IRONWOOD VILLAGE

Biological Resources Assessment

Prepared for
1BH1 LLC

August 2016

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ESA PCR

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1.0 INTRODUCTION

1.1 Background and Purpose

This report presents the findings of a Biological Resources Assessment & Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis conducted by **ESA PCR** for the approximately 78.48-acre project site proposed for development of a single-family residential development associated with Assessor's Parcel Number (APN) 473-160-004 and approximately 10.57-acre off-site areas (collectively, the "study area"). The study area is located directly northeast of the intersection of Ironwood Avenue and Nason Street within the City of Moreno Valley, in Riverside County, California. The purpose of this study is to satisfy the requirements of the Western Riverside County Multiple Species Habitat Conservation (MSHCP), the California Environmental Quality Act (CEQA), and to supplement subsequent regulatory applications pursuant to Sections 404 and 401 of the Clean Water Act (CWA) and Section 1602 of the California Fish & Game Code (CF&G).

1.2 Sources

This Biological Resources Assessment & MSHCP Consistency Analysis (collectively, the "BRA") is based on information compiled through field reconnaissance and appropriate reference materials. A general biological survey, vegetation mapping, and investigation of jurisdictional waters and wetlands was conducted by ESA PCR. Focused surveys for special-status plant species and burrowing owl (*Athene cunicularia*) were also conducted. The information sources used in preparation of this BRA are provided in Section 9, *References*.

1.3 Study Area Location

The approximately 78.48-acre on-site study area and approximately10.57-acre off-site study areas are regionally situated north of State Route (SR) 60 and northeast of Interstate (I) 215 (**Figure 1**, *Regional Map*). Specifically, the study area is located northeast of the intersection of Ironwood Avenue and Nason Street in the City of Moreno Valley. The on-site and off-site project study areas are depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle (S34, T2S, R3W & S3, T3S, R3W) (USGS, 1967; Earth Survey, 2015), as shown in **Figure 2**, *Vicinity Map.* The specific location of each project study area is depicted on **Figure 3**, *Study Areas*. Off-site study areas associated with four types of proposed project improvements include manufactured slopes, road improvements, a sewer line extension, and water line extensions and described in detail below:

Manufactured Slopes (West & East) – There are two (2) off-site study area locations proposed to support manufactured slopes, including one area adjacent to Nason Street (West) and a second area adjacent to the eastern boundary of the project site (East).

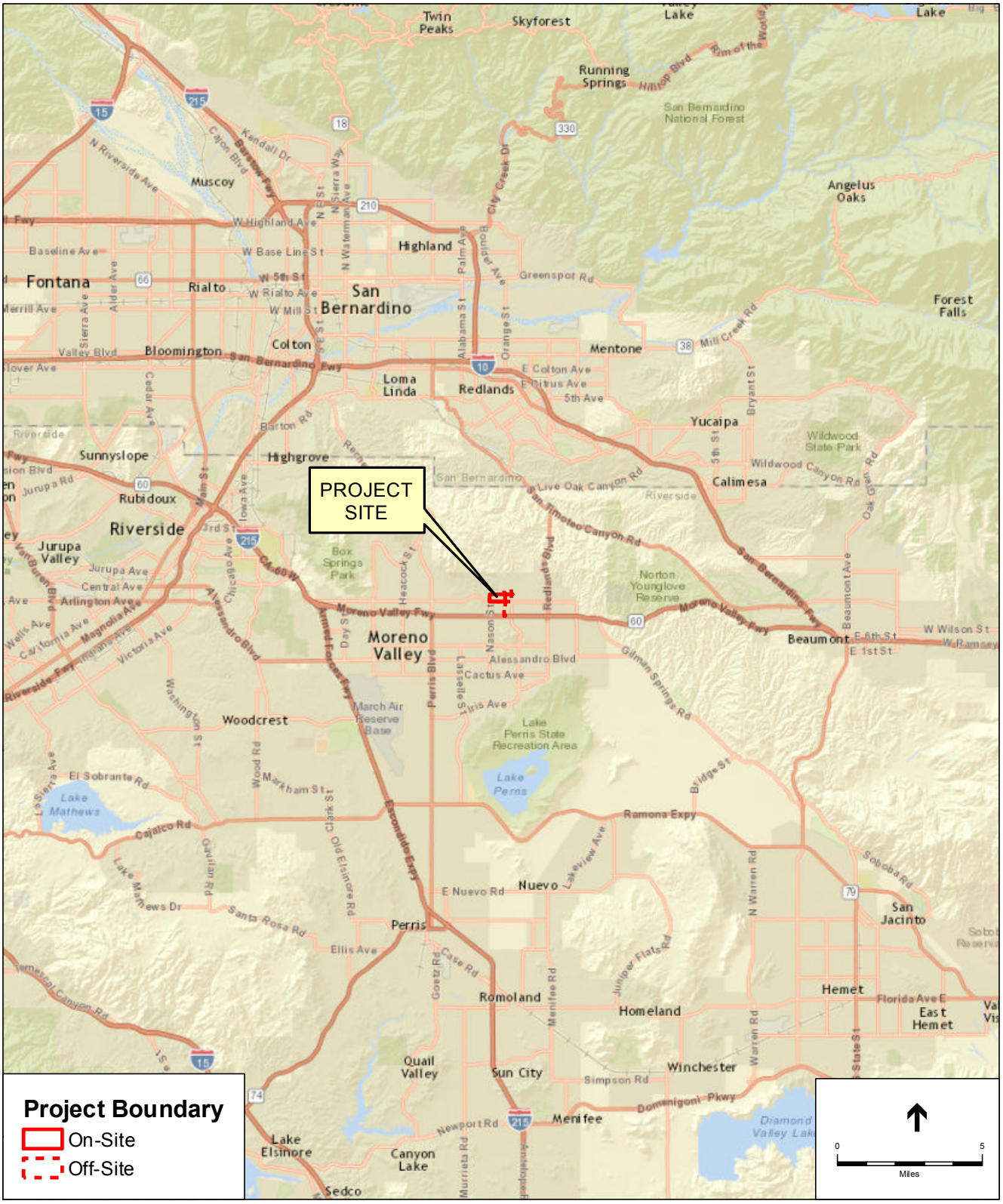
Road Improvements – There is one (1) road improvement area proposed between the area located directly north of Ironwood Avenue and south of the project site boundary.

Sewer Line – The sewer line is proposed to connect at the southeast corner of the project site at the intersection of Ironwood Avenue and Oliver Street and extend south along Oliver Avenue, ultimately ending at the SR-60 freeway.

Water line (Proposed and Alternatives) – Although the exact location of the final water line extension is still unknown, one proposed alignment and two (2) alternative alignments were assessed as part of the off-site project study areas. The Proposed Water Line would commence at the intersection of Ironwood Avenue and Oliver Street and extend east along Ironwood Avenue, continuing north along Moreno Beach Drive, and terminating at the intersection of Moreno Beach Drive and Kalmia Avenue. Water Line Alternative 1 would connect the water line at the northeast corner of the project site and extend north to an existing off-site water tower. Water Line Alternative 2 would commence at the northeastern corner of the project site and extend east toward the intersection of Moreno Beach Drive and Juniper Avenue.

1.4 Scope of Study

The scope of this BRA encompasses descriptions of the project, methods of study, and existing site conditions including vegetation communities and the potential for special-status biological resources, followed by an evaluation of impacts to special-status biological resources pursuant to CEQA thresholds and compliance with the Western Riverside County MSHCP. Avoidance, minimization, and/or mitigation measures are proposed to reduce any potential adverse effects to biological resources to less than significant under CEQA where appropriate.



SOURCE: ESRI Street Map, 2009.

Ironwood Village Project
Figure 1
Regional Map

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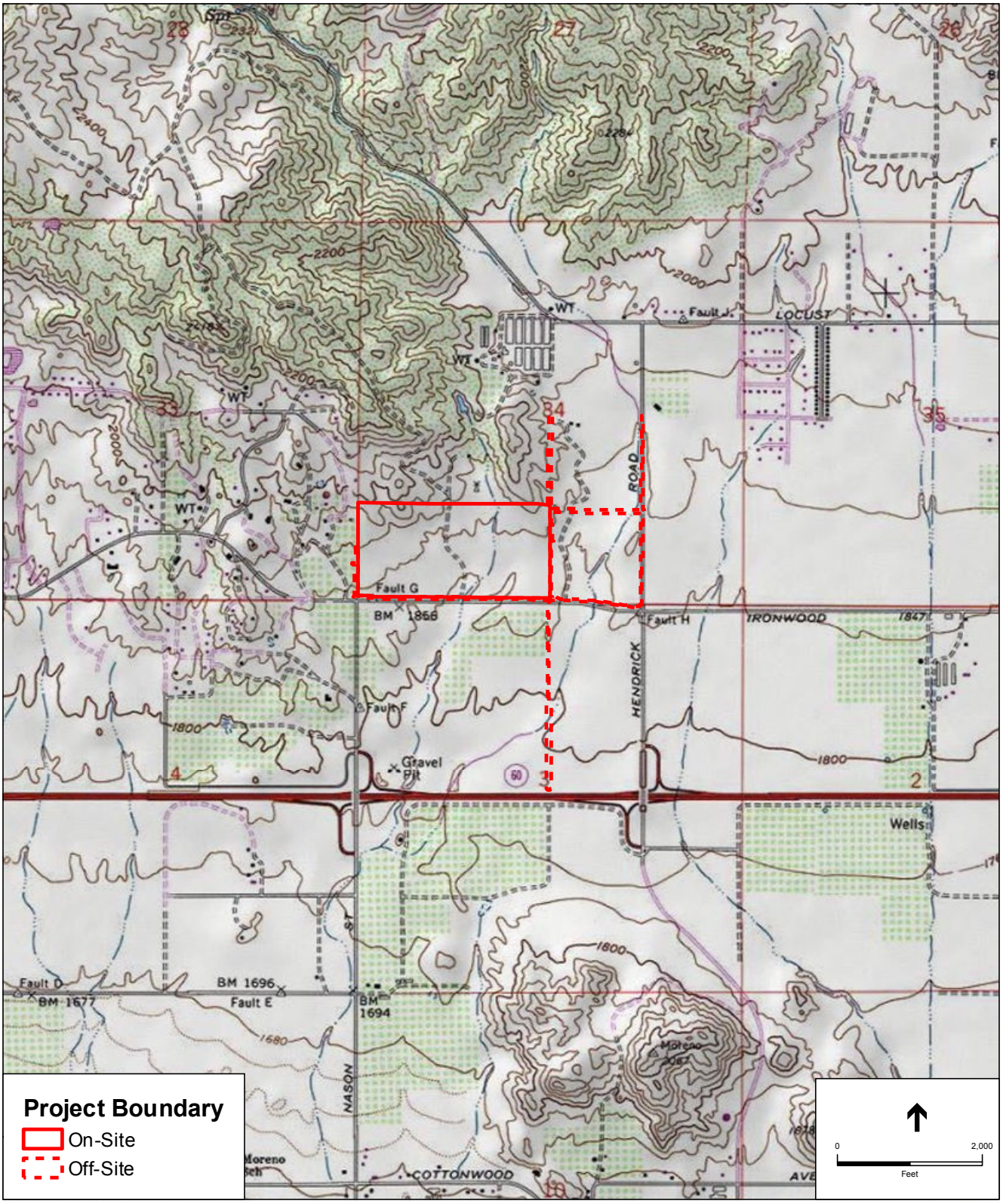

SOURCE: USGS Topographic Series (Sunnymead, CA).

Ironwood Village Project
Figure 2
Vicinity Map

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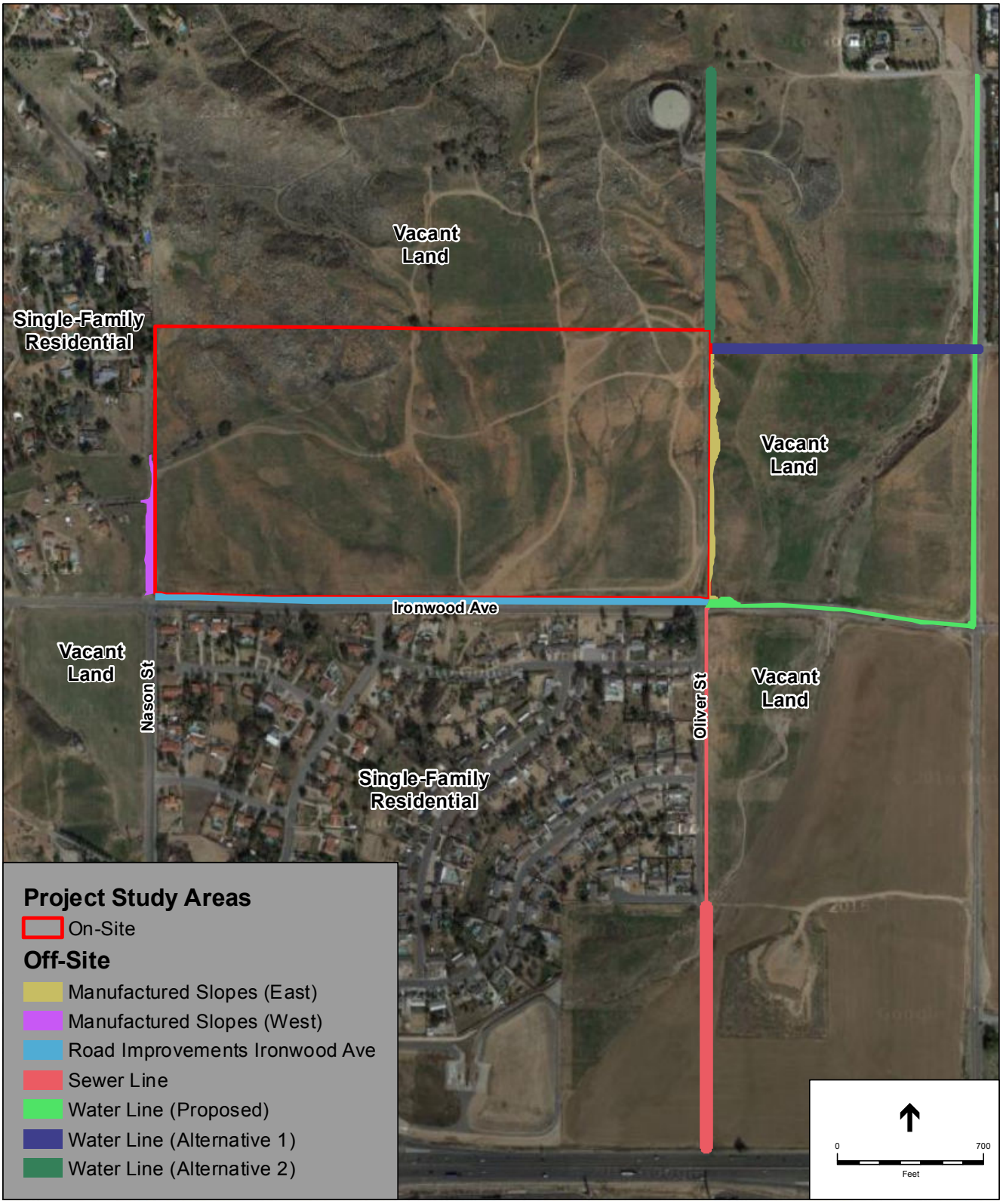

SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 3
Study Areas

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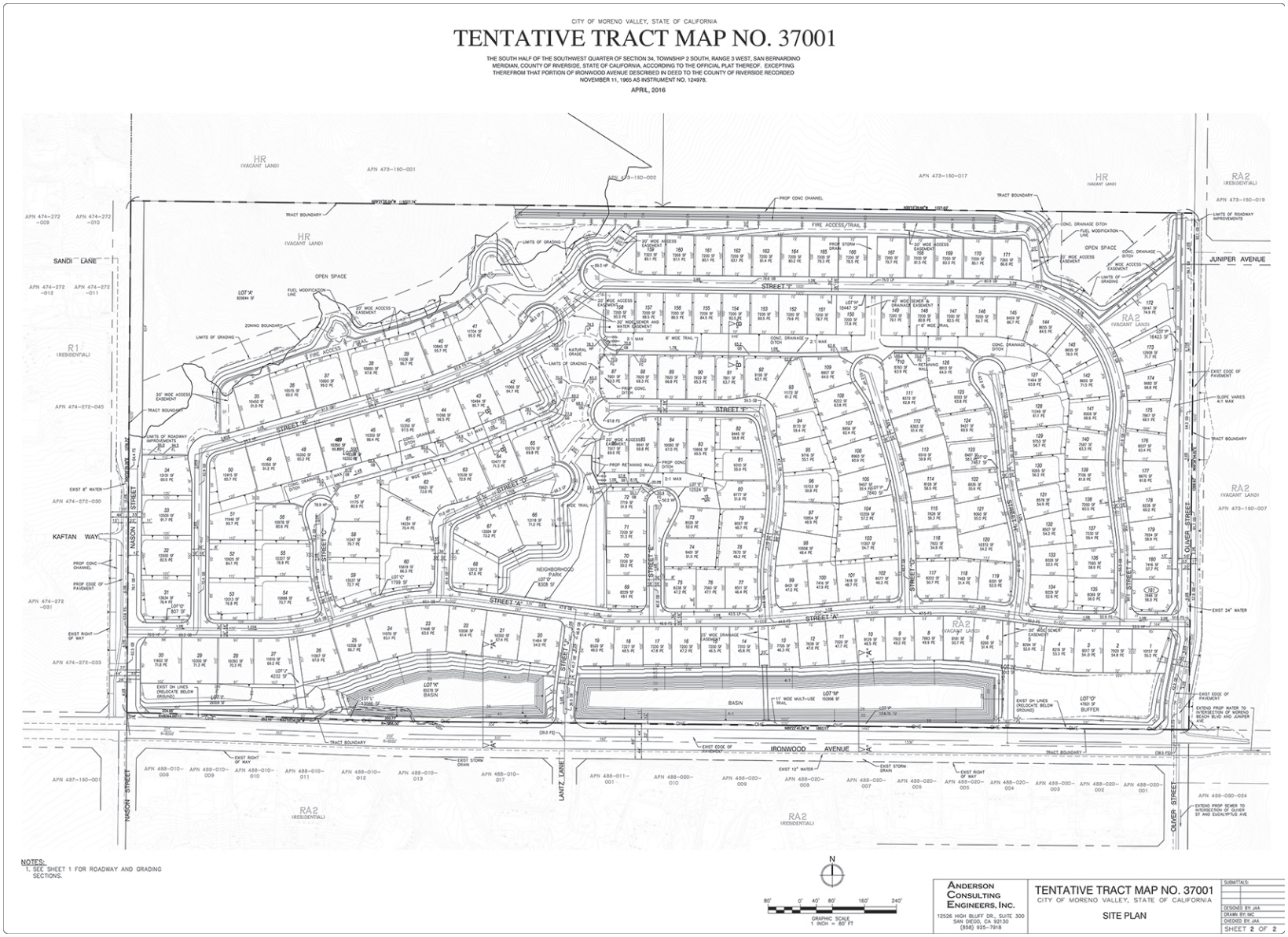
2.0 PROJECT DESCRIPTION

2.1 Project Description

The 78.48-acre project site is a proposed single-family residential development occupying approximately 38.5 acres, as shown in (**Figure 4**, *Site Plan*). The remaining acreage will be open space areas, which will consist of community open space areas that will be planted as appropriate to the project's climate and avoided areas in the northwestern and northeastern corner of the project site, which encompass native vegetation and rock outcroppings that will be preserved. Per Figure 3, there are four types of off-site areas associated with the project totaling 10.57 acres, including manufactured slope areas, road improvements, sewer line extension, and water line extensions (proposed and alternative). Sewer and water lines will be extended onto the site from existing utilities. Primary access to the development would occur from Ironwood Avenue between Nason Street and Oliver Street, immediately opposite from and north of Lantz Lane. Secondary access would be provided by driveways on both Nason Street and Oliver Street just north of Ironwood Avenue.

2.2 Project Avoidance

The project study areas consist primarily of non-native vegetation characterized by ruderal vegetation and disturbed areas that consist of little to no vegetation. There are some areas that support native plant communities, such as Riversidean sage scrub and brittlebush scrub, which predominantly reside in the northwestern corner of the on-site study area. The project proposes avoidance of the northwestern and northeastern corners of the on-site study area, which are located on hillsides that transition into the foothills of the Badlands mountain range located to the north of the project site. These avoided areas will be maintained as natural open space to preserve the scenic views of the hillsides from the City of Moreno Valley. The project on- and off-site study areas also support two drainage systems, which include Drainage A and Drainage Complex B, approximately 40% of which will be avoided.



SOURCE: Anderson Consulting Engineers, Inc., 2016

Ironwood Village Project

Figure 4
Site Plan

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3.0 METHODS OF STUDY

3.1 Approach

This BRA is based on information compiled through field reconnaissance and appropriate reference materials. Surveys included a general biological survey and vegetation mapping; an investigation of jurisdictional waters; focused plant surveys; and focused burrowing owl surveys.

3.2 Literature Review

Assessment of the study area began with a review of relevant literature on the biological resources of the study area and surrounding vicinity. The California Natural Diversity Database (CNDDB), a California Department of Fish and Wildlife (CDFW) species account database, was reviewed for all pertinent information regarding the localities of known observations of special-status species and habitats in the vicinity of the study area (CDFW, 2015). The vicinity of the study area included the following USGS topographic quadrangles: San Bernardino South, Redlands, Yucaipa, Riverside East, El Casco, Steele Peak, Perris, and Lakeview. Federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) (USFWS, 2015a), CDFW and the California Native Plant Society (CNPS, 2015) were reviewed in conjunction with anticipated Federally and State listed species potentially occurring within the vicinity. Other data sources reviewed include USFWS critical habitat maps (USFWS, 2015b) and United States Department of Agriculture Natural Resources Conservation Service (NRCS) soils mapping (NRCS, 2015). In addition, numerous regional flora and fauna field guides were utilized to assist in the identification of species and suitable habitats, in addition to relevant local policies such as the *Western Riverside County Multiple Species Habitat Conservation Plan* (MSHCP) (Dudek & Associates, 2003). A list of all relevant references reviewed is included in Section 9.0, *References*.

3.3 Field Investigations

A general biological survey and vegetation mapping was conducted by ESA PCR Senior Biologist Ezekiel Cooley on September 19, 2014 and investigations of jurisdictional waters were conducted by Principal Regulatory Scientist Amir Morales on September 19 and December 10, 2014. The observed vegetation communities, jurisdictional features, and other biological features or species observations of interest were mapped on aerial photographs. Biological surveys were conducted over all on-site and off-site study areas, with special attention to sensitive habitats such as those suitable for the burrowing owl and those areas potentially supporting special-status flora. The only exception is an off-site study area located directly east of the project study area proposed to support manufactured slopes. The eastern manufactured slopes support suitable

habitat for special-status plant species and a spring focused survey has not yet been conducted. As such, a mitigation measure addressing the potential for special-status plants to occur within this off-site area is included in Section 7.2.1 of this BRA. The following summarizes the extent of focused surveys conducted within the study areas identified on Figure 3.

Focused plant surveys were conducted within:

- the project site and off-site road improvement and sewer line areas on May 13, 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton and on July 20, 2015 by Amy Lee;
- the off-site proposed and alternative water line areas on May 23 and July 5, 2016 by Amy Lee; and
- the off-site manufactured slope areas on July 5, 2016 by Amy Lee. However, a spring focused plant survey has not been conducted within the off-site manufactured slope area located directly east of the site.

Focused burrowing owl surveys were conducted within:

- the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas from May to July 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton; and
- the alternative off-site water line areas from April to July 2016 by Amy Lee and Lauren Singleton.

During the course of all field visits, an inventory of plant and wildlife species observed was compiled. The methods for these field investigations are described in detail below.

3.3.1 Plant Community Mapping

Plant communities were mapped directly in the field utilizing a 125-scale (1”=125’) aerial photograph focusing on dominant plant species. Plant community names, codes, and descriptions follow *A Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf, and Evens, 2009) or Holland’s *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986). The California Natural Community Code (CaCodes) or Holland’s Element Code is in parentheses next to each community name, when applicable. After completing the fieldwork, the plant community polygons were digitized using Geographic Information System (GIS) technology to calculate acreages.

3.3.2 Sensitive Habitats

Sensitive habitats are listed by CDFW on their *List of Vegetation Alliances and Associations* (CDFW, 2010).[1] Communities on this list are given a Global (G) and State (S) rarity ranking on a scale of 1 to 5, where communities with a ranking of 5 are the most common and communities

[1] *Available online at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp*

with a ranking of 1 are the rarest and of the highest priority to preserve. These high priority communities are denoted on the CDFW list with asterisks. For the purpose of this report, sensitive habitats are those communities that have a state ranking of S3 or rarer. Any sensitive habitats located on the study area were identified based on the mapped natural communities (see section 3.3.1, *Plant Community Mapping*).

3.3.3 General Plant Inventory

All plant species observed during the general and focused surveys were either identified in the field or collected and later identified using taxonomic keys. Plant taxonomy follows Baldwin (2012). Common plant names, when not available from Baldwin, were taken from Munz (1974) and/or Clarke (2007). Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All plant species observed were recorded in field notes. Special-status plant species are discussed below in section 3.3.4, *Special-status Plant Species*.

3.3.4 Special-status Plant Species

The potential for special-status plant species was assessed based upon the known occurrence of species in the area as identified from CDFW, USFWS and CNPS databases (see Section 3.2, *Literature Review*), and the presence or absence of suitable habitat within the study area based on plant community mapping (see section 3.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities, soils and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and CNPS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the study area and local knowledge. A table of special-status plant species for which potentially suitable habitat occurs within the study area was prepared, and the potential for occurrence for each species was determined following completion of the vegetation mapping conducted during the field survey.

Due to the presence of potentially suitable habitat, focused plant surveys were conducted on the project site and off-site road improvement and sewer line areas by ESA PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton on May 13, 2015 and by Amy Lee on July 20, 2015. Focused plant surveys were also conducted on the off-site water line areas by Amy Lee on March 23, 2016 and July 5, 2016. Although a summer focused plant survey was conducted within the manufactured slope areas on July 5, 2016 by Amy Lee, a spring survey has not yet been performed in these areas. The manufactured slope area located west of the project boundary does not support suitable habitat for plants associated with the spring survey requirement. However, the manufactured slope area located east of the project boundary does require completion of a spring focused plant survey as summarized in Section 7.1.2 below. All focused plant surveys conducted to date were implemented in accordance with published agency guidelines (CDFW, 2009; CDFW, 2000a; and USFWS, 2000) and during the appropriate blooming periods of potential plant species to ensure detection of any special-status plants.

3.3.5 General Wildlife Inventory

All wildlife species observed within the study area, as well as any diagnostic sign (call, tracks, nests, scat, remains, or other sign), were recorded in field notes. Binoculars and regional field guides were utilized for the identification of wildlife, as necessary. Wildlife taxonomy follows Stebbins (2003) and California Herps (2015) for amphibians and reptiles, the American Ornithologists' Union (1998) for birds, and Jameson and Peeters (1988) for mammals. Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All wildlife species detected were recorded in field notes. Special-status wildlife species are discussed below in section 3.3.6, *Special-status Wildlife Species*.

3.3.6 Special-status Wildlife Species

The potential for special-status wildlife species was assessed based upon the known occurrence of species in the area as identified from CDFW and USFWS databases (see section 3.2, *Literature Review*), and the presence or absence of suitable habitat within the study area based on plant community mapping (see section 3.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and USFWS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the study area as well as local knowledge. A table of special-status wildlife species for which potentially suitable habitat occurs within the study area was prepared, and the potential for occurrence for each species was determined following completion of the vegetation mapping conducted during the field survey.

Due to the presence of potentially suitable habitat and MSHCP requirements, focused surveys were conducted for burrowing owl. A summary of the survey methodology is provided below; a separate survey report was also prepared following completion of the focused surveys. No other focused surveys were conducted for special-status wildlife species.

Burrowing Owl

The study area supports potentially suitable habitat for burrowing owl. As such, focused surveys for burrowing owl were conducted on the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas by ESA PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton on May 13; June 3; and July 2 and 27, 2015. Focused burrowing owl surveys were conducted within the off-site alternative water areas by Lauren Singleton on April 28, 2016 and by Amy Lee on May 23; June 9; and July 7, 2016. Step I and Step II surveys for burrowing owls were conducted on the project site and off-site areas in accordance with the County of Riverside's *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside, 2006). Step I is a Habitat Assessment and Step II consists of Locating Burrows and Burrowing Owls.

Suitable habitat was identified during the Step I Habitat Assessment, which was conducted by Ezekiel Cooley on September 19, 2014 during the general biological survey, including disturbed,

low-growing vegetation; bare ground; and a few small fossorial mammal burrows. Suitable habitat included disturbed, low-growing vegetation; bare ground; and a few small fossorial mammal burrows. Due to the presence of suitable habitat identified during the Step I survey, Step II surveys were conducted within the study area plus a 150-meter (approximately 500 feet) buffer zone around the perimeter of the study area (collectively, the "survey area"). Step II surveys focused on the detection of BUOW individuals, small fossorial mammal burrows potentially suitable for BUOW, and BUOW diagnostic sign (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Transects were utilized, spaced no more than 100 feet apart, to allow 100 percent visual coverage of the ground surface. The four surveys were conducted during the burrowing owl breeding season (March 1 to August 31) on separate days between two hours before sunset to one hour after or one hour before sunrise to two hours after.[2]

3.3.7 Regional Connectivity/Wildlife Movement Corridor

An analysis of wildlife movement was conducted based on information compiled from the literature, analysis of aerial photographs and topographic maps, direct observations made in the field during survey work, and an analysis of existing wildlife movement functions. Relative to corridor issues, the focus of this assessment was to determine if the change of the existing land use within the study area would have significant impacts on the regional wildlife movement associated with the study area as well as the immediate vicinity.

The Western Riverside County MSHCP was reviewed to identify any linkage or Core Areas proposed for preservation on the study area (Dudek & Associates, 2003). Additionally, the South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion document was reviewed (South Coast Wildlands, 2008).

3.3.8 Investigation of Jurisdictional Waters

A jurisdictional determination of existing on-site drainage and wetland features was conducted by ESA PCR Principal Regulatory Scientist Amir Morales on September 19 and December 10, 2014. The purpose of the delineation was to assess the location, extent and acreage of "waters of the U.S." and/or wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB), and the limits of streambed and associated riparian habitat under the jurisdiction of CDFW. All areas were delineated using the protocol stipulated by CDFW under Section 1600-1607 of the California Fish and Wildlife Code, and by the USACE and RWQCB under Section 404 and Section 401 of the Clean Water Act (CWA), respectively. No potential for wetlands or other special aquatic sites were observed within project study areas. Therefore, a wetland delineation using the procedures stipulated in the USACE Wetland Delineation Manual (Environmental Laboratory, 1987) and Arid West Supplement (USACE, 2008a and USACE, 2008b) were not performed or warranted for this project.

[2] For projects within the Western Riverside County MSHCP plan area, it has been PCR's experience that the County of Riverside has preferred that Step II surveys be conducted at least one week apart.

The potential for USACE jurisdictional "waters of the U.S." was based primarily on the presence or absence of jurisdictional field indicators consistent with the USACE guidelines (USACE, 2008a) such as the presence of an OHWM and/or secondary indicators of hydrology, including evidence of the deposition of debris, scour, sediment sorting, and changes in vegetation. The extent of CDFW jurisdiction was assessed based on the limits of the defined bed and bank and includes riparian streambed associated vegetation, where applicable. If these criteria were met, data was collected to estimate the length and width of jurisdictional features potentially regulated by the resource agencies. Upon completion of the field work, documentation of all jurisdictional wetlands, waters, and streambed were completed. The documentation included a map illustrating the location, extent and acreage of all jurisdictional features. Downstream surface connections to known USACE jurisdictional waters were also evaluated in the field and by using satellite imagery and mapping, for the purpose of establishing a connection (i.e. federal nexus) to "waters of the U.S.," where applicable. The results of the ESA PCR jurisdictional assessment are subject to review and approval by the resource agencies as part of future regulatory permits for the project, if required.

