acre. This plant community was dominated by black willow (*Salix gooddingii*) and Fremont's cottonwood (*Poplar fremontii*). Native species observed in the understory included mule fat (*Baccharis salicifolia*) and Jimson weed (*Datura wrightii*) while non-native species included Russian thistle (*Salsola tragus*) and tamarisk (*Tamarix ramosissima*).

3.3.3 Coast Live Oak Woodland

Coast live oak woodland (also coast live oak woodland under the MSHCP) is an open open-to to-dense evergreen woodland or forest community dominated by coast live oak (*Quercus agrifolia*) trees, which may reach heights between 35 and 80 feet. Components of the shrub layer generally include toyon (*Heteromeles arbutifolia*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). This community occurs on coastal foothills of the Peninsular Ranges, typically on north-facing slopes and shaded ravines.

Coast live oak woodland was observed within Drainage B which totaled 0.45 acre. The canopy of this plant community consisted mostly of coast live oak. Other plants in the canopy included non-native species such as Aleppo pine (*Pinus halepensis*) and Siberian elm (*Ulmus parvifolia*). The understory consisted mostly of non-native species and leaf litter, including non-native grasses such as ripgut brome and slender oats (*Avena barbata*).

3.3.4 Disturbed

Disturbed land is included under the Urban/Residential/Exotic classification in the MSHCP. This land use includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance

(previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Disturbed land was observed throughout the study area, which totaled 2.93 acres. These areas consisted of compact dirt adjacent to the paved roads and were mostly unvegetated due to heavy disturbance.

3.3.5 Developed

Developed land is included under the Urban/Residential/Exotic classification in the MSHCP. This land use includes areas where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

Developed land was observed surrounding the project site, which totaled 19.47 acres. The developed land consisted of roads, sidewalks, horse trails, and ornamental vegetation.

3.3.6 Non-native Vegetation

Non-native vegetation included under the Urban/Residential/Exotic classification in the MSHCP. This vegetation community is typically associated with land that has been heavily influenced by human activities, including areas adjacent to roads, manufactured slopes, and abandoned lots. Non-native vegetation areas are dominated by ornamental and exotic species that take advantage of previously cleared or abandoned landscaping or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Non-native vegetation totaled 12.81 acres. This community mostly was comprised of non-native Russian thistle and slender oats. Other non-native species observed in this community included ripgut brome and Peruvian peppertree (*Schinus molle*).

3.3.7 Ornamental

Ornamental vegetation included under the Urban/Residential/Exotic classification in the MSHCP. This vegetation community is characterized as stands of naturalized trees and shrubs (e.g., acacias [*Acacia* spp.], peppertrees [*Schinus* spp.]), many of which are also used in landscaping.

Ornamental vegetation was observed throughout the study area which totaled 1.13 acres. Ornamental vegetation consisted of landscaping associated with adjacent residential and commercial development as well as naturalized stands of ornamental vegetation. Ornamental species observed included Peruvian peppertree, river red gum (*Eucalyptus camaldulensis*), European olive (*Olea europaea*), Mexican fan palm (*Washingtonia robusta*), rosemary (*Rosmarinus officinalis*), and finestem needlegrass (*Stipa tenuissima*).

3.4 PLANTS

HELIX identified a total of 62 plant species on the study area during surveys to date, of which 42 (approximately 68 percent) are non-native species (Appendix A). The predominance of non-native species is indicative of the high degree of disturbance on the site and presence of surrounding development.

3.5 ANIMALS

A total of 12 animal species were detected on the study area during surveys to date, all of which were bird species (Appendix B).

3.6 SENSITIVE BIOLOGICAL RESOURCES

3.6.1 Rare Plant Species

The MSHCP requires focused plant surveys to be conducted for projects located within a Narrow Endemic Plant Species Survey Area (NEPSSA). There are 14 narrow endemic plant species that are associated with 10 different NEPSSAs located throughout the MSHCP Plan Area (see Table 6-1 in the MSHCP). Prior to conducting focused surveys, a habitat assessment should be conducted to determine whether the study area supports suitable habitat for plant species listed for the NEPSSA species. Focused surveys for species listed for the NEPSSA should be conducted if suitable habitat is present. If focused surveys are positive, 90 percent of the property that supports habitat suitable for long-term conservation of the species must be avoided until conservation goals for the species are satisfied.

The study area is not within a NEPSSA. Therefore, focused NEPSSA surveys were not required.

3.6.2 Sensitive Animal Species

Sensitive animal species include federally and state listed endangered and threatened, candidate species for listing by USFWS or CDFW, and/or are species of special concern (SSC) pursuant to CDFW. Additional MSHCP survey requirements for BUOW are discussed below in Section 3.6.4.

A total of 29 sensitive animal species were recorded within the Murrieta and Wildomar quadrangles based on a database search conducted on CNDDB (CDFW 2020). These species are included in Appendix F, *Sensitive Animal Species Potential to Occur.* Of the 29 sensitive animal species recorded within the vicinity of the study area, 12 species were determined to have a potential to occur on the study area. Nine of these species were determined to have a low potential to occur on the study area based on the presence of low quality and isolated habitat, limited acreage of habitat, surrounding development, and lack of recent observations within the immediate vicinity of the study area. These species include burrowing owl (*Athene cunicularia*), California glossy snake (*Arizona elegans occidentalis*), coast horned lizard (*Phrynosoma blainvillii*), Crotch bumble bee (*Bombus crotchii*), red diamond rattlesnake (*Crotalus ruber*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Swainson's hawk (*Buteo swainsoni*), western mastiff bat (*Eumops perotis californicus;* foraging only), and white-tailed kite (*Elanus leucurus*). Three of these species (southern California legless lizard [*Anniella stebbinsi*]*, least Bell's vireo* [*Vireo bellii pusillus*]*, and Stephen's kangaroo rat* [*Dipodomys stephensi*]) were determined to have a moderate potential to occur based on the presence of suitable habitat and recent observations within the vicinity of the study area. An evaluation of each sensitive animal species' potential to occur on the study area is provided in Appendix F.

3.6.3 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitats are considered either rare within the region or sensitive by CDFW (CDFW 2018, Holland 1986). Communities are given a Global and State ranking on a scale of 1 to

5. Communities afforded a rank of 5 are most common while communities with a rank of 1 are considered highly periled. CDFW considers sensitive communities as those with a rank between S1 and S3.

The study area supports three sensitive plant community pursuant to CDFW (coast live oak woodland, southern cottonwood-willow riparian forest and southern willow scrub). A total of 0.10 acre of southern willow scrub was mapped within Drainage B, a total of 0.07 acre of southern cottonwood-willow riparian forest was mapped within Drainage C, and 0.45 acre of coast live oak woodland were mapped within Drainages A and C.

3.6.4 Habitat and Wildlife Corridor Evaluation

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Corridors can be local or regional in scale; their functions may vary temporally and spatially based on conditions and species presence. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Animals use these corridors, which are often hillsides or tributary drainages, to move between different habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations.

The study area is not located within any MSHCP Linkages, which are areas within the Plan Area that are identified as having the potential to facilitate wildlife movement. The nearest linkage to the study area is Constrained Linkage 13, which is approximately 1.3 miles to the southwest of the study area and consists of Murrieta Creek (Dudek 2003). The study area is not located within any linkages recognized by the South Coast Missing Linkages report. The nearest linkage identified is the Santa Ana-Palomar Connection located approximately 10 miles to the southeast of the study area (South Coast Wildlands 2008).

The study area is constrained by commercial/residential development and I-15 to the north, and rural residential development to the south. Portions of the southern boundary of the study area are adjacent to undeveloped land which connects to Murrieta Creek. The study area consists of mostly developed land (Clinton Keith Road and Palomar Street), with disturbed land on the periphery. Native vegetation is limited to the drainages on site. The native riparian vegetation within these drainages connects other native riparian vegetation within Murrieta Creek, approximately 0.20 mile to the southwest. Larger stretches of undeveloped land are located approximately 1.3 miles to the southwest of the study area, which includes the Santa Rosa Plateau. However, this undeveloped land does not directly connect to the study area due to existing residential and commercial development. Additionally, the study area comprises mostly of heavily trafficked roadways, which facilitate little-to-no wildlife movement. Since the study area does not connect two or more large habitat areas, the study area is not considered a regional wildlife corridor.

The native riparian habitats likely provide foraging habitat and cover for certain species, particularly those species adapted to human disturbance such as small mammals (e.g., raccoon [*Procyon lotor*], skunk [*Mephitis* sp.] and cottontail rabbits [*Sylvilagu*s sp.]). Additionally, bird species are able to fly over existing development to access the study area for foraging and nesting. Therefore, the study area may support limited opportunities for local wildlife movement but does not function as a wildlife corridor since it does not directly connect to large blocks of habitat.

3.6.5 Jurisdictional Waters

Based on the results of the jurisdictional delineation, three jurisdictional features (Drainage A, Drainage B, and Drainage C) were observed on the study area (Figure 6, *Jurisdictional Features and MSHCP Riparian Areas*; Table 2, *Existing Jurisdictional Features*). Representative drainage photographs are included as Appendix D. Drainage A bisects the southeastern portion of the study area and Drainages B and C bisect the northwestern portion of the study area. No wetlands or other special aquatic sites occur within the study area.

Table 2
EXISTING JURISDICTIONAL FEATURES

Drainage	USACE/RWQCB[1]	CDFW[1]
A	0.06	0.41
B	0.01	0.10
C	0.04	0.28
TOTAL	**0.11**	**0.79**

[1] Jurisdictional acreages overlap and are not cumulative (e.g., USACE/RWQCB acreages are included in the CDFW acreages.
[2] Acreages are rounded to the nearest hundredth.

The study area supports a total of 0.11 acre of USACE/RWQCB non-wetland WUS and 0.79 acre of CDFW jurisdictional streambed and riparian vegetation. The jurisdictional features are described in detail below.

3.6.5.1 Drainage A

Drainage A is an ephemeral drainage feature that appears to initiate in the hillsides approximately 1.5 miles to the northeast of the study area. The drainage enters the study area near the southeastern boundary of the study area, on the north side of Palomar Street. The drainage flows south through the study area from approximately 60 feet before it enters a box culvert and continues under Palomar Street. Upon exiting the box culvert on the south side of Palomar Street, the drainage flows southeast for approximately 150 feet before it exits the study area. Drainage A flows approximately 1,175 feet to the south before it drains into Murrieta Creek, which connects to the Santa Margarita River as described above. Drainage A is dominated by coast live oak woodland. Soils within Drainage A consist of Hanford coarse sandy loam and Tujunga loamy sand (NRCS 2019).

Within the study area, Drainage A supports approximately 0.06 acre of USACE/RWQCB WUS and 0.41 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.2 Drainage B

Drainage B is an ephemeral drainage feature fed that appears to initiate on-site south of Palomar Street at a storm drain outlet. Based on a review of historic aerials, the area where the drainage now exists originally conveyed sheet flow from the now developed open space to the northeast (Historic Aerials 1938). Since the 1980s, the area surrounding the study area has been developed and I-15 has been constructed. The upstream watershed has been diverted underground as a result. The construction of Kilgore Lane in the early 1980s near the culvert outlet consolidated flows and defined the drainage on

Study Area
NAP - Camelia Project

Jurisdictional Features

CDFW Jurisdiction/MSHCP Riparian Areas
USACE Jurisdiction
Existing Culverts

Palomar Street
Clinton Keith Road
Washington Avenue
A
B
C
Windsong Lane
Palomar Street
Drainage C
Kilgore Lane
Palomar Street
Drainage B
Palomar Street
Drainage A

0 100 Feet
0 100 Feet
0 100 Feet

0 500 Feet

Source: Aerial (Riverside County, 2016)

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Jurisdictional Features and MSHCP Riparian Areas

Figure 6

the study area as it exists today. As the drainage exits the culvert, it flows southwest through the study area for approximately 100 feet before it exits the study area. Drainage B continues 230 feet where, at the terminus of Kilgore Lane flows become unconsolidated. Drainage B then continues for approximately 470 linear feet (LF before the unconsolidated flows drain into Murrieta Creek. Murrieta Creek is a tributary to the Santa Margarita River, which ultimately drains into the Pacific Ocean approximately 26 miles to the southwest of the study area. Drainage B is dominated by southern willow scrub species. Soils within Drainage B consist of Hanford coarse sandy loam (NRCS 2019).