4.0 EXISTING CONDITIONS

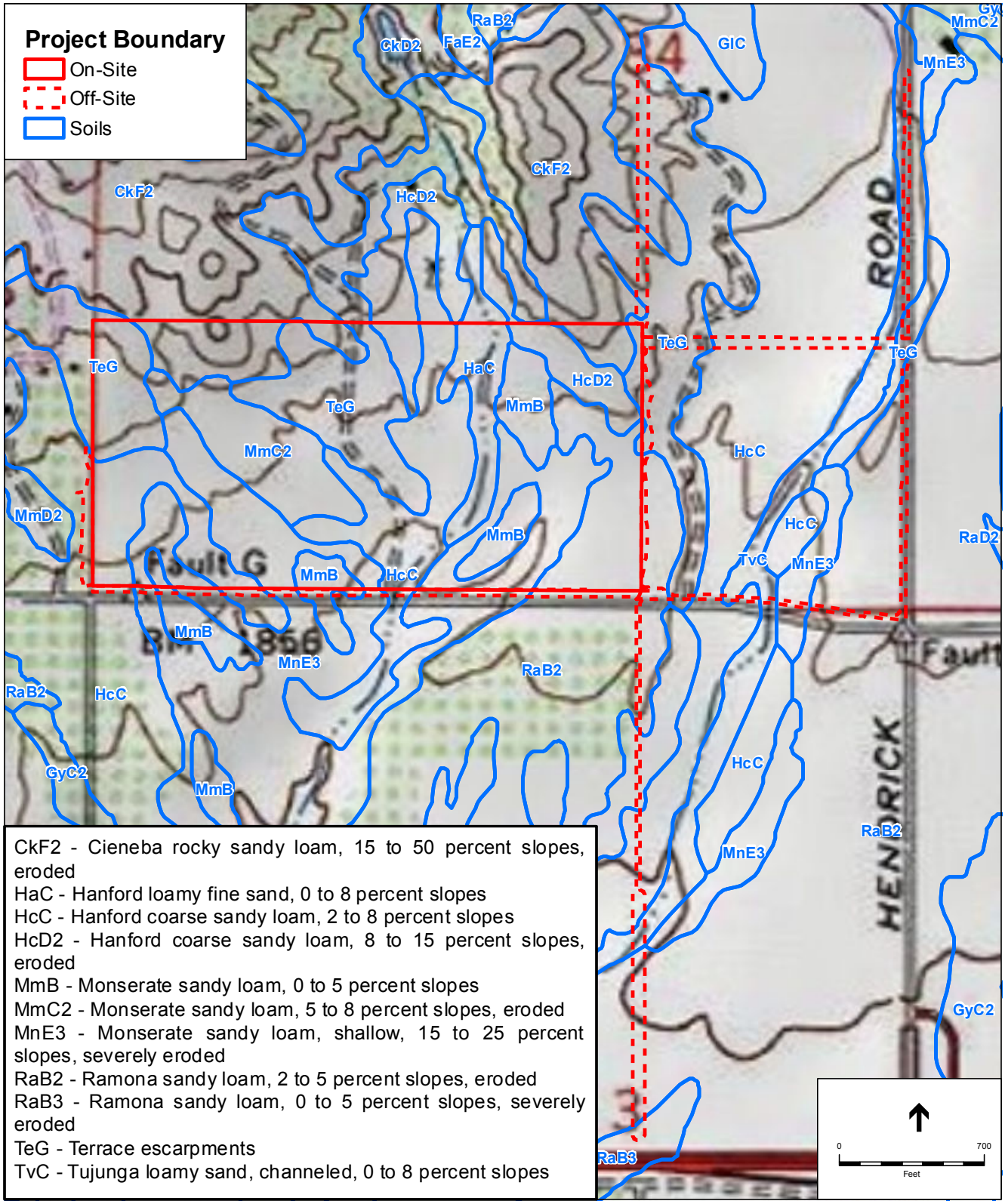
4.1 Characteristics of the Study Area and Surrounding Area

4.1.1 On-Site Characteristics

The approximately 79-acre project site and the 10.57-acre off-site areas are located in the City of Moreno Valley in Riverside County. The project site consists primarily of non-native vegetation characterized by ruderal vegetation and disturbed areas that consist of little to no vegetation. There are some areas that support native plant communities, such as Riversidean sage scrub and brittlebush scrub, which predominantly reside in the northwestern corner of the project site. The study area supports two drainage systems observed to support field indicators associated with USACE, RWQCB, and CDFW (collectively "the resource agencies") jurisdictional waters, referred to in this report as Drainage A and Drainage Complex B, although only Drainage A occurs on-site. The topography on-site is generally flat with gently rolling hills throughout the project site and steeper rock outcrops on the northwest corner. On-site elevations range from the lowest of approximately 1,830 feet above mean sea level (MSL) along the southern boundary of the project site to a high of approximately 1,975 feet above MSL along the northwest boundary of the site. On-site mapped soils in the project area include nine soil types as follows (NRCS, 2015), as shown in **Figure 5**, *Soils Map*:

- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded;
- Hanford loamy fine sand, 0 to 8 percent slopes;
- Hanford coarse sandy loam, 2 to 8 percent slopes;
- Hanford coarse sandy loam, 8 to 15 percent slopes, eroded;
- Monserate sandy loam, 0 to 5 percent slopes;
- Monserate sandy loam, 5 to 8 percent slopes, eroded ;
- Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded;
- Ramona sandy loam, 2 to 5 percent slopes, eroded; and
- Terrace escarpments.

Immediate surrounding land uses include residential development to the south and west and vacant land to the north and east. The entire project site is within the Reche Canyon/Badlands Area Plan of the MSHCP (**Figure 6**, *Relationship to the MSHCP*).

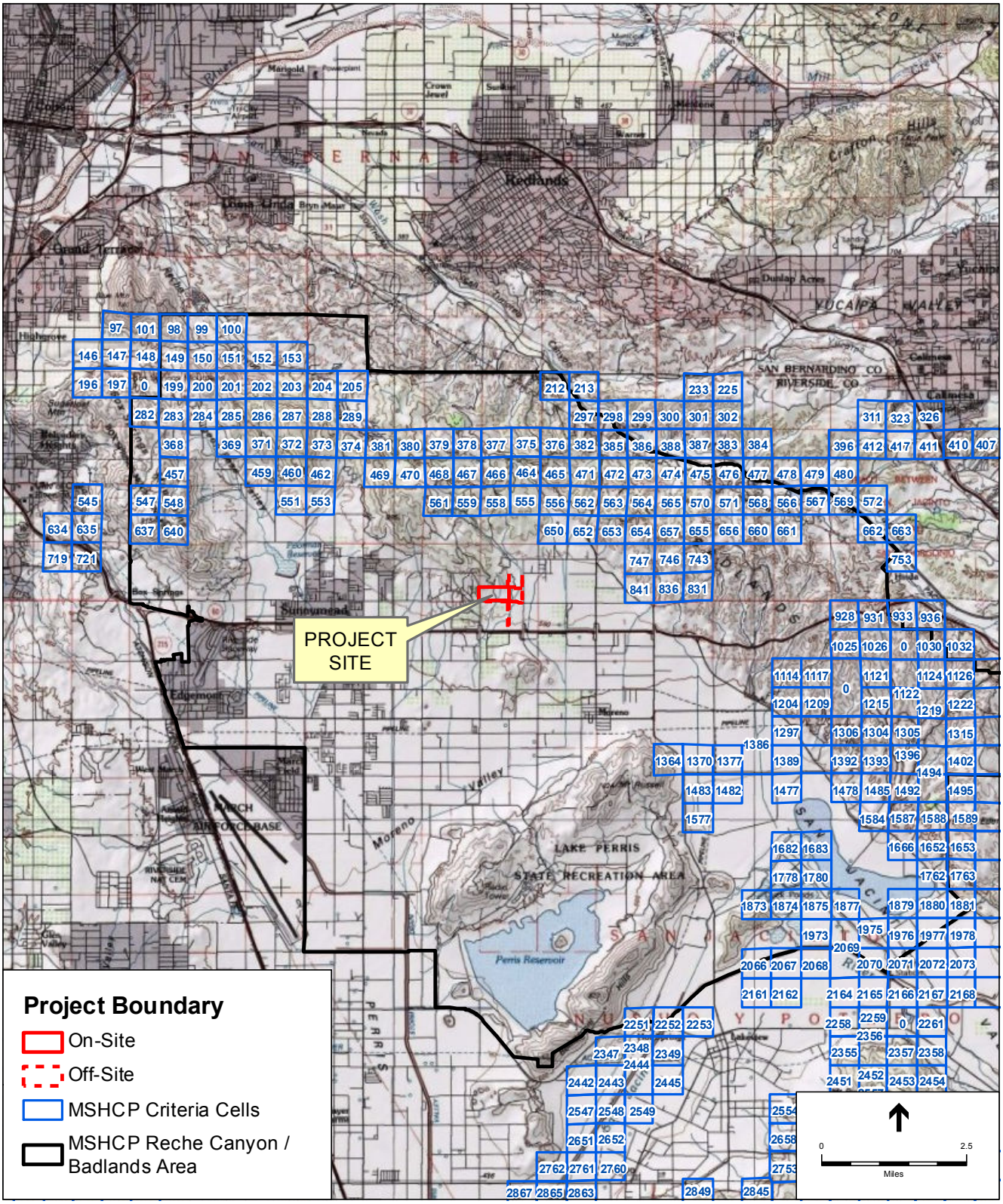


CkF2 - Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
HaC - Hanford loamy fine sand, 0 to 8 percent slopes
HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
MmB - Monserate sandy loam, 0 to 5 percent slopes
MmC2 - Monserate sandy loam, 5 to 8 percent slopes, eroded
MnE3 - Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded
RaB2 - Ramona sandy loam, 2 to 5 percent slopes, eroded
RaB3 - Ramona sandy loam, 0 to 5 percent slopes, severely eroded
TeG - Terrace escarpments
TvC - Tujunga loamy sand, channeled, 0 to 8 percent slopes

SOURCE: USGS Topographic Series (Sunnymead, CA), USDA NRCS SSURGO.

Ironwood Village Project
Figure 5
Soils Map

ESA PCR



SOURCE: USGS Topographic Series; MSHCP.

Ironwood Village Project

Figure 6

Relationship to the MSHCP

ESA PCR

4.1.2 Off-Site Characteristics

The 10.57-acre off-site areas include the proposed manufactured slopes, road improvements, sewer line, and water line areas. The off-site areas are dominated by ruderal vegetation and disturbed areas with only a small acreage of native brittlebush scrub and Riversidean sage scrub. The off-site areas also support some areas of sparsely vegetated river wash areas. A portion of Drainage A and the entirety of Drainage Complex B occurs within the off-site area. The topography of the off-site areas is generally flat with the exception of the proposed northern water line area near an existing water tank, which consists of a fairly steep east-facing slope supporting some native vegetation and rocky outcrops. Elevations within the off-site areas range from the lowest of approximately 1,793 feet above MSL at the southern end of the proposed sewer line to a high of approximately 1,948 feet above MSL at the steepest portion of the proposed water line area. Off-site mapped soils in the project area include seven soil types as follows (NRCS, 2015), as shown in Figure 5:

- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded;
- Hanford course sandy loam, 2 to 8 percent slopes;
- Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded
- Ramona sandy loam, 0 to 5 percent slopes, severely eroded;
- Ramona sandy loam, 2 to 5 percent slopes, eroded;
- Terrace escarpments; and
- Tujunga loamy sand, channeled, 0 to 8 percent slopes.

Land uses immediately surrounding the off-site sewer line include a residential community to the west, SR-60 to the south, and vacant land to the north and east. Land uses immediately surrounding the potential water line areas include residential development to the north, east, and southwest and vacant land to the south and west. Since the proposed manufactured slope areas are directly adjacent to the project site, surrounding land uses are identical to those described in section 4.1.1 above.

4.2 Plant Communities

Descriptions of each of the plant communities found within the study area are provided below, with CDFW CaCodes or Holland Element Codes in parentheses next to each community name. The locations of each of the plant communities are shown in **Figure 7**, *Plant Communities*. **Table 1**, *Plant Communities*, lists each of the plant communities observed, as well as the acreage within the study area. Representative photographs of plant communities found within the study area are included in **Figures 8a** and **8b**, *Site Photographs*.

TABLE 1
PLANT COMMUNITIES

Plant Communities	On-site (acres)	Off-site (acres)
Brittlebush Scrub	2.34	0.27
Brittlebush Scrub/Ruderal	0.31	0.21
Buckwheat Scrub/Ruderal	0.09	0.04
Laurel Sumac Scrub/Ruderal	0.78	-
Riversidean Sage Scrub	3.10	0.12
Riversidean Sage Scrub/Ruderal	-	0.07
Rock Outcrop/Riversidean Sage Scrub	2.15	-
River Wash	-	0.05
Ruderal	38.04	2.50
Ruderal/Brittlebush Scrub	-	0.04
Ruderal/Riversidean Sage Scrub	2.29	0.43
Disturbed	28.68	4.18
Developed	0.70	2.66
Total	**78.48**	**10.57**

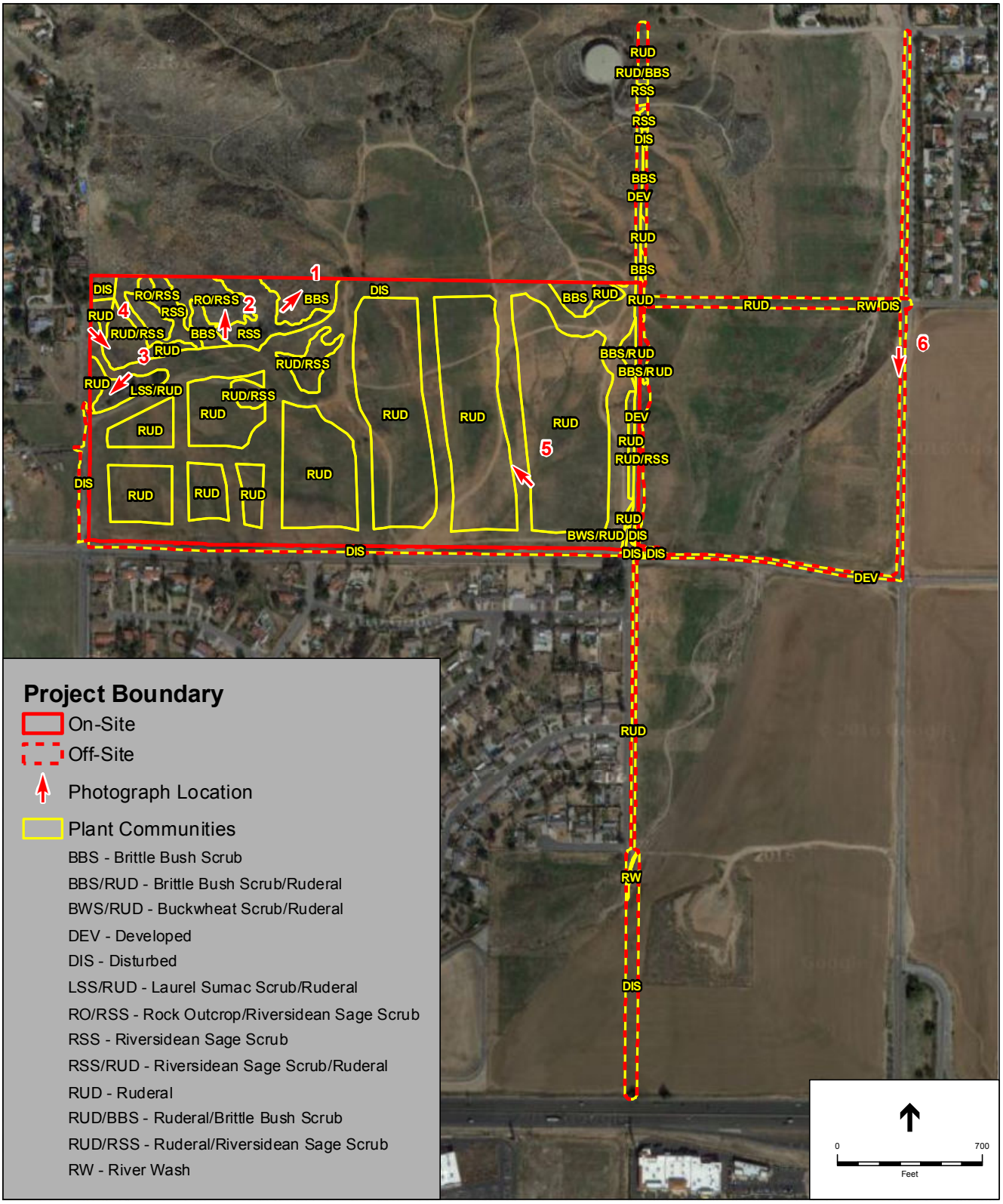
SOURCE: ESA PCR, 2016

4.2.1 Brittlebush Scrub (CaCode 33.030.00)

Brittlebush scrub is a drought tolerant subtype of Riversidean sage scrub dominated by an almost monotypic community of brittlebush (*Encelia farinosa*). Associated species observed within this community included sparsely growing California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and chia (*Salvia columbariae*). Brittlebush scrub on-site occurs primarily in two patches on the northwestern corner of the project site and a smaller patch in the northeastern corner, comprising approximately 2.34 acres on-site. There is also a small patch of this community located within the off-site water line areas, occupying approximately 0.27 acre off-site.

4.2.2 Brittlebush Scrub/Ruderal (CaCode 33.030.00/Not Applicable)

Brittlebush scrub/ruderal is dominated by species found within the brittlebush scrub community (primarily brittlebush) with interspersed ruderal species. In addition to brittlebush, associated native species found in this community included native species such as blue elderberry (*Sambucus nigra ssp. caerulea*), common fiddleneck (*Amsinckia intermedia*), dove weed (*Croton setigerus*), mule fat (*Baccharis salicifolia*), pinebush (*Ericameria pinifolia*), and western ragweed (*Ambrosia psilostachya*). The ruderal community is described in further detail below (see section 4.2.9). Brittlebush scrub/ruderal occurs on-site in a small area along the eastern boundary in the northeastern portion of the project site and comprises approximately 0.31 acre. There is also a small patch of this community located within the eastern manufactured slope area, occupying approximately 0.21 acre off-site.



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 7
Plant Communities

ESA PCR

PHOTOGRAPH 1. View of the brittlebush scrub community, facing northeast.

PHOTOGRAPH 2. View of the rock outcrop/Riversidean sage scrub community, facing north.

PHOTOGRAPH 3. View of the ruderal community in foreground and the laurel sumac scrub/ruderal community in the background to the left, facing southwest.

Note: Refer to Figure 7 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8a

Site Photographs

ESA PCR

PHOTOGRAPH 4. View of the ruderal/Riversidean sage scrub community, facing southeast.

PHOTOGRAPH 5. View of the ruderal community, facing northwest.

PHOTOGRAPH 6. View of the ruderal community within the off-site water line extension area, facing south.

Note: Refer to Figure 7 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8b

Site Photographs

ESA PCR

4.2.3 Buckwheat Scrub/Ruderal (CaCode 32.040.02/Not Applicable)

Buckwheat scrub/ruderal community is dominated by California buckwheat (*Eriogonum fasciculatum*) and other species commonly associated with the buckwheat scrub community, including pinebush and brittlebush. This community also supports interspersed areas of ruderal vegetation; the ruderal community is described in further detail below (see section 4.2.9). Buckwheat scrub/ruderal community occurs within one small patch on-site (0.09 acre) and within the off-site eastern manufactured slope area (0.04 acre).

4.2.4 Laurel Sumac Scrub/Ruderal (CaCode 45.455.00/Not Applicable)

Laurel sumac scrub/ruderal is primarily composed of those species found within the laurel sumac scrub community, which is dominated by laurel sumac (*Malosma laurina*) and often associated with other drought-tolerant shrubs, such as California buckwheat or black sage (*Salvia mellifera*). While this community largely consists of species found within the laurel sumac scrub community, ruderal species are interspersed throughout the community. The ruderal community is described in further detail below (see section 4.2.9). Laurel sumac scrub/ruderal community occurs in one area along the western boundary and comprises approximately 0.78 acre on-site only.

4.2.5 Riversidean Sage Scrub (Holland Element Code 32700)

Riversidean sage scrub is characterized by low growing shrubs adapted to semi-arid Mediterranean climate, and are most often found on steep or low gradient slopes that are rarely flooded. This community is fairly open and dominated by California sagebrush, California buckwheat, , and foxtail chess. Other associated species include pinebush, brittlebush, and caterpillar phacelia (*Phacelia cicutaria*). The Riversidean sage scrub community occurs in two patches on the northwestern corner of the project site and comprises approximately 3.10 acres on-site. There is also a small patch of this community located within the off-site water line areas, occupying approximately 0.12 acre off-site.

4.2.6 Riversidean Sage Scrub/Ruderal (Holland Element Code 32700/ Not Applicable)

Riversidean sage scrub/ruderal is primarily composed of those species found within the Riversidean sage scrub community, which is described in section 4.2.5 above. While this community largely consists of species found within the Riversidean sage scrub community, ruderal species are interspersed throughout the community. The ruderal community is described in further detail below (see section 4.2.9). Riversidean sage scrub/ruderal community occurs in one area along the western boundary and comprises approximately 0.07 acre off-site only.

4.2.7 Rock Outcrop/Riversidean Sage Scrub (Not Applicable/Element Code 32700)

Rock outcrop/Riversidean sage scrub includes rock outcrop areas, which consist of rocky, sparsely vegetated areas typically found along the hillsides on the northwest corner of the project site, and is interspersed with vegetation that is characteristic of the Riversidean sage scrub community described in section 4.2.5 above. Additional associated species observed in the rock outcrop/Riversidean sage scrub communities on-site included cane cholla (*Cylindropuntia californica* var. *parkeri*) and two-color rabbit tobacco (*Pseudognaphalium bicolor*). There are two patches of rock outcrop/Riversidean sage scrub on the northwestern corner of the project site, which occupies approximately 2.15 acres on-site only.

4.2.8 River Wash (Not Applicable)

River wash consists of prevailingly coarse-textured but variable material, ranging from sand to gravel. It usually is flood-swept, though it may lie slightly above present overflows. The sandy areas are loose with some silt and other fine materials. Sparse vegetation within the river wash areas include giant reed (*Arundo donax*), flatspine bur ragweed (*Ambrosia acanthicarpa*), pucturevine (*Tribulus terrestris*), and common sunflower (*Helianthus anuus*). River wash areas comprise approximately 0.05 acre off-site only associated with the mainstem Drainage B within the sewer line and water line areas.

4.2.9 Ruderal (Not Applicable)

Ruderal vegetation is found in areas heavily disturbed by human activities, such as roadsides, graded fields, and manufactured slopes. Within the study area, ruderal species observed include cheeseweed (*Malva parviflora*), cudweed aster (*Corethrogyne filaginifolia*), foxtail chess (*Bromus madritensis* ssp. *rubens*), gum tree (*Eucalyptus* sp.), London rocket (*Sisymbrium irio*), Mediterranean schismus (*Schismus barbatus*), Mexican palo verde (*Parkinsonia aculeata*), ripgut grass (*Bromus diandrus*), shortpod mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), tree tobacco (*Nicotiana glauca*), wild oat (*Avena* sp.), and wild radish (*Raphanus raphanistrum*). Ruderal areas dominant the project site and comprised approximately 38.04 acres on-site. The ruderal community is also prominent throughout the off-site areas, totaling 2.50 acres.

4.2.10 Ruderal/Brittlebush Scrub (Not Applicable/ CaCode 33.030.00)

Ruderal/brittlebush scrub is dominated by ruderal, weedy species but exhibit sparse, remnant species associated with the brittlebush scrub community. The brittlebush scrub and ruderal communities are described above in sections 4.2.1 and 4.2.9, respectively. Only one small ruderal/brittlebush scrub patch was observed within the water line area, consisting of approximately 0.04 acre off-site only.

4.2.11 Ruderal/Riversidean Sage Scrub (Not Applicable/Holland Element Code 32700)

Ruderal/Riversidean sage scrub is dominated by ruderal, weedy species but exhibit sparse, remnant species associated with the Riversidean sage scrub community. The Riversidean sage scrub and ruderal communities are described above in sections 4.2.5 and 4.2.9, respectively. The ruderal/Riversidean sage scrub community occupies the northwestern corner and the center of the project site, consisting of approximately 2.29 acres on-site. This community also occurs within the eastern manufactured slope area, consisting of approximately 0.43 acre off-site.

4.2.12 Disturbed (Not Applicable)

Disturbed areas are heavily affected by human activities, including dirt roads, graded fields, and manufactured slopes; as a consequence, these areas support little to no vegetation. While ruderal areas comprise the majority of the project site, disturbed areas account for much of the remaining space occupying approximately 28.68 acres on-site. Disturbed areas dominate the off-site areas, consisting of 4.18 acres.

4.2.13 Developed (Not Applicable)

Developed areas are associated with an unpaved access road that occurs along the eastern boundary of the project site and off-site manufactured slope areas. Developed areas occupied approximately 0.70 acre on-site and 2.66 acres off-site.

4.3 General Plant Inventory

The plant communities discussed above are comprised of numerous plant species. Observations regarding the plant species present were made during the field visits to the study area, and a list of all plant species observed is provided in **Appendix A**, *Floral and Faunal Compendium*. Special-status plant species occurring or potentially occurring within the study area are discussed below in section 4.7.5, *Special-status Plant Species*.

4.4 General Wildlife Inventory

The plant communities discussed above provide habitat for common wildlife species. Observations regarding the wildlife species present were made during the field visits to the study area, and a list of all species observed is provided in **Appendix A**. Special-status wildlife species occurring or potentially occurring are discussed below in section 4.7.6, *Special-status Wildlife Species*.

4.5 Wildlife Movement

4.5.1 Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by

urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic material (MacArthur and Wilson, 1967; Soulé, 1987; Harris and Gallagher, 1989; Bennett, 1990).

Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health and long-term viability.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss, 1983; Fahrig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and, (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Although the nature of each of these types of movement is species specific, large open spaces will generally support a diverse wildlife community representing all types of movement. Each type of movement may also be represented at a variety of scales from non-migratory movement of amphibians, reptiles, and some birds on a "local" level to home ranges encompassing many square-miles for large mammals moving on a "regional" level. A number of terms have been used in various wildlife movement studies, such as "wildlife corridor," "travel route," and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

<u>Travel Route</u>: A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den areas). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relatively direct link between target habitat areas.

Wildlife Corridor: A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

Wildlife Crossing: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

4.5.2 Wildlife Movement Within the Study Area

As previously described, wildlife movement activities occur at a variety of scales from a "local" level to a "regional" level. Regional movement through the study area is restricted due to the urbanization of the region and the proximity to a major freeway (SR-60) (refer to **Figure 9**, *Regional Aerial Photograph*). The study area is immediately surrounded by residential development to the south and west. Although there is vacant land directly to the north and east of the study area, the land to the east is highly disturbed and mostly cleared of natural vegetation and there are a number of residential communities adjacent to the eastern boundary of the vacant land. Additionally, the study area is located about 0.5 mile to north of the SR-60. Although regional movement through this area is likely limited, there is some potential for local movement through the study area via the open area directly to the north which comprises the foothills of the Badlands. Although the study area connects to the open area to the north, the study area is dominated by ruderal and disturbed areas with limited native vegetation.

The project site only supports one ephemeral drainage that conveys minor road runoff from Ironwood Avenue with no associated vegetation (Drainage A), which is unlikely to facilitate wildlife movement. Additionally, Drainage A initiates on-site and meanders for approximately 396 linear feet before exiting the project site via a culvert beneath Ironwood Avenue. Drainage Complex B occurs within the off-site areas and comprises the mainstem Drainage B, which is a USGS mapped blueline stream, and five small tributaries (Drainages B1 through B5). The mainstem Drainage B does support some ruderal and non-native vegetation (e.g. giant reed). Drainage B appears to initiate in the foothills of the Badlands to the north of the off-site areas and becomes channelized just west of the off-site sewer line area.

SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 9
Regional Aerial Photograph

ESA PCR

Due to the limited vegetation within Drainage B and lack of connection to suitable habitat downstream due to development, Drainage B is not expected to function as a wildlife movement corridor. The smaller tributaries (Drainages B1 through B5) are also ephemeral drainages with limited upland vegetation, which initiate at the peak of a small ridge upstream from the off-site water line area and appear to support little to no surface connection to the mainstem Drainage B likely due to decades of disturbance from agriculture and/or weed abatement activities. Drainage B5 does not appear to support any natural watershed and appears to be relict in nature. Vegetation within the drainage appears to be supported by artificial discharges from the water tank blow-off pipe observed at the headwaters of Drainage B5. Due to the limited vegetation and watershed, as well as the disturbed nature of the downstream areas off-site, the tributaries do not facilitate wildlife movement through the study area.

The study area is not within any Core or Linkage areas as identified by the MSHCP (Dudek & Associates, 2003). There is one proposed linkage (Proposed Linkage 4) approximately 2.1 miles to the north of the study area and one existing core (Core H) roughly 4.0 miles to the south of the study area. Proposed Linkage 4 would include upland habitat within Reche Canyon and provide connection to Box Springs Reserve, the Badlands, and San Bernardino County. The open area directly to the north of the study area does directly connect to Proposed Linkage 4. Existing Core H includes Lake Perris State Recreation Area and San Jacinto Wildlife Area. There is no direct connection from the study area to Core H, which are separated by urban development. The study area is not within any linkages identified by the South Coast Missing Linkages report; the nearest linkage design identified is for the San Bernardino–San Jacinto Connection located approximately 3.5 miles to the east (South Coast Wildlands, 2008). Since the study area is not identified as a linkage by the MSHCP or South Coast Wildlands, and it does not support habitat that connects two or more habitat patches that would otherwise be fragmented or isolated from one another, the study area is not considered a wildlife corridor. The study area may provide limited opportunities for wildlife movement, more likely for local wildlife movement as described below.

Movement on a smaller or “local” scale could occur within the study area for species that are less restricted in movement pathway requirements or are adapted to urban areas (e.g., raccoon [*Procyon lotor*], stripped skunk [*Mephitis mephitis*], coyote [*Canis latrans*], and bird species in general). Habitat within the study area is dominated by ruderal and disturbed areas with some portions supporting native vegetation, including brittlebush scrub, buckwheat scrub, and Riversidean sage scrub. As such, it likely supports some wildlife movement within the study area and/or nearby areas for foraging and shelter. Data gathered from the biological survey indicates that the study area contains habitat that supports common species of invertebrates, reptiles, birds, and small mammals. The home range and average dispersal distance of many of these species may be entirely contained within the study area and immediate vicinity.

Populations of animals such as insects, reptiles, small mammals, and a few bird species may find all their resource requirements without moving far or outside of the study area at all. Occasionally, individuals expanding their home range or dispersing from their parental range could attempt to move outside of the study area, if feasible, based on the surrounding restrictions to movement from development (see above). Bird species may fly over the development and

freeways to utilize the study area for foraging, although this is expected to be limited due to the high level of human activity in the region and higher quality foraging habitats in nearby open areas with less human disturbance, particularly the Badlands to the north.

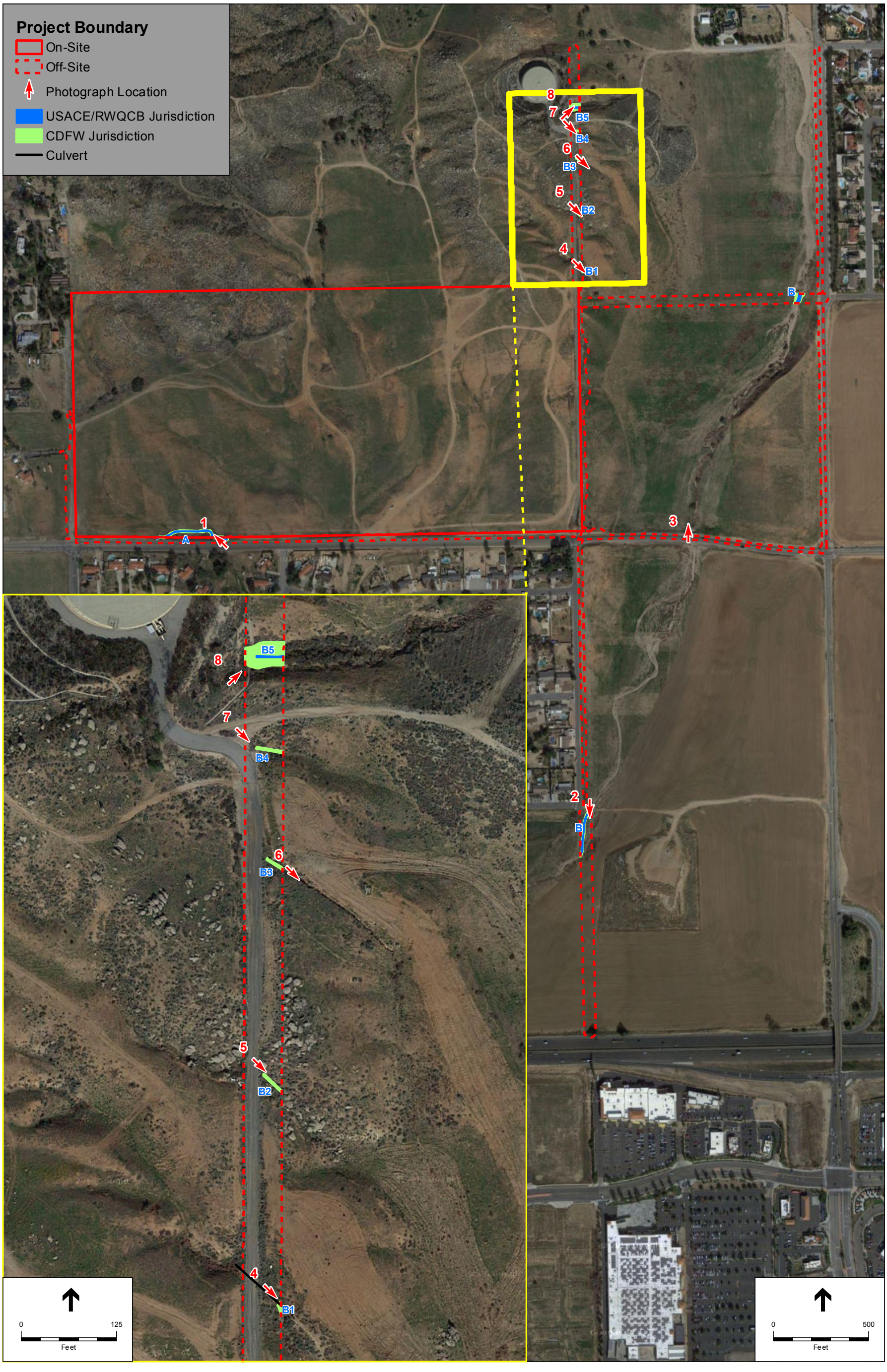
In summary, the study area may support live-in and movement habitat for species on a local scale (i.e., some live-in and at least marginal movement habitat for invertebrates, reptiles, birds, and small mammal species). However, due to surrounding development, the proximity to the I-60 freeway, and the ephemeral nature and limited watershed of the drainages, the study area likely provides little to no function to facilitate movement for wildlife species on a regional scale and it is not identified as a regionally important dispersal or seasonal migration corridor by the MSHCP or by South Coast Wildlands.

4.6 Jurisdictional Waters

An investigation of on- and off-site jurisdictional waters was performed by Amir Morales, Principal Regulatory Scientist, on September 19, 2014. An additional site visit was conducted by Amir Morales on December 10, 2014 following a series of storm events that occurred on December 2, 3, and 4, 2014 totaling nearly two inches of rain in that period.[3] Based on the results of the investigation, Drainage A and Drainage Complex B (Drainages B & B1through B5) were determined to support a total of approximately 0.057 acre of USACE/RWQCB "waters of the U.S." and 0.165 acre of CDFW jurisdictional streambed (**Figure 10**, *Jurisdictional Features*). A summary of jurisdictional features assessed within the study area is provided in **Table 2**, *Jurisdictional Features*. Photographs of drainage features are provided as **Figures 11a** and **11b**, *Drainage Photographs*.

The study area is located within rolling valley topography located southeast of Reche Canyon and south/southwest of The Badlands mountain range. The study area is located within the San Jacinto Watershed and generally drains toward the south, eventually reaching the Perris Valley Storm Drain which ultimately reaches the San Jacinto River and then Canyon Lake. The USGS Sunnymead topographic Quadrangle depicts a blueline stream originating in the foothills to the north with headwaters located approximately 2,000 linear feet from the on-site study area. The mapped blueline drainage feature enters the project site near the center of the northern project boundary and bisects the property. The property has been subjected to seasonal dry-farming and/or weed abatement activities for several decades. Based on the jurisdictional assessments performed by ESA PCR, no discernible streambed or indicators of flow were observed within the area historically mapped as a blueline drainage feature during the September 19, 2014 jurisdictional delineation. In order to determine if jurisdictional field indicators reestablish following moderate rain events, Amir Morales returned to investigate the site following a series of early December 2014 storm events yielding nearly 2-inches of rain over three consecutive days. In our experience, this amount of rain would have reestablished some evidence of flow capable of eroding a streambed and/or supporting some jurisdictional field indicators based on the USACE's arid delineation guidelines.