Within the study area, Drainage B supports approximately 0.01 acre of USACE/RWQCB WUS and 0.10 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.3 Drainage C

Drainage C is an ephemeral drainage feature that appears to initiate to the north of the study area. Based on a review of historic aerials, the drainage originally initiated in the hillsides approximately 1.75 miles to the northeast of the study area (Historic Aerials 1938). Since the 1980s, the area surrounding the study area has been developed and I-15 has been constructed. The upstream watershed has been diverted underground as a result. Drainage C is mapped as a USGS blueline stream and has been channelized and realigned to flow directly southwest to Murrieta Creek. Drainage C surfaces approximately 0.5 mile to the northeast of the study area and enters the study area near the northeastern boundary of the study area, on the north side of Palomar Street. The drainage flows southwest through the study area for approximately 45 feet before it enters a culvert and flows for approximately 65 feet under Palomar Street. Upon exiting a box culvert on the south side of Palomar Street, the drainage flows for approximately 50 feet before exits the study area. Drainage C continues through an unlined channel for approximately 680 feet before it drains into Murrieta Creek. Murrieta Creek is a tributary to the Santa Margarita River, which ultimately drains into the Pacific Ocean approximately 26 miles to the southwest of the study area. Drainage C north of Palomar Street is dominated by coast live oak woodland and south of Palomar Street is dominated by southern cottonwood-willow forest species. Soils within Drainage C consist of Hanford coarse sandy loam (NRCS 2019).

Within the study area, Drainage C supports approximately 0.04 acre of USACE/RWQCB WUS and 0.28 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.7 WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY ANALYSIS

3.7.1 Project Location within the MSHCP

The MSHCP Plan Area is divided into 16 Area Plans, within which 153,000 acres were identified as potential areas for conservation that would contribute to the overall existing MSHCP Conservation Area. The areas identified for conservation within the MSHCP Plan Area are called Criteria Areas and include Core Areas that support habitat for covered species and Linkages that provide a connection between Core Areas. The Criteria Areas are divided into 160-acre cells, which each have their own conservation goal. All projects within a cell or cell group are required to be accessed through the Habitat Acquisition and Negotiation Strategy (HANS) process to determine the amount of MSHCP conservation required. The HANS process aides in the acquisition of lands that will contribute to the assembly of the MSHCP Reserve.

As described in Section 2.1.2 of the MSHCP, the study area is located in the Riverside Lowlands bioregion, an area lying generally below 2,000 AMSL and characterized by Riversidean sage scrub and annual grasslands. The relatively arid climate is partly the result of rain shadow cast by the Santa Ana Mountains. A high level of disturbance and urbanization are noted within this bioregion (Dudek 2003).

The study area is located within the Elsinore Area Plan and is not located within or adjacent to an MSHCP Criteria Area; therefore, the study area is not subject to special conservation requirements that apply to cells and is not required to undergo the HANS process. The nearest criteria cell to the study area is Cell 5983, which is located approximately 1 mile to the south (Figure 7, *MSHCP Criteria Cell*). The study area is not located within or directly adjacent to any MSHCP Conservation Areas. The study area is located approximately 1.3 miles to the northeast of Constrained Linkage 13 and Existing Core F.

3.7.2 Riparian/Riverine and Vernal Pool Habitat Assessment (MSHCP Section 6.1.2)

The identification of MSHCP Riparian/Riverine resources is based on the potential for the habitat to support, or be a tributary to habitat that supports, Riparian/Riverine Covered Species. Riparian/Riverine Covered Species are identified in MSHCP Section 6.1.2. The MSHCP defines Riparian/Riverine habitat as "lands which contain habitat dominated by trees, shrubs, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year" (Dudek 2003). The MSHCP defines Vernal Pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season" (Dudek 2003). Artificially created features, except for those created intentionally to provide wetland habitat or resulting from the creation of open waters or alteration of natural stream courses, are not considered MSHCP Riparian/Riverine Areas or Vernal Pools.

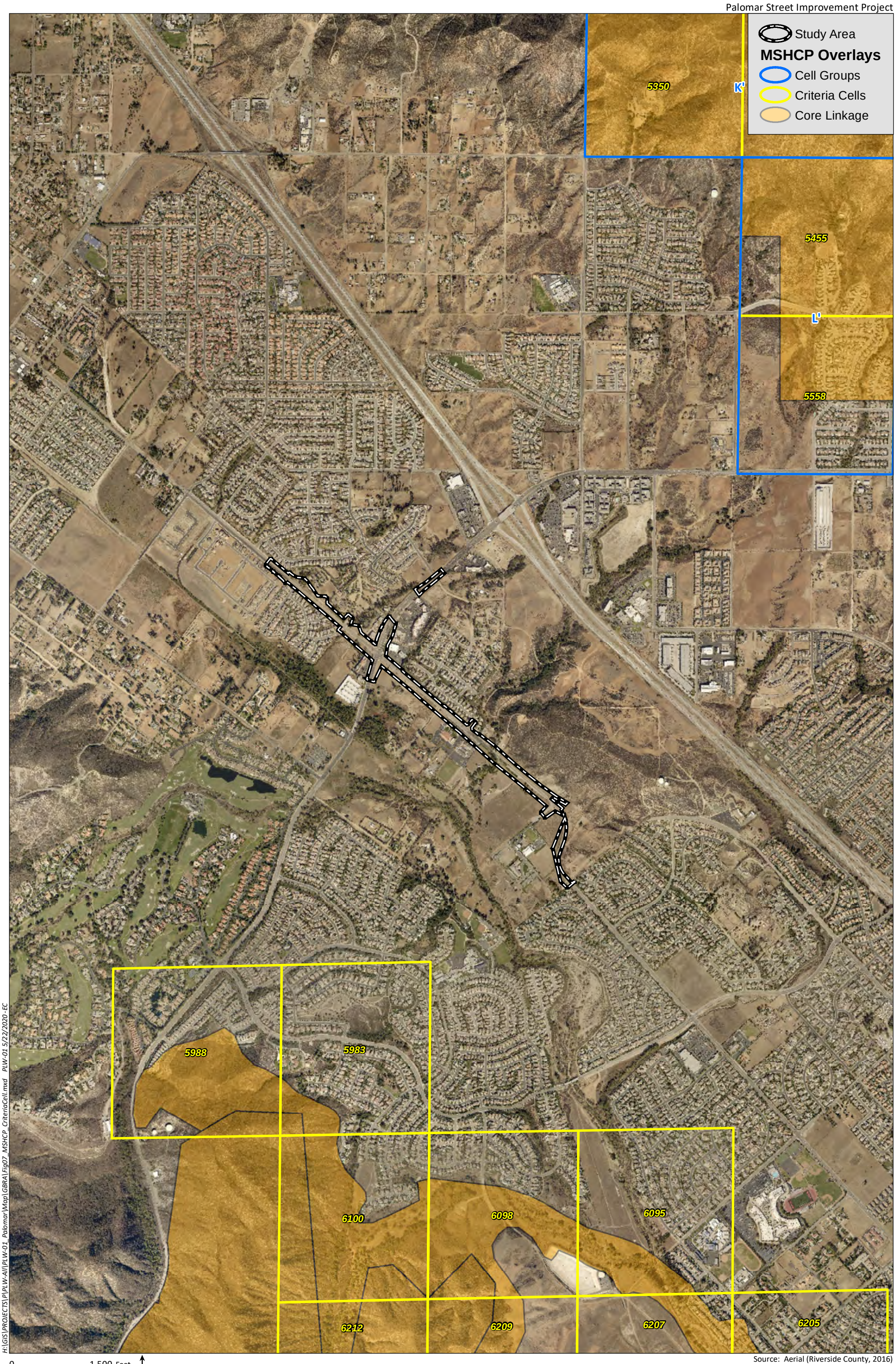
In accordance with the MSHCP, a Riparian/Riverine habitat assessment was conducted by Mr. Cooley on December 19, 2019. The Riparian/Riverine and Vernal Pool habitat assessment was conducted concurrently with the jurisdictional delineation. MSHCP Riparian Areas were identified within the study area, which are consistent with the limits of CDFW jurisdictional vegetation. The Riparian Areas mapped on the study area are equivalent to the total area of CDFW jurisdiction within Drainages A, B, and C (0.79 acre; Figure 6). The study area does not support any areas considered MSHCP Riverine or Vernal Pool Habitat.

3.7.2.1 Riparian/Riverine and Vernal Pool Species

Through the protection of Riparian/Riverine and Vernal Pool habitats, the MSHCP aims to conserve several plant and animal species within the Plan Area. During the Riparian/Riverine habitat assessment discussed above, each plant and animal species listed in Section 6.1.2 of the MSHCP was evaluated to determine the potential to occur on the study area. Riparian/Riverine and Vernal Pool species are discussed in detail below.

Plant Species

The MSHCP lists 23 rare plant species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are listed below in Table 3, *MSHCP Riparian/Riverine*



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0 1,500 Feet

Source: Aerial (Riverside County, 2016)

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MSHCP Criteria Cell

Figure 7

and Vernal Pool Plant Species. On May 6, 2020 Rob Hogenauer surveyed the Riparian/Riverine Areas for sensitive plant species. No Riparian/Riverine or Vernal Pool plant species were observed during any of the field surveys. A list of plant species observed during the field surveys are provided as Appendix A.

Table 3
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

Common Name	Scientific Name	Habitat
Brand's phacelia	*Phacelia stellaris*	Sandy washes and/or benches in alluvial flood plains.
California Orcutt grass	*Orcuttia californica*	Vernal pools.
Coulter's matilija poppy	*Romneya coulteri*	Dry washes and canyons in chaparral and coastal sage scrub communities and disturbed areas.
Engelmann oak	*Quercus engelmannii*	Woodlands, mixed chaparral, and savannah grasslands.
Fish's milkwort	*Polygala cornuta* var. *fishiae*	Shaded, rocky places in canyons associated with woodlands and chaparral.
graceful tarplant	*Holocarpha virgata* ssp. *elongata*	Coastal mesas and foothills with grassland habitats.
lemon lily	*Lilium parryi*	Moist montane meadows.
Mojave tarplant	*Deinandra mohavensis*	Drainages within arid montane chaparral.
mud nama	*Nama stenocarpum*	Marshes, swamps, lake margins, and riverbanks along muddy embankments.
ocellated Humboldt lily	*Lilium humboldtii* ssp. *ocellatum*	Shaded montane canyons.
Orcutt's brodiaea	*Brodiaea orcuttii*	Vernally moist grasslands and vernal pools; occasionally occurs along stream embankments within clay soils.
Parish's meadowfoam	*Limnanthes gracilis* var. *parishii*	Montane meadows with abundant annual and herbaceous perennials and lack of shrubs.
prostrate navarretia	*Navarretia prostrata*	Coastal sage scrub, valley and foothill grassland, and vernal pools.
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Vernal pools.
San Jacinto Valley crownscale	*Atriplex coronata* var. *notatior*	Highly alkaline and silty-clay soils associated with alkali sink scrub, alkali playa, vernal pool, and annual alkali grassland habitats.
San Miguel savory	*Clinopodium chandleri*	Coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands.
Santa Ana River woolly-star	*Eriastrum densifolium* spp. *sanctorum*	Sandy soils on flood plains and terraces within coastal scrub and chaparral communities.