[3] Based on WeatherCurrents.com precipitation data accessed at http://weathercurrents.com/morenovalley/ArchiveDec2014.do obtained on July 26, 2016.



SOURCE: Google Maps, 2015.

Ironwood Village Project
Figure 10
Jurisdictional Features

ESA PCR

TABLE 2
JURISDICTIONAL FEATURES

Drainage (Study Area)	Length (ft)	USACE/ RWQCB (acres)	CDFW (acres)	Flow Classification
A (On-Site)	285	0.023	0.046	Ephemeral
A (Off-Site)	111	0.007	0.013	Ephemeral
Drainage A Subtotal	***396***	***0.030***	***0.059***	
B (Off-Site)	306	0.026	0.069	Ephemeral
B1 (Off-Site)[b]	0[a]	N/A	0.001	Ephemeral
B2 (Off-Site)[b]	32	N/A	0.001	Ephemeral
B3 (Off-Site)[b]	25	N/A	0.001	Ephemeral
B4 (Off-Site)[b]	34	N/A	0.001	Ephemeral
B5 (Off-Site)	35	0.002	0.033	Ephemeral
Drainage Complex B Subtotal	***432***	***0.028***	***0.106***	
Total	**828**	**0.058**	**0.165**	

[a] Less than one linear foot of jurisdiction occurs within Drainage B1 as the majority of the drainage within the off-site study area is associated with an existing corrugated metal pipe that was not quantified.

[b] Drainage did not support jurisdictional field indicators associated with "waters of the U.S" regulated by the USACE and RWQCB pursuant to the Clean Water Act.

SOURCE: ESA PCR, 2014

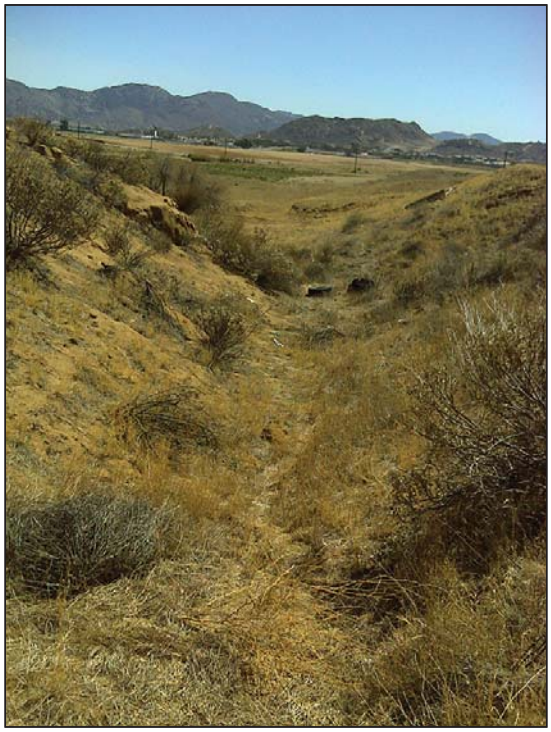
However, no ordinary water mark, sediment deposition/sorting, debris wracks, bed/bank, streambed associated vegetation, or other jurisdictional field indicators were observed immediately following the consecutive rain events. As a result, it was determined that no jurisdiction occurs within the area mapped as a blueline drainage feature within the study area.

It was noted that the USGS Sunnymead Quadrangle depicts a small water feature at the off-site headwaters, located approximately 2,000 linear feet north of the site where the blueline feature initiates. As such, it is feasible that the mapped water feature is associated with a historic stock pond, which may have supported a small drainage that ultimately extended to the project study area when water was historically discharged from the feature and/or significant storm events caused it to overflow. However, based on review of current aerial imagery in Google Earth, no water feature appears to persist within the off-site headwaters in the current condition capable of supporting a discernible streambed. Consequently, the only jurisdictional feature identified within the on-site study area during the December 2014 site visit is a minor roadside ditch identified as Drainage A. Jurisdiction within the off-site study areas is limited to a mainstem drainage identified as Drainage B, and Drainage Complex B which is comprised of tributary Drainages B1through B5. No riparian and/or hydrophytic vegetation communities were observed on the study area that would warrant the need for a formal wetland analysis. Therefore, no jurisdictional wetlands or special aquatic sites were determined to occur within the project study areas. The following provides a summary of jurisdictional drainage features identified within the project study areas:

PHOTOGRAPH 1. View of Drainage A, facing northwest (upstream).

PHOTOGRAPH 2. View of Drainage B within the off-site sewer line area, facing south (downstream).

PHOTOGRAPH 3. View of Drainage B within the off-site water line area, facing north (upstream).



PHOTOGRAPH 4. View of Drainage B1, facing southeast (downstream).

Note: Refer to Figure 10 for photograph locations.

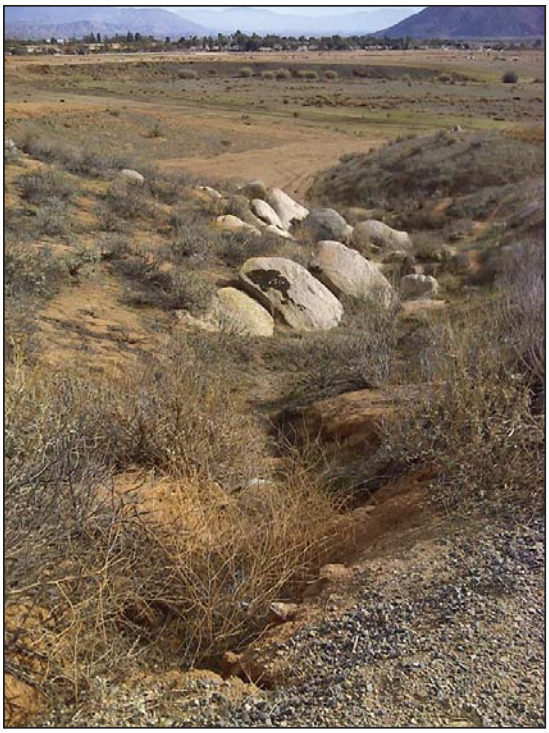
SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 11a

Drainage Photographs

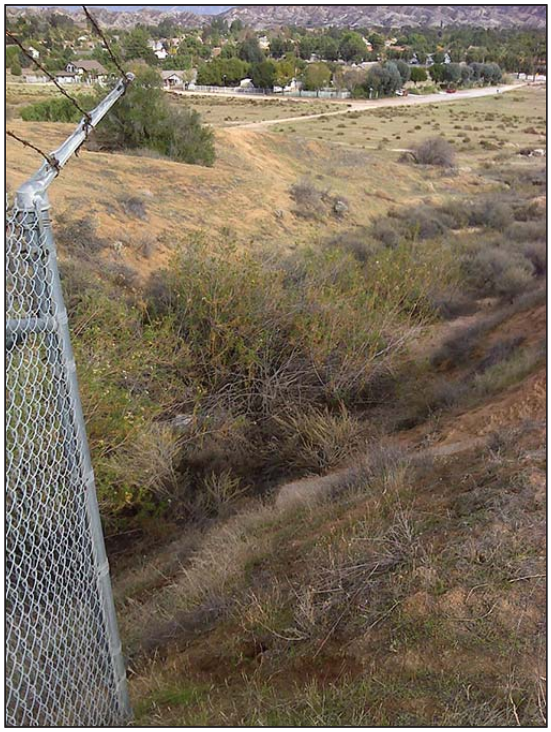
ESA PCR



PHOTOGRAPH 5. View of Drainage B2, facing southeast (downstream).

PHOTOGRAPH 6. View of Drainage B3, facing southeast (downstream).

PHOTOGRAPH 7. View of Drainage B4, facing southeast (downstream).



PHOTOGRAPH 8. View of Drainage B5, facing northeast (downstream).

Note: Refer to Figure 10 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 11b

Drainage Photographs

ESA PCR

4.6.1 Drainage A

Drainage A is an unvegetated roadside ditch that establishes only when rain events generate sufficient runoff from Ironwood Avenue to erode a small channel through sandy disturbed soils. The ephemeral ditch enters the Ironwood Avenue Right-of-Way within the off-site study area then enters the on-site study area along the southern project boundary, extending for approximately 285 linear feet. The ditch then enters a corrugated metal pipe (CMP) beneath Ironwood Avenue which is ultimately conveyed through the rural residential development to the south and into a water quality basin adjacent to SR-60. Drainage A ranged from 2 to 3 feet in jurisdictional channel width and contains sandy loam soils that are periodically disturbed by weed abatement activities. A photograph of Drainage A is provided in Figure 11a.

Drainage A within the on-and off-site study area supports a total of approximately 396 linear feet of ephemeral unvegetated roadside ditch, containing 0.023 acre of on-site and 0.007 acre of off-site non-wetland USACE "waters of the U.S" totaling 0.030 acre, as well as 0.46 acre of on-site and 0.013 acre of off-site CDFW jurisdictional streambed totaling 0.059 acre.

4.6.2 Drainage Complex B

4.6.2.1 Drainage B

Drainage B is an ephemeral sandy wash that originates off-site approximately 2 miles to the northwest along Reche Canyon Road. The drainage meanders along the road until it reaches the valley floor extending across Trust Way, crossing Kalmia Avenue, and then conveys runoff along the west side of Moreno Beach Drive for approximately a quarter-mile prior to crossing the off-site Water Line Alternative 1. The drainage feature then extends south/southwest for another quarter-mile before entering a culvert beneath Ironwood Avenue and meandering for another quarter-mile prior to entering the off-site sewer line study area. Drainage B then continues for approximately 700 linear feet toward the southwest ultimately entering a detention basin located directly northeast of the Nason Street exit of SR-60. Drainage B within the off-site study areas ranges from approximately 4-10 feet in USACE/CDFW channel width and is entirely unvegetated. Soils within the wash are comprised of loamy sands of the Tujunga series consistent with the mapping by NRCS. Photographs of Drainage B are provided in Figure 11a.

Drainage B within the off-site sewer line and Water Line Alternative 1 total approximately 306 linear feet of unvegetated ephemeral sandy wash totaling approximately 0.026 acre of non-wetland USACE/RWQCB "waters of the U.S." and 0.069 acre of CDFW jurisdictional streambed.

4.6.2.2 Drainages B1- B5

Drainages B1through B5 are minor ephemeral drainages that with the exception of Drainage B5 (which appears to accept flow from a water tank bypass pipe) function to drain a very limited watershed west of the existing water district road that runs parallel to the eastern boundary of the project site. Drainage B5 appears to support flows from two small slope v-ditches as well as a pipe at its headwaters that appears to drain the existing water tank directly to the west, and was likely formed by controlled releases from the water tank structure. Otherwise, no natural

watershed capable eroding such an incised drainage feature occurs upstream. Drainages B1 through B3 have small CMP culverts that convey limited runoff west of the water district road and support very weak indicators of flow and/or bed and bank. Drainage B4 does not support a pipe culvert rather a small pipe that drains surface flow from a small v-ditch directly west of the road. No discernible indicators associated with "waters of the U.S." such as an ordinary high water mark, sediment deposition/sorting, debris wracks, streambed associated vegetation, or other USACE jurisdictional field indicators indicative of the arid southwest region were observed within Drainages B1-B4 immediately following the consecutive rain events of early December 2014. However, Drainages B1 through B4 do support topographic low points with banks typical of headwater swales. Drainage B5 was presumed to support USACE/RWQCB jurisdiction due to the presence of an ordinary high water mark, which ultimately became indiscernible after approximately 1,000 linear feet. Given the reasonable proximity to Drainage B5 observed in the field in light of periodic disturbance to the sandy soils from weed abatement activities, Drainage B5 was presumed to be regulated as "waters of the U.S." Drainages B1through B5 were all presumed to support CDFW jurisdictional streambed.

Drainages B1 through B4 exhibit sparse upland scrub vegetation and ruderal grasses and are otherwise unvegetated. Drainage B5 supports a small patch of mule fat along approximately 15 linear feet of the headwaters directly downstream of the water tank pipe and mostly upland scrub vegetation beyond. Drainages B1through B5 contain CDFW jurisdictional channel widths ranging from 0.5 to 3 feet, while Drainage B5 exhibits USACE jurisdiction averaging approximately 2 feet in channel width and a CDFW channel width approximately averaging 10 feet. Drainage Complex B drainage features all were observed to support sandy loam soils. Photographs of Drainage Complex B are provided in Figures 11a and 11b.

Drainage B5 within the Water Line Alternative 2 study area totals approximately 0.002 acre of non-wetland ephemeral "waters of the U.S." regulated by the USACE/RWQCB. Drainage Complex B (Drainages B1 through B5) total approximately 0.037 acre of CDFW jurisdictional streambed and associated vegetation.

4.7 Special-status Biological Resources

The following discussion describes the plant and wildlife species present, or potentially present, within the study area that have been afforded special recognition by Federal, State, or local resource conservation agencies and organizations. These species have declining or limited population sizes, usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife. Protected special-status species are classified by either Federal or State resource management agencies, or both, as threatened or endangered, under provisions of the Federal and State Endangered Species Acts (FESA and CESA, respectively).

4.7.1 Federal Special-status Resource Protection and Classifications

4.7.1.1 FESA

The FESA of 1973 defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA, unless properly permitted, it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action which could affect a federally listed plant or animal species, the property owner and agency are required to consult with USFWS pursuant to Section 7 of the ESA if there is a federal nexus, or pursuant to Section 10 of the ESA. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

All references to Federally-protected species in this BRA include the most current published status or candidate category to which each species has been assigned by USFWS. For purposes of this assessment the following acronyms are used for Federal status species, as applicable:

- FE Federally-listed as Endangered
- FT Federally-listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FPD Federally proposed for delisting
- FC Federal candidate species (former C1 species)

Some of the USFWS offices maintain a database of listed species within their jurisdiction, for example the Sacramento[4] and Carlsbad[5] offices. The Carlsbad USFWS Office jurisdiction encompasses the counties of Los Angeles, Orange, Riverside, San Bernardino, Imperial, and San Diego.

4.7.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects individuals as well as any part, nest, or eggs of any bird listed as migratory. In practice, Federal permits issued for activities that potentially

4 http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-overview.htm
5 http://www.fws.gov/carlsbad/SpeciesStatusList/CFWO_Species_Status_List.htm

impact migratory birds typically have conditions that require pre-disturbance surveys for nesting birds. In the event nesting is observed, a buffer area with a specified radius must be established, within which no disturbance or intrusion is allowed until the young have fledged and left the nest, or it has been determined that the nest has failed. If not otherwise specified in the permit, the size of the buffer area varies with species and local circumstances (e.g., presence of busy roads, intervening topography, etc.), and is based on the professional judgment of a monitoring biologist. A list of migratory bird species protected under the MBTA is published by USFWS.

4.7.1.3 Federal Clean Water Act, Section 404

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into waters of the U.S. and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Implementing regulations for the CWA define waters of the U.S. as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The permit review process entails an assessment of potentially adverse impacts to USACE jurisdictional waters of the U.S.

Over the years, the USACE has modified its regulations, typically due to evolving policy or judicial decisions, through the issuance of Regulatory Guidance Letters, memorandums, or more expansive instruction guidebooks. These guidance documents help to update and define how jurisdiction is claimed, and how these waters of the U.S. will be regulated. The most recent, significant modification occurred on June 5, 2007, subsequently updated in December 2008, when the USACE and the U.S. Environmental Protection Agency (USEPA) issued a series of guidance documents outlining the requirements and procedures, effective immediately, to establish jurisdiction under Section 404 of the CWA and the Section 10 of the Rivers and Harbors Act of 1899. These documents are intended to be used for all jurisdictional delineations and provide specific guidance for the jurisdictional determination of potentially jurisdictional features affected by the U.S. Supreme Court rulings in *Rapanos v. the United States* and *Carabell v. the United States* 547 U.S. 715 (2006) (jointly referred to as *Rapanos*).

The *Rapanos* case outlines the conditions and criteria used by the USACE to assess and claim jurisdiction over non-isolated, non-navigable, ephemeral tributaries. Under a plurality ruling, the Court noted that certain "not relatively permanent" (i.e., ephemeral), non-navigable tributaries must have a "significant nexus" to downstream traditional navigable waters to be jurisdictional. An ephemeral tributary has a significant nexus to downstream navigable "waters" when it has "more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a Traditional Navigable Water (TNW)." A significant nexus is established through the consideration of a variety of hydrologic, geologic and ecological factors specific to the particular drainage feature in question. For drainage features that do not meet the significant nexus criteria, a significant nexus determination is provided by the USACE to the USEPA for the final determination of federal jurisdiction. Drainage features that do not meet the significant nexus criteria based on completion of an AJD, and/or are determined to be isolated pursuant to the SWANCC ruling (see below), may still be regulated by California Department of Fish and

Wildlife (CDFW) under Fish and Game Code Section 1600 or the Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Water Quality Act.

On January 15, 2003, the USACE and USEPA issued a Joint Memorandum to provide clarifying guidance regarding the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) ("the SWANCC ruling"), (Federal Register: Vol. 68, No. 10.). This ruling held that the CWA does not give the federal government regulatory authority over non-navigable, isolated, intrastate waters. As a result of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which are not hydrologically connected to other intra- or inter-state "waters of the U.S.," are no longer regulated by the USACE.

4.7.1.4 Federal Clean Water Act, Section 401

The mission of the RWQCB is to develop and enforce water quality objectives and implement plans that will best protect the beneficial uses of the state's waters, recognizing local differences in climate, topography, geology, and hydrology. The California RWQCB is responsible for implementing compliance not only with state codes such as the California Water Code, but also some federal acts such as Section 401 of the CWA. Section 401 of the CWA requires that any applicant for a federal permit for activities that involve a discharge to waters of the state shall provide the federal permitting agency with a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal CWA.[6] As such, before the USACE will issue a CWA Section 404 permit, applicants must apply for and receive a Section 401 water quality certification (WQC) from the RWQCB. The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect "waters of the state" (Water Code § 13260 (a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act which defines RWQCB jurisdictional "waters of the state" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code § 13050 (e)).

With the exception of isolated waters and wetlands, most discharges of fill to waters of the state are also subject to a CWA Section 404 permit. If a CWA Section 404 permit is not required for the project, the RWQCB may still require issuance of Waste Discharge Requirements (WDR) under the Porter-Cologne Water Quality Control Act. The RWQCB may regulate isolated waters that are not under jurisdiction of the USACE through issuance of WDR's. However, projects that obtain a Section 401 WQC are simultaneously enrolled in a statewide general WDR. Processing of Section 401 WQC's generally requires submittal of 1) a construction storm water pollution prevention plan (SWPPP), 2) a final water quality technical report that demonstrates that post-construction storm water Best Management Practices (BMPs) comply with the local design standards for municipal storm drain permits (MS4 permits) implemented by the State Water Resources Control Board effective January 1, 2011, and 3) a conceptual Habitat Mitigation and Monitoring Plan (HMMP) to compensate for permanent impacts to RWQCB waters, if any. In

[6] 33 USC 1341 *(a) (1)*.

addition to submittal of a draft CEQA document, a WQC application typically requires a discussion of avoidance and minimization of impacts to RWQCB jurisdictional resources, and efforts to protect beneficial uses as defined by the local RWQCB basin plan for the project. The RWQCB cannot issue a Section 401 WQC until the project CEQA document is certified by the lead agency.

4.7.2 State of California Special-status Resource Protection and Classifications

4.7.2.1 CESA

California's Endangered Species Act (CESA) defines an endangered species as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.*

The State defines a threatened species as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species.*

Candidate species are defined as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.*

Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Wildlife Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species by stating:

> *…no person shall import into this State, export out of this State, or take, possess, purchase, or sell within this State, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided.*

Under the CESA, "take" is defined as, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Additionally, some special-status mammals and birds are protected by the State as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Wildlife Code, Sections 4700 and 3511, respectively.

California Species of Special Concern are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. Informally listed species are not protected per se, but warrant consideration in the preparation of biological assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest areas.

For the purposes of this BRA, the following acronyms are used for State status species, as applicable:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SR State-listed as Rare
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened
- SFP State Fully Protected
- SSC California Species of Special Concern

Protection of Birds

Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Activities that result in the abandonment of an active bird of prey nest may also be considered in violation of this code. In addition, California Fish and Game Code, Section 3511 prohibits the taking of any bird listed as fully protected, and California Fish and Game Code, Section 3515 states that is it unlawful to take any non-game migratory bird protected under the MBTA.

4.7.2.2 State of California Fish and Game Code, Section 1602

Section 1602 of the California Fish and Game Code requires any entity (e.g., person, state or local government agency, or public utility) who proposes a project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake to notify the CDFW of the proposed project. In the course of this notification process, the CDFW will review the proposed project as it affects streambed habitats within the project area. The CDFW may then place conditions in the Section 1602 Streambed Alteration Agreement to avoid, minimize, and mitigate any potentially significant adverse impacts within CDFW jurisdictional limits.

4.7.2.3 California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of special-status species in California. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California (CNPS 2012). The list serves as the candidate list for listing as Threatened and Endangered by CDFW. CNPS has developed five categories of rarity, of which Ranks 1A, 1B, and 2 are particularly considered special-status:

- Rank 1A Presumed extinct in California.
- Rank 1B Plants Rare, Threatened, or Endangered in California and elsewhere.
- Rank 2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- Rank 3 Plants about which we need more information – a review list.
- Rank 4 Plants of limited distribution – a watch list.

The CNPS recently added "threat ranks" which parallel the ranks used by the CNDDB. These ranks are added as a decimal code after the CNPS List (e.g., Rank 1B.1). The threat codes are as follows:

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

Special-status species that occur or potentially could occur within the study area is based on one or more of the following: (1) the direct observation of the species within the study area during any field surveys; (2) a record reported in the CNDDB; and (3) the study area is within known distribution of a species and contains appropriate habitat.

4.7.2.4 Sensitive Plant Communities

Sensitive plant communities include those habitat types considered rare by resource agencies, namely the CDFW, due to their scarcity and/or their ability to support State and Federally-listed Endangered, Threatened, and Rare vascular plants, as well as several special-status bird and reptile species. CDFW maintains a natural plant community list, the *List of California Terrestrial Natural Communities*.[7] Special-status natural communities (also referred to by CDFW as 'rare' or 'special concern') are identified on the list by an asterisk and are considered high priority vegetation types (CDFW, 2010; CDFW, 2000a).

[7] Available online at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp.

4.7.3 Local Special-status Resource Protection and Classifications

Western Riverside County MSHCP

The study area is within the Western Riverside County MSHCP which was adopted by the Riverside County Board of Supervisors (June 17, 2003). The MSHCP functions as an Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the FESA and as a Natural Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The USFWS and CDFW have authorized the take of a number special-status plant and wildlife species (Covered Species) within the MSHCP Plan Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Stephens' kangaroo rat (SKR) HCP provides Take Authorization for SKR within its boundaries as implemented by legal agreements executed among the Riverside County Habitat Conservation Agency (RCHCA), its member agencies, USFWS, CDFW, BLM , U.S. Department of Interior, State of California Resources Agency, and other agencies as appropriate.[8] The MSHCP provides Take Authorization for SKR outside the boundaries of the SKR HCP, but within the MSHCP Plan Area boundaries. The seven core reserves established by the SKR HCP will be managed as part of the MSHCP Conservation Area consistent with the SKR HCP.

The study area is within the boundaries of the SKR HCP but is not within any of the core reserves. As such, the project would be required to pay a SKR mitigation fee for coverage under the SKR HCP.

4.7.4 Sensitive Plant Communities

The study area does not support any communities considered by CDFW as sensitive habitats.

4.7.5 Special-status Plant Species

Special-status plants include those listed, or candidates for listing, by the USFWS and CDFW; and species considered special-status by the CNPS (particularly Lists 1A, 1B, and 2). Several special-status plant species were reported in the vicinity based on CNDDB and CNPS, totaling 65 species within the 9-quadrangle search (as indicated in **Appendix B**, *Special-Status Plant Species*). A total of 12 species were identified as having a potential to occur within the study area based on the literature review and existing habitat on the study area, as listed in Appendix B. Focused plant surveys were conducted in 2015 on the project site and off-site road improvement and sewer line areas and in 2016 on the off-site water line areas; none of the species determined to have a potential to occur on the project site and off-site water and sewer line areas were observed. A summer focused survey was conducted within the off-site eastern manufactured slope area in 2016; however, a spring survey has not yet been conducted within this area. The western manufactured slope areas do not support suitable habitat for special-status plant species.

[8] *http://www.skrplan.org/index.html*

4.7.6 Special-status Wildlife Species

Special-status wildlife include those species listed as Endangered or Threatened under the FESA or CESA, candidates for listing by the USFWS or CDFW, and species of special concern to the CDFW. Several special-status wildlife species were reported in the vicinity based on CNDDB, totaling 43 species within the 9-quadrangle search. A total of 19 species were identified as having a potential to occur within or use the study area based on the literature review and habitat present on the study area, as listed in **Appendix C**, *Special-status Wildlife Species*.

In addition, focused surveys were conducted for the burrowing owl in accordance with recommended protocols and the potential for foraging and nesting migratory bird and raptor species were also analyzed due to known presence within the study area or within the vicinity (see Appendix C). The species with a potential to occur on the study area are discussed below, including the results of the burrowing owl surveys and the migratory birds and raptors assessment.

Species With Potential to Occur On-site

Coast horned lizard (*Phrynosoma blainvillii*): This reptile species is a state species of special concern and is a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers sandy riparian and sage scrub habitats, but also occurs in valley-foothill, hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet. Habitats include open country, especially sandy areas, washes, flood plains, and windblown deposits.

Coast horned lizard was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Harvester ants, this species main food source, were also observed (although the food source was not seen in the area supporting suitable habitat). Although habitat and a food source potentially exist on the study area, the majority of the potentially suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Orange-throated whiptail (*Aspidoscelis hyperythra*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, non-native grassland, Riversidean sage scrub, and juniper and oak woodlands. It is often associated with riparian areas and alluvial fan sage scrub habitats.

Orange-throated whiptail was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. These areas support perennial plants that may host this species preferred food source (termites). Although habitat and a food source potentially exist on the study area, the majority of the potentially suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon)

and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Red Diamond Rattlesnake (*Crotalus ruber*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.

Red diamond rattlesnake was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Although these areas support some vegetation and crevices within the rock outcrops, the vegetation is not dense and rock crevices available for cover are limited. Higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Golden Eagle (*Aquila chrysaetos*): This raptor is a state fully protected species and is protected by the Bald and Golden Eagle Protection Act; it is also a Covered Species pursuant to the Western Riverside County MSHCP. This species nests on cliff faces and tall trees. Foraging habitat includes open country, including grasslands and early successional stages of forest and shrub habitats.

Golden eagle was determined to have a potential to occur only to forage within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered very low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to lack of cliffs on the study area, which is their preferred nesting habitat. Additionally, there is only one CNDDB occurrence record within the vicinity. This record was a breeding pair observed in fall 1979, spring 1980, and fall 1980 in San Timoteo Canyon, approximately 6.0 miles to the northeast. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Swainson's hawk (*Buteo swainsoni*): This bird species is listed as threatened by the state and is a Covered Species pursuant to the Western Riverside County MSHCP. It prefers Great Basin grasslands, riparian forests, riparian woodlands, and valley and foothill grasslands.

Swainson's hawk was determined to have a potential for foraging only within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to the limited number of trees on the study area and the proximity of the trees to roads and residential homes, which could create some noise disturbance. Additionally, there are only two CNDDB occurrence records of nesting individuals within the vicinity; both

records are from over 100 years ago. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Burrowing owl: This bird species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal prairie, coastal scrub, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley and foothill grassland and disturbed habitats. It is known to occur in the project vicinity based on CNDDB and the MSHCP, and the study area is within the MSHCP Burrowing Owl Survey Area, an overlay in the MSHCP that requires additional surveys.

Burrowing owl was determined to have potential to occur within the study area based on the presence of suitable habitat that was identified during the Step I survey, including disturbed, low-growing vegetation, bare ground, and a few small fossorial mammal burrows. Step II surveys were conducted from May to July 2015 within the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas. Step II surveys were conducted from April to July 2016 within the off-site alternative water line areas. The subsequent Step II surveys did not identify individual burrowing owls, active burrowing owl burrows, or signs of burrowing owls within the survey area. Therefore, the study area and adjacent buffer area do not currently support burrowing owls. The results are also outlined in a separate survey reports attached as **Appendix D**, 2015 *Burrowing Owl Focused Survey Report* and **Appendix E**, 2016 *Burrowing Owl Focused Survey Report*.

Loggerhead shrike (*Lanius ludovicianus*): This bird species is listed as a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, and Sonoran desert scrub habitats.

Loggerhead shrike was observed foraging within the northwestern corner of study area during the third burrowing owl survey conducted on July 2, 2015. This area supports suitable foraging habitat for this species, which includes Riversidean sage scrub and brittlebush scrub. The potential for nesting for this species is considered moderate based on the presence of shrubs on the northwestern corner. Although this area supports shrubs that may be suitable for nesting, the northwestern corner is adjacent to developed, residential areas; higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area.

Coastal California gnatcatcher (*Polioptila californica californica*): This bird species is listed as Federally Threatened, state species of special concern, and a Covered Species pursuant to the Western Riverside County MSHCP. This species is an obligate inhabitant of coastal sage scrub habitat.

This species was observed on the study area during the focused burrowing owl survey conducted on May 13, 2015. Only one individual was heard during the survey.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*): This mammal species is listed as a state species of special concern and a Covered Species pursuant to the Western

Riverside County MSHCP. It prefers chaparral and coastal sage scrub habitats, in addition to grassland and Riversidean alluvial fan sage scrub habitats.

Northwestern San Diego pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable coastal scrub and chaparral habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Stephens' kangaroo rat (*Dipodomys stephensi*): This mammal species is listed as federally endangered and state threatened. Take Authorization for Stephens' kangaroo rat is provided by the SKR HCP within its plan boundaries, and by the Western Riverside County MSHCP for areas outside of the SKR HCP but within the MSHCP area plan boundaries (this species is a MSHCP Covered Species). This species prefers open grasslands or sparse shrub lands within sandy to sandy loam soils and low clay and gravel content.

Stephens' kangaroo rat was determined to have a moderate potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. The study area is not within any core reserves identified by the SKR HCP. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Los Angeles pocket mouse (*Perognathus longimembris brevinasus*): This mammal species is listed as a state species of special concern and a conditionally Covered Species pursuant to the Western Riverside County MSHCP (surveys are required for areas within the survey overlay, with potential conservation). It prefers sparsely vegetated habitat areas within coastal sage scrub communities and in patches of fine sandy soils associated with washes.

Los Angeles pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable Riversidean sage scrub habitat in the northwestern portion. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*): This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers open brushlands and scrub habitats.

San Diego black-tailed jackrabbit was determined to have a moderate potential to occur within the study area. The majority of the study area supports suitable habitat for this species, including the Riversidean sage scrub on the northwestern corner and the ruderal areas (which support some short grasses). However, this species is highly conspicuous and no incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego desert woodrat: This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal scrub and chaparral habitats with areas containing rock outcrops and cliffs.

San Diego desert woodrat was determined to have a moderate potential to occur within the study area based on the presence of suitable habitat (e.g. Riversidean sage scrub, rock outcrop/Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Southern Grasshopper Mouse (*Onychomys torridus ramona*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

Southern grasshopper mouse was determined to have a potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub and Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. However, the potential was considered low since this species has not been recorded on CNDDB within the vicinity of study area since 1938. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

American badger (*Taxidea taxus*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

American badger was determined to have a potential to occur within the study area based on the presence of shrubs within the Riversidean sage scrub habitat on the northwestern corner of the study area. A few fossorial mammal burrows were observed, suggesting the presence of small mammals that could provide a possible food source. However, the potential was considered low since the majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Additionally, this species has not been recorded within the vicinity since 1908. No signs of this species were observed during any site surveys conducted in 2015.

Western Mastiff Bat (*Eumops perotis californicus*): This mammal species is a state species of special concern. This species prefers chaparral, cismontane woodlands, coastal scrub, and valley and foothill grassland habitats.

Western mastiff bat was determined to have a potential to occur for foraging only within the study area. However, the potential was considered low since although bats in this family are known to be strong fliers and can fly long distances to forage, habitat on the study area is disturbed and the majority of the study area is surrounded by development. This species preferred roosting habitat is not present on the study area and the nearest CNDDB occurrence record is from1990 approximately 3.0 miles to the southwest of the study area, in an area that is now a residential development. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pocketed free-tailed bat (*Nyctinomops femorasaccus*): This bat species is a state species of special concern and occurs in more arid habitats, roosting in rock crevices, caverns, or buildings.

Pocketed free-tailed bat was determined to have a potential to occur for roosting only within the study area based on the presence of rock outcrops. However, this potential was considered very

low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat (CDFW, 2000b). There are only 2 CNDDB occurrence records in the vicinity. The nearest record is from 1985 approximately 6.5 miles to the southwest of the study area near March Air Force Base. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Lesser long-nosed bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. Although day roosting habitat (caves or mines) are not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pallid bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. Although day roosting habitat (caves or mines) is not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only one CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Migratory Birds and Raptors

The study area supports some potential nesting and foraging habitat for nesting birds and raptors, primarily in the northwestern corner of the study area where there are shrubs and some trees. Several species of birds were observed on-site (see Appendix A) and were identified by CNDDB as potentially occurring within the 9-quadrangle search area (see Appendix C). Raptors observed on-site include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). There is also a foraging potential for listed raptors within the 9-quadrangle search area according to CNDDB, such as golden eagle (State Fully Protected) and Swainson's hawk (Federally Threatened), though the potential of foraging is considered low and neither are expected to nest on-site (see Appendix C).

4.7.7 Study Area's Relationship to the Western Riverside County MSHCP

This section provides a discussion of the study area's relationship to the MSHCP policies, including the location within the MSHCP Area Plan, Criteria Cells, and cores and linkages, and the presence of MSHCP protected biological resources.

4.7.7.1 Location of the Study Area within the MSHCP Area Plan and Criteria Cells

The entire study area is within the Reche Canyon/Badlands Area Plan (see Figure 6) of the MSHCP but is not within a Criteria Cell, a designated Cell Group, or a subunit within the Southwest Area Plan that requires conservation of land for inclusion in the MSHCP Conservation Area (Riverside County TLMA, 2015).

4.7.7.2 Location of the Study Area within MSHCP Cores and Linkages

As mentioned previously in section 4.5.2, *Wildlife Movement within the Study Area*, the study area is not within any cores or linkages (i.e., Special Linkage Areas) as identified in the Reche Canyon/Badlands Area Plan.