Table 3
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

Common Name	Scientific Name	Habitat
slender-horned spineflower	*Dodecahema leptoceras*	Sandy soil associated with alluvial scrub; is often found on stream terraces and banks.
smooth tarplant	*Centromadia pungens* ssp. *laevis*	Alkali scrubs, playas, and grasslands; riparian woodland and streams.
spreading navarretia	*Navarretia fossalis*	Vernal pools, depressions, and ditches.
southern California black walnut	*Juglans californica*	Open savannahs, creek beds, alluvial terraces, and north-facing slopes.
thread-leaved brodiaea	*Brodiaea filifolia*	Clay soils in vernally moist grasslands and vernal pool periphery are typical locales.
vernal barley	*Hordeum intercedens*	Saline flats and depressions in grasslands or vernal pools.

Source: Dudek (2003).

Animal Species

The MSHCP lists 12 sensitive animal species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are listed in Table 4, *MSHCP Riparian/Riverine and Vernal Pool Animal Species*. The MSHCP requires focused surveys to be conducted for projects that propose impacts to three invertebrate and three bird species, as described in detail below. The study area supports suitable habitat for one of the sensitive bird species (LBVI) listed in Table 4, below.

Table 4
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL ANIMAL SPECIES

Common Name	Scientific Name	Habitat
Riverside fairy shrimp	*Streptocephalus woottoni*	Deep vernal pools and other ephemeral basins that hold water for typically 30 or more days.
Santa Rosa Plateau fairy shrimp	*Linderiella santarosae*	Limited to vernal pools within the Santa Rosa Plateau.
vernal pool fairy shrimp	*Branchinecta lynchi*	Vernal pools and other ephemeral basins within patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.
arroyo toad	*Anaxyrus californicus*	Washes and intermittent streams with open-canopy riparian forest.
California red-legged frog	*Rana aurora draytonii*	Perennial streams with dense, shrubby riparian vegetation.
mountain yellow-legged frog	*Rana muscosa*	Perennial waterways, often within open riparian vegetation.
Santa Ana sucker	*Catostomus santaanae*	Clear, cool perennial streams with loose sand, gravel, cobble, and boulders with algae, aquatic emergent

		vegetation, macroinvertebrates, and riparian vegetation.
bald eagle	*Haliaeetus leucocephalus*	Within close proximity to lakes or other water bodies.
least Bell's vireo	*Vireo bellii pusillus*	Well-developed riparian scrub, woodland, or forest.
peregrine falcon	*Falco peregrinus*	Generally, areas with cliffs or tall buildings near water where prey (shorebirds and ducks) is concentrated.
southwestern willow flycatcher	*Empidonax traillii extimus*	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Extensive stands of mature riparian woodland.

Source: Dudek (2003).

Invertebrates

There are three sensitive fairy shrimp species that occur in the MSHCP Plan Area, including Riverside fairy shrimp (*Streptocephalus woottoni*), Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*), and vernal pool fairy shrimp (*Branchinecta lynchi*). Vernal pool fairy shrimp occurs throughout the Central Valley and in several disjunct populations in the County. This species exists in vernal pools and other ephemeral basins often located in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral. Riverside fairy shrimp occurs in Riverside, Orange, and San Diego Counties as well as in northern Baja California, Mexico. This species is typically found in deeper vernal pools and other ephemeral basins that hold water for long periods of time (30 or more days). Santa Rosa Plateau fairy shrimp is limited to the Santa Rosa Plateau in the County.

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for the three sensitive fairy shrimp species discussed above. The study area does not support suitable habitat for fairy shrimp species; therefore, no focused surveys were required.

Birds

Riparian/Riverine Areas within the MSHCP Plan Area provide suitable habitat for sensitive bird species, such as LBVI, southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), bald eagle (*Haliaeetus leucocephalus*), and peregrine falcon (*Falco peregrinus*). Typical habitat for LBVI consists of well-developed riparian scrub, woodland, or forest dominated by willows, mule fat, and Fremont cottonwood. LBVI will also use small patches of trees adjacent to dense, riparian habitat. Southwestern willow flycatcher and western yellow-billed cuckoo require mature riparian forest with a stratified canopy and nearby water. Both the bald eagle and peregrine falcon occur primarily in and adjacent to open water habitats, with peregrine falcon occurring in riparian areas.

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for LBVI, southwestern willow flycatcher, and western yellow-billed cuckoo. The study area supports suitable habitat for LBVI; therefore, focused surveys are required. Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3)

3.7.3 Additional Survey Needs and Procedures (MSHCP Section 6.3.2)

The MSHCP requires additional surveys for projects that support suitable habitat for certain conditionally-covered species. The survey results provide species-specific information in order for the MSHCP to satisfy the Federal Endangered Species Act (FESA) issuance criteria. If focused surveys are positive for conditionally-covered species, 90 percent of the property that supports habitat suitable for long-term conservation of the species must be avoided until conservation goals for the species are satisfied. Additional survey requirements are discussed in detail below.

3.7.3.1 Criteria Area Species

Focused surveys for rare plant species must be conducted for projects located within a Criteria Area Species Survey Area (CASSA). There are 13 criteria area species, which are associated with eight CASSAs located throughout the MSHCP Plan Area (see Table 6-1 in the MSHCP). Prior to conducting focused surveys, a habitat assessment should be conducted to determine whether the study area supports suitable habitat for plant species listed for the CASSA. If suitable habitat is present, focused surveys for species listed for the CASSA should be conducted.

The study area is not within a CASSA; therefore, focused CASSA surveys were not required.

3.7.3.2 Amphibian Species

Focused surveys for arroyo toad (*Bufo californicus*), California red-legged frog (*Rana draytonii*), and mountain yellow-legged frog (*Rana muscosa*) must be conducted for projects located within an Amphibian Species Survey Area.

The study area is not within the Amphibian Species Survey Area; therefore, focused surveys were not required.

3.7.3.3 Bird Species

A focused survey for BUOW must be conducted for projects located within a BUOW Survey Area.

The study area is located within the BUOW Survey Area. Therefore, BUOW focused surveys are required in accordance with the County's survey protocol (County 2006). Mr. Cooley and Mr. Torres completed the habitat assessment on December 19, 2019, during which potential suitable habitat and suitable burrows for BUOW were observed. Therefore, Step II surveys (focused burrow survey and four focused BUOW surveys) are required and will be conducted during the 2020 survey season.

Focused protocol surveys must be conducted within suitable habitat for LBVI.

The study area supports suitable habitat for LBVI therefore, focused protocol surveys for LBVI are required. In accordance with USFWS survey protocol, eight focused surveys shall be conducted between April 10 and July 31 at least 10 days apart by a qualified biologist (USFWS 2001). Focused protocol surveys for LBVI will be conducted during the 2020 survey season.

3.7.3.4 Mammal Species

Focused surveys for Aguanga kangaroo rat (*Dipodomys merriami collinus*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) must be conducted for projects located within a Mammal Species Survey Area.

The study area is not within the Mammal Species Survey Area; therefore, focused surveys were not required.

4.0 REGIONAL AND REGULATORY CONTEXT

Biological resources located within the study area are subject to regulatory review by federal, state, and local agencies. Biological resources-related laws and regulations that apply to the project include the FESA, Migratory Bird Treaty Act (MBTA), CWA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL REGULATIONS

4.1.1 Federal Endangered Species Act

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) 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 FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. 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 is required when there is a nexus between federally listed species' use of the site and impacts to USACE jurisdictional areas. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. The MSHCP is the Section 10(a) permit for the City, which includes the study area.

4.1.2 Federal Clean Water Act, Section 404

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the 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 and vernal pools, is overseen by USACE under Section 404 of the CWA. Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits. Individual Permits are assessed individually based on the type of action, amount of fill, etc. Individual Permits typically require substantial time (often longer than

six months) to review and approve, while Nationwide Permits are pre-approved if a project meets the appropriate conditions. A CWA Section 401 Water Quality Certification, which is administered by the State Water Resources Control Board, must be issued prior to any 404 Permit.

4.1.3 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the Federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season, which is generally defined as March 1 to August 31. In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests (January 15 to August 31).

4.1.4 Critical Habitat

As described by the FESA, critical habitat is the geographic area occupied by a threatened or endangered species essential to species conservation that may require special management considerations or protection. Critical habitat also may include specific areas not occupied by the species but that have been determined to be essential for species conservation.

Critical habitat does not occur on the study area. The nearest critical habitat to the study area includes coastal California gnatcatcher (*Polioptila californica californica*), which is approximately 2 miles to the northeast of the study area (USFWS 2019).

4.2 STATE REGULATIONS

4.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

4.2.2 California Endangered Species Act

The CESA is similar to the FESA 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 MSHCP is the regional 2081 for this portion of the County, which includes the study area. The golden eagle (*Aquila chrysaetos*) and white-tailed kite are considered state fully protected species. Fully protected species may not be taken or possessed at any time, and no state licenses or permits may be issued for their take except for collecting the species necessary for scientific research and relocation of the bird species for the protection of livestock (Fish and Game Code Sections 3511, 4700, 5050, and 5515).

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 of plants that are listed. The

California ESA followed the NPPA and covers both plants and animals that are determined to be endangered or threatened with extinction. Plants listed as rare under NPPA were designated threatened under the California ESA.

4.2.3 Protection of Raptor Species

Raptors (birds of prey) and owls and their active nests are protected by California Fish and Game Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW.

4.2.4 California Fish and Game Code, Section 1602

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

4.3 LOCAL REGULATIONS

4.3.1 Multiple Species Habitat Conservation Plan Consistency

The MSHCP is a comprehensive multi-jurisdictional effort that includes the City and multiple other cities throughout the western portion of the County. Rather than addressing sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Dudek 2003). Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004. Section 3.6 above and Section 5.6 below demonstrate the project's consistency with the MSHCP.

4.3.2 Stephens' Kangaroo Rat Habitat Conservation Plan

The HCP for Stephens' kangaroo rat describes the conservation, mitigation, and monitoring measures that are implemented within core reserves. Within the HCP, there are seven core reserves totaling 41,221 acres for conservation of Stephens' kangaroo rat and associated habitat. The HCP provides a 30-year incidental take authorization for Stephens' kangaroo rat on lands within its boundaries, which includes 533,954 acres within the County and the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula.

The study area is within the Stephens' kangaroo rat HCP but is not located within any of the core reserves. Therefore, the project is required to pay a Stephens' kangaroo rat mitigation fee for incidental take authorization under the Stephens' kangaroo rat HCP.

4.3.3 Protection of City Street Trees

The City has implemented regulatory measures to protect street trees. Article 050 of Chapter 12.08 of the Wildomar Municipal Code states "No person, firm, corporation, public district, public agency or political subdivision shall remove or severely trim any tree planted in the right-of-way of any City street

without first obtaining a permit from the Transportation Director to do so." Conditions of the permit may include the relocation or replacement of any trees removed. One or more trees of the same kind or type may be acceptable as replacement. Final permit conditions will be specified in the permit (City of Wildomar 2008).

Street trees under the jurisdiction of this ordinance exist along Clinton Keith Road. Prior to impacting these trees, a permit from the City of Wildomar must be obtained.

5.0 PROJECT EFFECTS

This section describes potential direct and indirect impacts associated with the proposed project. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Indirect impacts consist of secondary effects of a project, including noise, decreased water quality (e.g., through sedimentation, urban contaminants, or fuel release), fugitive dust, colonization of non-native plant species, animal behavioral changes, and night lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect may take a longer time to become apparent.