4.7.7.3 Riparian/Riverine Areas and Vernal Pools

Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools,* of the MSHCP provides for the protection of Riparian/Riverine Areas and Vernal Pools within the MSHCP Plan Area. Riparian/Riverine areas are defined in the MSHCP as "lands which contain habitat dominated by trees, shrubs, persistent emergents, 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." Vernal pools are defined in the MSHCP 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."

As shown in **Figure 12**, *MSHCP Riverine Areas*, and summarized in **Table 3**, *MSHCP Riverine* Areas, The project study areas support a total 0.165 acre of MSHCP Riverine Areas including 0.059 acre in Drainage A (0.046 acre on-site and 0.013 acre off-site), 0.070 acre in Drainage B, 0.001 acre in Drainage B1, 0.001 acre in Drainage B2, 0.001 acre in Drainage B3, 0.002 acre in Drainage B4, and 0.033 acre in Drainage B5. All drainages are considered MSHCP Riverine Areas (rather than MSHCP Riparian Areas) since they are supported by ephemeral[9] flows and do not support riparian vegetation communities. No vernal pools occur within the on- and off-site study areas. Due to the presence of MSHCP Riverine features, the project will require a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis for any impacts proposed to these areas. The DBESP is required to provide details on any proposed impacts and compensatory mitigation for compliance with MSHCP requirements for submittal to the County of Riverside Environmental Programs Department (EPD), subject to approval by the

[9] Riparian drainages are streambeds that generally convey runoff during, and immediately after, a storm event.

County of Riverside Regional Conservation Authority (RCA) and the State and Federal Wildlife Agencies (CDFW and USFWS).

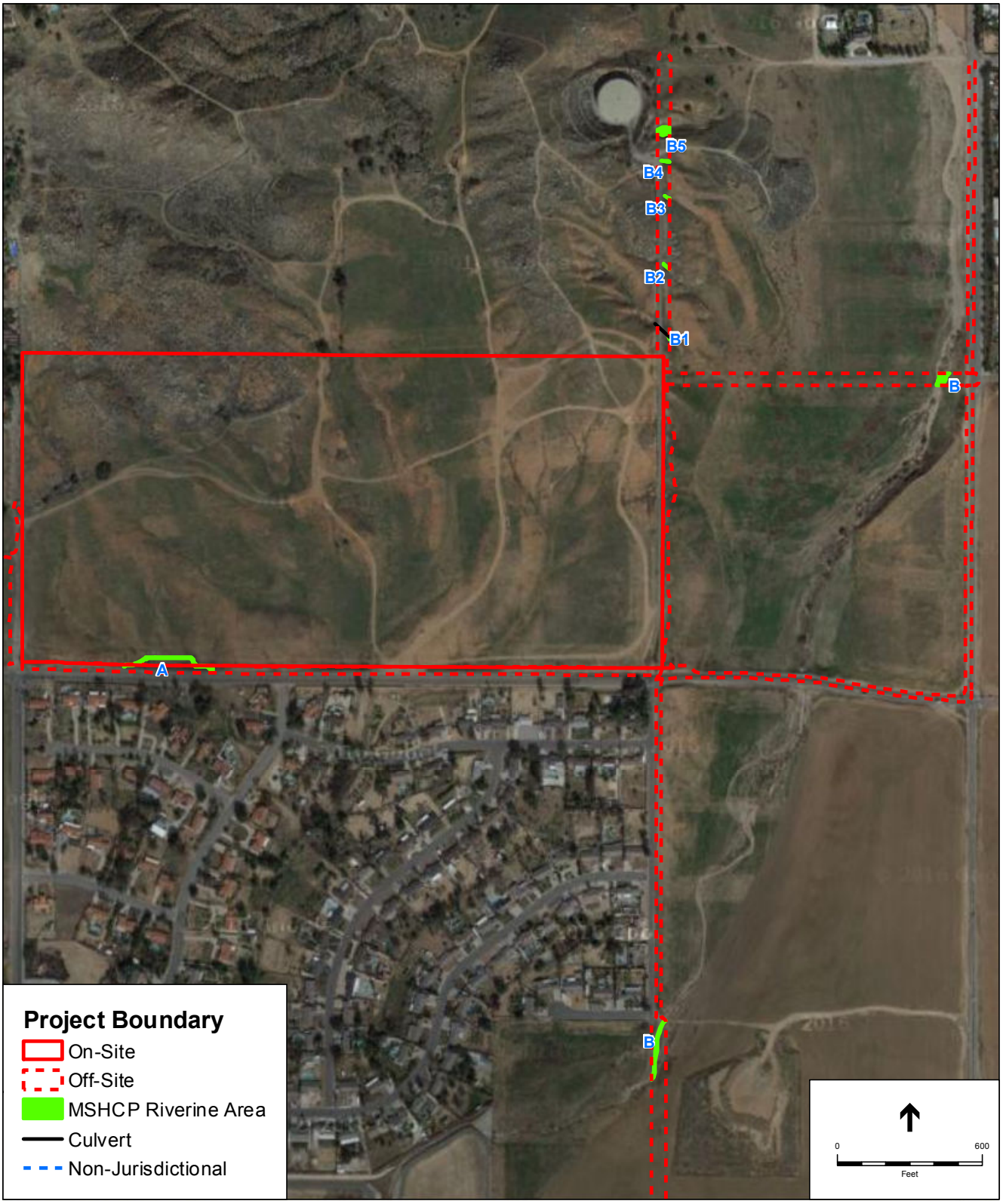
TABLE 3
MSHCP RIVERINE AREAS

Drainage (Study Area)	Length (ft)	Area (acres)	Riparian/Riverine Flow Classification
A (On-Site)	285	0.046	Riverine
A (Off-Site)	111	0.013	Riverine
B (Off-Site)	306	0.069	Riverine
B1 (Off-Site)	0*	0.001	Riverine
B2 (Off-Site)	32	0.001	Riverine
B3 (Off-Site)	25	0.001	Riverine
B4 (Off-Site)	34	0.001	Riverine
B5 (Off-Site)	35	0.033	Riverine
Total	**828**	**0.165**	

** Less than one linear foot of jurisdiction occurs within Drainage B1 as the majority of the drainage within the off-site study area is associated with an existing corrugated metal pipe that was not quantified.*

Source: ESA PCR, 2014

The biological function and value of the on- and off-site Riverine Areas within Drainage A and Drainage Complex B include the transport of water, which is limited based on the ephemeral flows of the drainage and limited watershed. The function and value of the drainages are also limited since they are primarily unvegetated and support only some small patches of upland and/or ruderal vegetation. Other types of aquatic features that could provide suitable habitat for Riparian/Riverine species, such as fairy shrimp, are not present within the study area (i.e. vernal pools, swales, vernal pool-like ephemeral ponds, seasonal ponds, stock ponds, or other human-modified depressions such as tire ruts, etc.).



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project

Figure 12

MSHCP Riverine Areas

ESA PCR

Riparian/Riverine Plant Species

A habitat assessment was conducted for species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 4**, *MSHCP Riparian/Riverine Plant Species*. Only one Riparian/Riverine plant species was determined to have a potential to occur on the study area, namely smooth tarplant (*Centromadia pungens* ssp. *laevis*). This species was considered to have a potential to occur only within the riverine habitat associated with the on- and off-site drainages; however, smooth tarplant was not observed during any of the focused plant surveys and therefore was concluded to be absent from the project site. The remaining MSHCP Riparian/Riverine plant species are not expected to occur within the study area due to the lack of suitable habitat or the location of the study area.

TABLE 4
MSHCP RIPARIAN/RIVERINE PLANT SPECIES

Species	Potential to Occur within the Study Area
Brand's phacelia *Phacelia stellaris*	Not expected to occur. This species has not been recorded in the Moreno Valley area. There is only one occurrence record in CNDDB within Riverside County, which was observed in 2000 in the City of Riverside near the Santa Ana River.
California Orcutt grass *Orcuttia californica*	Not expected to occur due to the lack of vernal pools.
Coulter's matilija poppy *Romneya coulteri*	Not expected to occur. This perennial plant has conspicuous flowers that would have been detected during the focused plant surveys if present.
Engelmann oak *Quercus engelmannii*	Not expected to occur. This is a conspicuous tree species that would have been detected during the focused plant surveys if present.
Fish's milkwort *Polygala cornuta* var. *fishiae*	Not expected to occur. The majority of occurrence records of this species on CNDDB are confined to the Santa Ana Mountains.
graceful tarplant *Holocarpha virgata* ssp. *Elongate*	Not expected to occur due to disturbance on-site. The study area is outside of the species' range; there are no known records of this species within the flatter agricultural areas east of the Santa Ana Mountains.
lemon lily *Lilium parryi*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
Mojave tarplant *Deinandra mohavensis*	Not expected to occur. The study area is outside the species range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
mud nama *Nama stenocarpum*	Not expected to occur due to the lack of wetlands. None were incidentally observed during any surveys (this species can occasionally occur in non-wetlands).
ocellated Humboldt lily *Lilium humboldtii* ssp. *ocellatum*	Not expected to occur due to high disturbance within the drainages and lack of shade. This species is typically found at higher elevations.
Orcutt's brodiaea *Brodiaea orcuttii*	Not expected to occur due to the lack of vernal pools.
Parish's meadowfoam *Limnanthes alba* ssp. *parishii*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area is outside of this species' elevation range.

Species	Potential to Occur within the Study Area
prostrate navarretia *Navarretia prostrata*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Diego button-celery *Eryngium aristulatum* var. *parishii*	Not expected to occur. The study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Jacinto Valley crownscale *Atriplex coronata* var. *notatior*	Not expected to occur due to the lack of suitable alkaline habitat.
San Miguel savory *Satureja chandleri*	Not expected to occur due to the lack of suitable metavolcanic substrate habitat.
Santa Ana River woollystar *Eriastrum densifolium* ssp. *sanctorum*	Not expected to occur due to lack of suitable habitat. The study area is outside the species range; this species is restricted to the Santa Ana River and alluvial fan sage scrub habitat.
slender-horned spineflower *Dodecahema leptoceras*	Not expected to occur due to the lack of alluvial fan habitat.
smooth tarplant *Centromadia pungens* ssp. *laevis*	Potential, but not observed. This species was not observed during the focused plant surveys.
southern California black walnut *Juglans californica*	Not expected to occur. This is a conspicuous tree species that would have been detected if present.
spreading navarretia *Navarretia fossalis*	Not expected to occur due to the lack of vernal pools.
thread-leaved brodiaea *Brodiaea filifolia*	Not expected to occur due to the lack of vernal pools.
vernal barley *Hordeum intercedens*	Not expected to occur due to the lack of vernal pools.

SOURCE: ESA PCR, 2016

Riparian/Riverine Wildlife Species

Habitat assessments were conducted for wildlife species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 5**, *MSHCP Riparian/Riverine Wildlife Species*. No riparian/riverine wildlife species are expected to occur on the study area due to the lack of suitable habitat.

TABLE 5
MSHCP RIPARIAN/RIVERINE WILDLIFE SPECIES

Species	Potential to Occur within the Study Area
arroyo toad *Anaxyrus californicus*	Not expected to occur due to the lack of suitable habitat (perennial streams).
mountain yellow-legged frog *Rana muscosa*	Not expected to occur due to the lack of suitable habitat (perennial streams).
California red-legged frog *Rana aurora draytonii*	Not expected to occur due to the lack of suitable habitat (perennial streams).

Species	Potential to Occur within the Study Area
bald eagle *Haliaeetus leucocephalus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
least Bell's vireo *Vireo bellii pusillus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
American peregrine falcon *Falco peregrinus anatum*	Not expected to occur due to the lack of suitable habitat for foraging and nesting (cliffs overlooking open areas or large bodies of water).
southwestern willow flycatcher *Empidonax traillii extimus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Not expected to occur due to the lack of suitable habitat for foraging and nesting; outside of the species range.
Santa Ana sucker *Catostomus santaanae*	Not expected to occur due to the lack of suitable habitat (perennial streams).
Riverside fairy shrimp *Streptocephalus woottoni*	Not expected to occur due to the lack of suitable habitat (vernal pools).
vernal pool fairy shrimp *Branchinecta lynchi*	Not expected to occur due to the lack of suitable habitat (vernal pools).
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	Not expected to occur due to the lack of suitable habitat (vernal pools).

SOURCE: ESA PCR, 2016

4.7.7.4 Narrow Endemic Plant Species Survey Area

The study area is not within the Narrow Endemic Plant Species Survey Area; therefore, no surveys were required for Narrow Endemic plant species.

4.7.7.5 Additional Survey Needs and Procedures

Section 6.3.2, *Additional Survey Needs and Procedures*, of the MSHCP provides for additional survey needs for the burrowing owl, as well as a number of special-status plant, amphibian, and mammal species.

Burrowing Owl Survey Area

The study area is within the Burrowing Owl Survey Area; therefore, in compliance with the Western Riverside County MSHCP, surveys are required for this species. As discussed above in section 4.7.6 Special-status Wildlife Species, Step I and Step II surveys conducted for the project following Western Riverside County MSHCP protocol were negative. Although the site does not currently support burrowing owls, pre-construction surveys are required within 30 days of ground disturbance based on the presence of suitable habitat.

Criteria Area Species Survey Area

The study area is not within the Criteria Area Species Survey Area; therefore, no surveys were required for Criteria Area plant species.

Amphibian Species Survey Area

The study area is not within the Amphibian Species Survey Area; therefore, no surveys are required.

Mammal Species Survey Area

The study area is not within the Mammal Species Survey Area; therefore, no surveys are required.

4.7.7.6Urban/Wildlands Interface

Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, of the MSHCP presents a number of guidelines that are intended to address indirect effects associated with locating developments in proximity to a Western Riverside County MSHCP Conservation Area. These guidelines address the quantity and quality of any 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 is not within or in the vicinity of any Criteria Cells (see Figure 6) and, as such, development of the site is not expected to result in indirect effects to MSHCP Conservation Areas related to night lighting, noise, and grading/land development, and barriers would not be necessary. Drainage A and Drainage Complex B ultimately drain to the San Jacinto River, which is a Constrained Linkage (19) and where Criteria Cells are located. Runoff from the site therefore has the potential to affect the quantity and quality of water downstream, in addition to the transport of plant seeds. Since the project will be required to comply with flood and water quality standards[10], no indirect effects from the quantity and quality of run-off will occur to downstream areas. At minimum, no invasive, non-native plant species listed in Tables 6-2 of the MSHCP, *Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area*, will be utilized in the landscape plans. This will avoid dispersal of invasive plant seeds in the watershed. Despite the study area not being within any Criteria Cells or adjacent to any MSHCP Conservation Areas, it does support one on-site drainage and one off-site drainage complex that are considered Riverine Areas. The above measures will avoid indirect impacts to these drainages from runoff and invasive species.

[10] The project will be required to prepare a Water Quality Management Plan and Storm Water Pollution Prevention Plan consistent with Regional Water Quality Control Board and County requirements that will outline measures such as Best Management Practices (BMPS) to address water quantity and quality, and to address any potential flooding.

5.0 THRESHOLDS OF SIGNIFICANCE

The environmental impacts relative to biological resources are assessed using impact significance threshold criteria which mirror the policy statement contained in the CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State to:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

Determining whether or not a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7, Thresholds of Significance, each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the State CEQA Guidelines, Appendix G, *Environmental Checklist Form*. Section 15065(a) states that a project may have a significant effect where:

> *"The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species..."*

Appendix G of the State CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including: candidate or other special-status species; riparian habitat or other special-status natural communities; Federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and, adopted HCPs. This is done in the form of a checklist of questions to be answered during the Initial Study leading to the preparation of the appropriate environmental documentation for a project [i.e., Negative Declaration, Mitigated Negative Declaration, or Environmental Impacts Report (EIR)]. Because these questions are derived from standards in other laws, regulations, and other commonly used thresholds, it is reasonable to use these

standards as a basis for defining significance thresholds in an EIR. Therefore, for the purpose of this analysis, impacts to biological resources are considered potentially significant (before considering offsetting mitigation measures) if one or more of the following conditions would result from implementation of the proposed Project.

Threshold BIO-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 the California Department of Fish and Wildlife or U.S. Wildlife Service.

Note: Threshold BIO-A also encompasses the threshold on the Riverside County Environmental Assessment/Initial Study form as follows: "Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)."

Threshold BIO-B Have a substantial adverse effect on any riparian habitat or other sensitive plant community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service.

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

Threshold BIO-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 areas.

Threshold BIO-E Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Threshold BIO-F Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

For the purposes of this impact analysis the following definitions apply:

- "Substantial adverse effect" means loss or harm of a magnitude which, based on current scientific data and knowledge would: (1) substantially reduce population numbers of a listed, candidate, sensitive, rare, or otherwise special status species; (2) substantially reduce the distribution of a sensitive plant community/habitat type; or (3) eliminate or substantially

impair the functions and values of a biological resource (e.g., streams, wetlands, or woodlands) in a geographical area defined by interrelated biological components and systems. In the case of this analysis, the prescribed geographical area is considered to be the region that includes the USGS topographic quadrangle for the study area, namely Sunnymead. For some species, the geographic area may extend to the vicinity of the study area based on known distributions of the species. The vicinity of the study area is considered to comprise the following USGS topographic quadrangles: San Bernardino South, Redlands, Yucaipa, Riverside East, El Casco, Steele Peak, Perris, and Lakeview.

- "Conflict" means contradiction of a magnitude, which based on foreseeable circumstances, would preclude or prevent substantial compliance.

- "Rare" means: (1) that the species exists in such small numbers throughout all, or a significant portion of, its range that it may become endangered if its environment worsens; or (2) the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the FESA.

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6.0 PROJECT RELATED IMPACTS

6.1 Regulatory Setting

Special-status species are provided protection by either Federal or State resource management agencies, or both, under provisions of the FESA and CESA.

There are a number of performance criteria and standard conditions that must be met as part of any review and approval of the proposed project. These include compliance with all of the terms, provisions, and requirements with applicable laws that relate to Federal, State, and local regulating agencies related to potential impacts to special-status plant and wildlife species, wetlands, riparian habitats, and blue lined stream courses. The following summarizes federal and state regulations, and CNPS, as previously discussed in section 4.7, *Special-Status Biological Resources*.

6.1.1 Federal Regulations

As previously discussed in section 4.7.1, Federal Sensitive Resource Protection and Classifications of this BRA, under provisions of Section 9(a)(1)(B) of the FESA, unless properly permitted, it is unlawful to "take" any listed species. In a case where a property owner seeks permission from a Federal agency for an action which could affect a Federally-listed plant and animal species, the property owner and agency are required to consult with USFWS to obtain appropriate permits. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants. In addition to FESA, take of migratory birds, or bald or golden eagles, require permits pursuant to the MBTA and the Bald and Golden Eagle Protection Act, respectively. Furthermore, any impacts to USACE and RWQCB jurisdictional waters would require permitting pursuant to Sections 404 and 401 of the CWA, respectively.

6.1.2 State of California Regulations

As previously discussed in section 4.7.2, *State of California Sensitive Resource Protection and Classifications* of this BRA, Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species. Exceptions authorized by the State to allow "take" require permits or memoranda of understanding and can be authorized for "endangered species, threatened species, or candidate species for scientific, educational, or management purposes." Sections 1901 and 1913 of the California Fish and Wildlife Code provide that notification is required by an initiator prior to disturbance. State regulations also exist for protection of birds pursuant to the MBTA, and for acquiring permits for impacts to CDFW jurisdictional streambeds pursuant to Section 1602 of the Fish and Game Code.

6.1.3 California Native Plant Society

As previously discussed in section 4.7.2, *State of California Sensitive Resource Protection and Classifications* of this BRA, the CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California which classifies plant species into categories of rarity. Informally ranked species are not protected per se, but warrant consideration in the preparation of biological assessments.

6.1.4 Local Regulations

The study area is within the adopted Western Riverside County MSHCP Plan area. The Western Riverside County MSHCP provides permits for the take of all species identified in the MSHCP as covered and conditionally covered, so long as the conditions imposed are satisfied (see also sections 4.7.3 and 4.7.7 above).

6.2 Project Related Impacts

The analysis in section *6.3 Impact Analysis* of this BRA examines the potential impacts to plant and wildlife resources that may occur as a result of implementation of the project. For the purpose of this assessment, project-related impacts take two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification or disturbance of natural habitats (i.e., vegetation or plant communities), which in turn, directly affect plant and wildlife species dependent on that habitat. Direct impacts also include the destruction of individual plants or wildlife, which is typically the case in species of low mobility (i.e., plants, amphibians, reptiles, and small mammals). The collective loss of individuals in these manners may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and, hence, population stability.

Indirect impacts are considered to be those that involve the effects of increases in ambient levels of sensory stimuli (e.g., noise, light), unnatural predators (e.g., domestic cats and other non-native animals), and competitors (e.g., exotic plants, non-native animals). Indirect impacts may be associated with the construction and/or eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to study area.

The determination of impacts in this analysis is based on both the proposed project development plan and the biological values of the habitat and/or sensitivity of plant and wildlife species to be affected. Any recommended mitigation measures to address impacts are discussed in section 7.0 below, and compliance with existing regulations are also outlined in section 7.0 as Conditions of Approval.

The biological values of resources within, adjacent to, and outside the area to be affected by the proposed project were determined by consideration of several factors, as applicable. These included the overall size of habitats to be affected, the study area’s previous land uses and

disturbance history, the study area's surrounding environment and regional context, the on-site biological diversity and abundance, the presence of special-status plant and wildlife species, the study area's importance to regional populations of these species, and the degree to which on-site habitats are limited or restricted in distribution on a regional basis and, therefore, are considered sensitive in themselves. Therefore, the focus of this impacts analysis is on sensitive plant communities/habitats, resources that play an important role in the regional biological systems, and special-status species.

Impacts to biological resources as a result of project development were analyzed in GIS using Computer-Aided Design (CAD) data of the project footprint and guidelines on temporary impact areas for the drainage crossings, both provided by the project engineer. Acreages of impacts were calculated by overlaying the CAD data and adding the fuel modification zones over GPS data of biological resources collected by ESA PCR during the surveys.

6.3 Impact Analysis

6.3.1 Impacts to Special-Status Species

Threshold BIO-A: Would the project 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 the California Department of Fish and Wildlife or U.S. Wildlife Service?

Less than Significant with Mitigation Incorporated

6.3.1.1 Special-Status Plant Species

Development of the study area would result in the direct removal of numerous common plant species; a list of plant species observed within the study area is included in Appendix A. Common plant species present within the study area occur in large numbers throughout the region and their removal does not meet the significance thresholds defined in Section 5.0, *Thresholds of Significance* above. Therefore, impacts to common plant species would not be considered a significant impact and no mitigation measures are required.

A total of 53 special-status plant species of the 65 species identified as occurring in the project vicinity in available databases (see section 4.7.5 above) are not expected to occur within the study area due to the lack of suitable habitat or because the site is outside the known distribution or elevation range for the species. These species are listed in Appendix B. As discussed in section 4.7.5, above, the remaining 12 special-status plant species were determined to have a potential to occur on the study area; however, these 12 species are not expected to occur within the project site or off-site water and sewer line areas since focused surveys conducted within these areas were negative. As such, no impacts to special-status plant species would occur as a result development on the project site and within the proposed off-site water and sewer lines and no mitigation is required.

Although a summer focused survey was performed within the off-site manufactured slope area to the east of the project site, a spring focused survey has not been conducted within this off-site

area. Of the 12 species with a potential to occur, seven (7) species are not expected to occur within the off-site manufactured slope area since these species were not detected during the summer focused survey or the area does not support suitable habitat, including California screw most (*Tortula californica*), smooth tarplant, San Bernardino aster (*Symphyotrichum defoliatum*), chaparral sand-verbena (*Abronia villosa* var. *aurita*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), salt spring checkerbloom (*Sidalcea neomexicana*), and mesa horkelia (*Horkelia cuneate* var. *puberula*). The blooming period of the remaining five (5) species with the potential to occur within the off-site manufactured slope area east of the project boundary fall outside of the summer survey window, which include Nevin's barberry (*Berberis nevinii*), Jaeger's bush milk-vetch (*Astragalus pachypus* var. *jaegeri*), round-leaved filaree (*California macrophylla*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), and white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*). Of these five species, Nevin's barberry, Jaeger's bush milk-vetch, and round-leaved filaree are covered by the MSHCP. Parry's spineflower and white-bracted spineflower are not currently covered by the MSHCP and impacts to these individuals, if present, would be significant. As such, a mitigation measure is prescribed as MM BIO-1 in section 7.2.1, which requires a spring focused plant survey to be conducted within the off-site manufactured slope area located directly east of the site prior to ground disturbance in the appropriate blooming period (between April and June) to determine the presence/absence of Parry's spineflower and white-bracted spineflower. If either or both of these species are found within the off-site eastern manufactured slope area, MM BIO-1 outlines the necessary actions that are required to reduce impacts to the special-status plant species to less than significant.

6.3.1.2 Special-status Wildlife Species

Development of the study area would result in the disruption and removal of habitat and the loss and displacement of common wildlife species. A list of wildlife species observed within the study area is included in Appendix A. Due to the limited amount of native habitat to be removed and the level of existing disturbance from human activity within the vicinity (e.g., nearby development), these impacts would not be expected to reduce the general wildlife populations below self-sustaining levels within the region and impacts to common wildlife species do not meet the significance thresholds defined in Section 5.0, *Thresholds of Significance* above. Therefore, impacts to common wildlife species would not be considered a significant impact and no mitigation measures are required.

A total of 25 special-status wildlife species of the 43 species identified as occurring in the project vicinity in available databases (see section 4.7.6 above) are not considered to have a potential to occur within the study area due to the lack of suitable habitat or because the site is outside the known distribution range for the species. These species are listed in Appendix C. Since these species are not expected to be present on the study area, no impacts would occur as a result of project development and no mitigation measures are required.

As discussed in section 4.7.6, above, the remaining 19 special-status wildlife species were determined to have a potential to occur on the study area. Of these species, focused surveys were conducted for burrowing owl, which is conditionally covered by the MSHCP with additional surveys and mitigation required as discussed in further detail below. Of the remaining 17

potential special-status wildlife species, 12 species are covered by the MSHCP with no survey or conservation requirements for the study area, including coast horned lizard, orange-throated whiptail, red diamondback rattlesnake, golden eagle, Swainson's hawk, loggerhead shrike, coastal California gnatcatcher, northwestern San Diego pocket mouse, Stephens' kangaroo rat (covered by the SKR HCP), Los Angeles pocket mouse, San Diego black-tailed jackrabbit, and San Diego desert woodrat. Therefore, assuming payment of the applicable fees (the MSHCP Local Development Mitigation Fee and the SKR HCP fee for the Stephens' kangaroo rat) and compliance with required guidelines in the MSHCP (see section 7.2.5 below), no additional mitigation is required for these species.

The remaining six (6) species, the southern grasshopper mouse, American badger, western mastiff bat, pocketed free-tailed bat, lesser long-nosed bat, and pallid bat are not covered by the MSHCP. These species are listed as species of special concern by the CDFW and do not carry a federal or state listing as threatened or endangered. These species are considered to have a low to very low potential to occur on the study area based on the limited habitat and/or quality of the habitat, and no significant impacts are anticipated to these species as described below. The study area also has the potential to support migratory birds and raptors that are discussed further in 6.2.4.2 of this report.

- No significant impact to southern grasshopper mouse since this species is only considered to have a low potential to occur as it has not been recorded on CNDDB within the vicinity of the study area since 1938.

- No significant impact to American badger since this species was considered to have low potential to occur. The majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Additionally, this species has not been recorded on CNDDB within the vicinity of the study area since 1908.

- No significant impact to western mastiff bat since this species was only considered to have a low potential to occur for foraging with no suitable roosting habitat on the study area. Although bats in this family are known to be strong fliers and can fly long distances to forage, there is only a low probability that these species will travel to the study area based on the disturbance present on the study area and presence of surrounding development. The nearest CNDDB occurrence record of this species was recorded in 1990 approximately 3.0 miles to the southwest of the study area.

- No significant impact to pocketed free-tailed bat since this species was only considered to have a very low potential to occur for roost with no suitable roosting habitat on the study area. The potential for roosting was considered very low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat.[11] There are only two CNDDB occurrence records in the vicinity.

11 CDFW. 2000. California Wildlife Habitat Relationships System: Pocketed Free-tailed Bat. State of California, The Resources Agency. May 2000.

The nearest record is from 1985 approximately 6.5 miles to the southwest of the study area near March Air Force Base.

- No significant impact to lesser long-nosed bat since this species was only considered to have a very low potential to roost and forage on the study area. The potential was considered low since this species is not typically found in California. Records in California are typically vagrant migrants. This species has only been recorded once on CNDDB within the vicinity of the study area, which was in 1993 approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa.

- No significant impact to pallid bat since this species was only considered to have a very low potential to roost and forage on the study area. The potential was considered very low because of evidence of disturbance on the study area and the presence of surrounding development to the south, northeast, and west; this species is highly sensitive to disturbance. Additionally, this species has not been recorded on CNDDB within the vicinity since 1929.

The above six species were not considered for coverage under the MSHCP, indicating that regionally significant populations of these species do not exist within the MSHCP boundaries. Based on the above discussion, the study area is not capable of supporting large populations of these species and a loss of a few individuals, if present, would not expect to reduce regional population numbers. Therefore, any impacts to these species would be less than significant and no mitigation measures are considered required.

Burrowing Owl

The study area supports potentially suitable burrowing owl (Species of Special Concern) habitat, but no active burrowing owl burrows, signs, or individuals were found on-site during the Step I and Step II surveys.

Although the study area does not currently support burrowing owls, a pre-construction survey is required in compliance with the MSHCP. Specifically, in accordance with the County of Riverside's *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside, 2006), a pre-construction survey for burrowing owl within the study area is required within 30 days prior to ground disturbance to avoid potential direct take of burrowing owls in the future. A Condition of Approval (COA BIO-1) requiring this survey is provided in section 7.2.2 below, in addition to a recommended mitigation measure (MM BIO-2) should burrowing owls be present in the future. Mitigation is proposed consistent with the burrowing owl mitigation guidelines published by CDFW (CDFW, 2012).

6.3.2 Impacts to Sensitive Plant Communities

Threshold BIO-B: Would the project have a substantial adverse effect on any riparian habitat or other sensitive plant community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service?

No Impacts (Sensitive Plant Communities)

Less than Significant with Regulatory Compliance (CDFW Jurisdiction)

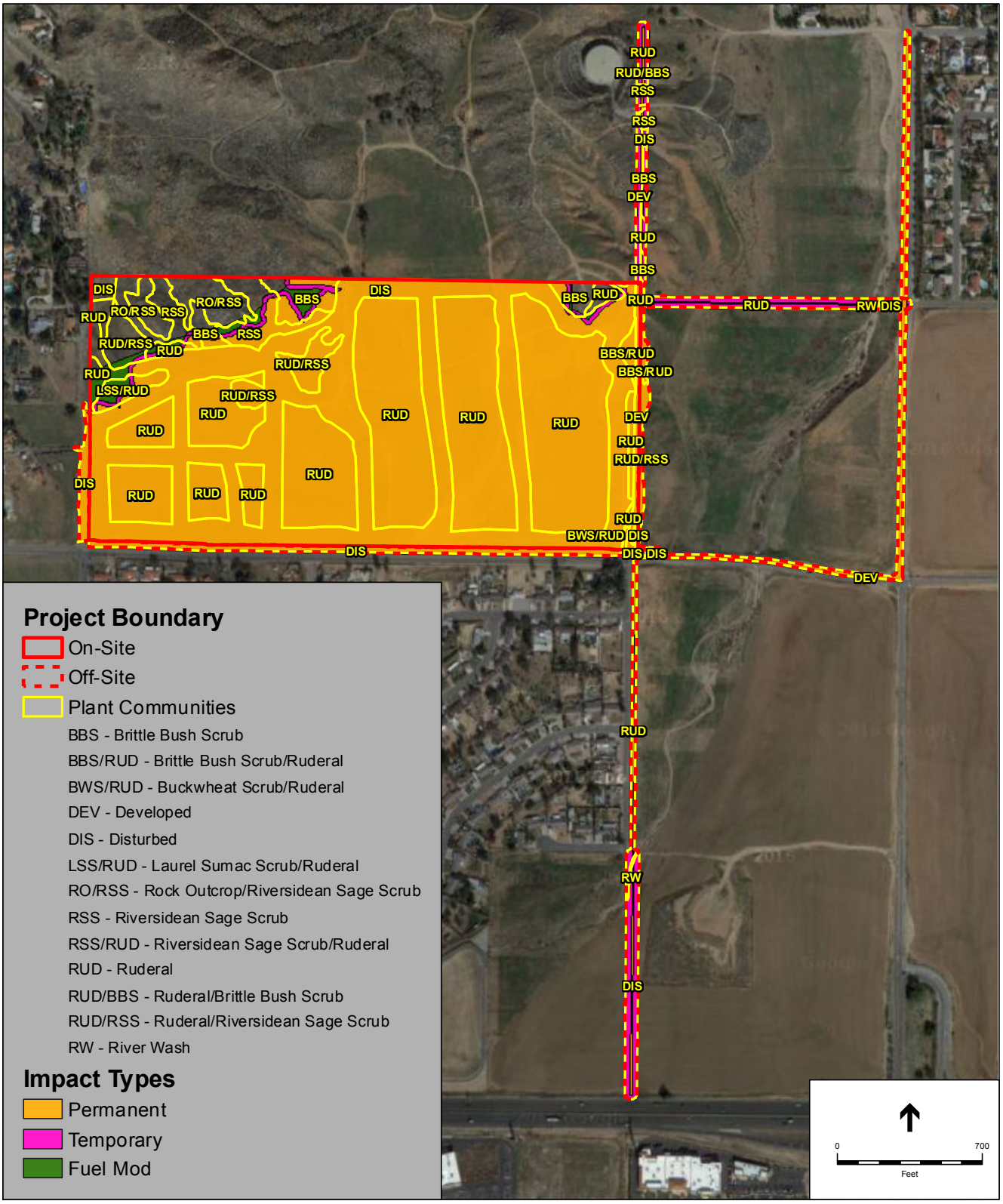
6.3.2.1 Sensitive Plant Communities

Sensitive plant communities were not observed within the study area; therefore, no impacts would occur. There are seven native communities on the study area that total 9.48 acres, including brittlebush scrub, brittlebush scrub/ruderal, buckwheat scrub/ruderal, laurel sumac scrub/ruderal, Riversidean sage scrub, Riversidean sage scrub/ruderal, and rock outcrop/Riversidean sage scrub. Permanent impacts to native communities on the study area are proposed to 2.91 acres, which is only 3.8 percent of the total proposed permanent impacts (75.81 acres) to plant communities. The majority of permanent impacts are proposed to ruderal (37.66 acres) and disturbed (30.54 acres) areas, which are dominated by non-native species. Impacts to these areas comprise 90.0 percent of the total impacts to plant communities on the study area. In addition to permanent impacts, 0.83 acres of fuel modification and 1.25 acres of temporary impacts are proposed to native communities on the study area. Impacts to plant communities are shown in **Figure 13**, *Impacts to Plant Communities* and **Table 6**, *Existing and Proposed Impacts to Plant Communities*.