The significance of impacts to biological resources present or those with potential to occur was determined based upon the sensitivity of the resource and the extent of the anticipated impacts. For certain highly sensitive resources (e.g., a federally listed species), any impact would be significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the County but declining elsewhere) could sustain some impact with a less than significant effect.

According to Appendix G of the CEQA Guidelines, project impacts to biological resources would be considered significant if they would:

(a) Have 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 CDFW or USFWS.

(b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified by local or regional plans, policies, regulations or by CDFW or USFWS.

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means.

(d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

(e) Conflict with local policies or ordinances protecting biological resources, such a tree preservation policy or ordinance.

(f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.1 SENSITIVE SPECIES

5.1.1 Rare Plant Species

Less than Significant with Mitigation Incorporated

A total of 32 of the 34 rare plant species recorded within the vicinity of the study area were not considered to have a potential to occur based on geographic range, elevation range, and/or lack of suitable habitat (see Appendix E). The remaining two species (San Diego ambrosia and white rabbit-tobacco) were considered to have a potential to occur on the study area. San Diego ambrosia is a federally endangered species and is listed with a CRPR of 1B.1, white rabbit-tobacco is listed with a CRPR of 2B.2, neither of these species are federally- or state-listed. A habitat assessment and surveys for these species are only required if a project occurs within NEPSSA 2, which the study area is not located within a NEPSSA.

5.1.2 Sensitive Animal Species

Less than Significant Impacts with Mitigation Incorporated

Of the 29 sensitive animal species recorded within the vicinity of the study area, 18 species were considered to have no potential to occur on the study area due to lack of suitable habitat (see Appendix F). Therefore, no significant impacts to these sensitive wildlife species are anticipated by the project. Eleven (11) of the remaining 29 species were determined to have a potential to occur on the study area. Potential project impacts to these species are discussed in detail below.

Low Potential Species

Seven (7) species have a low potential to occur based on the presence of low quality and isolated habitat, limited acreage of habitat, surrounding development, and lack of recent observations within the immediate vicinity of the study area. These species include burrowing owl, red diamond rattlesnake, coast horned lizard, Swainson's hawk, white-tailed kite, western mastiff bat (foraging only), and San Diego black-tailed jackrabbit.

Red diamond rattlesnake, coast horned lizard, Swainson's hawk, white-tailed kite, and San Diego black-tailed jackrabbit are fully covered species under the MSHCP. With payment of the MSHCP Local Development Mitigation Fee (LDMF), no additional mitigation is required for potential impacts to these species.

Western mastiff bat is not an MSHCP covered species and does not carry a federal or state listing as threatened or endangered. This species is listed as SSC by CDFW. The study area does not support suitable roosting habitat for this species. There is some potential for foraging habitat on the study area, although the habitat is considered low quality based on presence of surrounding development. The nearest observation recorded on CNDDB was made in 2001, approximately 6.5 miles to the northeast of the study area (CDFW 2019). Based on the presence of surrounding development, lack of recent

observations, and absence of suitable roosting habitat, no significant impacts to western mastiff bat are anticipated by the project.

Burrowing Owl

BUOW is considered an SSC and MSHCP conditionally covered species. Potential suitable habitat and suitable burrows for BUOW were observed. Therefore, focused surveys, which are being conducted during the 2020 season, are required prior to impacts. If burrowing owl is observed during the focused surveys, impacts would be considered significant and as such, mitigation measure (MM) BIO-1 is recommended to reduce potential impacts to burrowing owls. Mitigation is proposed consistent with the burrowing owl mitigation guidelines published by CDFW (CDFW 2012). Therefore, implementation of MM BIO-1 would reduce any direct impacts to burrowing owl to less than significant.

Moderate Potential Species

The remaining three species (southern California legless lizard, least Bell's vireo, and Stephen's kangaroo rat) were determined to have a moderate potential to occur based on the presence of a limited amount of suitable habitat and recent observations in the vicinity of the study area.

Stephen's kangaroo rat is fully covered species under the MSHCP. In addition, the study area is located within the Stephens' kangaroo rat HCP and is required to pay a Stephens' kangaroo rat mitigation fee for incidental take authorization under the Stephens' kangaroo rat HCP. See Section 5.6.6 below for a more detailed discussion.

California legless lizard is an SSC. Although the study area supports suitable sandy wash habitat within coast live oak woodland, the habitat is considered low quality due to its small extent and heavily disturbed surrounding areas. Since the study area supports low quality habitat, the study area is not expected to support large populations of this species. If present, a loss of a few individuals would not be expected to reduce regional population numbers. Impacts to these species would be less than significant and no mitigation measures are considered required.

Least Bell's Vireo

The LBVI is a federally and state endangered species and an MSHCP conditionally covered species. Since the study area supports suitable habitat, focused surveys conducted in accordance with USFWS' survey protocol (2001) are required prior to impacts. If nesting LBVI is observed during the focused surveys, impacts would be considered significant and as such, MM BIO-2 is recommended to reduce potential impacts to LBVI. Therefore, implementation of MM BIO-2 would reduce any direct impacts to LBVI to less than significant. Sensitive Vegetation Communities

5.1.3 California Department of Fish and Wildlife Sensitive Vegetation Communities/Habitats

Less than Significant with Mitigation Incorporated

The study area supports 0.10 acre of southern willow scrub and 0.44 acre of coast live oak woodland, which are sensitive communities pursuant to CDFW (2018). The remaining three communities

(disturbed, developed, and ornamental) are not considered sensitive communities pursuant to CDFW. Proposed impacts to vegetation are shown in Table 5, *Impacts to Vegetation and Land Uses* and on Figure 8, *Impacts to Vegetation*.

Permanent impacts to southern willow scrub would be considered significant and require compensatory mitigation as part of the Section 1602 permitting requirements (see Section 5.2.2 below). As required by MM BIO-3, permanent impacts to southern willow scrub would be mitigated through on-site or off-site enhancement, restoration, and/or creation at a ratio of no less than 2:1.

Table 5
IMPACTS TO VEGETATION AND LAND USES

Vegetation Community	Permanent Impacts (acres)[1]
Southern Cottonwood-Willow Riparian Forest[2]	0.04
Southern Willow Scrub[2]	0.09
Coast Live Oak Woodland[2]	0.34
Developed	16.64
Disturbed	2.70
Non-native Vegetation	10.16
Ornamental	1.03
TOTAL	**31.00**

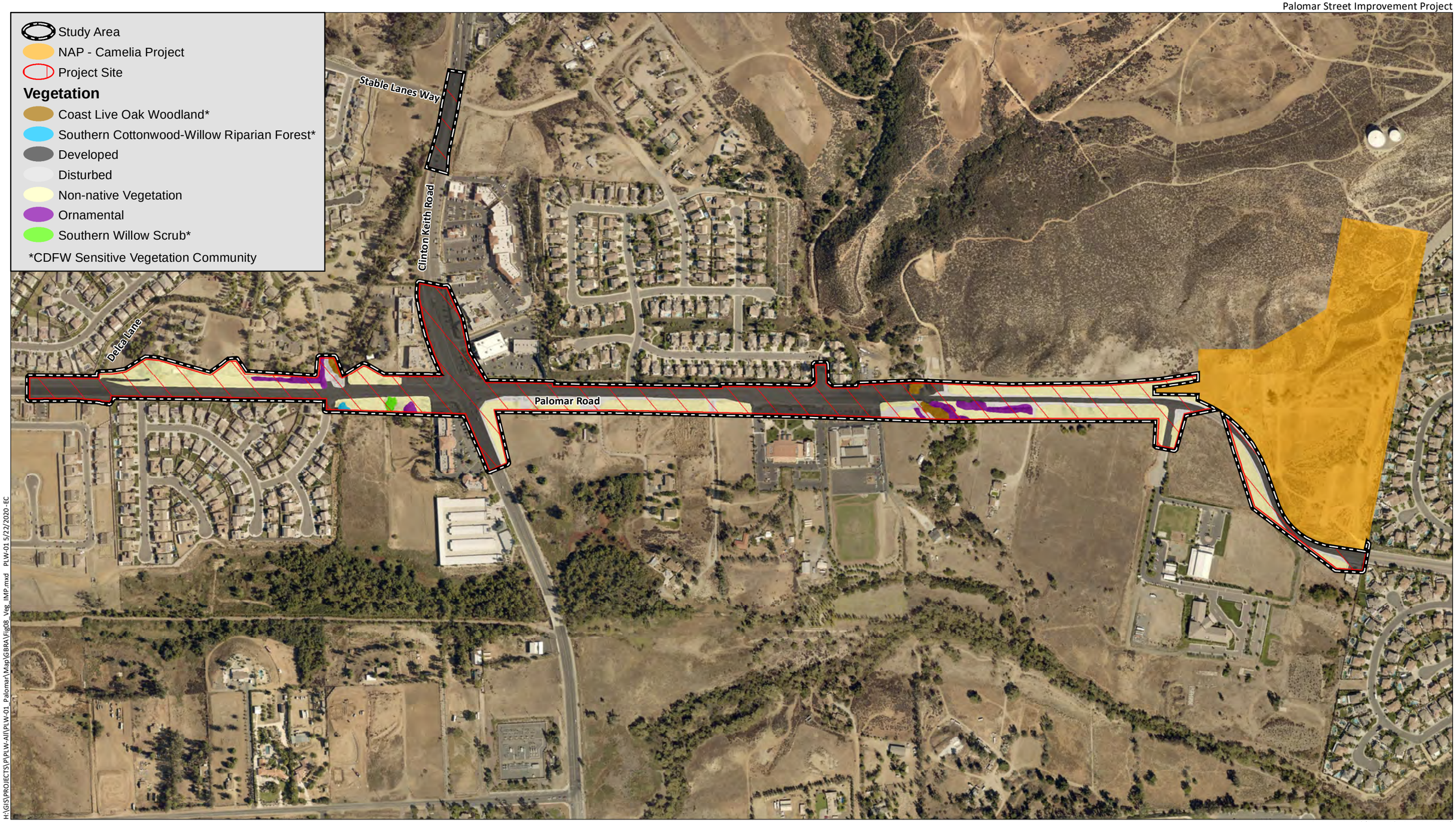
[1] Acreage is rounded to the nearest hundredth.
[2] Sensitive habitats pursuant to CDFW's Natural Communities List (2019).

5.1.4 California Department of Fish and Wildlife Riparian Habitat and Streambed

Less than Significant with Mitigation Incorporated

Drainage A, Drainage B, and Drainage C are considered jurisdictional streambeds pursuant to Section 1602 of the CFG Code as regulated by CDFW. The project would result in permanent impacts to approximately 0.64 acre of CDFW jurisdiction on the study area, including 0.35 acre within Drainage A, 0.09 acre within Drainage B, and 0.20 acre within Drainage C (Figure 9, *Impacts to Jurisdictional Features and MSHCP Riparian Areas*; Table 6, *Impacts to CDFW Jurisdiction*).

Impacts to CDFW jurisdiction will require a Section 1602 Stream Alteration Agreement from the CDFW, as described in MM BIO-3 included in Section 6.0 below. Compensatory mitigation for permanent impacts to CDFW jurisdiction would be required as part of subsequent Section 1602 permitting requirements. Permanent impacts to CDFW jurisdiction shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at ratio of no less than 2:1 as required by MM BIO-3.



Source: Aerial (Riverside County, 2016)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8

Study Area
NAP - Camelia Project
Project Site

Jurisdictional Features

CDFW Jurisdiction/MSHCP Riparian Areas
USACE Jurisdiction
Existing Culverts

Palomar Street
Clinton Keith Road
Washington Avenue
A
B
C
Windsong Lane
Kilgore Lane
Drainage A
Drainage B
Drainage C
0 100 Feet
0 500 Feet

Source: Aerial (Riverside County, 2016)

H:\GIS\PROJECTS\P\PLW-All\PLW-01_Palomar Map\GBRA\Fig09_JD_IMP.mxd PLW-01 5/22/2020 -EC

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian Areas

Figure 9

Table 6
IMPACTS TO CDFW JURISDICTION

Drainage	Permanent Impacts (acres)[1]
A	0.35
B	0.09
C	0.20
TOTAL	**0.64**

[1] Acreage is rounded to the nearest hundredth.