TABLE 6
EXISTING AND PROPOSED IMPACTS TO PLANT COMMUNITIES

Plant Communities	Existing (acres)	Permanent Impacts (acres)	Fuel Modification Impacts (acres)	Temporary Impacts (acres)
Brittlebush Scrub	2.61	0.92	0.32	0.69
Brittlebush Scrub/Ruderal	0.52	0.51	0.00	0.01
Buckwheat Scrub/Ruderal	0.13	0.13	0.00	0.00
Laurel Sumac Scrub/Ruderal	0.78	0.36	0.26	0.16
Riversidean Sage Scrub	3.22	0.98	0.19	0.33
Riversidean Sage Scrub/Ruderal	0.07	0.01	0.00	0.06
Rock Outcrop/Riversidean Sage Scrub	2.15	0.00	0.06	0.00
River Wash	0.05	0.01	0.00	0.04
Ruderal	40.54	37.66	0.35	1.92
Ruderal/Brittlebush Scrub	0.04	0.01	0.00	0.03
Ruderal/Riversidean Sage Scrub	2.72	1.75	0.13	0.03
Disturbed	32.86	30.54	0.19	1.52
Developed	3.36	2.93	0.00	0.43
Total	**89.05**	**75.81**	**1.50**	**5.22**

SOURCE: ESA PCR, 2016



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project

Figure 13

Impacts to Plant Communities

ESA PCR

6.3.2.2 CDFW Jurisdiction

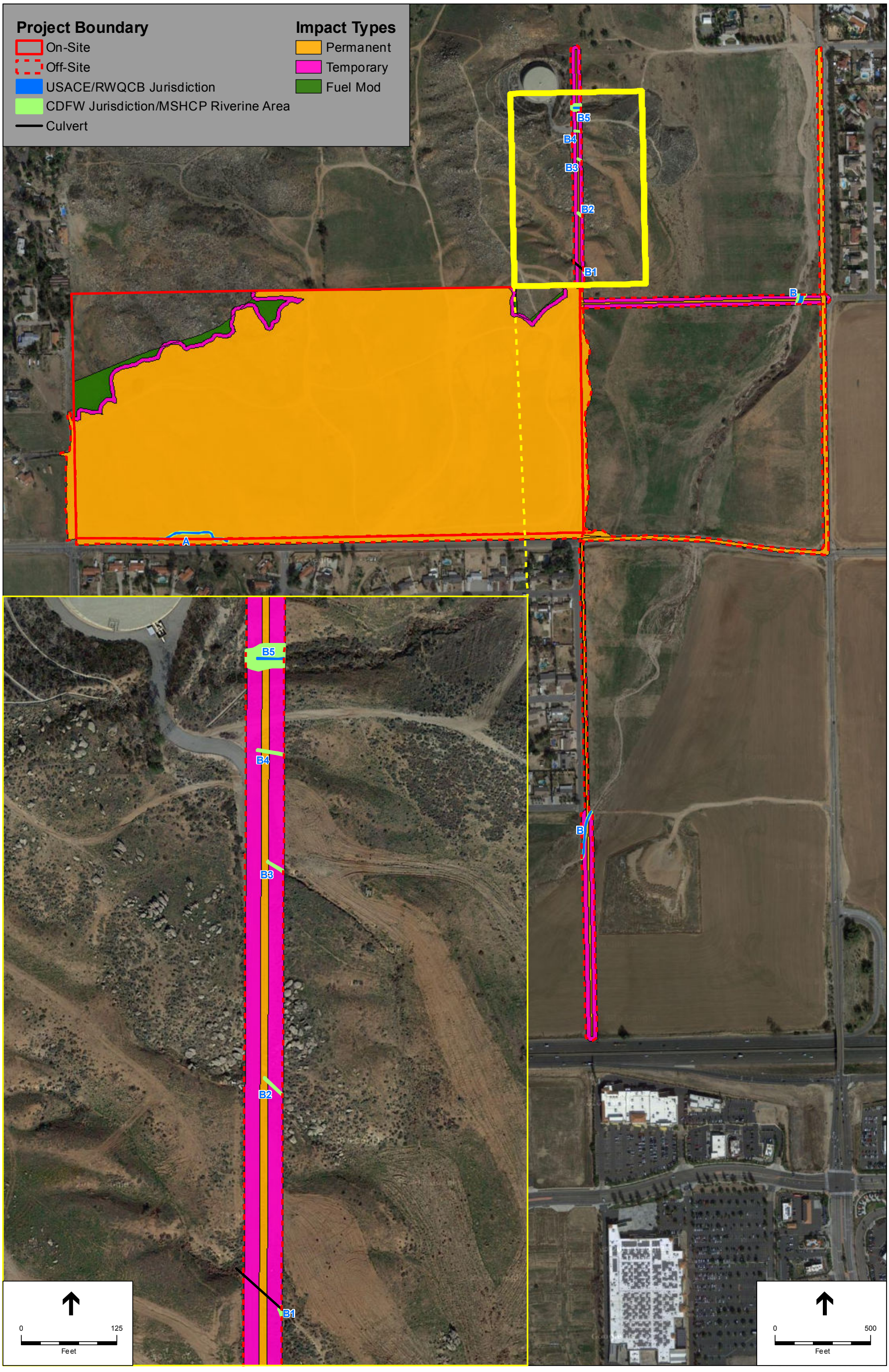
The project study areas support drainages that are considered CDFW jurisdictional streambeds pursuant to Section 1602 of the California Fish and Game Code and are proposed for impacts. Drainage A and Drainage Complex B are all jurisdictional, of which permanent impacts are proposed to Drainages A, B, B2, B3, B4, and B5 totaling 0.077 acre of permanent impacts (including 0.046 acre on-site and 0.031 acre off-site), as shown on **Figure 14**, *Impacts to Jurisdictional Features and MSHCP Riverine Areas*. Existing and impact acreages are summarized in **Table 7**, *Permanent Impacts to CDFW Jurisdictional Features and MSHCP Riverine Areas*. The permanent impacts total approximately 47 percent of the total 0.165 acre of CDFW jurisdiction identified within the on-site and off-site study areas. It should be noted that this report presumes combined impacts associated with the proposed water line alignment and two alternative alignments will occur. However, only one water line alignment will ultimately by implemented. Therefore, permanent and temporary impacts to CDFW jurisdictional waters will be slightly reduced once the final water line alignment is determined. Compensatory mitigation for permanent impacts to CDFW jurisdictional waters will be required for the project based only on impacts associated with the final water line alignment as part of subsequent CDFW Section 1602 permitting requirements. Temporarily impacted CDFW jurisdictional areas will be restored to pre-project conditions following completion of construction.

TABLE 7
IMPACTS TO CDFW JURISDICTIONAL FEATURES AND MSHCP RIVERINE AREAS[a]

Drainage (Study Area)	Existing (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Drainage A (On-Site)	0.046	0.046	-
Drainage A (Off-Site)	0.013	0.013	-
Drainage B (Off-Site)	0.069	0.011	0.058
Drainage B1 (Off-Site)	0.001	0.000	0.001
Drainage B2 (Off-Site)	0.001	0.000[b]	0.001
Drainage B3 (Off-Site)	0.001	0.000[c]	0.001
Drainage B4 (Off-Site)	0.001	0.000[d]	0.001
Drainage B5 (Off-Site)	0.033	0.007	0.026
Total	**0.165**	**0.077**	**0.088**

NOTES:
[a] MSHCP Riverine Areas are presumed equivalent to CDFW jurisdiction.
[b] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0003 acre.
[c] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0001 acre.
[d] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0004 acre.

SOURCE: ESA PCR, 2016.



SOURCE: Google Maps, 2015.

Ironwood Village Project

Figure 14

Impacts to Jurisdictional Features and MSHCP Riverine Areas

ESA PCR

Impacts to CDFW jurisdictional features would be required to comply with Section 1602 of the California Fish and Game Code, including applying for a permit and providing compensatory streambed mitigation as stated above. A Condition of Approval (COA BIO-2) is proposed in section *7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features* of this BRA to comply with the compensatory mitigation requirement of this regulation, subject to approval by CDFW. Compliance with Section 1602 of the California Fish and Game Code would reduce impacts to a less than significant level.

6.3.3 Impacts to Wetlands

Threshold BIO-C: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Regulatory Compliance

The project study areas do not support wetlands as defined by Section 404 of the Clean Water Act. However, the project study areas do support USACE/RWQCB ephemeral non-wetland jurisdictional streambeds regulated under Sections 404/401 of the Clean Water Act (CWA) that are proposed for impacts. Drainage A and Drainage B5 are considered jurisdictional "waters of the U.S.", of which permanent impacts are proposed totaling 0.034 acre(0.023 acre on-site and 0.011 acre off-site), as shown on Figure 14. Existing and permanent impact acreages are summarized in **Table 8**, *Permanent Impacts to USACE/RWQCB Jurisdictional Features*. The permanent impacts total less than 60 percent of the total 0.058 acre of USACE/RWQCB jurisdiction on-site and off-site. Temporarily impacted areas will be restored to pre-project conditions.

TABLE 8
IMPACTS TO USACE/RWQCB JURISDICTIONAL FEATURES

Drainage	Existing (acres)		Permanent Impacts (acres)		Temporary Impacts (acres)	
	Length (ft)	Area (acres)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Drainage A	285	0.023	285	0.023	0	0.000
Drainage A (off-site)	111	0.007	111	0.007	0	0.000
Drainage B (off-site)	306	0.026	40	0.004	266	0.022
Drainage B5 (off-site)	35	0.002	10	0.001	25	0.001
Total	**737**	**0.058**	**436**	**0.034**	**366**	**0.023**

SOURCE: ESA PCR, 2016

Impacts to USACE and RWQCB jurisdictional "waters of the U.S." would be required to comply with Sections 404 and 401 of the CWA, respectively, including applying for a permit and mitigation subject to approval by USACE and/or RWQCB. A Condition of Approval (COA

BIO-2) is proposed in section *7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features* of this BRA to comply with the compensatory mitigation requirement of these regulations, subject to approval by USACE and RWQCB. Compliance with Sections 404 and 401 of the CWA is intended to reduce impacts to a less than significant level.

6.3.4 Impacts to Wildlife Movement and Migratory Species

Threshold BIO-D: Would the project 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 areas?

Less Than Significant (Wildlife Movement)

Less than Significant with Mitigation Incorporated (Migratory Species)

6.3.4.1 Wildlife Movement

As described in section 4.5.2 above, the study area supports potential live-in and movement habitat for species on a local scale (i.e., some limited live-in and at least marginal movement habitat for reptile, bird, and mammal species), but it likely provides little to no function to facilitate wildlife movement for wildlife species on a regional scale, and is not identified as a regionally important dispersal or seasonal migration corridor. Movement on a local scale likely occurs with species adapted to urban environments due to the development and disturbances in the vicinity of the study area. Although implementation of the project would result in disturbances to local wildlife movement within the study area, those species adapted to urban areas would be expected to persist on-site following construction, particularly within the open space areas. As such, impacts would be less than significant and no mitigation measures would be required. Since the study area does not function as a regional wildlife corridor and are not known to support wildlife nursery area(s), no impacts would occur and no mitigation measures would be required.

6.3.4.2 Migratory Species

Migratory Birds and Raptors

As previously discussed in section 4.7.6, *Special-status Wildlife Species*, the site supports potential nesting and foraging habitat for migratory birds, in addition to potential foraging habitat for raptors. Based on the disturbed nature of the site from agriculture and ongoing maintenance activities, the quality of foraging habitat is considered to be low. Higher quality foraging habitat is considered to occur in less developed areas with larger expanses of open space. The loss of a relatively small acreage of low quality foraging habitat as a result of the project would not be expected to impact the foraging of these species. Therefore, impacts to foraging habitat would be considered less than significant and no mitigation measures are considered required.

The study area has the potential to support songbird and raptor nests due to the presence of shrubs, ground cover, and limited trees on-site. Nesting activity typically occurs from February 15 to August 31. Disturbing or destroying active nests is a violation of the MBTA (16 U.S.C.

703 et seq.). In addition, nests and eggs are protected under Fish and Wildlife Code Section 3503. As such direct impacts to breeding birds (e.g. through nest removal) or indirect impacts (e.g. by noise causing abandonment of the nest) is considered a potentially significant impact as defined by the thresholds of significance (Threshold BIO-D) in Section 6.0 above. Compliance with the MBTA would reduce impacts to a less than significant level, as detailed in MM BIO-3 (see section 7.2.4).

6.2.5 Consistency with Local Policies and Ordinances

Threshold BIO-E: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impacts

The project does not conflict with any local policies or ordinances protecting biological resources, such as tree preservations or ordinances.

6.2.6 Consistency with Adopted Natural Community Conservation Plan

Threshold BIO-F: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant with Mitigation Incorporated

The study area is within the Western Riverside County MSHCP and requires payment of the Local Development Mitigation Fee, compliance with requirements of the MSHCP including the Burrowing Owl Survey Area guidelines (Section 6.3.2 of the MSHCP), and the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2 of the MSHCP). The study area is not within a cell, a designated cell group, or a subunit within the Reche Canyon/Badlands Area Plan; therefore, conservation of land on the study area is not required pursuant to the MSHCP. The study area is also not within the survey overlays for Criteria Area Species, Narrow Endemic Plant Species, Amphibian Species, or Mammal Species (Section 6.3.2 of the MSHCP). Since the study area is not within or in the vicinity of any Criteria Cells, the project will not result in edge effects that will adversely and directly affect biological resources within the MSHCP Conservation Area. As such, the project will not be subject to certain requirements outlined in the Guidelines Pertaining to the Urban/Wildlands Interface (Section 6.1.3 of the MSHCP) including those for the treatment and management of edge factors including night lighting, noise, barriers for public access and predators, and grading/land development limits. However, runoff from the site has the potential to indirectly affect MSHCP Conservation Areas downstream through the quantity and quality of water discharged from the site, in addition to the transport of plant seeds. Therefore compliance with the drainage, toxics, and invasive requirements outlined in Section 6.1.3 of the MSHCP would be required. A Condition of Approval (COA BIO-3) is proposed in section *7.2.5 Measures to Mitigate Potentially Significant Impacts to the MSHCP* of this BRA, which requires the project to comply

with all provisions of the MSHCP prior to issuance of a grading permit. Compliance with COA BIO-3 would reduce impacts to a less than significant level.

Project compliance with the MSHCP pertaining to Burrowing Owl, Riparian/Riverine, and Urban/Wildlands Interface requirements for drainage, toxics and invasives are summarized below:

- The study area is within the Burrowing Owl Survey Area of the MSHCP. Focused burrowing owl surveys were conducted within all portions of the study area that support potentially suitable habitat for this species. No burrowing owls were observed on the study area. However, due to the presence of potentially suitable habitat, a 30-day pre-construction survey for burrowing owl is required pursuant to the MSHCP. If burrowing owls are found within the study area during the 30-day pre-construction survey, impacts to this species would be potentially significant. The Condition of Approval (COA BIO-1) and mitigation measure (MM BIO-2) prescribed in section 7.2.1 below would reduce this impact to a less than significant level and ensure consistency with the MSHCP.

- Drainage A and Drainage Complex B on the study area meet the definition of Riverine Areas pursuant to the MSHCP. The project will result in permanent impacts to 0.078 acre of Riverine Areas, including 0.046 acre within the on-site portion of Drainage A, 0.013 acre in the off-site portion of Drainage A, and 0.018 acre within Drainage Complex B. The permanent impacts are equivalent to approximately 47 percent of the total 0.165 acre of Riverine Areas within the project study areas. The proposed Riverine Areas impacts are summarized in Table 7.

- The biological function and value of the on- and off-site Riverine Areas within Drainage A and Drainage Complex B include the transport of water, which is restricted based on the ephemeral flows of the drainage and limited watershed. The function and value of the drainages are also limited since they support only small patches of upland and/or ruderal vegetation and are primarily unvegetated. Other types of aquatic features that could provide suitable habitat for Riparian/Riverine species, such as fairy shrimp, are not present within the study area (i.e. vernal pools, swales, vernal pool-like ephemeral ponds, seasonal ponds, stock ponds, or other human-modified depressions such as tire ruts, etc.).

- Impacts to Riverine Areas would be potentially significant based on requirements of the MSHCP. According to section 6.1.2 of the MSHCP, if an avoidance alternative is not feasible a Determination of Biologically Equivalent or Superior Preservation (DBESP) shall be made by the Project applicant to ensure the replacement of any lost functions and values of habitat as it relates to MSHCP Covered Species. The condition of approval prescribed in section 7.2.3 below pertaining to jurisdictional drainages ensures consistency with the MSHCP. The DBESP would be submitted to the City and reviewed and approved by the City and the Wildlife Agencies.

- The project has the potential to affect the quantity and quality of water in downstream MSHCP Conservation Areas or Riverine areas via Drainage A and Drainage Complex B through runoff generated by the development and transport of invasive, non-native plants species from project landscaping. Since the project will be required to comply with flood and

water quality standards,[12] no indirect effects from the quantity and quality of run-off will occur to downstream areas. In addition, no invasive, non-native plant species listed in Tables 6-2 of the MSHCP, *Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area*, will be utilized in the landscape plans. These measures will avoid impacts to water quality and the dispersal of invasive plant seeds in the watershed and are outlined in the Condition of Approval recommended in section 7.2.5 below.

[12] The project will be required to prepare a Water Quality Management Plan and Storm Water Pollution Prevention Plan consistent with Regional Water Quality Control Board and County requirements that will outline measures such as Best Management Practices (BMPS) to address water quantity and quality, and to address any potential flooding.

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7.0 MITIGATION MEASURES AND CONDITIONS OF APPROVAL

7.1 Approach

Mitigation measures are recommended for those impacts determined to be significant to special-status biological resources (identified in italics in section 7.2 below). Mitigation measures for impacts considered to be "significant" were developed in an effort to reduce such impacts to a level of "insignificance," while at the same time allowing an opportunity to realize development goals under the proposed project. As stated in CEQA Guidelines Section 15370 mitigation includes:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

Where compliance with existing regulations and the issuance of permits by regulatory agencies would reduce impacts to a less than significant level, those measures are proposed as conditions of approval (identified in non-italics in section 7.2 below).

7.2 Mitigation Measures and Conditions of Approval for Significant Impacts

The following recommended mitigation measures (MM) and conditions of approval (COA) are intended to address potentially significant impacts from the proposed development Project.

7.2.1 Measures to Mitigate Potentially Significant Impacts to Special-Status Plant Species

MM BIO-1 Due to the presence of suitable habitat within the proposed off-site manufactured slope area located directly east of the project boundary, a spring focused plant survey to determine the presence/absence of Parry's spineflower and white-bracted spineflower is required to be conducted during the appropriate blooming periods of the two species (between April and June) prior to ground disturbance. If individuals are found,

significant impacts would occur as a result of implementation of the project unless mitigation is implemented to reduce impacts to less than significant. Mitigation includes seed collection of individuals that would be significantly impacted by the project at the end of the growing season and prior to ground disturbance. Collected seeds will be planted within an appropriate on-site or off-site mitigation area, which will be conserved as open space in perpetuity. Mitigation for significant impacts to Parry's spineflower and white-bracted spineflower will be implemented in consultation with the City of Moreno Valley and CDFW.

7.2.2 Measures to Mitigate Potentially Significant Impacts to Special-Status Wildlife Species

COA BIO-1 Due to the presence of suitable habitat and in compliance with the MSHCP, a pre-construction survey for burrowing owl is required within 30 days prior to ground disturbance to determine the presence of burrowing owls and avoid potential direct take of burrowing owls if present.

MM BIO-2 If burrowing owls are determined present during the 30-day pre-construction survey, occupied burrows shall be avoided to the greatest extent feasible, following the guidelines in the Staff Report on Burrowing Owl Mitigation published by Department of Fish and Wildlife (CDFW, 2012) including, but not limited to, conducting pre-construction surveys, avoiding occupied burrows during the nesting and non-breeding seasons, implementing a worker awareness program, biological monitoring, establishing avoidance buffers, and flagging burrows for avoidance with visible markers. If occupied burrows cannot be avoided, acceptable methods may be used to exclude burrowing owl either temporarily or permanently, pursuant to a Burrowing Owl Exclusion Plan that shall be prepared and approved by the County of Riverside Environmental Programs Department (EPD), in coordination with the CDFW. The Burrowing Owl Exclusion Plan shall be prepared in accordance with the guidelines in the Staff Report on Burrowing Owl Mitigation and the MSHCP.

In accordance with the MSHCP, take of active nests will be avoided. Passive relocation (i.e., the scoping of the burrows by a burrowing owl biologist and collapsing burrows free of young) will occur when owls are present outside the nesting season. The EPD may require translocation sites for the burrowing owl to be created in the MSHCP reserve for the establishment of new colonies pursuant to MSHCP objectives for the species. Translocation sites, if required, will be identified in consultation with EPD and/or CDFW taking into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species.

7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features

COA BIO-2 Prior to the issuance of any grading permit for permanent impacts in the areas designated as jurisdictional features, the project applicant shall obtain regulatory permits from the USACE, RWQCB, and CDFW. The following shall be incorporated into the permitting, subject to approval by the regulatory agencies:

1. On-site or off-site creation, restoration and/or enhancement of USACE/RWQCB jurisdictional "waters of the U.S." within the San Jacinto watershed at a ratio no less

than 1:1 or within an adjacent watershed at a ratio no less than 2:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

2. On-site or off-site creation, restoration, and/or enhancement of CDFW jurisdictional streambed within the San Jacinto watershed at a ratio no less than 1:1 or within an adjacent watershed at a ratio no less than 2:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

Purchase of any mitigation credits through an agency-approved mitigation bank or in-lieu fee program should occur prior to any impacts to jurisdictional drainages. Any mitigation proposed on land acquired for the purpose of in-perpetuity mitigation that is not part of an agency-approved mitigation bank or in-lieu fee program shall include the creation, restoration, and/or enhancement of similar streambed habitat pursuant to a resource agency-approved Habitat Mitigation and Monitoring Plan (HMMP). The HMMP shall be prepared prior to any impacts to jurisdictional features, and shall provide details as to the implementation of the mitigation, maintenance, and future monitoring of mitigation areas. The goal of the mitigation shall be to create, restore, and/or enhance similar habitat with equal or greater function and value than the impacted habitat.

7.2.4 Measures to Mitigate Potentially Significant Impacts to Migratory or Nesting Birds

MM BIO-3 Prior to the issuance of any grading permit that would remove potentially suitable nesting habitat for raptors or songbirds, the project applicant shall demonstrate to the satisfaction of the City of Moreno Valley that either of the following have been or will be accomplished:

1. Vegetation removal activities shall be scheduled outside the nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors) to avoid potential impacts to nesting birds.

2. Any construction activities that occur during the nesting season (February 15 to August 31 for songbirds; January 15 to August 31 for raptors) will require that all suitable habitat be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected a buffer of 300 feet (500 feet for raptors) around the nest adjacent to construction will be delineated, flagged, and avoided until the nesting cycle is complete. The buffer may be modified and/or other recommendations proposed as determined appropriate by the biological monitor to minimize impacts.

7.2.5 Measures to Mitigate Potentially Significant Impacts to the MSHCP

COA BIO-3 Prior to the issuance of any grading permit the project applicant shall comply with all of the provisions of the MSHCP, including payment of the MSHCP Local Development Mitigation Fee, compliance with Section 6.1.2 of the MSHCP pertaining to Riparian/Riverine Areas, implementation of drainage, toxics and non-native species guidelines pertaining to the Urban/Wildlands Interface in Section 6.1.4 of the MSHCP, and compliance with Section 6.3.2 of the MSHCP pertaining to Burrowing Owl Survey Area requirements. Compliance with Section 6.1.2 of the MSHCP will require preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis outlining the impacts and proposed compensatory mitigation for impacts to the Riparian/Riverine Areas for submittal and approval by the City of Moreno Valley and the wildlife agencies (CDFW and USFWS).

8.0 IMPACTS AFTER MITIGATION

8.1 Level of Significance after Mitigation

The proposed project, inclusive of mitigation measures and conditions of approval, would have less than significant impacts to special-status species, jurisdictional features, and migratory and/or nesting birds, in addition to providing MSHCP consistency.

8.2 Cumulative Impacts

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered significant. "Related projects" refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed Project. CEQA deems a cumulative impact analysis to be adequate if a list of "related projects" is included in the EIR or the proposed project is consistent with an adopted general, specific, master, or comparable programmatic plan [Section 15130(b)(1)(B)]. CEQA also states that no further cumulative impact analysis is necessary for impacts of a proposed project consistent with an adopted general, specific, master, or comparable programmatic plan [Section 15130(d)].

The MSHCP identifies areas for long-term conservation and management. As such, cumulative impacts of proposed projects within authorized take lands are minimized through the conservation of land. Cumulative impacts to the biological resources listed below for the study area are considered to be less than significant based on compliance with the Western Riverside County MSHCP, and regulations for jurisdictional waters. This includes implementation of the mitigation measures and conditions of approval outlined above in section 6.*0*, *Project Related Impacts* and *7.0*, *Mitigation Measures and Conditions of Approval*. Since the study area was determined not to function as a regional wildlife movement corridor, this biological resource is not included below.

- Special-status plant species (Parry's spineflower and white-bracted spineflower);
- Burrowing owl;
- Migratory and/or nesting birds; and
- Drainage features (including USACE, RWQCB and CDFW jurisdictional features and MSHCP Riparian/Riverine areas).

The proposed mitigation would result in a minimum no-net-loss of the biological function and value of these resources, and the conditions of approval would ensure compliance with existing regulations (such as the Western Riverside County MSHCP) and regulations for jurisdictional drainages. Therefore, with the proposed mitigation and conditions of approval, impacts would not be considered cumulatively significant. A summary is provided below.

Special-Status Plant Species: Mitigation is proposed and includes a spring focused survey prior to ground disturbance to determine the presence/absence of Parry's spineflower and white-bracted spineflower within the off-site eastern manufactured slope area. If either or both of these species are observed, collection of seed and planting within an on-site or off-site mitigation site is required. The mitigation site is required to be preserved as open space in perpetuity. With this mitigation measure, any impacts to Parry's spineflower and white-bracted spineflower would not be considered cumulatively significant.

Special-Status Wildlife Species: Mitigation is proposed if burrowing owls are observed on the study area in the future, which would avoid direct impacts in compliance with the Western Riverside County MSHCP. Mitigation is also proposed to avoid direct impacts to raptors and migratory bird species through compliance with the MBTA. With these mitigation measures, any impacts would not be considered cumulatively significant.

Jurisdictional Drainages: Impacts to jurisdictional features would be subject to permitting with the regulatory agencies, including USACE, RWQCB and/or CDFW, including compensatory mitigation. With the proposed compliance of existing regulations through the permitting process, impacts would not be considered cumulatively significant.

Riparian/Riverine Areas: Impacts to MSHCP Riparian/Riverine areas would be subject to approval of a DBESP by the City of Moreno Valley and Wildlife Agencies, as required in Section 6.1.2 of the Western Riverside County MSHCP. With the approval and implementation of the DBESP impacts would not be considered cumulatively significant. Mitigation is proposed as compensation for impacts to jurisdictional drainages through the regulatory process as described above.

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APPENDIX A - FLORAL AND FAUNAL COMPENDIUM

ANGIOSPERMS (DICOTYLEDONS)

	Scientific Name	Common Name
	Adoxaceae	**Muskroot Family**
	Sambucus nigra ssp. *caerulea*	blue elderberry
	Anacardiaceae	**Sumac or Cashew Family**
	Rhus ovata	sugar sumac
	Asteraceae	**Sunflower Family**
	Ambrosia acanthicarpa	flatspine bur ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Baccharis salicifolia	mule fat
	Brickellia desertorum	desert brickellbush
*	*Centaurea melitensis*	tocalote
	Corethrogyne filaginifolia	common sandaster
	Deinandra fasciculata	fascicled tarplant
	Encelia farinosa	brittlebush
	Ericameria pinifolia	pinebush
	Erigeron canadensis	horseweed
*	*Helianthus annuus*	common sunflower
	Heterotheca grandiflora	telegraphweed
*	*Lactuca serriola*	prickly lettuce
*	*Oncosiphon piluliferum*	stinknet
	Pseudognaphalium bicolor	bicolored cudweed
*	*Salsola tragus*	prickly Russian thistle
	Stephanomeria virgata	rod wirelettuce
	Boraginaceae	**Borage Family**
	Amsinckia intermedia	common fiddleneck
	Phacelia cicutaria	caterpillar phacelia
	Brassicaceae	**Mustard Family**
*	*Hirschfeldia incana*	short pod mustard
*	*Raphanus raphanistrum*	wild radish
*	*Sisymbrium irio*	London rocket
	Sisymbrium sp.	mustard

** non-native*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Cactaceae	**Cactus Family**
Cylindropuntia californica var. *parkeri*	cane cholla
Opuntia littoralis	coast prickly pear
Chenopodiaceae	**Goosefoot Family**
* *Chenopodium murale*	nettle-leaved goosefoot
Convolvulaceae	**Morning-Glory Family**
* *Convolvulus arvensis*	field bindweed
Cucurbitaceae	**Gourd Family**
Cucurbita palmata	coyote gourd
Marah macrocarpa	wild cucumber
Cuscutaceae	**Dodder Family**
Cuscuta sp.	dodder
Euphorbiaceae	**Spurge Family**
Croton setigerus	dove weed
Euphorbia albomarginata	rattlesnake weed
Fabaceae	**Legume Family**
Acmispon americanus	Spanish lotus
Acmispon glaber var. *glaber*	deerweed
Geraniaceae	**Geranium Family**
* *Erodium botrys*	longbeak stork's bill
* *Erodium cicutarium*	red-stemmed filaree
Lamiaceae	**Mint Family**
* *Marrubium vulgare*	horehound
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Trichostema lanceolatum	vinegarweed
Malvaceae	**Mallow Family**
* *Malva parviflora*	cheeseweed
Myrtaceae	**Myrtle Family**
* *Eucalyptus camaldulensis*	red gum
* *Eucalyptus citriodora*	lemon scented gum
Nyctaginaceae	**Four O'Clock Family**
Mirabilis laevis	wishbone bush

** non-native*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
Salix gooddingii	black willow
Scrophulariaceae	**Figwort Family**
Antirrhinum nuttallianum	Nuttall's snapdragon
Scrophularia californica	California figwort
Solanaceae	**Nightshade Family**
Datura wrightii	jimsonweed
* *Nicotiana glauca*	tree tobacco
Solanum douglasii	Douglas' nightshade
Solanum xanti	purple nightshade
Zygophyllaceae	**Caltrop Family**
* *Tribulus terrestris*	puncturevine

ANGIOSPERMS (MONOCOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Arecaceae	**Palm Family**
* *Washingtonia robusta*	Mexican fan palm
Liliaceae	**Lily Family**
Chlorogalum pomeridianum	soap plant
Poaceae	**Grass Family**
* *Arundo donax*	giant reed
* *Avena fatua*	wild oat
* *Bromus diandrus*	ripgut grass
* *Bromus madritensis* ssp. *rubens*	foxtail chess
* *Festuca perennis*	Italian ryegrass
* *Hordeum vulgare*	barley
* *Lamarckia aurea*	goldentop
* *Polypogon monspeliensis*	annual beard grass
* *Schismus barbatus*	Mediterranean schismus

** non-native*

REPTILES

SCIENTIFIC NAME	COMMON NAME
Colubridae	**Colubrid Snakes**
Coluber flagellum	coachwhip
Phrynosomatidae	**Zebratail, Earless, Horned, Spiny, Fringe-Toed Lizards**
Sceloporus occidentalis	western fence lizard

BIRDS

SCIENTIFIC NAME		COMMON NAME
Cathartidae		**New World Vultures**
	Cathartes aura	*turkey vulture*
Accipitridae		**Hawks**
	Accipiter cooperii	*Cooper's hawk*
	Buteo jamaicensis	*red-tailed hawk*
Falconidae		**Falcons**
	Falco sparverius	*American kestrel*
Charadriidae		**Plovers**
	Charadrius vociferus	*killdeer*
Columbidae		**Pigeons and Doves**
*	*Columba livia*	*rock pigeon*
	Zenaida macroura	*mourning dove*
Apodidae		**Swifts**
	Aeronautes saxatalis	*white-throated swift*
Trochilidae		**Hummingbirds**
	Archilochus alexandri	*black-chinned hummingbird*
	Calypte anna	*Anna's hummingbird*
Picidae		**Woodpeckers**
	Picoides nuttallii	*Nuttall's woodpecker*
Tyrannidae		**Tyrant Flycatchers**
	Sayornis nigricans	*black phoebe*
	Sayornis saya	*Say's phoebe*
	Tyrannus verticalis	*western kingbird*
	Tyrannus vociferans	*Cassin's kingbird*
Laniidae		**Shrikes**
	Lanius ludovicianus	*loggerhead shrike*

** non-native*

BIRDS

SCIENTIFIC NAME		COMMON NAME
Corvidae		**Jays and Crows**
	Corvus brachyrhynchos	*American crow*
Alaudidae		**Larks**
	Eremophila alpestris	*horned lark*
Hirundinidae		**Swallows**
	Petrochelidon pyrrhonota	*cliff swallow*
	Hirundo rustica	*barn swallow*
	Stelgidopteryx serripennis	*northern rough-winged swallow*
Aegithalidae		**Bushtits**
	Psaltriparus minimus	*bushtit*
Polioptilidae		**Gnatcatchers**
	Polioptila californica californica	*coastal California gnatcatcher*
Sturnidae		**Starlings**
*	*Sturnus vulgaris*	*European starling*
Emberizidae		**Emberizine Sparrows and Allies**
	Melozone crissalis	*California towhee*
Icteridae		**Blackbirds**
	Agelaius phoeniceus	*red-winged blackbird*
Fringillidae		**Finches**
	Haemorhous mexicanus	*house finch*
	Spinus psaltria	*lesser goldfinch*
	Spinus tristis	*American goldfinch*
Passeridae		**Old World Sparrows**
*	*Passer domesticus*	*house sparrow*

MAMMALS

SCIENTIFIC NAME	COMMON NAME
Sylvilagus audubonii sanctidiegi	Audubon's cottontail

** non-native*

APPENDIX B: SPECIAL-STATUS PLANT SPECIES

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
BRYOPHYTES								
Bryaceae	**Moss Family**							
Tortula californica	California screw moss	N/A	NONE	NONE	1B.2	NONE	Sandy soil. Chenopod scrub, Valley and foothill grassland. 10-1460 meters.	**ABSENT**
ANGIOSPERMS (DICOTS)								
Asteraceae	**Sunflower Family**							
Ambrosia pumila	San Diego ambrosia	Apr.-Oct.	FE	NONE	1B.1	MSHCP(b)	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; often in disturbed areas; sometimes alkaline sandy loam or clay soils. 20-415 meters.	**NONE**
Artemisia palmeri	San Diego sagewort	May-Sep.	NONE	NONE	4.2	MSHCP	Coastal scrub, chaparral, riparian forest, riparian woodland, riparian scrub; found in sandy soils within drainages and riparian areas. 15-915 meters.	**NONE**
Centromadia pungens ssp. *laevis*	smooth tarplant	Apr.-Sep.	NONE	NONE	1B.1	MSHCP(d)	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline. 0-640 meters.	**ABSENT**
Deinandra paniculata	paniculate tarplant	Apr.-Nov.	NONE	NONE	4.2	NONE	Generally vernally mesic; coastal scrub; valley and foothill grassland; vernal pools 25-940 meters.	**NONE**
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Aug.-Oct.	NONE	NONE	1A	NONE	Freshwater marsh, salt marsh. 10-1675 meters.	**NONE**
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Feb.-Jun.	NONE	NONE	1B.1	MSHCP(d)	Marshes and swamps (coastal salt), playas, vernal pools. 1-1220 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Senecio astephanus	San Gabriel ragwort	May-Jul.	NONE	NONE	4.3	NONE	Chaparral, coastal bluff scrub; rocky slopes. 400-1500 meters.	**NONE**
Symphyotrichum defoliatum	San Bernardino aster	Jul.-Nov.	NONE	NONE	1B.2	NONE	Cismontane woodland; coastal scrub; lower montane coniferous forest; meadows and seeps; marshes and swamps; valley and foothill grassland (vernally mesic); near ditches, streams and springs. 2-2040 meters.	**ABSENT**
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	May-Sep.	NONE	NONE	2B.1	MSHCP(b)	Meadows and seeps, marshes and swamps, riparian scrub, vernal. 5-435 meters.	**NONE**
Aspleniaceae	**Spleenwort Family**							
Asplenium vespertinum	western spleenwort	Mar.-Jun.	NONE	NONE	4.2	NONE	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland. 274 - 825 meters.	**NONE**
Berberidaeeae	**Barberry Family**							
Berberis nevinii	Nevin's barberry	Mar.-Jun.	FE	SE	1B.1	MSHCP(d)	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian	**ABSENT**

NONE = species not expected to occur on the study area due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = preferred habitat was considered present based on the literature review and observed habitat on the study area, however no individuals were observed during the focused sensitive plant survey.