5.2 U.S. ARMY CORPS OF ENGINEERS/REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Less than Significant with Mitigation Incorporated

Drainage A, Drainage B, and Drainage C are considered jurisdictional streambeds pursuant to Sections 404/401 of the CWA as regulated by USACE and RWQCB, respectively. The project would result in permanent impacts to approximately 0.08 acre of WUS on the study area (Figure 9; Table 7, *Impacts to USACE/RWQCB Jurisdiction*).

Impacts to USACE/RWQCB jurisdiction will require a Section 404 permit from USACE and a Section 401 permit from RWQCB, as described in MM BIO-3 included in Section 6.0 below. Compensatory streambed mitigation for permanent impacts to USACE/RWQCB jurisdiction will be required as part of subsequent Section 404/401 permitting requirements. Permanent impacts to USACE/RWQCB jurisdiction shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at ratio of no less than 2:1 as required by MM BIO-3.

Table 7
IMPACTS TO USACE/RWQCB JURISDICTION

Drainage	Permanent Impacts (acres)[1]
A	0.05
B	0.01
C	0.02
TOTAL	**0.08**

[1] Acreage is rounded to the nearest hundredth.

5.3 WILDLIFE MOVEMENT AND MIGRATORY SPECIES

5.3.1 Wildlife Movement

No Impact

The study area is not part of a regional wildlife corridor and does not serve as a nursery site. The study area is not identified by the MSHCP (Dudek 2003) or South Coast Missing Linkages (South Coast Wildlands 2008) as being part of a local or regional corridor or linkage. The study area currently does not directly connect two or more large blocks of habitat and is constrained by existing development that surrounds the site. The study area supports some native riparian vegetation that may be used by smaller mammals and reptiles that are adapted to human disturbance to move locally throughout the study area. Bird species may fly over existing development to access the study area for foraging. Therefore, the project will not significantly impact movement of wildlife or impede the use of native wildlife nursery sites.

5.3.2 Migratory Species

Less than Significant Impacts with Mitigation Incorporated

Development of the proposed project could disturb or destroy active migratory bird nests, including eggs and young. Disturbance to or destruction of migratory bird eggs, young, or adults is in violation of the MBTA and is considered a potentially significant impact. Although suitable habitat for nesting birds on the study area is limited, herbaceous ground cover, shrubs, and trees located throughout the study area could provide habitat for protected nesting bird species. A mitigation measure is provided as MM BIO-4 in Section 6.0 below, which would ensure the project is in compliance with MBTA regulations.

5.4 LOCAL POLICIES AND ORDINANCES

Less than Significant with Mitigation Incorporated

The project will comply with the City's street tree protection measures. The study area supports street trees subject to the tree protection measures. In accordance with MM BIO-5, prior to impacts, an inventory of trees will be conducted and a permit for removal of the trees will be obtained. Therefore, implementation of MM BIO-5 would reduce any direct impacts to protected trees to less than significant.

5.5 ADOPTED HABITAT CONSERVATION PLANS

Less than Significant Impacts with Mitigation Incorporated

As discussed in Section 3.6.1 above, the study area is within the Elsinore Area Plan of the MSHCP. The study area is not located within or adjacent to an MSHCP Criteria Area; therefore, the study area is not

subject to special conservation requirements that apply to cells and is not required to undergo the HANS process. The following sections demonstrate the project's compliance with MSHCP requirements.

5.5.1 Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2)

The identification of MSHCP Riparian/Riverine resources is based on the potential for the habitat to support, or be a tributary to habitat that supports, Riparian/Riverine Covered Species. Riparian/Riverine Covered Species are identified in MSHCP Section 6.1.2. The MSHCP defines Riparian/Riverine habitat as "lands which contain Habitat dominated by trees, shrubs, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year" (Dudek 2003). The MSHCP defines Vernal Pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season" (Dudek 2003). Artificially created wetlands, except for those created intentionally to provide habitat or resulting from the creation of open waters or alteration of natural stream courses, are not considered MSHCP Vernal Pools.

Riparian Habitat

The MSHCP Riparian Areas mapped on the study area are equivalent to CDFW jurisdiction. Implementation of the proposed project would result in permanent impacts to approximately 0.47 acre of MSHCP Riparian habitat and 0.17 acre of Riverine habitat (Figure 9; *Table 8, Impacts to MSHCP Riparian/Riverine Areas; Table 9, Impacts to MSHCP Riparian Area Vegetation*).

Since the project proposes impacts to Riparian Areas, the project is required to prepare a Determination of Biologically Equivalent or Superior Preservation, which provides a detailed account of impacts and proposed mitigation to compensate for impacts. Mitigation for permanent impacts to the Riparian Areas would be met by implementing required mitigation for impacts to CDFW jurisdiction. Mitigation would include off-site enhancement, restoration, and/or creation at a ratio of no less than 2:1, as required by MM BIO-3 included in Section 6.0 below.

Table 8
IMPACTS TO MSHCP RIPARIAN/RIVERINE AREAS

Drainage	Permanent Impacts (acres)[1]
A	0.35
B	0.09
C	0.20
TOTAL	**0.64**

[1] Acreage is rounded to the nearest hundredth.

Table 9
IMPACTS TO RIPARIAN/RIVERINE AREA VEGETATION

Vegetation Community	Permanent Impacts (acres)[1]
Southern Cottonwood-Willow Riparian Forest[2]	0.04
Southern Willow Scrub[2]	0.09
Coast Live Oak Woodland[2]	0.34
Developed	0.04
Disturbed	0.06
Non-native Vegetation	0.03
Ornamental	0.04
TOTAL	**0.64**

[1] Acreage is rounded to the nearest hundredth.
[2] Sensitive habitats pursuant to CDFW's Natural Communities List (2019).

Riparian/Riverine and Vernal Pool Species

No Riparian/Riverine or Vernal Pool plant species were observed on the study area during any of the site visits. The study area does not support suitable habitat for 11 of the 12 Riparian/Riverine or Vernal Pool animal species. The study area supports suitable habitat for LBVI and focused surveys will be conducted prior to impacts in compliance with MM Bio-2.

As discussed above, the proposed project is consistent with MSHCP Section 6.1.2.

5.5.2 Narrow Endemic Plant Species (MSHCP Section 6.1.3)

The study area is not located within a NEPSSA; therefore, no focused surveys were required and the proposed project is consistent with Section 6.1.3 of the MSHCP.

5.5.3 Urban/Wildland Interface Guidelines (MSHCP Section 6.1.4)

Proposed developments adjacent to MSHCP Conservation Areas may create edge effects that can impact conserved biological resources. The MSHCP provides several guidelines that address potential indirect effects from proposed developments that are in proximity to MSHCP Conservation Areas. These guidelines include measures addressing quantity and quality of runoff generated by the development (i.e., drainage and toxics), night lighting, noise, non-native invasive plant species, barriers to humans and animal predators, and grading/land development encroachment.

The study area does not occur adjacent to land targeted for conservation or existing MSHCP Conservation Areas. The nearest MSHCP Conservation Area is Constrained Linkage 7, which is approximately 1.4 miles to the southwest of the study area. Existing development separates the study area from Constrained Linkage 7.

5.5.3.1 Drainage

The project will incorporate measures to avoid discharge of untreated surface runoff into downstream waters. Measures will include those required for construction pursuant to the State Water Resources Control Board General Construction Storm Water Permit and the project Storm Water Pollution Prevention Program, while post-construction water quality measures will be implemented in compliance with the National Pollutant Discharge Elimination System, Municipal Storm Drain Permit requirements, and subsequent 401 Water Quality Certification from RWQCB for the project. The project will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes downstream from the study area. In addition, post-construction Best Management Practices are intended to help ensure that post-project hydrologic conditions remain consistent with pre-project conditions, therefore minimizing the potential for downstream erosion and/or sedimentation that could otherwise result from implementation of the proposed project.

5.5.3.2 Toxics

Land uses that use chemicals or generate bio-products that are potentially toxic or may adversely affect wildlife species, habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge into downstream waters. Measures such as those employed to address drainage issues would be implemented by the proposed project to avoid the potential impacts of toxics.

5.5.3.3 Lighting

The study area is not located within or directly adjacent to an MSHCP Conservation Area. The nearest Conservation Area is located 1.4 miles to the southwest of the study area. Therefore, construction lighting and ambient lighting from the proposed development would not reach the Conservation Area.

5.5.3.4 Noise

The project does not occur directly adjacent to MSHCP Conservation Areas, which are separated by agricultural fields and/or existing development. Therefore, noise standards are not applicable.

5.5.3.5 Invasives

The project shall not use invasive plants for erosion control, landscaping, wind rows, or other purposes. A mitigation measure (BIO-6) is provided in Section 6.0 below, which requires the project to comply with the MSHCP and avoid the use of invasive, non-native plants in accordance with MSHCP Table 6.2.

5.5.3.6 Barriers

Since the study area is not directly adjacent to the MSHCP Conservation Area, barriers or signage are not necessary.

5.5.3.7 Grading/Land Development

The project is not adjacent to an existing or proposed MSHCP Conservation Areas. Therefore, manufactured slopes associated with proposed site development will not extend into an MSHCP Conservation Area.

5.5.4 Additional Surveys (MSHCP Section 6.3.2)

The study area is not within a CASSA or an Amphibian or Mammal Species Survey Area. No impacts to CASSA species or sensitive amphibian or mammal species are proposed.

The study area is within the MSHCP BUOW Survey Area and supports suitable habitat and burrows. Focused surveys are currently being conducted during the 2020 survey season, in accordance with the County's survey protocol (2006). Additionally, a pre-construction survey is required within 30 days of ground disturbance pursuant to the MSHCP. A mitigation measure requiring a pre-construction survey and avoidance of active nests and/or relocation of BUOW (if BUOWs are observed) is included as MM BIO-1 in Section 6.0 below.

As discussed above, the proposed project is consistent with MSHCP Section 6.3.2.

5.5.5 Fuels Management (MSHCP Section 6.4)

The property is not adjacent to an MSHCP Conservation Area. Therefore, fuel modification impacts would not extend into a conservation area. The project is consistent with MSHCP Section 6.4.

5.5.6 Multiple Species Habitat Conservation Plan and Stephens' Kangaroo Rat Fees

In order for the project to participate in the MSHCP, the project proponent is required to pay a LDMF in order to finance the acquisitions of conservation areas to provide habitat for MSHCP covered species (County 2003). The LDMF must be paid prior to issuance of a building permit. The applicant shall pay the LDMF as determined by the County. Final fee credits shall be determined through coordination with the County.

The study area is also within the Stephens' kangaroo rat HCP but is not located within any of the core reserves (County 1996). Therefore, the project is required to pay a Stephens' kangaroo rat mitigation fee for incidental take authorization under the Stephens' kangaroo rat HCP.

A mitigation measure (BIO-7) is provided in Section 6.0, which requires the project proponent to pay the MSHCP LDMF and Stephens' kangaroo rat HCP fees.

6.0 MITIGATION MEASURES

The following provides recommended measures intended to minimize or avoid impacts to biological resources:

BIO-1 **Burrowing Owl**: In compliance with the MSHCP, a pre-construction survey shall be conducted on the study area within 30 days prior to ground disturbance to determine presence of burrowing owls. If the pre-construction survey is negative and burrowing owl is confirmed absent, then ground-disturbing activities (i.e., earthwork, clearing, and grubbing) shall be allowed to commence and no further mitigation would be required.