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
							scrub or woodland. 274 - 825 meters.	
Nasturtium gambelii	Gambel's water cress	Apr.-Oct.	FE	ST	1B.1	NONE	Marshes or swamps. 5-330 meters.	**NONE**
Boraginaceae	**Borage Family**							
Harpagonella palmeri	Palmer's grapplinghook	Mar.-May	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub, valley and foothill grassland; open grassy areas within shrubland; clay soils. 20-955 meters.	**NONE**
Brassicaceae	**Mustard Family**							
Caulanthus simulans	Payson's jewel-flower	Feb.-Jun.	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub; sandy, granitic soils. 90-2200 meters.	
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Jan.-Jul.	NONE	NONE	4.3	NONE	Chaparral, coastal scrub; shrubland; dry soils. 1-885 meters.	**NONE**
Cactaceae	**Cactus Family**							
Opuntia basilaris var. brachyclada	short-joint beavertail	Apr.-Jun.	NONE	NONE	1B.2	NONE	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland, riparian woodland; sandy or granitic soils. 425-1800 meters.	**NONE**
Caryophyllaceae	**Pink Family**							
Arenaria paludicola	marsh sandwort	May-Aug.	FE	SE	1B.1	NONE	Marshes and swamps (freshwater); grows through dense areas of *Typha*, *Juncus*, and *Scirpus*; found in sandy soils. 3-170 meters.	**NONE**
Chenopodiaceae	**Saltbush Family**							
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	Apr.-Aug.	FE	NONE	1B.1	MSHCP(d)	Alkaline flats, playas, valley and foothill grassland, vernal pools. 139-500 meters.	**NONE**
Atriplex pacifica	South Coast saltscale	Mar.-Oct.	NONE	NONE	1B.2	NONE	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas. 0-140 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Atriplex parishii	Parish's brittlescale	Jun.-Oct.	NONE	NONE	1B.1	MSHCP(d)	Shadscale scrub, alkali sinks, freshwater wetlands, wetland-riparian; playas, vernal pools. 25-1900 meters.	**NONE**
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Apr.-Oct.	NONE	NONE	1B.2	MSHCP(d)	Coastal sage scrub, wetland-riparian; coastal. 10-200 meters	**NONE**
Convolvulaceae	**Morning-glory Family**							
Convolvulus simulans	small-flowered morning-glory	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Clay soils, serpentinite seeps; openings in chaparral; coastal sage scrub; valley and foothill grassland. 30-700 meters.	**NONE**
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	Jul.-Oct.	NONE	NONE	2B.2	NONE	Marshes and swamps (freshwater). 15-280 meters.	**NONE**
Fabaceae	**Pea Family**							
Astragalus hornii var. hornii	Horn's milk-vetch	May-Oct.	NONE	NONE	1B.1	MSHCP	Meadows and seeps, playas, lake margins; alkali soils. 60-850 meters.	**NONE**
Astragalus pachypus var. jaegeri	Jaeger's bush milk-vetch	Dec.-Jun.	NONE	NONE	1B.1	MSHCP	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland; dry habitats, such as ridges, valleys, and sandy slopes, typically within grasslands and oak chaparral. 365-915 meters.	**ABSENT**
Rupertia rigida	Parish's rupertia	Jun.-Aug.	NONE	NONE	4.3	NONE	Chaparral, lower montane coniferous forest, cismontane woodland, meadows and seeps, pebble plain, valley and foothill grassland. 700-2500 meters	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Geraniaceae	**Geranium Family**							
California macrophylla	round-leaved filaree	Mar.-May	NONE	NONE	1B.1	MSHCP(d)	Cismontane woodland, valley and foothill grassland; clay. 15-1200 meters.	**ABSENT**
Grossulariaceae	**Gooseberry Family**							
Ribes divaricatum var. parishii	Parish's gooseberry	Feb.-Apr.	NONE	NONE	1A	NONE	Riparian woodland. 65-300 meters.	**NONE**
Hydrophyllaceae	**Waterleaf Family**							
Nama stenocarpa	mud nama	Jan.-Jul.	NONE	NONE	2.B2	MSHCP(d)	Marches and swamps (lake margins, riverbanks). 5-500 meters.	**NONE**
Juglandaceae	**Walnut Family**							
Juglans californica	California black walnut	Mar.-Jun.	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub, cismontane woodland, slopes, canyons, alluvial habitats. 50-900 meters.	**NONE**
Juglandaceae	**Walnut Family**							
Lepechinia cardiophylla	heart-leaved pitcher sage	Apr.-Jul.	NONE	NONE	1B.2	MSHCP(d)	Closed-cone coniferous forest, chaparral, cismontane woodland. 520-1370 meters.	**NONE**
Monardella macrantha ssp. *hallii*	Hall's monardella	Jun.-Oct.	NONE	NONE	1B.3	MSHCP	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. 730-2195 meters.	**NONE**
Monardella pringlei	Pringle's monardella	May-Jun.	NONE	NONE	1A	NONE	Coastal scrub; sandy soils. 300-400 meters.	**NONE**
Juncaceae	**Rush Family**							
Juncus duranii	Duran's rush	Jul.-Aug.	NONE	NONE	4.3	NONE	Meadows, lower and upper montane coniferous forest; wet areas. 1770-2805 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Malvaceae	**Stick-leaf Family**							
Malacothamnus parishii	Parish's bush-mallow	Jun.-Jul.	NONE	NONE	1A	NONE	Chaparral, coastal sage scrub; in washes. 305-455 meters.	**NONE**
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	Jun.-Aug.	NONE	SR	1B.2	NONE	Chaparral, cismontane woodland, lower montane coniferous forest; typically found in burned or cleared areas on dry, rocky hillsides and along edges of fire roads. 1000-2500 meters.	**NONE**
Sidalcea neomexicana	salt spring checkerbloom	Mar.-Jun.	NONE	NONE	2B.2	NONE	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas/alkaline, mesic. 15-1530 meters.	**ABSENT**
Nyctaginaceae	**Four O'Clock Family**							
Abronia villosa var. *aurita*	chaparral sand-verbena	Jan.-Sep.	NONE	NONE	1B.1	NONE	Chaparral, coastal scrub, desert dunes; sandy. 75-1600 meters.	**ABSENT**
Orobanchaceae	**Broom-rape Family**							
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	May-Oct.	FE	SE	1B.2	NONE	Coastal salt marsh, coastal dunes; limited to the higher zones of the salt marsh habitat 0-30 meters.	**NONE**
Papaveraceae	**Poppy Family**							
Romneya coulteri	Coulter's matilija poppy	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Dry washes and canyons in sage scrub and chaparral. 20-1200 meters.	**NONE**
Polemoniaceae	**Phlox Family**							
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Apr.-Sep.	FE	SE	1B.1	MSHCP	Chaparral, coastal scrub (alluvial fan); sandy or gravelly soils. 91-610 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Navarretia fossalis	spreading navarretia	Apr.-Jun.	FT	NONE	1B.1	MSHCP(b)	Coastal sage scrub, wetland-riparian; occurs almost always under natural conditions in wetlands. 30-655 meters.	**NONE**
Polygonaceae	**Buckwheat Family**							
Chorizanthe leptotheca	Peninsular spineflower	May-Aug.	NONE	NONE	4.2	MSHCP(e)	Chaparral, coastal scrub, lower montane coniferous forest; granitic soils and alluvial fans. 300-1900 meters.	**NONE**
Chorizanthe parryi var. *parryi*	Parry's spineflower	Apr.-Jun.	NONE	NONE	1B.1	MSHCP(e)	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; sandy or rocky, openings. 275-1220 meters.	**ABSENT** However, there is a potential for this species to occur within the off-site manufactured slope area east of the project boundary.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Apr.-Jul.	NONE	NONE	1B.2	MSHCP	Chaparral, coastal scrub, meadow and seep, valley and foothill grassland, vernal pools; ultramafic, often clay. 30-1530 meters.	**ABSENT**
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Apr.-June	NONE	NONE	1B.2	NONE	Coastal scrub(alluvial fans), Mojavean desert scrub, pinyon and juniper woodland; sandy or gravelly soils. 300-1200 meters.	**ABSENT** However, there is a potential for this species to occur within the off-site manufactured slope area east of the project boundary.
Dodecahema leptoceras	slender-horned spineflower	Apr.-Jun.	FE	SE	1B.1	MSHCP(b)	Chaparral, cismontane woodland, coastal scrub (alluvial fan); sandy. 200-760 meters.	**NONE**
Ranunculaceae	**Buttercup Family**							
Myosurus minimus ssp. *apus*	little mousetail	Mar.-Jun.	NONE	NONE	3.1	MSHCP(d)	Associated with vernal pools and inundated grassland habitats.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Rosaceae	**Rose Family**							
Horkelia cuneata var. *puberula*	mesa horkelia	Feb.-Sep.	NONE	NONE	1B.1	NONE	Chaparral (maritime), cismontane woodland, coastal scrub; sandy or gravelly soils. 70-810 meters.	**ABSENT**
Rubiaceae	**Coffee Family**							
Galium californicum ssp. *primum*	Alvin Meadow bedstraw	May-Jul.	NONE	NONE	1B.2	MSHCP(f)	Chaparral, Lower montane coniferous forest/granitic, sandy 1350-1700 meters.	**NONE**
Solanaceae	**Nightshade Family**							
Lycium parishii	Parish's desert-thorn	Mar.-Apr.	NONE	NONE	2B.3	NONE	Coastal scrub, Sonoran desert scrub. 135-1000 meters.	**NONE**
Themidaceae	**Butcher's-Broom Family**							
Brodiaea filifolia	thread-leaved brodiaea	Mar.-Jun.	FT	SE	1B.1	MSHCP(d)	Clay soils in coastal scrub, valley and foothill grassland, cismontane woodland, and vernal pools. 25-1120 meters.	**NONE**
Muilla coronate	crowned muilla	Mar.-Apr.	NONE	NONE	4.2	NONE	Joshua tree woodland, pinyon-juniper woodland, Mojavean desert scrub, chenopod scrub; found in sandy, granitic soils on barren flats and ridges. 670-1960 meters.	**NONE**
ANGIOSPERMS (MONOCOTS)								
Cyperaceae	**Sedge Family**							
Carex comosa	bristly sedge	May-Sep.	NONE	NONE	2B.1	NONE	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland. 0-625 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Orchidaceae	**Orchid Family**							
Piperia leptopetala	narrow-petaled rein orchid	Mar.-Jul.	NONE	NONE	4.3	NONE	Cismontane woodland, lower and upper montane coniferous forest. 380-2225 meters.	**NONE**
Liliaceae	**Lily Family**							
Allium munzii	Munz's onion	Mar.-May	FE	ST	1B.1	MSHCP(b)	Prefers chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland; mesic, clay. 297-1070 meters.	**NONE**
Calochortus plummerae	Plummer's mariposa lily	May-Jul.	NONE	NONE	4.2	MSHCP(e)	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest; rocky and sandy areas, typically of granitic or alluvial material; typically common after fire. 100-1700 meters.	**NONE**
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, openings. 30-1800 meters.	**NONE**
Poaceae	**Grass Family**							
Hordeum intercedens	vernal barley	Mar.-Jun.	NONE	NONE	3.2	MSHCP	Valley and foothill grassland, vernal pools, coastal dunes, coastal scrub, dry saline streambeds, alkaline flats. 5-1000 meters.	**NONE**
Imperata brevifolia	California satintail	Sep.-May	NONE	NONE	2.1	NONE	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub/mesic. 0-1215 meters.	**NONE**
Sphenopholis obtusata	prairie wedge grass	Apr.-Jul.	NONE	NONE	2B.2	NONE	Cismontane woodland, meadows and seeps; mesic sites. 300-2000 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
FUNGI (ASCOMYCOTA)								
Caliciaceae	**Lichen-forming Fungi**							
Texosporium sancti-jacobi	woven-spored lichen	N/A	NONE	NONE	3	NONE	Chaparral; found in open areas with chamise, buckwheat, club moss, and sometimes on small mammal droppings. 290-660 meters.	**NONE**

Key to Species Listing Status Codes

FE	*Federally Endangered*	SE	*State Listed as Endangered*
FT	*Federally Threatened*	ST	*State Listed as Threatened*
FC	*Federal Candidate*	SCE	*State Candidate for Endangered*
FPE	*Federally Proposed as Endangered*	SCT	*State Candidate for Threatened*
FPT	*Federally Proposed as Threatened*	SFP	*State Fully Protected*
FPD	*Federally Proposed for Delisting*	SSC	*California Species of Special Concern*

MSHCP	*Western Riverside County Multiple Species Habitat Conservation Plan covered species*
MSHCP(a)	*Surveys may be required as part of wetlands mapping per MSHCP Section 6.1.2.*
MSHCP(b)	*Surveys may be required within Narrow Endemic Plant Species survey area per MSHCP Section 6.1.3.*
MSHCP(c)	*Surveys may be required per MSHCP Section 6.3.2.*
MSHCP(d)	*Surveys may be required within Criteria Area per MSHCP Section 6.3.2.*
MSHCP(e)	*These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met per MSHCP Section 9.0 (Table 9-3).*
MSHCP(f)	*These Covered Species will be considered to be 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 per MSHCP Table 9-3.*

Source: PCR Services Corporation, 2015

NONE = species not expected to occur on the study area due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = preferred habitat was considered present based on the literature review and observed habitat on the study area, however no individuals were observed during the focused sensitive plant survey.

Appendix C: Special-Status Wildlife Species

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
INVERTEBRATES						
ANOSTRACA	**Fairy Shrimp**					
Streptocephalus woottoni	Riverside fairy shrimp	FE	NONE	MSHCP(a)	Endemic to western Riverside, Orange and San Diego Counties In areas of tectonic swales and slump basins in grassland and coastal scrub. Inhabit seasonal pools filled by winter/spring rains. Hatch in warm water later in the season.	**NONE** No suitable habitat.
Diptera	**Flies**					
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	FE	NONE	MSHCP	Found in areas of the Delhi Sands formation in southwestern San Bernardino and northwestern Riverside Counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes and sparse vegetation.	**NONE** No suitable habitat. Although the study area is in the species range, Delhi Sands soils were not mapped by NRCS. Additionally, the majority of the site is highly disturbed.
Lepidoptera	**Butterflies and Moths**					
Euphydryas editha quino	quino checkerspot butterfly	FE	NONE	MSHCP	Chaparral and coastal scrub with sunny clearings. Require high densities of host plants, cuhs as *Plantago erecta*, *P. insularis*, and *Orthocarpus purpurescens*.	**NONE** No host species.
FISHES						
Catostomidae	**Suckers**					
Catostomus santaanae	Santa Ana sucker	FT	NONE	MSHCP	Habitat generalists, but prefer sand-rubble-boulder bottoms,	**NONE**

NONE = Species not expected to occur due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (F) = Species not expected to forage due to lack of food sources, or the site's location is outside of the species' range.

NOT EXPECTED = Preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys.

POTENTIAL = Preferred habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (N) = Preferred nesting or roosting habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					cool, clear water, & algae.	No suitable habitat.
Cyprinidae	**Carps and Minnows**					
Gila orcutti	arroyo chub	NONE	SSC	MSHCP	Aquatic and south coast flowing waters; slow water stream sections with mud or sand bottoms; feeds heavily on aquatic vegetation and associated invertebrates.	**NONE** No suitable habitat.
Rhinichthys osculus ssp. *3*	Santa Ana speckled dace	NONE	SSC	NONE	Aquatic and south coast flowing waters. Prefer stony habitat where there are hiding spaces between stones, washed by moderate current.	**NONE** No suitable habitat.
AMPHIBIANS						
Ranidae	**True Frogs**					
Rana muscosa	southern mountain yellow-legged frog	FE, FSS	SSC	MSHCP(d)	Prefers rocky stream courses in the mountains of southern California. Inhabits mid- to upper-elevation, perennial streams, often in locations with bedrock pools. Always encountered within a few feet of water.	**NONE** No suitable habitat.
Scaphiopodidae	**North American Spadefoots**					
Spea hammondii	western spadefoot	NONE	SSC	MSHCP	Prefers burrow sites within relatively open areas in lowland grasslands, chaparral, and pine-oak woodlands, areas of sandy or gravelly soil in alluvial fans, washes, and floodplains.	**NONE** No suitable habitat.

NONE = Species not expected to occur due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (F) = Species not expected to forage due to lack of food sources, or the site's location is outside of the species' range.

NOT EXPECTED = Preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys.

POTENTIAL = Preferred habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (N) = Preferred nesting or roosting habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					Requires temporary pools for reproduction.	
REPTILES						
Anniellidae	**Legless Lizards**					
Anniella pulchra pulchra	silvery legless lizard	NONE	SSC	NONE	Sparse vegetation in beach, chaparral, and pine-oak woodland habitats as well as sycamores, cottonwoods, and oaks growing adjacent to streams. Needs loose soil for burrowing, moisture, warmth, and plant cover. Requires moisture.	**NONE** No suitable habitat.
Colubridae	**Colubrid Snakes**					
Lampropeltis zonata parvirubra	California mountain kingsnake (San Bernardino population)	NONE	SSC	MSHCP(f)	Well-lit canyons with rocky outcrops or rocky talus.	**NONE** No suitable habitat. Although the study area supports two small areas with rock outcrops, the outcrops are interspersed with vegetation and surrounded by unsuitable habitat. The study area also lacks rocky talus and is not within a canyon, which are both habitat features preferred by this species. The only CNDDB occurrence record in the vicinity is from 1997 on near Mill Creek off of SR-38, approximately 14.25 miles to the northeast of the study area.
Thamnophis hammondii	two-striped garter snake	NONE	SSC	NONE	Riparian and freshwater marshes with perennial water.	**NONE** No suitable habitat.

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Emydidae	**Box and Water Turtles**					
Emys marmorata	western pond turtle	NONE	SSC	MSHCP	Aquatic environments; artificial flowing waters; marsh and swamp; south coast flowing and standing waters; wetlands. Requires upland habitat up to 0.5 km from water for egg laying and sandy banks or open fields for basking.	**NONE** No suitable habitat.
Phrynosomatidae	**Zebratail, Earless, Horned, Spiny, Fringe-Toed Lizards**					
Phrynosoma blainvillii	coast horned lizard	NONE	SSC	MSHCP	Chaparral; cismontane woodland; coastal bluff scrub; coastal scrub; desert wash; pinyon and juniper woodlands; riparian scrub; riparian woodland; valley and foothill grassland. Requires opens areas for basking, bushes for cover, loose soil for burrowing, and insects for food.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of study area where Riversidean sage scrub and brittlebush scrub occurs. Harvester ants, this species main food source, were also observed (although the food source was not observed in the area supporting suitable habitat). Although suitable habitat and a possible food source exists on the study area, the majority is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.

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Teiidae	**Whiptail Lizards**					
Aspidoscelis hyperythra	orange-throated whiptail	NONE	SSC	MSHCP	Chaparral; cismontane woodland; coastal scrub. Typically found along washes and other sandy sites. Requires perennial plants that host termites.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of the study area where Riversidean sage scrub and brittlebush scrub occurs. These areas support perennial plants that may host this species preferred food source (termites). Although suitable habitat and a possible food source exists on the study area, the majority is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.
Viperidae	**Vipers**					
Crotalus ruber	red diamond rattlesnake	None	SSC	MSHCP	Chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of study area where Riversidean sage scrub and brittlebush scrub occurs. However, these areas support limited vegetation and crevices for cover required by this species and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the

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						study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.
BIRDS						
Accipitridae	**Hawks**					
Aquila chrysaetos	golden eagle	NONE	SFP	MSHCP	Mountains, deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	**NONE (N); POTENTIAL(F, LOW)** There are few trees are present on the site, primarily near the western boundary in the laurel sumac scrub/ ruderal community. However, this species typically prefers to nest on cliffs, which are not present. This species is not expected to nest on the study area since it is highly disturbed, preferred nesting habitat is not present, and no records of nesting occur. There were some small mammal burrows observed in the disturbed areas of the study area, which could potentially provide a food source. However, there is only 1 CNDDB occurrence record within the vicinity. This record was a breeding pair observed in fall 1979, spring 1980, and fall 1980 in San Timoteo Canyon, approximately 6.0 miles to the northeast.
Buteo swainsoni	Swainson's hawk	NONE	ST	MSHCP	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands	**NONE (N); POTENTIAL (F, LOW)** There are a few trees present on the study area, primarily near the

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					with groves or lines of trees. Requires suitable foraging areas adjacent to breading areas such as grasslands that support rodent populations. This species will also hunt for reptiles and occasionally insects.	western boundary in the laurel sumac scrub/ ruderal community. However, these trees are limited and directly adjacent to roads and residential homes, which could create some noise disturbance. Disturbed areas supply open space with some potentially suitable habitat for burrowing animals and insects, and therefore may provide a food source for this species. There are only 2 CNDDB occurrence records of nesting individuals within the vicinity, both from over 100 years ago.
Elanus leucurus	white-tailed kite	NONE	SFP	MSHCP	Cismontane woodland; marsh and swamp; riparian woodland; valley and foothill grassland; wetland. Requires open grasslands, meadows, or marshes for foraging near isolated full-canopied trees for nesting.	**NONE (N); NONE (F)** No suitable habitat.
Haliaeetus leucocephalus	bald eagle	NONE	SE	MSHCP	Lower montane coniferous forest; old growth.	**NONE (N); NONE (F)** No suitable habitat.
Cuculidae	**Cuckoos, Roadrunners, and Anis**					
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FC	SE	MSHCP(a)	Riparian thickets and forests dominated by willows abutting slow-moving watercourses, backwaters, or seeps.	**NONE (N); NONE (F)** No suitable habitat.

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Strigidae	**True Owls**					
Athene cunicularia	burrowing owl	NONE	SSC	MSHCP(c)	Disturbed; low-growing vegetation within coastal prairie, coastal scrub, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley and foothill grassland; bare ground, disturbed.	**NOT EXPECTED** Potentially suitable habitat present. Presence/absence surveys conducted with no BUOW observed.
Asio otus	long-eared owl	NONE	SSC	NONE	Riparian bottomlands with tall willows & cottonwoods; also found in live oak patches along streams. Require adjacent open land with mice and old nests of crows, hawks, or magpies for breeding.	**NONE (N); NONE (F)** No suitable habitat.
Tyrannidae	**Tyrant Flycatchers**					
Empidonax traillii extimus	southwestern willow flycatcher	FE	SE	MSHCP(a)	Wet meadows, riparian woodlands that contain water and low growing willow thickets.	**NONE (N); NONE (F)** No suitable habitat.
LANIIDAE	**Shrikes**					
Lanius ludovicianus	loggerhead shrike	NONE	SSC	MSHCP	Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes; open country with perches for hunting and relatively dense shrubs for nesting.	**POTENTIAL (N, MODERATE); OBSERVED (F)** This species was observed during the third BUOW survey (7/2/2015).
Vireonidae	**Vireos**					
Vireo bellii pusillus	least Bell's vireo	FE	SE	MSHCP(a)	Riparian forest; riparian scrub; riparian woodland.	**NONE (N); NONE (F)** No suitable habitat.

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Troglodytidae	**Wrens**					
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	NONE	SSC	MSHCP	Coastal scrub. Requires tall, mature *Opuntia* or cholla cactus for nesting.	**NONE (N); NONE (F)** No suitable habitat. The cactus observed on-site (*Opuntia littoralis* and *Cylindropuntia californica* var. *parkeri*) are sparsely growing, immature individuals and are not suitable for nesting.
Parulidae	**Wood Warblers**					
Icteria virens	yellow-breasted chat	NONE	SSC	MSHCP	Nests in low, dense riparian willow thickets & other brushy tangles (e.g. blackberry, wild grape) near water. Forages and nests within 10 feet of ground.	**NONE (N); NONE (F)** No suitable habitat.
Setophaga petechia	yellow warbler	NONE	SSC	MSHCP	Riparian woodlands, montane chaparral, open ponderosa pine and mixed coniferous habitat with significant brush.	**NONE (N); NONE (F)** No suitable habitat.
Polioptilidae	**Gnatcatchers**					
Polioptila californica californica	coastal California gnatcatcher	FT	SSC	MSHCP	Coastal bluff scrub; coastal scrub.	**POTENTIAL (LOW, N); OBSERVED (F)** This species was observed on the study area after completing the burrowing owl survey conducted on 5/13/2015. There is potential for this species to nest on the study area based on the presence of suitable RSS habitat; however, the potential is low since the habitat is fragmented and interspersed with unsuitable habitat.

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Icteridae	**Blackbirds**					
Agelaius tricolor	tricolored blackbird	NONE	SSC	MSHCP	Highly colonial species. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**NONE (N); NONE (F)** No suitable habitat.
MAMMALS						
Heteromyidae	**Pocket Mice and Kangaroo Rats**					
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	NONE	SSC	MSHCP	Coastal scrub, chaparral, grasslands, sagebrush; sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**POTENTIAL [MODERATE]** The study area supports suitable coastal scrub and chaparral habitat within the northwestern portion (e.g. brittle bush scrub, Riversidean sage scrub). Additionally, a number of small fossorial mammal burrows were observed on the study area.
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE	NONE	MSHCP	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains.	**NONE** The study area does not support suitable alluvial scrub vegetation.
Dipodomys stephensi	Stephens' kangaroo rat	FE	ST	MSHCP/SKR HCP	Open grasslands or sparse shrub lands. Sandy to sandy loam soils with low clay to gravel content.	**POTENTIAL [MODERATE]** The study area supports potentially suitable shrub habitat within the northwestern portion (e.g. brittle bush scrub and Riversidean sage scrub communities). Additionally, a number of small fossorial

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						mammal burrows were observed on the study area.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	NONE	SSC	MSHCP(c)	Lower elevation grasslands and coastal sage communities. Sparsely vegetated habitat areas in patches of fine sandy soils associated with washes. May not dig burrows, rather using weeds and dead leaves.	**POTENTIAL [MODERATE]** The study area supports potentially suitable habitat within the Riversidean sage scrub in the northwestern corner.
Leporidae	**Hares and Rabbits**					
Lepus californicus bennettii	San Diego black-tailed jackrabbit	NONE	SSC	MSHCP	Arid regions with short grasses; coastal scrub.	**POTENTIAL [MODERATE]** The majority of the study area supports suitable habitat for this species, including the Riversidean sage scrub on the northwestern corner and the ruderal areas (which support some short grasses)
Muridae	**Mice, Rats, and Voles**					
Neotoma lepida intermedia	San Diego desert woodrat	NONE	SSC	MSHCP	Coastal scrub and chaparral. Prefer areas with moderate to dense canopy cover. Frequently found in areas with rock outcrops and cliffs.	**POTENTIAL [MODERATE]** The study area supports potentially suitable habitat within northwestern corner (e.g. Riversidean sage scrub, rock outcrop/Riversidean sage scrub).

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Onychomys torridus ramona	southern grasshopper mouse	NONE	SSC	NONE	Low, open, and semi-open coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, chenopod scrub, and annual grasslands with scattered shrubs; food source is arthropods, especially scorpions and grasshoppers.	**POTENTIAL [LOW]** The study area supports potentially suitable shrub habitat within the northwestern portion (e.g. brittle bush scrub and Riversidean sage scrub). Additionally, a number of small fossorial mammal burrows were observed on the study area. The nearest CNDDB occurrence record of this species was recorded in 1938 approximately 4.3 miles to the southeast of the study area within the Badlands.
Mustelidae	**Weasels, Badgers, and Otters**					
Taxidea taxus	American badger	NONE	SSC	NONE	Open shrub, forest, and herbaceous habitats, with friable soils to dig burrows. Requires rodent populations for food source.	**POTENTIAL [LOW]** Shrub habitat is present on the study area within the Riversidean sage scrub community on the northwestern corner of the study area. A few mammal burrows were observed, suggesting the presence of small fossorial mammals that could provide a possible food source. However, the majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Nearest CNDDB occurrence record is from 1908 roughly 6.5 miles to the northwest of the study area.
Molossidae	**Free-Tailed Bats**					
Eumops perotis californicus	western mastiff bat	NONE	SSC	NONE	Chaparral; cismontane woodland; coastal scrub; valley	**NONE [N]; POTENTIAL [F, LOW]**

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					and foothill grassland. Roosts in crevices in cliff faces, high buildings, trees, and tunnels. Feed on insects.	No suitable roosting habitat exists on the study area. Bats in this family are known to be strong fliers and can fly long distances to forage. There is a probability that individuals may travel from roosts to forage on insects on the study area, but this is considered low based on the disturbance present on the study area and presence of surrounding development. The nearest CNDDB occurrence record is from1990 approximately 3.0 miles to the southwest of the study area.
Nyctinomops femorosaccus	pocketed free-tailed bat	NONE	SSC	NONE	Joshua tree woodland; pinyon and juniper woodland; desert scrub, palm oasis, desert wash, and desert riparian; Sonoran desert scrub. Typically roost in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying, over bodies of water or arid desert habitats to capture prey.	**POTENTIAL [N, VERY LOW]; NONE [F]** Rock outcrops are present on the study area, which may provide some potentially suitable habitat for roosting. However, this potential was considered very low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat.[1] There are only 2 CNDDB occurrence records in the vicinity. The nearest record is from 1985 approximately 6.5 miles to the

1 *CDFW. 2000.* California Wildlife Habitat Relationships System: Pocketed Free-tailed Bat. *State of California, The Resources Agency. May 2000.*

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
						southwest of the study area near March Air Force Base.
Phyllostomidae	**Leaf-Nosed Bats**					
Leptonycteris yerbabuenae	lesser long-nosed bat	FE	NONE	NONE	Found in dry areas, such as desert grasslands and shrublands. Require caves or mines for day roosting and may additionally use rock crevices, trees & shrubs, and abandoned buildings for night roosting. Feed on cactus or agave fruit, nectar, and pollen (frugivorous). There are no records of breeding individuals in California, and occurrence records may only be vagrants.	**POTENTIAL [N, VERY LOW]; POTENTIAL [F, VERY LOW]** Some potentially suitable habitat is present on the study area. Potential night roosts include a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. This species can travel long distances between day roosting and foraging sites. However, the potential was considered low since this species is not typically found in California. Records in California are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa.
Vespertilionidae	**Evening Bats**					
Antrozous pallidus	pallid bat	NONE	SSC	NONE	Chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, and valley and foothill grassland. Prefers rocky outcrops, cliffs, and crevices with access to open	**POTENTIAL [N, VERY LOW]; POTENTIAL [F, VERY LOW]** Some potentially suitable habitat is present on the study area. Potential roosting habitat includes the rock outcrops and Riversidean sage scrub on the northwestern corner of the study area and the

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					habitats for foraging. Very sensitive to disturbance of roosting sites.	open ruderal areas may provide feeding opportunities. However, the potential was considered very low because of evidence of disturbance on the study area and the presence of surrounding development to the south, northeast, and west; this species is highly sensitive to disturbance. Additionally, this species has not been recorded on CNDDB within the vicinity since 1929.
Lasiurus xanthinus	western yellow bat	NONE	SSC	NONE	Desert wash. Known to occur in palm oases.	**NONE [N]; NONE [F]** No suitable habitat.

Key to Species Listing Status Codes

FE	*Federally Endangered*	SE	*State Listed as Endangered*
FT	*Federally Threatened*	ST	*State Listed as Threatened*
FC	*Federal Candidate*	SCE	*State Candidate for Endangered*
FPE	*Federally Proposed as Endangered*	SCT	*State Candidate for Threatened*
FPT	*Federally Proposed as Threatened*	SFP	*State Fully Protected*
FPD	*Federally Proposed for Delisting*	SSC	*California Species of Special Concern*

MSHCP	*Western Riverside County Multiple Species Habitat Conservation Plan covered species*
MSHCP(a)	*Surveys may be required as part of wetlands mapping per MSHCP Section 6.1.2.*
MSHCP(b)	*Surveys may be required within Narrow Endemic Plant Species survey area per MSHCP Section 6.1.3.*
MSHCP(c)	*Surveys may be required per MSHCP Section 6.3.2.*
MSHCP(d)	*Surveys may be required within Criteria Area per MSHCP Section 6.3.2.*
MSHCP(e)	*These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met per MSHCP Section 9.0 (Table 9-3).*
MSHCP(f)	*These Covered Species will be considered to be 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 per MSHCP Table 9-3.*

Source: PCR Services Corporation, 2015

NONE = Species not expected to occur due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (F) = Species not expected to forage due to lack of food sources, or the site's location is outside of the species' range.

NOT EXPECTED = Preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys.

POTENTIAL = Preferred habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (N) = Preferred nesting or roosting habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Appendix D

2015 Burrowing Owl Focused Survey Report

August 3, 2015

Mr. Joseph Rivani
GLOBAL INVESTMENT & DEVELOPMENT
3470 Wilshire Boulevard, Suite 1020
Los Angeles, CA 90010

Re: RESULTS OF FOCUSED BURROWING OWL SURVEYS FOR THE IRONWOOD PROJECT, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Dear Mr. Rivani:

This report summarizes the methodology and findings of focused burrowing owl (*Athene cunicularia*) (BUOW) surveys conducted by **PCR Services Corporation (PCR)** for the approximately 83-acre property located directly northeast of Ironwood Avenue and Nason Street (APN 473-160-004) ("project site") located in the City of Moreno Valley, Riverside County, California. The surveys encompassed the project site and a 500-foot survey buffer surrounding the perimeter of the project site where suitable habitat was present. The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[1]

PROJECT SITE DESCRIPTION

The approximately 83-acre project site is generally situated east of Interstate 10 (I-10) and north of State Route 60 (SR 60), as shown in **Figure 1**, *Regional Map*. Specifically, the project site is located northwest of the intersection of Ironwood Avenue and Nason Street. The project site is depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle map, Section 34, T. 2 S., R. 3 W., as shown in **Figure 2**, *Vicinity Map*. The topography of the project site is generally flat with gently rolling hills throughout and steep rocky hillsides along the northwestern portion of the project site. Elevations on the project site range from approximately 1,975 feet above mean sea level (MSL) along the northwestern boundary of the project site, to approximately 1,830 feet above MSL along the southern boundary of the project site. Surrounding land uses include residential development to the south, northeast, and west and undeveloped land to the north and southeast.

[1] *County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.

PLANT COMMUNITIES

The project site consists primarily of large ruderal areas. Plant communities found on the project site include brittlebush scrub, Riversidean sage scrub, rock outcrop/Riversidean sage scrub, brittlebush scrub/ruderal, laurel sumac scrub/ruderal, ruderal/Riversidean sage scrub, river wash, ruderal, disturbed, and developed. A brief summary of each plant community within the project site in which surveys were conducted is discussed below.

Brittlebush Scrub/Ruderal

Brittlebush scrub is a drought tolerant subtype of Riversidean Sage Scrub in which the dominate plant is brittlebush (*Encelia farinosa*). Additional native species within the brittlebush scrub community include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and chia (*Salvia columbariae*). Ruderal vegetation is also found within this community. Brittlebush scrub/ruderal areas occupy 0.29 acre throughout the project site.

River Wash

River wash consists of prevailingly course-textured but variable material, ranging from sand to gravel. Sparse vegetation within the river wash includes giant reed (*Arundo donax*), telegraph weed (*Heterotheca grandiflora*), doveweed, and Russian thistle (*Salsola tragus*). River wash occupies 0.03 acre throughout the project site.

Ruderal/Riversidean Sage Scrub

Ruderal/Riversidean sage scrub within the project site is heavily disturbed and is dominated by ruderal vegetation. Non-native species observed within this community include shortpod mustard (*Hirschfeldia incana*), foxtail chess (*Bromus madritensis*), and red-stemmed filaree (*Erodium cicutarium*). Native species found within this community include brittlebush (*Encelia farinosa*), California buckwheat, California sagebrush, common sunflower (*Helianthus annuus*), deerweed (*Acmispon glaber*), and pinebush (*Ericameria pinifolia*). Ruderal/Riversidean sage scrub occupies 1.31 acres throughout the project site.

Ruderal

Ruderal vegetation is found in areas heavily disturbed by human activities, such as roadsides, graded fields, and manufactured slopes. Within the project site, non-native species observed within this community include shortpod mustard, foxtail chess, red-stemmed filaree, ripgut brome (*Bromus diandrus*), and native species such as doveweed (*Croton setigerus*), common fiddleneck (*Amsinckia*

intermedia), and cudweed aster (*Corethrogyne filaginifolia*). Ruderal areas occupy 39.08 acres throughout the project site.

Disturbed

Disturbed areas consist of areas heavily disturbed by human activities, including dirt roads with little to no vegetation. Disturbed areas occupy 31.23 acres throughout the project site.

Developed

Developed areas consist of man-made structures such as homes and buildings, and these areas comprise 1.64 acres throughout the project site.

METHODOLOGY

Step I - Habitat Assessment

The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2] During the Step I Habitat Assessment, suitable habitat was identified on-site during the field survey, including disturbed, low-growing vegetation; bare ground; and small fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

Step II surveys were conducted within the project site plus an approximately 500-foot survey buffer around the project site perimeter. Surveys focused on the detection of small fossorial mammal burrows potentially suitable for BUOW, BUOW burrows, individual BUOW, and any diagnostic sign of their occurrence (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Off-site areas within the 500-foot survey buffer were surveyed by foot where accessible, or with the use of binoculars in areas which were inaccessible.

Surveys were conducted on May 13, June 3, July 2, and July 27, 2015 by PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton. Surveys consisted of four site visits, on four separate days, and were conducted between one hour prior to and two hours after sunrise during suitable weather conditions. Transects were utilized in all accessible areas, spaced no more than 100

[2] *County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.

feet apart, to allow for 100 percent visibility (**Figure 3**, *Transect Map*, attached). In addition, observations were made with the use of binoculars. Weather conditions consisted of hazy to cloudy skies with winds between 0 and 5 miles per house (mph) and air temperatures ranging from 52° to 76° Fahrenheit. Survey data is presented in **Table 1**, *Survey Data*, below.

Table 1

Survey Data

Date	Time	Wind (mph) (start/end)	Temperature (F) (start-end)	Weather (start-end)	Results	Surveyor
05/13/15	0615 – 0820	1-2/2-5	52° – 61°	70% Cloud Cover – 60% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
06/03/15	0600 – 0800	1-3/0-1	55° – 57°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
07/02/15	0545 – 0730	0-1/0-1	72° – 76°	60% Cloud Cover – 80% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
07/27/15	0600 – 0730	0-1/0-1	62°– 66°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton

Source: PCR Services Corporation, 2015.

RESULTS

The project site is within the Burrowing Owl Survey Area for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The following results present the findings of the Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls.

Step I - Habitat Assessment

Results of the Step I, Habitat Assessment concluded that the project site and 500-foot survey buffer exhibited suitable BUOW habitat consisting of disturbed, low-growing vegetation; bare ground; and fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

The Step II surveys did not identify BUOW burrows, BUOW sign or BUOW within the project site or within the 500-foot survey buffer. A complete list of all avian species observed within the project site is included in **Appendix A**, *Avian Compendium*, attached.

RECOMMENDATIONS

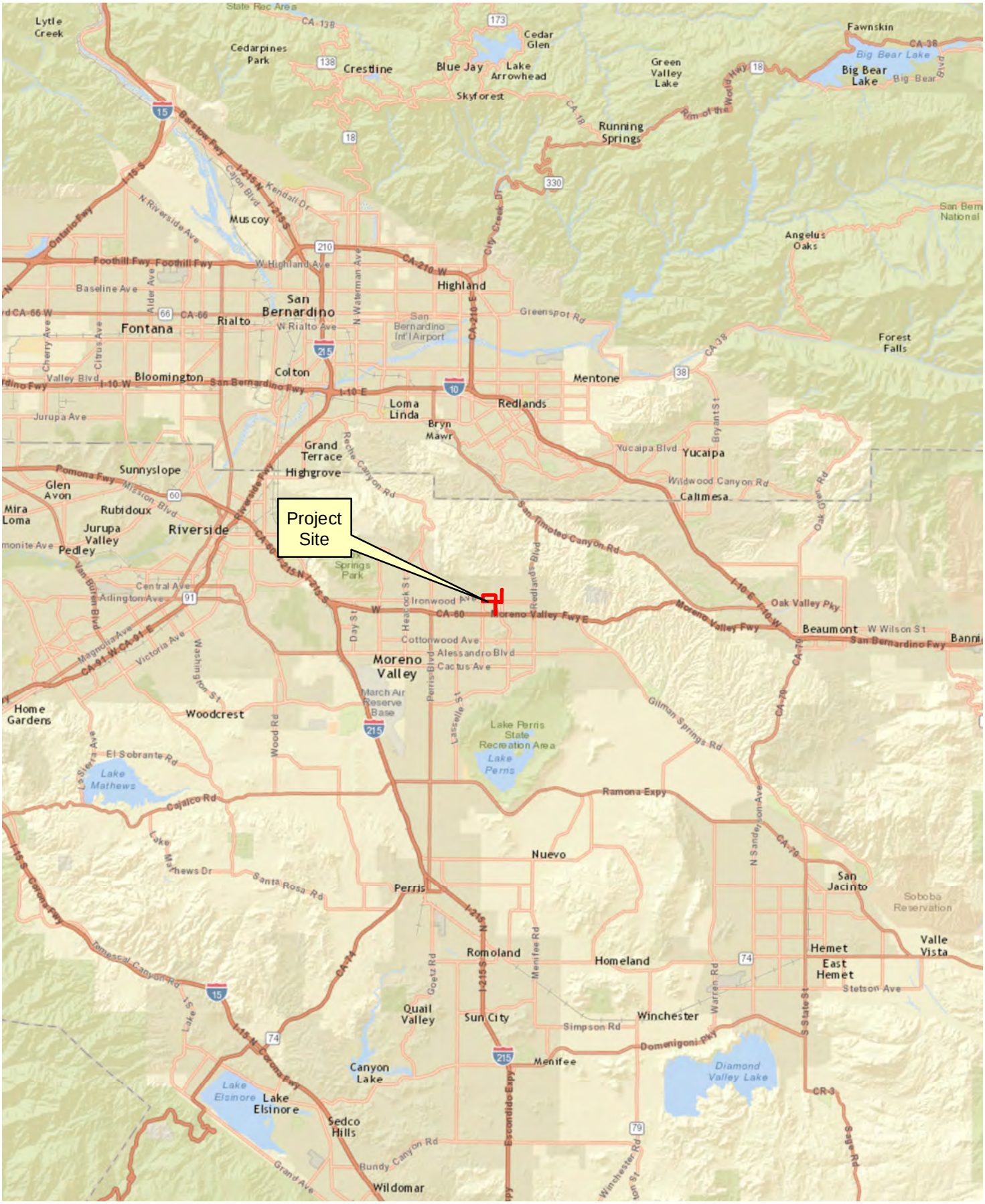
As required by the MSHCP, a pre-construction survey must be conducted 30 days prior to ground disturbance for project sites whether or not BUOW are found during the focused surveys to avoid the direct take of BUOW.

Should you have any questions concerning the methodology or findings in this report, please contact Ezekiel Cooley (E.Cooley@pcrnet.com) at (949) 753-7001.

Sincerely,
PCR SERVICES CORPORATION

Ezekiel Cooley	Amy Lee	Lauren Singleton
Senior Biologist	Biologist	Biologist

Attachments:
Figure 1: Regional Map
Figure 2: Vicinity Map
Figure 3: Transect Map
Appendix A: Avian Compendium



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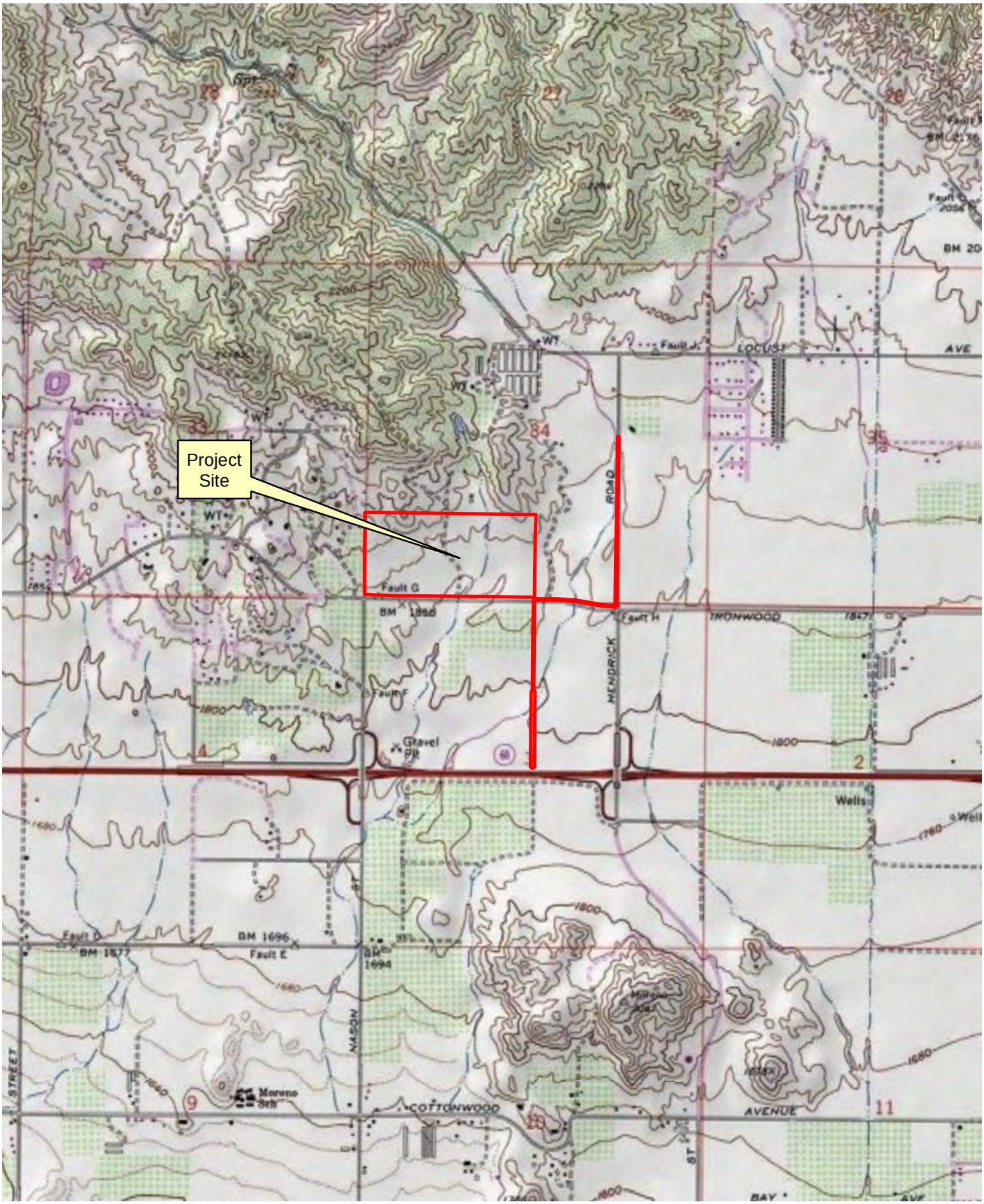
Regional Map

Ironwood Residential Project

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

1



N

0 2,000 4,000 Feet

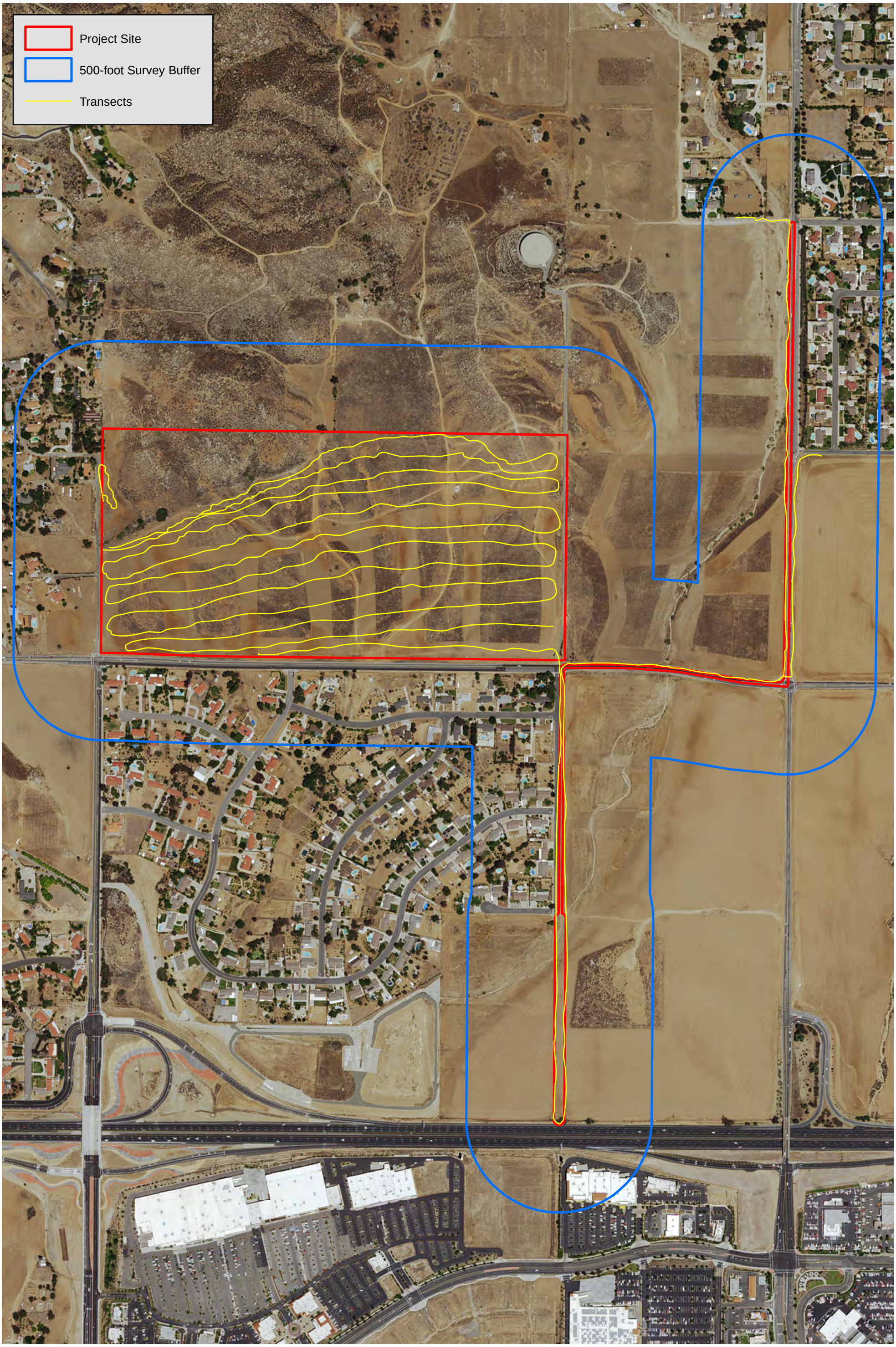
Vicinity Map

Ironwood Residential Project

Source: USGS Topographic Series (Sunnymead, CA); PCR Services Corporation, 2015.

FIGURE

2



PCR

N

0 500 1,000 Feet

Transect Map

Ironwood Residential Project

Source: Microsoft, 2010 (Aerial); PCR Services Corporation, 2015.

FIGURE

3

Appendix A: Avian Compendium

Scientific Name	Common Name
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Accipitridae	**Hawks**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Falconidae	**Falcons**
Falco sparverius	American kestrel
Charadriidae	**Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons and Doves**
* *Columba livia*	rock pigeon
Zenaida macroura	mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	white-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	black-chinned hummingbird
Calypte anna	Anna's hummingbird
Picidae	**Woodpeckers**
Picoides nuttallii	Nuttall's woodpecker
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Laniidae	**Shrikes**
Lanius ludovicianus	loggerhead shrike
Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Alaudidae	**Larks**
Eremophila alpestris	horned lark
Hirundinidae	**Swallows**
Petrochelidon pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit

* *Non-native species*

SCIENTIFIC NAME	COMMON NAME
Polioptilidae	**Gnatcatchers**
Polioptila californica californica	coastal California gnatcatcher
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Emberizidae	**Emberizine Sparrows and Allies**
Melozone crissalis	California towhee
Icteridae	**Blackbirds**
Agelaius phoeniceus	red-winged blackbird
Fringillidae	**Finches**
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	house sparrow

* *Non-native species*

Appendix E

2016 Burrowing Owl Focused Survey Report

ESA PCR

2121 Alton Parkway
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www.pcrnet.com

July 13, 2016

Mr. Joseph Rivani
Global Investment & Development
3470 Wilshire Boulevard, Suite 1020
Los Angeles, CA 90010

Subject: Results of Focused Burrowing Owl Surveys for the Alternative Off-site Waterline Area for the Ironwood Village Project, City of Moreno Valley, Riverside County, California

Dear Mr. Rivani:

This report summarizes the methodology and findings of focused burrowing owl (*Athene cunicularia*) (BUOW) surveys conducted by **ESA PCR** for the two proposed alternative off-site waterline areas associated with the approximately 78.48-acre Ironwood Village Project (APN 473-160-004) located directly northeast of Ironwood Avenue and Nason Street, City of Moreno Valley, Riverside County, California.[1] The surveys encompassed the two alternative off-site waterline areas (survey area) and a 500-foot survey buffer surrounding the survey area (survey buffer). The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2]

Survey Area Description

The survey area is generally situated south of Interstate 10 (I-10) and north of State Route 60 (SR 60), as shown in **Figure 1**, *Regional Map*. Specifically, the survey area includes a waterline alignment that runs north-south, immediately north of the intersection of Ironwood Avenue and Oliver Street along the Eastern Municipal Water District access road, and another which runs east-west, west of the intersection of Moreno Beach Drive and Juniper Avenue. The survey area and survey buffer are depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle map, Section 34, T. 2 S., R. 3 W., as shown in **Figure 2**, *Vicinity Map*. The topography of the survey area and survey buffer is generally flat with the expectation of fairly steep east-facing slope on the western portion. Elevations in the survey area are approximately 1,858 feet above mean sea level (MSL) along the midpoint of the east-west waterline, to approximately 1,945 feet above MSL at the northern terminus of north-south waterline. Surrounding land uses include residential development to the northeast and east, and undeveloped land to the northwest, west, and south.

Plant Communities

The survey area and survey buffer consists primarily of ruderal and disturbed habitat. Ruderal habitat is dominated by non-native species including mediterranean grass (*Schismus barbatus*), Russian thistle (*Salsola tragus*), and ripgut brome (*Bromus diandrus*). Disturbed areas consist of areas heavily disturbed by human activities, including dirt roads with little to no vegetation.

---

1 Step II BUOW surveys were conducted in all suitable habitat for the Ironwood Village project during the 2015 breeding season.
2 County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area.

Methodology

Step I - Habitat Assessment

The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2] During the Step I Habitat Assessment, suitable habitat was identified on-site during the field survey, including disturbed, low-growing vegetation; bare ground; and small fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

Step II surveys were conducted within the survey area plus an approximately 500-foot survey buffer. Surveys focused on the detection of small fossorial mammal burrows potentially suitable for BUOW, BUOW burrows, individual BUOW, and any diagnostic sign of their occurrence (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Off-site areas within the 500-foot survey buffer were surveyed by foot where accessible, or with the use of binoculars in areas which were inaccessible.

Surveys were conducted on April 28, May 23, June 9, and July 5, 2016 by ESA PCR biologists Amy Lee and Lauren Singleton. Surveys consisted of four site visits, on four separate days, and were conducted between one hour prior to and two hours after sunrise during suitable weather conditions. Transects were utilized in all accessible areas, spaced no more than 100 feet apart, to allow for 100 percent visibility (**Figure 3**, *Survey Area*, attached). In addition, observations were made with the use of binoculars. Weather conditions consisted of 45 to 100 percent cloud cover with winds between 0 and 4 miles per hour (mph) and air temperatures ranging from 48° to 68° Fahrenheit. Survey data is presented in **Table 1**, *Survey Data*, below.

TABLE 1
SURVEY DATA

Date	Time	Wind (mph) (start/end)	Temperature (F) (start-end)	Weather (start-end)	Results	Surveyor
04/28/16	0600 – 0800	2-4/0-1	50° – 49°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Singleton
05/23/16	0550 – 0750	0-1/0-1	48° – 54°	90% Cloud Cover – 75% Cloud Cover	No BUOW or BUOW sign	Lee
06/09/16	0525 – 0715	0-1/0-1	61° – 68°	45% Cloud Cover – 45% Cloud Cover	No BUOW or BUOW sign	Lee
07/05/16	0550 – 0735	0-2/0-2	63°– 63°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Lee

Source: ESA PCR, 2016.

Results

The survey area is within the Burrowing Owl Survey Area for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The following results present the findings of the Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls.

Step I - Habitat Assessment

Results of the Step I, Habitat Assessment concluded that the survey area and 500-foot survey buffer exhibited suitable BUOW habitat consisting of disturbed, low-growing vegetation; bare ground; and fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

The Step II surveys did not identify BUOW burrows, BUOW sign or BUOW within the survey area or within the 500-foot survey buffer. A complete list of all avian species observed within the survey area and survey buffer is included in **Appendix A**, *Avian Compendium*, attached.

Recommendations

As required by the MSHCP, a pre-construction survey must be conducted 30 days prior to ground disturbance for project sites whether or not BUOW are found during the focused surveys to avoid the direct take of BUOW.

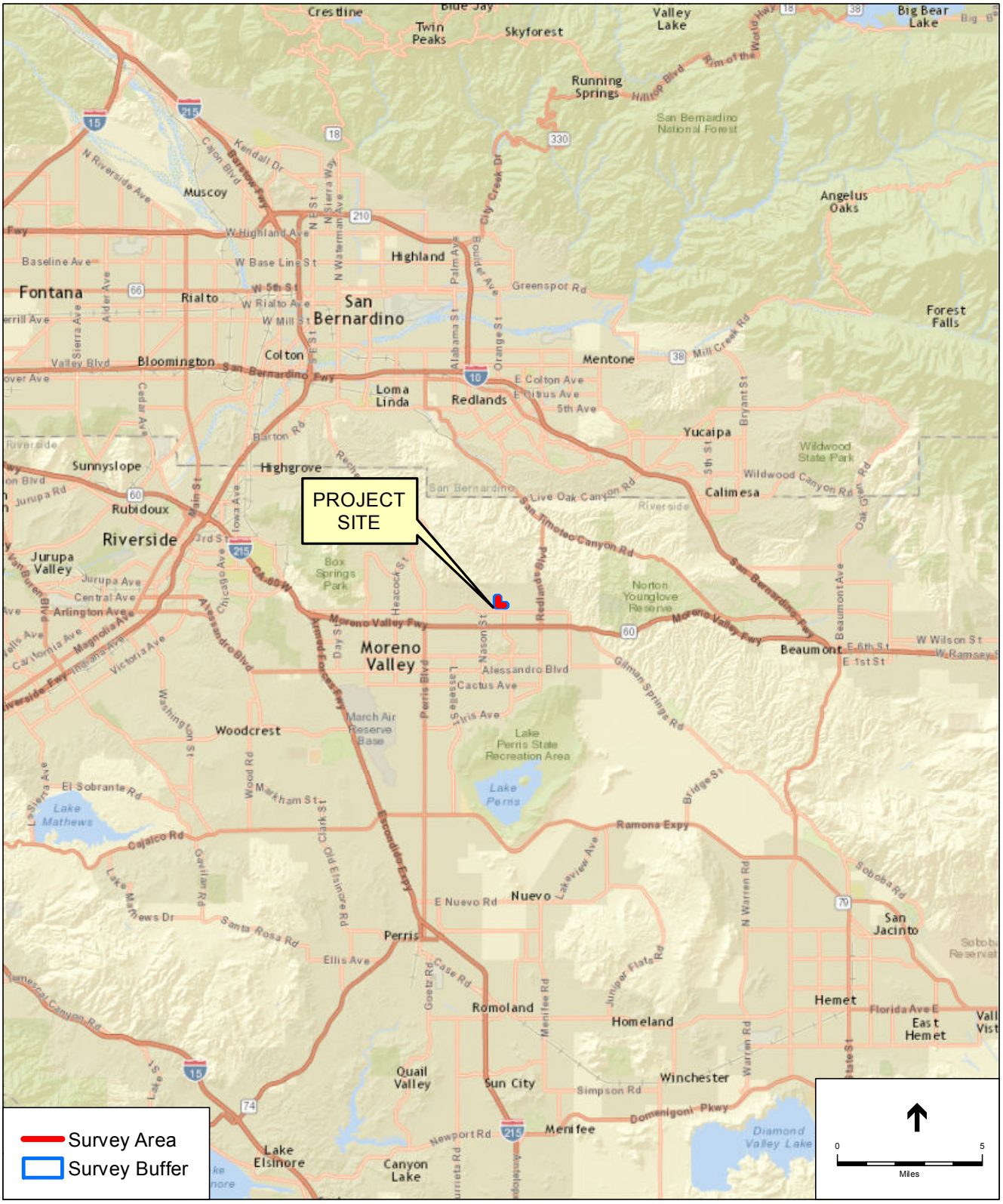
Should you have any questions concerning the methodology or findings in this report, please contact Amy Lee (A.Lee@pcrnet.com) at (949) 753-7001.

Sincerely,

Amy Lee
Biologist

Attachments

Fig 1 - Regional Map
Fig 2 - Vicinity Map
Fig 3 - Survey Area
Appendix A – Avian Compendium



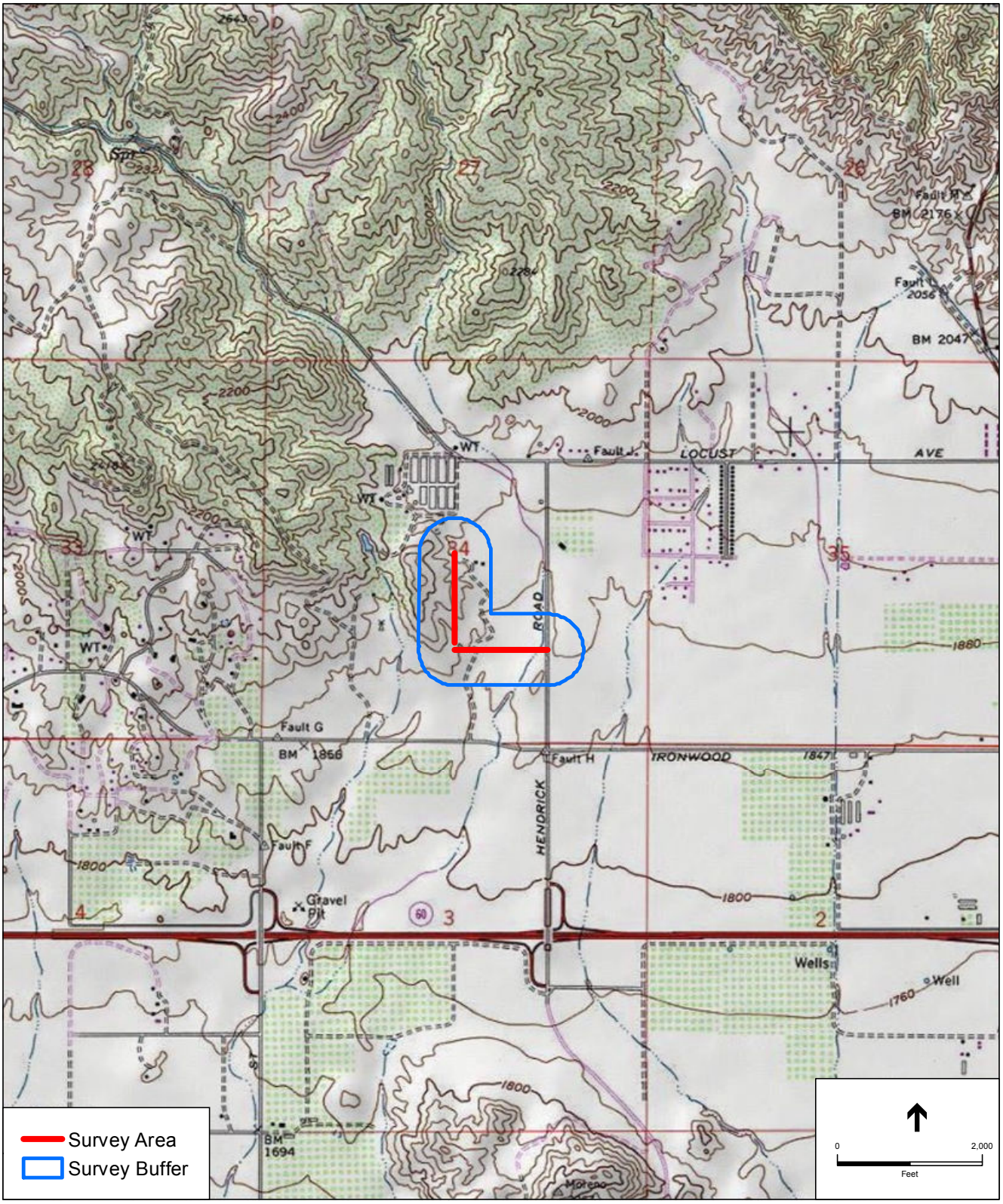
SOURCE: ESRI Street Map, 2009.

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 1

Regional Map

ESA PCR



SOURCE: USGS Topographic Series (Sunnymead, CA).