,

If BUOW is observed during the focused surveys or during the pre-construction survey, active burrows shall be avoided by the project in accordance with the California Department of Fish and Wildlife's (CDFW) *Staff Report on Burrowing Owl Mitigation* (2012) or CDFW's most recent guidelines. The Project Proponent shall immediately inform the Western Riverside County Regional Conservation Authority (RCA) of BUOW observations. A BUOW Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by RCA prior to initiating ground disturbance. The RCA will coordinate directly with CDFW as needed to ensure that the plan is consistent with the MSHCP and CDFW guidelines. The plan shall detail avoidance measures that shall be implemented during construction and passive or active relocation methodology. Relocation shall only occur outside of the nesting season (September 1 through January 31). The RCA may require translocation sites to be created within the MSHCP Conservation Area for the establishment of new colonies. If required, the translocation sites must take into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species in order to successfully create suitable habitat for BUOW. The translocation sites must be developed in consultation with RCA. If required, translocation sites would also be described in the agency-approved plan.

BIO-2 **Least Bell's Vireo**. Due to presence of suitable habitat for least Bell's vireo within the study area, the following avoidance and minimization measures shall be implemented to avoid potential impacts to the species:

1. Construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the breeding season for least Bell's vireo (March 15 through August 31).

2. If construction activities (i.e., earthwork, clearing, grubbing, etc.) are proposed within the breeding season of least Bell's vireo, focused protocol surveys for least Bell's vireo shall be conducted prior to commencement of construction activities, within all suitable habitat located on the study area, along with a 500-foot buffer where suitable habitat occurs, to determine whether the habitat is occupied. Focused surveys for least Bell's vireo shall be conducted by a qualified biologist and during the breeding season in accordance with the most recent USFWS guidelines. The results of the focused surveys shall be documented by the qualified biologist and submitted to USFWS and/or CDFW.

If the qualified biologist determines that least Bell's vireo do not occur within 500 feet of the proposed construction, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that the habitat is occupied by least Bell's vireo, the following avoidance and minimization measures shall be implemented:

a. No construction activities may occur within 500 feet of an active nest of a least Bell's vireo. A qualified biologist shall clearly delineate the required avoidance buffer around the active least Bell's vireo nest. The buffer shall be clearly marked with flags and/or fencing prior to the initiation of construction activities.

b. If construction activities are proposed within 500 feet of an occupied nest, a biological monitor shall be required to observe the behavior of any breeding least Bell's vireo. The construction supervisor shall be notified if the construction activities appear to be altering the birds' normal breeding behavior. No construction activities will be allowed within 500 feet of an occupied nest until additional minimization measures have been performed. Such measures may include retaining a qualified acoustician to determine ambient noise levels and project-related noise levels at the edge of occupied habitat. Noise levels at the edge of the occupied habitat shall not exceed an hourly average of 60 decibels (dB[A]), or a 3 dB(A) increase in noise levels if ambient noise levels exceed 60 dB(A). If project-related noise levels at the edge of the occupied habitat are above 60 dB(A) or the 3 dB(A) increase in noise occurs, additional minimization measures shall be taken to reduce project-related noise levels to an acceptable level as determined by the biological monitor. Measures may include, but are not limited to, limitation on the use of certain equipment, placement of equipment, restrictions on the simultaneous use of equipment, use of noise barriers, or other noise attenuation methods as deemed appropriate by the biologist and acoustician. The USFWS and/or CDFW shall be notified of additional minimization measures taken to reduce noise during construction activities. If the biological monitor determines the construction activities are posing a potential risk to the nest after implementing the additional minimization measures, the noise generating construction activities shall cease until USFWS and/or CDFW are contacted to discuss alternative methods. The biological monitor shall prepare written documentation of all monitoring activities at the completion of construction activities, which shall be submitted to CDFW/or USFWS.

c. All project personnel shall attend a training program presented by a qualified biologist prior to construction activities. The training program will inform project personnel about the life history of least Bell's vireo and all avoidance and minimization measures.

d. The construction contractor shall only allow construction activities to occur during daylight hours and high noise levels shall generally be limited according to these hours.

e. The construction contractor shall require functional mufflers on all construction equipment (stationery or mobile) used within or immediately adjacent to any 500-foot avoidance buffers to reduce construction equipment noise. Stationing

equipment situated so that noise generated from the equipment is not directed towards any habitat occupied by least Bell's vireo.

The construction contractor will place staging areas as far as feasible from any occupied nest by least Bell's vireo.

BIO-3 **Jurisdictional Resources**: Prior to issuance of a grading permit for impacts to jurisdictional resources, the City shall obtain regulatory permits from USACE, RWQCB, and CDFW (collectively, the "Resource Agencies"). Compensatory mitigation for permanent impacts to jurisdiction shall be required as part of subsequent permitting requirements. Permanent impacts to jurisdictional resources shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at ratio of no less than 2:1. The following minimization measures will be implemented during construction:

- Use of standard Best Management Practices (BMPs) to minimize the impacts during construction.
- Construction-related equipment will be stored in developed areas, outside of drainages.
- Source control and treatment control BMPs will be implemented to minimize the potential contaminants that are generated during and after construction. Water quality BMPs will be implemented throughout the project to capture and treat potential contaminants.
- To avoid attracting predators during construction, the project shall be kept clean of debris to the extent possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from site.
- Employees shall strictly limit their activities, vehicles, equipment and construction material to the proposed project footprint, staging areas, and designated routes of travel.
- Exclusion fencing should be maintained until the completion of construction activities.

BIO-4 **Nesting Birds:** Construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds, which is March 1 through August 31 for songbirds and January 15 to August 31 for raptors.

If construction activities (i.e., earthwork, clearing, and grubbing) must occur during the general bird nesting season for migratory birds and raptors (January 15 and August 31), a qualified biologist shall be retained to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the MBTA and CFG Code. The pre-construction survey shall be performed no more than seven days prior to the commencement of construction activities. The results of the pre-construction survey shall be documented

by the qualified biologist. If construction is inactive for more than seven days, an additional survey shall be conducted.

If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, no impacts within 300 feet (500 feet for raptors) of the active nest shall occur until the young have fledged the nest and the nest is confirmed to no longer be active, or as determined by the qualified biologist. The biological monitor may modify the buffer or propose other recommendations in order to minimize disturbance to nesting birds.

BIO-5 **Protected Street Trees:** Prior to impacting any planted street trees within the project site, the City shall obtain a street tree removal permit in accordance with the City's street tree protection measures (City of Wildomar 2008).

BIO-6 **MSHCP Landscaping Restrictions**: In accordance with MSHCP Section 6.1.4, no species listed in Table 6-2, *Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area*, shall be used in the project landscape plans (including hydroseed mix used for interim erosion control).

BIO-7 **Habitat Conservation Plan Fees**: The City is subject to the MSHCP LDMF and the Stephens' Kangaroo Rat HCP Fee, which shall be paid prior to issuance of any grading permit.

7.0 CERTIFICATION/QUALIFICATION

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

Daniel Torres	B.S., Ecology and Natural Resources, Rutgers University, 2013
Ezekiel Cooley	B.S., Natural Resources with an emphasis in Wildlife, Central Michigan University, 2004
Amir Morales	B.S., Hydrological Sciences, Minor Geographic Information Systems, University of California Santa Barbara, 2001

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Appendix A

PLANT SPECIES OBSERVED		
Family	**Scientific Name**	**Common Name**
ANGIOSPERMS – EUDICOTS		
Aizoaceae	*Carpobrotus edulis**	icelant
Apieaceae	*Apiastrum angustifolium*	wild celery
Anacardiaceae	*Malosma laurina*	laurel sumac
	*Schinus molle**	Peruvian peppertree
Apocynaceae	*Nerium oleander**	common oleander
Araliaceae	*Schefflera arboricola**	umbrella tree
Asteraceae	*Baccharis pilularis*	coyote brush (ornamental)
	Baccharis salicifolia	mule fat
	*Centaurea melitensis**	tocalote
	*Cirsium vulgare**	bull thistle
	*Dimorphotheca sinuata**	African daisy
	Encelia farinosa	brittlebush
	Erigeron canadensis	horseweed
	Helianthus annuus	common sunflower
	Heterotheca grandiflora	telegraph weed
	*Lactuca serriola**	prickly lettuce
	*Pseudognaphalium luteoalbum**	Jersey cudweed
	*Sonchus asper**	prickly sow thistle
	Stephanomeria virgata	wirelettuce
Brassicaceae	*Hirschfeldia incana**	short-pod mustard
Cactaceae	*Opuntia ficus-indica**	mission prickly-pear
Chenopodiaceae	*Salsola tragus**	Russian thistle
Euphorbiaceae	*Croton setiger*	dove weed
	*Euphorbia tirucalli**	sticks on fire
Fabaceae	*Acacia redolens**	bank catclaw
	Acmispon glaber	deerweed
Fagaceae	*Quercus agrifolia*	coast live oak
Geraniaceae	*Erodium cicutarium**	redstem filaree
Lamiaceae	*Rosmarinus officianilis**	rosemary
Meliaceae	*Melia azedarach**	China berry tree
Moraceae	*Morus alba**	white mulberry
Myrsinaceae	*Lysimachia arvensis**	scarlet pimpernel
Myrtaceae	*Callistemon citrinus**	Crimson bottlebrush
	*Eucalyptus camaldulensis**	river red gum
Oleaceae	*Olea europea**	olive
Polygonaceae	*Eriogonum fasciculatum*	buckwheat
	Eriogonum gracile	slender wooly buckwheat
Salicaceae	*Populus nigra**	black poplar
	Populus fremontii ssp. *fremontii*	Fremont cottonwood
	Salix gooddingii	Goodding's black willow
	Salix laevigata	red willow
	Salix lasiolepis	arroyo willow
Solanaceae	*Datura wrightii*	Jimson weed
	*Nicotiana glauca**	tree tobacco
Tamaricaceae	*Tamarix ramosissima**	saltcedar
Ulmaceae	*Ulmus parvifolia**	Siberian elm

PLANT SPECIES OBSERVED		
Family	**Scientific Name**	**Common Name**
Vitaceae	*Vitis* sp.*	Grape (ornamental)
ANGIOSPERMS – MONOCOTS		
Arecaceae	*Phoenix canariensis**	Canary island date palm
	*Syagrus romanzoffiana**	queen palm
	Washingtonia sp.*	Mexican fan palm
Asphodelaceae	*Aloe maculata**	soap aloe
Poaceae	*Avena barbata**	slender oat
	*Bromus diandrus**	common ripgut grass
	Bromus madritensis ssp. *rubens**	red brome
	*Cynodon dactylon**	bermuda grass
	Leptochloa fusca ssp. *uninervia**	Mexican sprangletop
	Muhlenbergia rigens	deergrass (ornamental)
	*Pennisetum setaceum**	fountain grass
	*Polypogon monspeliensis**	rabbitsfoot grass
	*Schismus barbatus**	Mediterranean grass
	*Stipa tenuissima**	finestem needlegrass
GYMNOSPERMS		
Pinaceae	*Pinus halepensis**	Aleppo pine

*Non-native species

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Appendix B

ANIMAL SPECIES OBSERVED OR DETECTED			
Order	**Family**	**Scientific Name**	**Common Name**
Birds			
Accipitriformes	Accipitridae	*Buteo lineatus*	red-shouldered hawk
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferous*	killdeer
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Corvidae	*Corvus brachyrhynchos*	American crow
	Fringillidae	*Haemorhous mexicanus*	house finch
	Passerellidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
	Passeridae	*Passer domesticus*	house sparrow
	Tyrannidae	*Sayornis nigricans*	black phoebe
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker

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Photograph 1: View of the southern cottonwood-willow riparian forest in the northwestern portion of the study area, facing northwest. Non-native vegetation can be seen in the left of the photo.

Photograph 2: View of developed land along Clinton Keith Road in the southeastern portion of the study area. This photo was taken facing north towards the intersection of Clinton Keith Road and Palomar Street.

Photograph 3: View of disturbed habitat in the southern portion of the study area, facing southeast.

Photograph 4: View of developed land, disturbed habitat, and non-native grassland in the southern portion of the study are, facing north. Palomar Street can be seen in the on the right of the photo.

See Figure 5 for photograph locations.

Source: HELIX 2019

Photograph 1: View of Drainage A in the central portion of the project site facing north (upstream) at box culvert.

Photograph 2: View of Drainage A in the central portion of the project site facing south (downstream).

Photograph 3: View of Drainage B in the western portion of the project site facing north (upstream) at culvert outlet.

Photograph 4: View of Drainage B in the western portion of the project site facing north (downstream) at culvert outlet.

See Figure 6 for photograph locations.

Source: HELIX 2019

Photograph 5: View of Drainage C in the western portion of the project site facing south (downstream) at culvert inet at Palomar Street.

Photograph 6: View of Drainage C in the western portion of the project site facing north (upstream) from culvert at Palomar Street.

Photograph 7: View of Drainage C in the western portion of the project site facing north (upstream) at culvert outlet at Palomar Street.

Photograph 8: View of Drainage C in the western portion of the project site facing south (downstream).

See Figure 6 for photograph locations.

Source: HELIX 2019

Appendix E

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Abronia villosa var. *aurita*	chaparral sand-verbena	CRPR 1B.1	Small annual herb. Occurs on sandy floodplains or flats in generally inland, arid areas of sage scrub and open chaparral. Elevation range 0-1600 m. Flowering period Mar-Aug.	**None.** The study area does not support sage scrub or chaparral.
Allium munzii	Munz's onion	FE/ST CRPR 1B.1 MSHCP Covered Species (b)	Medium perennial herb. Occurs on clay soils in chaparral, cismontane woodland, coastal sage scrub, pine-juniper woodland, and valley and foothill grasslands. Elevation range 300-900 m. Flowering period Apr-May.	**None.** The study area does not support clay soils.
Almutaster pauciflorus	alkali marsh aster	CRPR 2B.2	Perennial herb. Occurs in meadows and seeps on alkaline soil. Elevation range 200-700 m. Flowering period Jun-Oct.	**None.** The study area does not support alkaline soils, meadows, or seeps.
Ambrosia pumila	San Diego ambrosia	FE CRPR 1B.1 MSHCP Covered Species (b)	Small perennial herb. Occurs on clay, sandy loam, and sometimes alkaline soils. Found in grasslands, valley bottoms, and dry drainages. Can occur on slopes, disturbed places, in coastal sage scrub and chaparral. Elevation range 50-600 m. Flowering period Apr-Jul.	**Low.** The study area supports suitable sandy loam soils and disturbed habitat for this species. This species was recorded on CNDDB in 2014, approximately 8.3 miles to the southeast of the study area, adjacent to the Santa Gertrudis Creek.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Arctostaphylos rainbowensis	rainbow manzanita	CRPR 1B.1 MSHCP Covered Species (e)	Large conspicuous shrub. Southern mixed chaparral is preferred habitat with a relatively dense canopy from 6 to 8 feet. Elevation range 150-800 m. Flowering period Jan-Feb.	**None.** The study area does not support chaparral.
Ayenia compacta	California ayenia	CRPR 2B.3	Small perennial herb. Occurs within rocky and sandy washes in the desert within Mojavean, Sonoran, and creosote bush scrub habitats. Elevation range 150-1095 m. Flowering period Mar-Apr.	**None.** The study area does not support desert habitats.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE CRPR 1B.1 MSHCP Covered Species (d)	Medium perennial herb. Occurs in clay soils within vernally moist grasslands and vernal pool periphery are typical locales. Elevation range 25-860 m. Flowering period Mar-Jun.	**None.** The study area does not support clay soils or vernally moist areas.
Brodiaea orcuttii	Orcutt's brodiaea	CRPR 1B.1 MSHCP Covered Species	Perennial herb. Occurs in vernally moist grasslands, mima mound topography, and vernal pool periphery are preferred habitat. Occasionally will grow on streamside embankments in clay soils. Elevation range 0-1600 m. Flowering period Apr-Jul.	**None.** The study area does not support vernally moist areas or clay soils.
Brodiaea santarosae	Santa Rosa basalt brodiaea	CRPR 1B.2	Small perennial herb. Occurs in soils derived from Santa Rosa Basalt within grassland habitat. Elevation range 580-1045 m. Flowering period May-Jun.	**None.** The study area is not located on Santa Rosa Basalt.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Calochortus weedii var. *intermedius*	intermediate mariposa lily	CRPR 1B.2 MSHCP Covered Species	Medium perennial herb. Occurs on dry, rocky slopes within openings in chaparral, coastal scrub, and grassland habitats. Elevation range 0-680 m. Flowering period Jun-Jul.	**None.** The study area does not support
Centromadia pungens ssp. *laevis*	smooth tarplant	CRPR 1B.1 MSHCP Covered Species (d)	Medium annual herb. Occurs within valley and foothill grasslands, particularly near alkaline locales. Elevation range 90-500 m. Flowering period Apr-Sep.	**None.** The study area does not support alkaline soils.
Chorizanthe parryi var. *parryi*	Parry's spineflower	CRPR 1B.1 MSHCP Covered Species (e)	Small annual herb. Occurs in sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral communities. Elevation range 90-800 m. Flowering period May-Jun.	**None**. The study area supports sandy soils but does not support grassland, coastal sage scrub, or chaparral habitats. The high level of disturbance on potentially suitable habitat precludes this species.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	CRPR 1B.2 MSHCP Covered Species	Small annual herb. Occurs within clay lenses largely devoid of shrubs. Can be occasionally seen on vernal pool and even montane meadows peripheries near vernal seeps. Elevation range 30-1500 m. Flowering period Apr-Jun.	**None.** The study area does not support clay soils or vernally moist areas.
Clinopodium chandleri	San Miguel savory	CRPR 1B.2 MSHCP Covered Species (b)	Medium perennial herb. Occurs on Gabbro and metavolcanic soils in interior foothills, chaparral, and oak woodland. Elevation range 0-1100 m. Flowering period Mar-Jul.	**None.** The study area does not support Gabbro or metavolcanic soils.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE CRPR 1B.1 MSHCP Covered Species	Small annual or perennial herb. Occurs in vernal pools or mima mound areas with vernally moist conditions are preferred habitat. Elevation range 0-705 m. Flowering period May-Jun.	**None.** The study area does not support vernally moist areas.
Geothallus tuberosus	Campbell's liverwort	CRPR 1B.1	Liverwort. Occurs in mesic soil within coastal scrubs and in vernal pools. Elevation range 10-600 m. Flowering period N/A.	**None.** The study area does not support vernal pools or coastal scrub.
Hesperocyparis forbesii	Tecate cypress	CRPR 1B.1	Large shrub or tree. Occurs within clay, gabbroic, or metavolcanic soils within closed-cone coniferous forest and chaparral habitats. Elevation range 80-1500 m. Flowering period N/A.	**None.** The study area does not support closed-cone coniferous forest or chaparral habitats.
Hordeum intercedens	vernal barley	CRPR 3.2 MSHCP Covered Species	Small annual grass. Saline flats and depressions in grasslands or in vernal pool basins. Elevation range 5-1000 m. Flowering period Mar.-Jun.	**None.** The study area does not support saline flats, depressions, or vernal pool basins.
Horkelia cuneata var. *puberula*	mesa horkelia	CRPR 1B.1	Medium perennial herb. Occurs in sandy or gravelly areas within chaparral, coastal sage scrub, and coastal mesas. Elevation range 70-870. Flowering period Mar-Jul.	**None.** The study area does not support chaparral, coastal sage scrub, or coastal mesas.
Juncus luciensis	Santa Lucia dwarf rush	CRPR 1B.2	Small annual grass-like herb. Occurs in mesic sandy soils within seeps, meadows, vernal pools, streams, and roadsides. Elevation 300-1900 m. Flowering period Apr-Jul.	**None.** The study area does not support appropriate mesic soils. The roads within the study area are paved and the peripheries of the roads are heavily disturbed.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	CRPR 1B.1 MSHCP Covered Species (d)	Medium annual herb. Occurs in coastal salt marsh, upper end of tidal inundation areas, and vernal pools. Elevation range 0-1000 m. Flowering period Apr-May.	**None.** The study area does not support suitable mesic areas.
Lilium parryi	lemon lily	CRPR 1B.2 MSHCP Covered Species (f)	Medium perennial herb. Meadows and seeps in lower and upper montane coniferous forest and riparian forest habitats. Elevation range 1220-2745 m. Flowering period Jun-Sep.	**None.** The study area does not support suitable habitat for this species and is below its elevation range.
Limnanthes alba ssp. *parishii*	Parish's meadowfoam	CRPR 1B.2 MSHCP Covered Species	Small annual herb. Occurs in montane meadows largely devoid of shrubs and with concentrations of annuals and herbaceous perennials (not grasses). Elevation range 600-2000 m. Flowering period Apr-May.	**None.** The study area does not support montane meadows and is below the elevation range for this species.
Monardella hypoleuca ssp. *intermedia*	intermediate monardella	CRPR 1B.3	Medium perennial herb. Typically occurs within understory of chaparral and cismontane woodland habitats. Occasionally observed within in lower montane coniferous forest habitat. Elevation range 400-1250 m. Flowering period Jun-Sep.	**None.** The study area does not support chaparral or cismontane woodland.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Myosurus minimus ssp. *apus*	little mousetail	CRPR 3.1 MSHCP Covered Species (d)	Small annual herb. Vernal pools and alkaline marshes. This cryptic species typically grows in the deeper portions of vernal pool basins, sprouting immediately after the surface water has evaporated. Elevation range 20-640 m. Flowering period Mar-Jun.	**None.** The study area does not support vernal pools or alkaline areas.
Navarretia fossalis	spreading navarretia	FT CRPR 1B.1 MSHCP Covered Species (b)	Small annual herb. Occurs in vernal pools, vernal swales, or roadside depressions. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Elevation range 30-1300 m. Flowering period Apr-Jun.	**None.** The study area does not support vernal pools or roadside depressions.
Navarretia prostrata	prostrate vernal pool navarretia	CRPR 1B.1 MSHCP Covered Species (d)	Small annual herb. Occurs in alkaline floodplain, meadows, seeps, and vernal pools within coastal scrub and valley and foothill grassland. Elevation range below 700 m. Flowering period Apr-Jul.	**None.** The study area does not support vernal pools.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1 MSHCP Covered Species (b)	Small annual herb. Occurs in or near vernal pools. This species tends to grow in wetter portions of the vernal pool basin but does not show much growth until the basins become somewhat desiccated. Elevation range 0-700 m. Flowering period Apr-Aug.	**None.** The study area does not support vernal pools.
Pseudognaphalium leucocephalum	white rabbit-tobacco	CRPR 2B.2	Medium biennial or short-lived perennial herb. Occurs in sandy and gravelly benches, dry stream and canyon bottoms within woodland, coastal scrub, and chaparral. Elevation range below 500 m. Flowering period Jul-Oct.	**Moderate.** The study area supports suitable sandy and gravelly areas within the drainages. This species was recorded in CNDDB in 1995, approximately 1.9 miles to the southeast of the study area.
Scutellaria bolanderi ssp. *austromontana*	southern mountain skullcap	CRPR 1B.2	Medium perennial herb. Occurs within gravelly soils along streambanks in oak and pine woodlands. Elevation 425-2000 m. Flowering period Jun-Aug.	**None.** The study area does not support suitable streambank habitat for this species.
Sibaropsis hammittii	Hammitt's clay-cress	CRPR 1B.2 MSHCP Covered Species (b)	Small annual herb. Occurs within clay and volcanic soils in grassland habitat and grassy openings in chaparral habitat. Elevation 720-1065 m. Flowering period Mar-Apr.	**None.** The study area does not support clay or volcanic soils.
Sphaerocarpos drewei	bottle liverwort	CRPR 1B.1	Liverwort. Openings within chaparral and coastal scrub habitats. Elevation range 90-600 m. Flowering period N/A	**None.** The study area does not support chaparral or coastal sage scrub habitats.

Appendix E (cont.)

RARE PLANT SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Symphyotrichum defoliatum	San Bernardino aster	CRPR 1B.2	Large perennial herb. Occurs in vernally mesic soils within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, grasslands, streams, springs, and disturbed ditches. Elevation range 0-2050 m. Flowering period Jul-Nov.	**None.** The project site does not support vernally mesic soils.

Source: HELIX (2020)

[1] Sensitive species reported within the Murrieta and Wildomar quadrangles based on a database search conducted on CNDDB and CNPS.

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened.
CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered. MSHCP Conditionally Covered Species (a) through (f): (a) surveys may be required for species as part of wetland mapping (MSHCP Section 6.1.2); (b) surveys may be required for species within Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3); (c) surveys may be required for species within locations shown on survey maps (MSHCP Section 6.3.2); (d) surveys may be required for species within Criteria Area Species Survey Area (MSHCP Section 6.3.2); (e) covered species will be considered to be covered species adequately conserved when conservation requirements identified in species-specific conservation objectives have been met (MSHCP Table 9-3); and (f) covered species will be conserved covered species adequately conserved when a Memorandum of Understanding is executed with the Forest Service that addresses management for these species on Forest Service Land (MSHCP Table 9-3).

[3] Potential to Occur is assessed as follows: **None**: Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and/or the study area is not within the elevation range of the species; **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; Presumed **Present**: The species was observed during focused surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused surveys for the species were negative.

Appendix F

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Insects				
Bombus crotchii	Crotch bumble bee	--/SCE	Coastal California east to the Sierra-Cascade crest and south into Mexico. Species' food genera include *Antirrhinum* sp.*, Phacelia* sp.*, Clarkia* sp.*, Dendromecon* sp.*, Eschscholzia* sp.*, and Eriogonum* sp.	**None.** The study area does not support chaparral, coastal sage scrub habitat, or food sources.
Euphydryas editha quino	quino checkerspot butterfly	FE/-- MSHCP Covered Species	Open, sunny areas within chaparral and coastal sage scrub. Host plants are *Plantago* spp.*, Antirrhinum coulterianum*, and *Cordylanthus rigidus*.	**None.** The study area does not support chaparral or coastal sage scrub habitat.
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FT MSHCP Covered Species (a)	Most commonly found in swale, earth slump, or basal-flow depression pools in unplowed grasslands. Requires cool-water pools.	**None.** The study area does not support vernal pools.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	Vernal pools. Endemic to mesas in San Diego and Orange Counties.	**None.** The study area does not support vernal pools.
Streptocephalus woottoni	Riverside fairy shrimp	FE MSHCP Covered Species (a)	Typically requires deep vernal pools and seasonal wetlands at least 30 centimeters deep.	**None.** The study area does not support vernal pools.
Fish				
Gila orcuttii	arroyo chub	SSC MSHCP Covered Species	Prefers slow moving streams or backwaters with sand or mud bottoms. Streams are typically deeper than 40 centimeters (16 inches). Primary food source is aquatic vegetation and invertebrates.	**None.** The study area does not support perennial streams.
Amphibians				

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Anaxyrus californicus	arroyo toad	FE/SSC MSHCP Covered Species (c)	Found on banks with open-canopy riparian forest characterized by willows, cottonwoods, or sycamores; breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**None.** The study area does not support suitable aquatic habitat for this species.
Rana draytonii	California red-legged frog	FT/SSC	Suitable habitat is characterized by dense, shrubby riparian vegetation with deep, slow-moving water. Readily displaced by introduced aquatic predators, including bullfrogs (*Lithobates catesbiana*) or crayfish (*Procambarus* spp.).	**None.** The study area does not support deep, slow-moving water.
Spea hammondii	western spadefoot	SSC MSHCP Covered Species	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires vernal pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* spp.)	**None.** The study area does not support coastal sage scrub, chaparral, or grassland habitats**.**
Taricha torosa	Coast Range newt	SSC MSHCP Covered Species	Breeds in ponds, reservoirs, and slow-moving stream pools; often found in riparian forest, woodlands, chaparral, or grassland within one kilometer of breeding habitat.	**None.** The study area does not support ponds, reservoirs, or streams.

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Reptiles				
Anniella stebbinsi	Southern California legless lizard	SSC	Occurs in moist, warm, loose soil with plant cover. May be found in coastal sand dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Moderate.** The study area provides s small amount of suitable habitat within drainages supporting coast live oak woodland. This species was recorded on CNDDB in 2017 approximately 2.1 miles to the northwest of the study area.
Arizona elegans occidentalis	California glossy snake	SSC	Most common in desert habitats, but also occurs in chaparral, arid scrub, and annual grassland. Associated with sandy open areas with sparse shrub cover, but can also occur in rocky habitats.	**None**. The study area does not support chaparral, grassland, or scrub habitat.
Crotalus ruber	red diamond rattlesnake	SSC MSHCP Covered Species	Occurs in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**Low.** The study area supports a small amount of suitable habitat within the coast live oak woodland. The nearest occurrence recorded in CNDDB is an undated collection made approximately 2.5 miles to the southeast of the study area.
Emys marmorata	western pond turtle	SSC MSHCP Covered Species	Almost entirely aquatic; occurs in freshwater marshes, creeks, ponds, rivers and streams, particularly where basking sites, deep water retreats, and egg laying areas are readily available.	**None.** The study area does not support suitable aquatic habitat.

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Phrynosoma blainvillii	coast horned lizard	SSC MSHCP Covered Species	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* spp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**Low.** The study area supports a small amount of suitable habitat within the coast live oak woodland. The nearest occurrence recorded in CNDDB is an undated collection made approximately 2.5 miles to the southeast of the study area.
Thamnophis hammondii	two-striped gartersnake	SSC	Occurs in or near permanent fresh water bordered by dense riparian vegetation. Occasionally occurs in artificially created aquatic habitats, such as manmade lakes or stock ponds.	**None.** The study area does not support permanent fresh water.
Birds				
Aquila chrysaetos	golden eagle	SFP MSHCP Covered Species	Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation.	**None.** The study area does not support suitable open space for this species.
Athene cunicularia	burrowing owl	SSC MSHCP Covered Species (c)	Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow.	**Low.** The study area supports suitable habitat

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Buteo swainsoni	Swainson's hawk	ST MSHCP Covered Species	Breeds in open grassland with scattered trees or groves within agricultural/ranch lands. Forages for small mammals, reptiles, birds, and insects in adjacent grassland and agricultural fields.	**Low.** The study area supports a small amount of suitable nesting and foraging habitat within the coast live oak woodlands. However, this species has not been recorded on CNDDB within the vicinity of the study area since 1933.
Elanus leucurus	white-tailed kite	SFP MSHCP Covered Species	Nests in trees with dense canopies within open grasslands, woodlands, and marshes. Forages for small mammals within lightly grazed/ungrazed pastures and grasslands.	**Low.** The study area supports a small amount of suitable nesting and foraging habitat within the coast live oak woodlands.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC MSHCP Covered Species	Occurs in coastal sage scrub and very open chaparral.	**None.** The study area does not support coastal sage scrub or chaparral.
Vireo bellii pusillus	least Bell's vireo	FE/SE MSHCP Covered Species (a)	Inhabits riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat with a canopy of tall willows.	**Moderate.** The study area provides a small amount of suitable habitat for this species within the southern willow scrub. This species was recorded in CNDDB in 2007, approximately 3.75 miles to the southeast of the study area.
Mammals				
Chaetodipus californicus femoralis	Dulzura pocket mouse	SSC	Primarily associated with mature chaparral. It has, however, been trapped in mule fat scrub and is known to occur in coastal sage scrub.	**None.** The study area does not support chaparral, mule fat scrub, or coastal sage scrub.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC MSHCP Covered Species	Herbaceous openings within coastal sage scrub, chaparral, grasslands, and desert scrub. Often associated with sandy, rocky, or gravelly substrates.	**None.** The study area does not support coastal sage scrub, chaparral, grasslands, or desert scrub.

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE/SSC MSHCP Covered Species (c)	Generally associated with alluvial fan sage scrub, but also occurs in sage scrub, chaparral, and grassland in proximity to alluvial fan sage scrub habitats.	**None.** The study area does not support shrub or grassland habitats.
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST MSHCP Covered Species	Primarily occurs in sparsely vegetated areas within grassland habitats, but also found in open coastal scrub habitat. Feeds on filaree (*Erodium* sp.) and brome (*Bromus* sp.) seeds. Dig burrows in firm soil or use abandoned pocket gopher burrows.	**Moderate.** The study area supports suitable sparsely vegetated areas for this species.
Eumops perotis californicus	western mastiff bat	SSC	Roosts under exfoliating rock slabs on cliff faces and occasionally in large boulder crevices and building cracks. Forages in a variety of open areas, including washes, floodplains, chaparral, coastal sage scrub, woodlands, ponderosa pine forests, grassland, and agricultural areas.	**Low.** The study area does not support suitable roosting habitat but does support foraging habitat within the coast live oak woodland. This species was recorded on CNDDB in 2001 approximately 6.5 miles to the northeast of the study area.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC MSHCP Covered Species	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.	**Low.** The study area supports suitable disturbed habitat with a very minor amount of shrub cover.

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**
Perognathus longimembris brevinasus	Los Angeles pocket mouse	SSC MSHCP Covered Species (c)	Sandy, gravelly, or stony soils within coastal scrub, alluvial sage scrub, and grassland habitats.	**None.** The study area does not support scrub or grassland habitats.

Source: CDFW (2019), HELIX (2019)

[1] Sensitive species reported within the Murrieta quadrangle based on a database search conducted on CNDDB.

Appendix F (cont.)

SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]				
Species Name	**Common Name**	**Status[2]**	**Habitat, Ecology, and Life History**	**Potential to Occur[3]**

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; CT = Candidate Threated; FP = Fully Protected; SSC = State Species of Special Concern. MSHCP Conditionally Covered Species (a) through (f): (a) surveys may be required for species as part of wetland mapping (MSHCP Section 6.1.2); (b) surveys may be required for species within Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3); (c) surveys may be required for species within locations shown on survey maps (MSHCP Section 6.3.2); (d) surveys may be required for species within Criteria Area Species Survey Area (MSHCP Section 6.3.2); (e) covered species will be considered to be covered species adequately conserved when conservation requirements identified in species-specific conservation objectives have been met (MSHCP Table 9-3); and (f) covered species will be conserved covered species adequately conserved when a Memorandum of Understanding is executed with the Forest Service that addresses management for these species on Forest Service Land (MSHCP Table 9-3).

[3] Potential to Occur is assessed as follows. **None**: Species is so limited to a particular habitat that it cannot disperse across unsuitable habitat (*e.g.* aquatic organisms), and habitat suitable for its survival does not occur on the study area; **Not Expected**: Species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur on the study area (includes species recorded during surveys but only as transients); **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent for residence or breeding is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; **Presumed Present**: The species was observed during biological surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused/protocol surveys for the species were negative.