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 2

Vicinity Map

ESA PCR

SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 3

Survey Area

ESA PCR

Appendix A - Avian Compendium

BIRDS

Scientific Name	Common Name
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Falconidae	**Falcons**
Falco sparverius	American kestrel
Charadriidae	**Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons and Doves**
Zenaida macroura	mourning dove
Cuculidae	**Cuckoos and Roadrunners**
Geococcyx californianus	greater roadrunner
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Salpinctes obsoletus	rock wren
Mimidae	**Thrashers**
Mimus polyglottos	northern mockingbird
Ptilogonatidae	**Silky-flycatchers**
Phainopepla nitens	phainopepla
Parulidae	**Wood Warblers**
Setophaga coronata	yellow-rumped warbler

* non-native

BIRDS

Scientific Name	Common Name
Emberizidae	**Emberizine Sparrows and Allies**
Melozone crissalis	California towhee
Pipilo maculatus	spotted towhee
Icteridae	**Blackbirds**
Icterus bullockii	Bullock's oriole
Icterus cucullatus	hooded oriole
Sturnella neglecta	western meadowlark
Fringillidae	**Finches**
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	house sparrow

* non-native

IRONWOOD VILLAGE

Determination of Biologically Equivalent or Superior Preservation

Prepared for
1BH1 LLC

September 2016

ESA PCR

IRONWOOD VILLAGE

Determination of Biologically Equivalent or Superior Preservation

Prepared for
1BH1 LLC

September 2016

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1.0
Introduction

1.1 Background and Purpose

This document presents the results of a Determination of Biologically Equivalent or Superior Preservation (DBESP) conducted by ESA PCR for the approximately 89.05-acre (78.48 acres on-site and 10.57-acre off-site) (collectively, the "study area") proposed single-family residential development associated with Assessor's Parcel Number (APN) 473-160-004 located in the City of Moreno Valley, Riverside County, California, as required under Section 6.1.2, Riparian/Riverine and Vernal Pools policy of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (Riverside County Integrated Project/RCIP, 2003; Dudek & Associates, 2003). No MSHCP Riparian Areas or vernal pools occur within the study area. However, the study area does support MSHCP Riverine Areas and as such requires a DBESP analysis for any impacts proposed to these areas. This DBESP provides details on the MSHCP Riverine Areas located within the project study area in addition to proposed impacts and compensatory mitigation for compliance with Section 6.1.2 of the MSHCP.

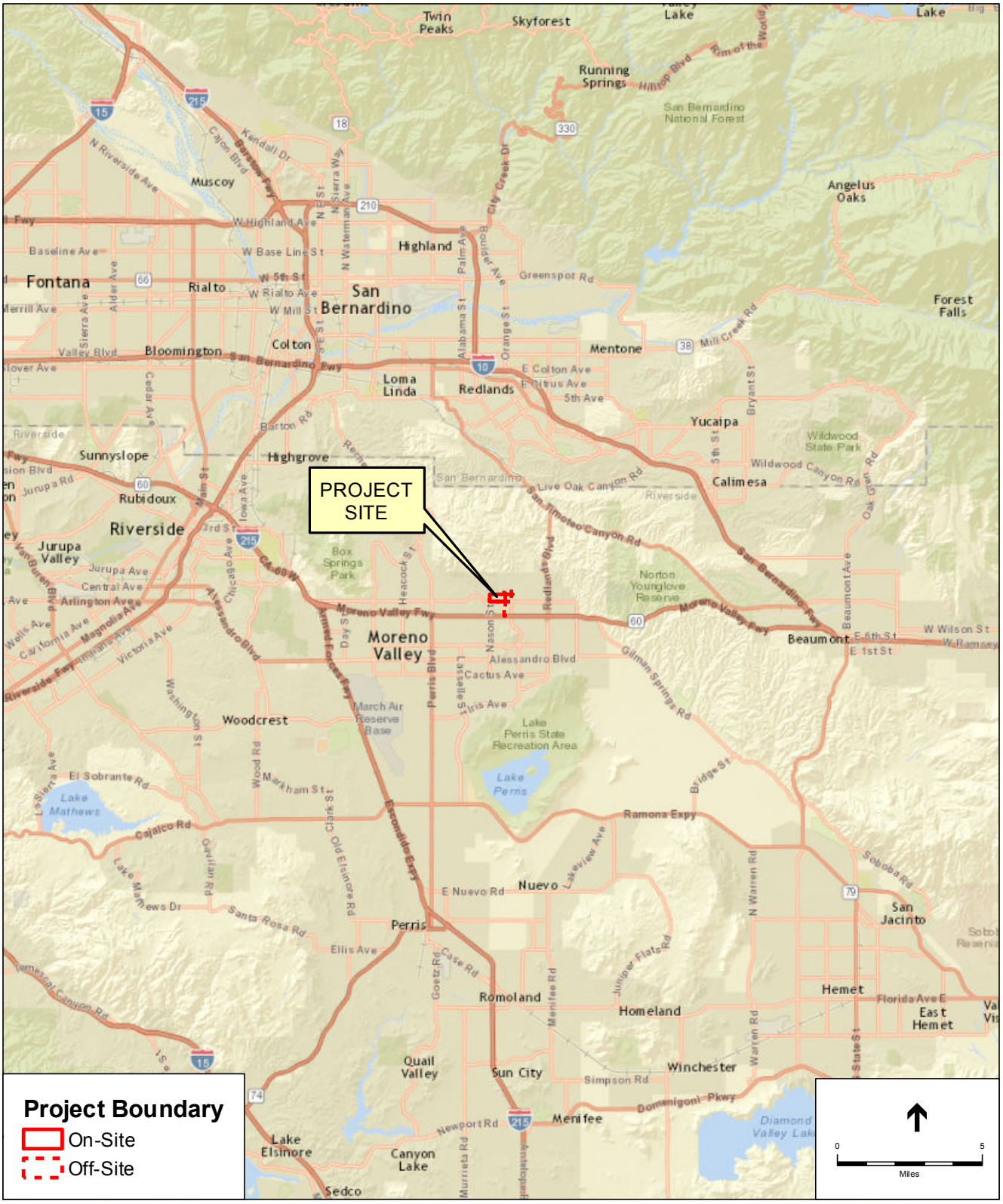
1.2 Definition of the Study Area

The approximately 89.05-acre study area is regionally situated north of State Route (SR) 60 and northeast of Interstate (I) 215 (**Figure 1**, *Regional Map*). Specifically, the study area is located northeast of the intersection of Ironwood Avenue and Nason Street in the City of Moreno Valley. The study area is depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle (S34, T2S, R3W & S3, T3S, R3W) (USGS, 1967; Earth Survey, 2015), as shown in **Figure 2**, *Vicinity Map*. The specific locations and extend of the on-site and off-site study areas are depicted on **Figure 3**, *Study Areas*. The six (6) off-site study areas are associated with four types of proposed project activities including manufactured slopes, road improvements, a sewer line extension, and water line extensions (1 proposed and 2 alternatives) as described below:

Manufactured Slopes (West & East) – There are two (2) off-site study area locations proposed to support manufactured slopes, including one area adjacent to Nason Street (West) and a second area adjacent to the eastern boundary of the on-site study area (East).

Road Improvements – There is one (1) road improvement area proposed between the area located directly north of Ironwood Avenue and south of the on-site study area boundary.

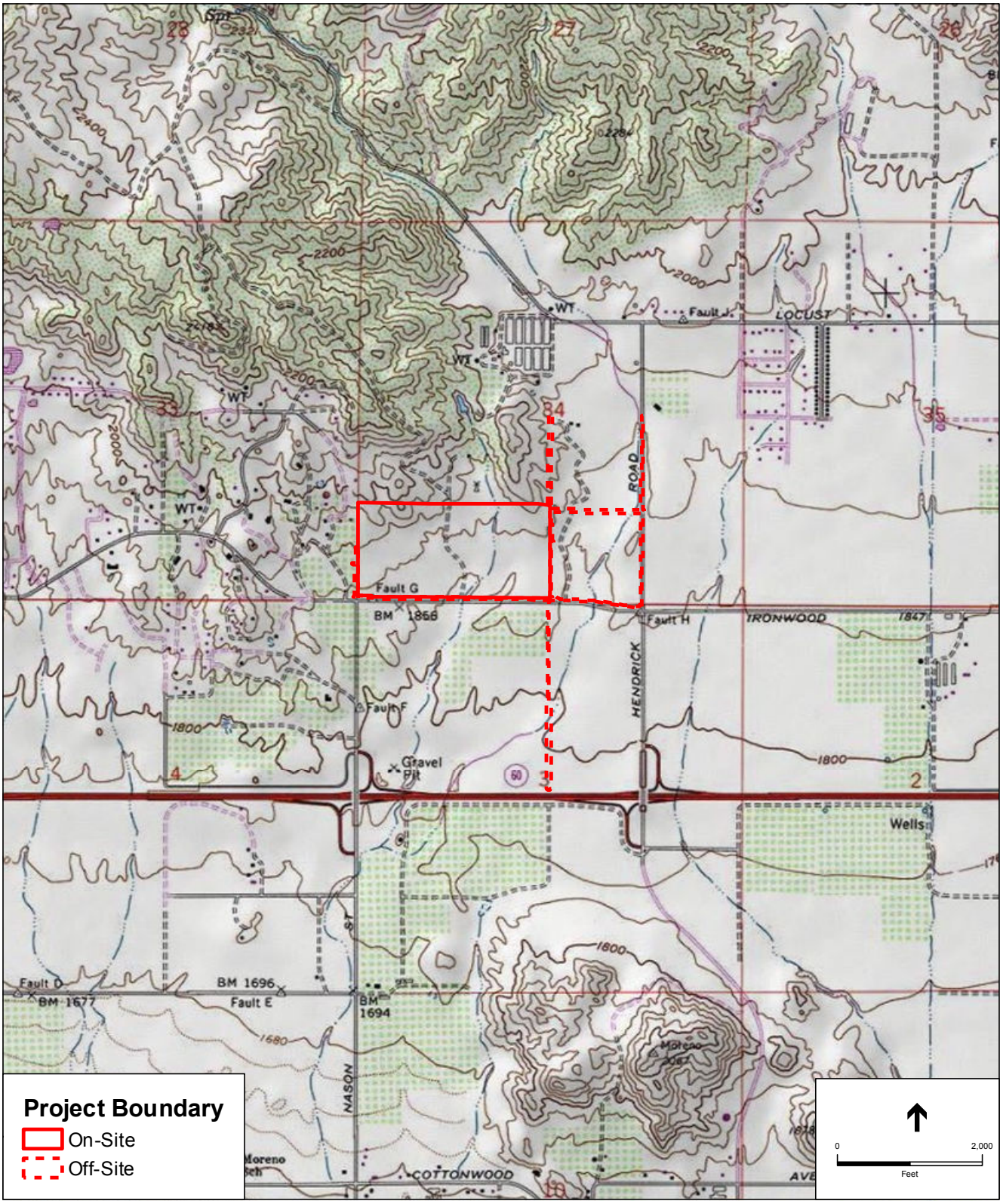
Sewer Line – There is one (1) sewer line area which is proposed to connect at the southeast corner of the on-site study area at the intersection of Ironwood Avenue and Oliver Street and extend south along Oliver Avenue, ultimately ending at the SR-60 freeway.



SOURCE: ESRI Street Map, 2009.

Ironwood Village Project
Figure 1
Regional Map

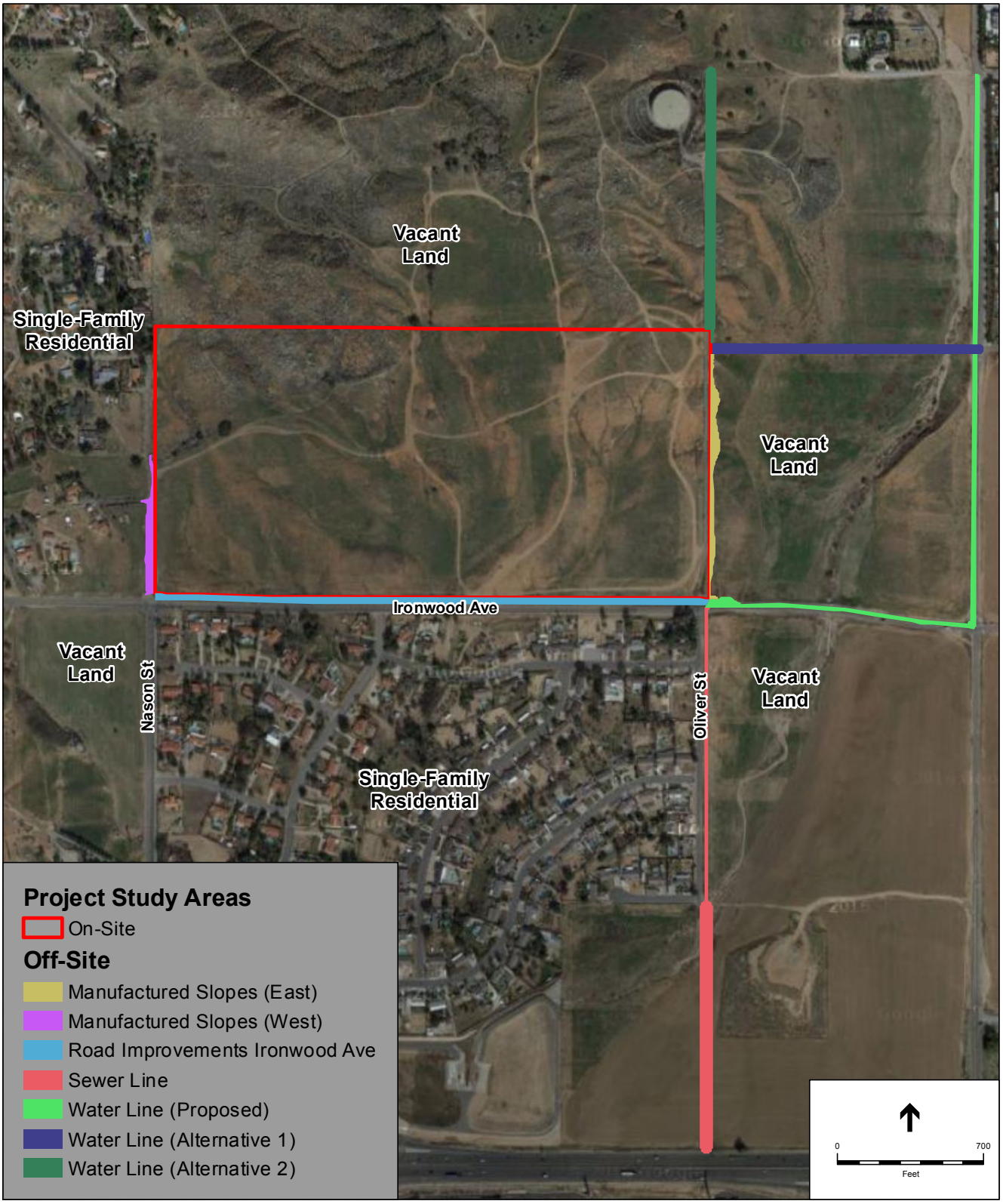
ESA PCR



SOURCE: USGS Topographic Series (Sunnymead, CA).

Ironwood Village Project
Figure 2
Vicinity Map

ESA PCR



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 3
Study Areas

ESA PCR

Water line (Proposed and Alternatives) – Although the exact location of the final water line extension is still unknown, one proposed alignment and two (2) alternative alignments were assessed as part of the off-site project study areas. The Proposed Water Line would commence at the intersection of Ironwood Avenue and Oliver Street and extend east along Ironwood Avenue, continuing north along Moreno Beach Drive, and terminating at the intersection of Moreno Beach Drive and Kalmia Avenue. Water Line Alternative 1 would connect the water line at the northeast corner of the on-site study area and extend north terminating near an existing off-site water tower. Water Line Alternative 2 would commence at the northeastern corner of the on-site study area and extend east toward the intersection of Moreno Beach Drive and Juniper Avenue.

It should be noted that only one of the water line alignments will ultimately be implemented by the project. However, given the relatively small amount of impacts to Riverine Areas proposed by the water alignments, this DBESP analyzes the cumulative impacts to MSHCP Riverine resources as if all water line alignments were to be implemented in order to provide a conservative analysis. Ultimately, impacts to MSHCP Riverine resources will be slightly reduced once the final water line alignment is chosen.

The topography on-site is generally flat with gently rolling hills throughout the study area and steeper rock outcrops on the northwest corner. On-site elevations range from the lowest of approximately 1,830 feet above mean sea level (MSL) along the southern boundary of the study area to a high of approximately 1,975 feet above MSL along the northwest boundary of the study area. The topography of the off-site study areas are generally flat with the exception of the proposed water line area that extends north from the northeastern corner of the study area, which consists of a fairly steep east-facing slope supporting some native vegetation and rocky outcrops. Elevations within the off-site areas range from the lowest of approximately 1,793 feet above MSL at the southern end of the proposed sewer line to a high of approximately 1,948 feet above MSL at the steepest portion of the proposed water line area. Representative photographs of the study area are included in **Figures 4a** and **4b**, *Site Photographs*.

1.3 Relationship to the MSHCP

The study area is located within the Reche Canyon/Badlands Plan of the MSHCP. The MSHCP is a multi-jurisdictional Habitat Conservation Plan to maintain biological and ecological diversity within a rapidly urbanizing region. Under the MSHCP, participating jurisdictions (in this case, the City of Moreno Valley) are authorized to allow “take” of specified plant and wildlife species within the MSHCP Plan Area. In addition, the wildlife agencies, namely CDFW and USFWS, allow take of habitat or individual species outside of the MSHCP Conservation Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area. The study area is not within or adjacent to a criteria cell, as shown in **Figure 5**, *Relationship to the MSHCP*. A criteria cell is defined as a “unit within the Criteria Area” for which descriptions are provided “to guide assembly of the Additional Reserve Lands”. Since the study area is not within a criteria cell, the project is not subject to the Habitat Acquisition and Negotiation Strategy (HANS) process. The HANS process applies to properties within a MSHCP criteria cell which may be needed for inclusion in the MSHCP Conservation Area.

PHOTOGRAPH 1. View of the brittlebush scrub community, facing northeast.

PHOTOGRAPH 2. View of the rock outcrop/Riversidean sage scrub community, facing north.

PHOTOGRAPH 3. View of the ruderal community in foreground and the laurel sumac scrub/ruderal community in the background to the left, facing southwest.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 4a

Site Photographs

ESA PCR

PHOTOGRAPH 4. View of the ruderal/Riversidean sage scrub community, facing southeast.

PHOTOGRAPH 5. View of the ruderal community, facing northwest.

PHOTOGRAPH 6. View of the ruderal community within the off-site water line extension area, facing south.

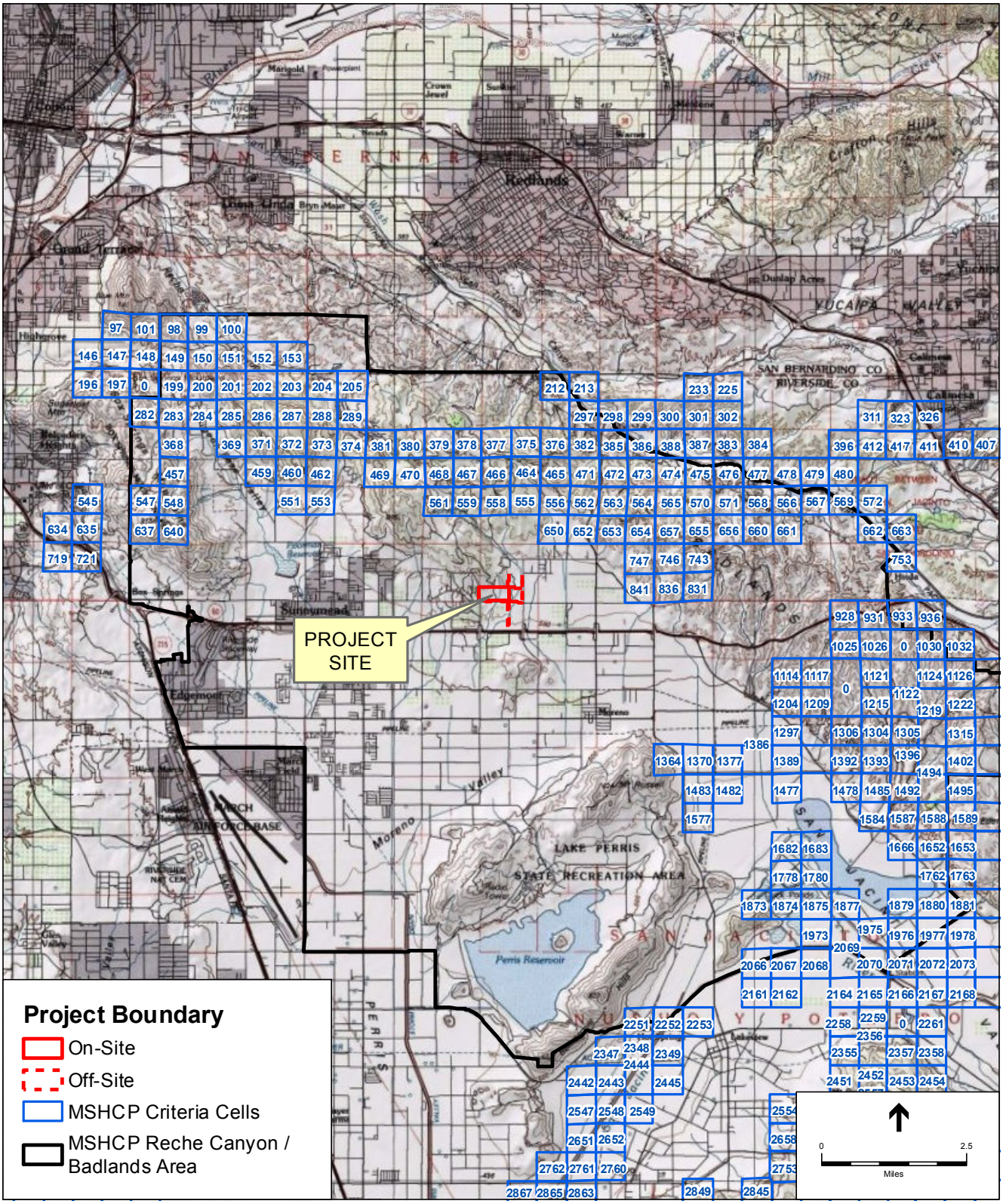
SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 4b

Site Photographs

ESA PCR



SOURCE: USGS Topographic Series; MSHCP.

Ironwood Village Project

Figure 5

Relationship to the MSHCP

ESA PCR

Although the study area is not within a criteria cell, it is still subject to other plan wide requirements of the MSHCP. The Applicant is required to pay the Local Development Mitigation Fee established in the MSHCP Implementation Agreement (Section 8.5.1 of the MSHCP), comply with the Riparian/Riverine policy (Section 6.1.2 of the MSHCP), and conduct burrowing owl surveys since the study area is within the Burrowing Owl Survey Area (Section 6.3.2 of the MSHCP). The study are is not within the MSHCP's Narrow Endemic Plant Species Survey Area (Section 6.1.3 of the MSHCP), Criteria Area Species Survey Area, Amphibian Species Survey Area, or Mammal Species Survey Area (Section 6.3.2 of the MSHCP). However, the study area is within the Stephens' kangaroo rat (SKR) habitat conservation plan (HCP) boundaries and will be required to pay the SKR mitigation fee for coverage under the HCP.[1]

The study area is not within any Core or Linkage areas as identified by the MSHCP (Dudek & Associates, 2003). There is one proposed linkage (Proposed Linkage 4) approximately 2.1 miles to the north of the study area and one existing core (Core H) roughly 4.0 miles to the south of the study area. Proposed Linkage 4 would include upland habitat within Reche Canyon, which would provide connection to Box Springs Reserve, the Badlands, and San Bernardino County. The open area directly to the north of the study area does directly connect to Proposed Linkage 4. Existing Core H includes Lake Perris State Recreation Area and San Jacinto Wildlife Area. There is no direct connection from the study area to Core H, which are separated by urban development.

[1] *http://www.skrplan.org/index.html; SKR is an Adequately Conserved species under the MSHCP. However, coverage is only provided under the MSHCP in areas within the MSHCP boundaries that are outside the boundaries of the SKR HCP.*

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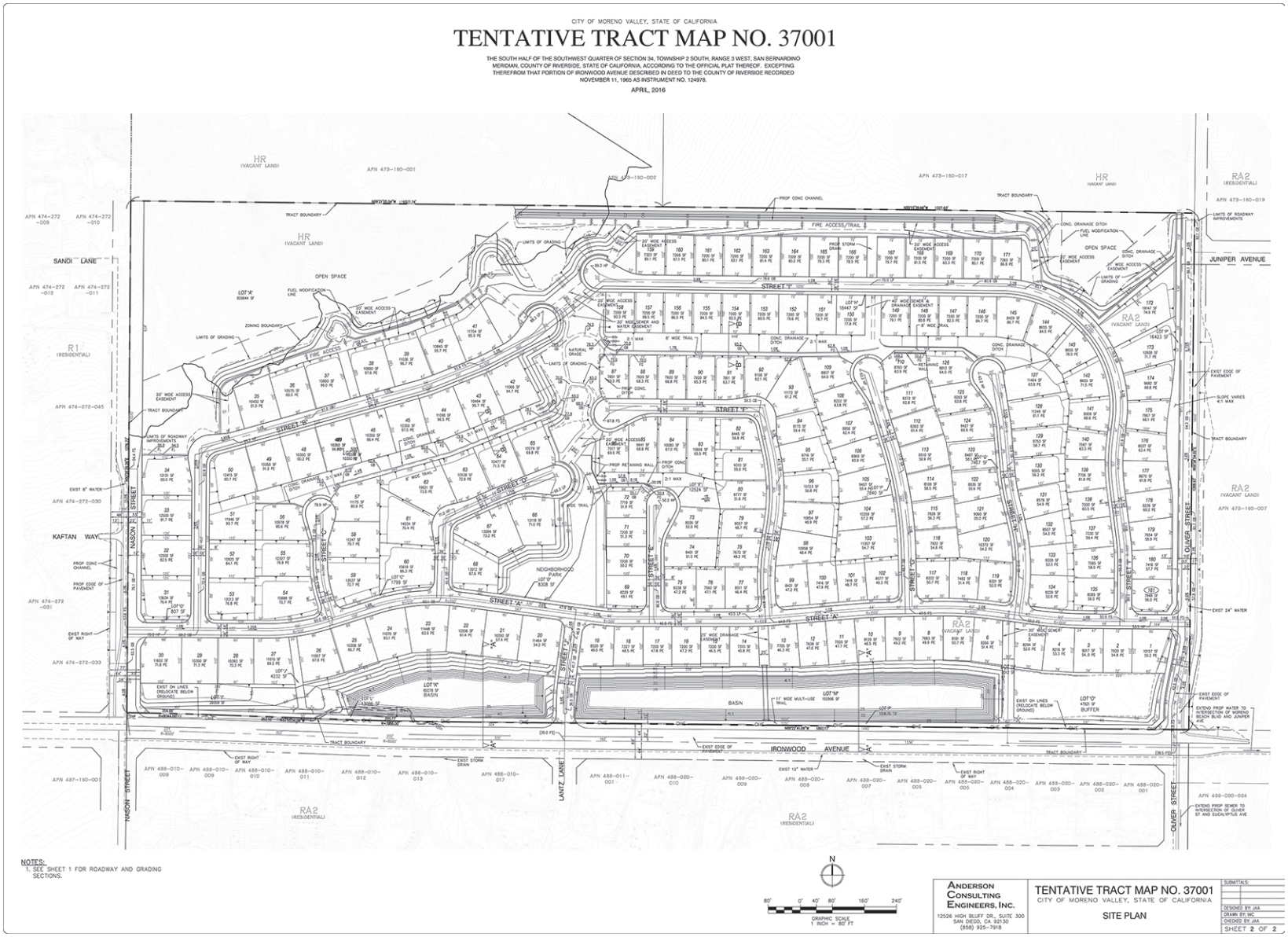
2.0
Project Description

2.1 Proposed Project

The 89.05 acre study area is a proposed single-family residential development that will occupy approximately 38.5 acres, as shown in (**Figure 6**, *Site Plan*).[2] The remaining on-site acreage (39.98 acres) will be open space areas, which will consist of community open space areas that will be planted as appropriate to the project's climate, the proposed on-site mitigation area and avoided areas in the northwestern and northeastern corner of the study area, which encompass native vegetation and rock outcroppings that will be preserved. Per Figure 3, there are four types of off-site improvement areas associated with the project totaling 10.57 acres, including manufactured slope areas, road improvements, a sewer line extension, and water line extensions comprised of one (1) proposed alignment & two (2) alternative alignments. Sewer and water lines will be extended onto the study area from existing utilities. Primary access to the development would occur from Ironwood Avenue between Nason Street and Oliver Street, immediately opposite from and north of Lantz Lane. Secondary access would be provided by driveways on both Nason Street and Oliver Street just north of Ironwood Avenue.

The study area supports two drainage systems identified as Drainage A and Drainage Complex B. The drainages support field indicators associated with USACE, RWQCB, and CDFW (collectively "the resource agencies") jurisdictional waters. The limits of CDFW jurisdictional streambed resources were found to be consistent with the definition of Riverine Areas as defined by Section 6.1.2 of the MSHCP. Drainage A is an unvegetated roadside ditch that enters the Ironwood Avenue Right-of-Way and flows on-site adjacent to the southern boundary. Drainage A exits the study area via a corrugated metal pipe (CMP) that runs under Ironwood Avenue. Drainage Complex B occurs within the off-site areas and comprises the mainstem Drainage B feature and five smaller tributaries (Drainages B1 through B5). The mainstem feature identified as Drainage B is an ephemeral sandy wash that originates off-site to the northwest of the study area along Reche Canyon Road. Drainage B meanders south/southwest and crosses the off-site Water Line Alternative 1 and sewer line area, ultimately entering a detention basin located directly northeast of the Nason Street exit of the SR-60.

[2] The project site plan does not depict the conceptual on-site mitigation area presented as Figure 10 in Section 7.3 below. However, the feasibility of providing the necessary on-site mitigation area into the site design has been evaluated by the project engineer, and the mitigation area will be integrated into the final project design should the resource agencies prefer on-site mitigation as part of subsequent regulatory permitting.



SOURCE: Anderson Consulting Engineers, Inc., 2016

Ironwood Village Project

Figure 6
Site Plan

ESA PCR

Drainages B1 through B5 are minor ephemeral drainages that drain very small and localized watersheds located directly west of the existing water district road which runs parallel to the eastern boundary of the study area. Drainage B5 supports marginal, yet more substantial flows than Drainages B1 through B4, and was likely formed by controlled release from the water tank structure directly to the west which outlets directly into the drainage via a large corrugated metal pipe structure. Drainage A and Drainage Complex B are further described in Section 4.4, *Riverine Areas Setting* and Section 5.1, *Assessment of Riparian/Riverine and Vernal Pool Resources*, below.

2.2 Project Alternatives

The sensitive biological resources on the study area are limited to Drainage A and Drainage Complex B that support ephemeral habitats and are considered jurisdictional features and MSHCP Riverine Areas. The study area does not support any habitats that qualify as MSHCP Riparian Areas. Avoidance of sensitive biological resources on the study area is not feasible as impacts are necessary to provide slope stabilization to support the proposed residential development and infrastructure improvements, including road improvements along Ironwood Avenue and extension of water and sewer lines to the proposed development from existing off-site utilities. Permanent impacts proposed to MSHCP Riverine Areas total 0.077 acre and include: Drainage A (0.059 acre), Drainage B (0.011 acre), Drainage B2 (<0.001), Drainage B3 (<0.001), Drainage B4 (<0.001) and Drainage B5 (0.007 acre). The remaining impacts to MSHCP Riverine Areas (totaling 0.088 acre) are temporary impacts associated with the extension of the off-site sewer and water lines to the study area. All though the drainages will either be permanently or temporarily impacted, the drainages are ephemeral systems with limited watersheds and support little to no native vegetation. Impacts to vegetation within the drainages will be limited to small patches of upland vegetation, including brittlebush scrub, buckwheat scrub, and Riversidean sage scrub.

Impacts to MSHCP Riverine Areas addressed in this report are based on a worst-case scenario in regards to impacts to MSHCP Riverine Areas, which assesses impacts associated with all Alternative Water Lines. However, it should be noted that once the Alternative Water Line route is chosen, actual impacts to MSHCP Riverine Areas will be slightly less. Therefore, when addressing mitigation, the acreage of presumed mitigation will be based on a 2:1 ratio of TOTAL riverine impacts with the caveat that once the alternative is chosen, impacts and mitigation may be slightly reduced.

2.3 100 Percent Avoidance Analysis

In accordance with the MSHCP, a 100 percent avoidance alternative was considered to determine if a project could be developed on the property that avoided 100 percent of the MSHCP Riverine Areas present. The study area supports two drainage systems (Drainage A and Drainage Complex B), which are briefly described above and in further detail in section 4.4, *Riverine Features*, of this report. Drainage A, which occurs on-site and off-site, and Drainage Complex B (i.e. mainstem Drainage B and its tributaries), which occurs within the off-site areas, were determined to meet the definition of MSHCP Riverine Areas.

In order to avoid all impacts to Riverine Areas, the project could not provide infrastructure improvements, including road improvements and water and sewer line extensions and support the developable acreage necessary to make the project economically feasible. Furthermore, since the proposed project is not within a MSHCP criteria cell, removing any possible development would place additional development pressure on areas within MSHCP criteria cells.

In summary, the 100 percent avoidance alternative was determined to be infeasible because it would not allow the Applicant to provide the required infrastructure improvements while realizing project objectives, and it would increase development pressure within MSHCP criteria cells. Additionally, the project has minimized permanent impacts to a maximum[3] of just 0.077 acre of low function and value habitat (based on the limited watershed and presence of minimal upland vegetation) within the drainages. Therefore, no further analysis was considered by the project proponent with regard to 100 percent avoidance or any part thereof.

2.4 Other Alternatives Considered

No other alternatives beyond those discussed in sections 2.1 and 2.2, above, were considered for the development based on the economical infeasibility and low function and value of the biological resources identified.

[3] Actual impacts will be reduced further upon determination of the final water line alignment.

3.0 Methodology

The biological resources of the study area are documented in the Biological Resources Assessment (BRA) (ESA PCR, 2016) (refer to attached **Appendix A**, *Biological Resources Assessment*). An overview of the methods is provided below.

3.1 Literature Review

Assessment of the study area began with a review of relevant maps and literature on the biological resources of the study area and surrounding vicinity. The California Natural Diversity Database (CNDDB), a CDFW species account database; the MSHCP; and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plans were reviewed for all pertinent information regarding the localities of known observations of sensitive species and habitats in the vicinity of the study area. Federal register listings, protocols, and species data provided by the USFWS and CDFW were reviewed in conjunction with anticipated Federally and State listed species potentially occurring within the vicinity as necessary. In addition, numerous regional flora and fauna field guides were utilized to assist in the identification of species and suitable habitats.

3.2 Field Investigations

The following field investigations were conducted by ESA PCR on the study area. The detailed methodology for each type of survey can be found in section 3.0 of the BRA Report, which is attached as Appendix A.

- A general biological survey and vegetation mapping were conducted by ESA PCR Senior Biologist Ezekiel Cooley on September 19, 2014.
- A Riparian/Riverine Areas assessment was conducted by ESA PCR Principal Regulatory Scientist Amir Morales on September 19 and December 10, 2014.
- Focused plant surveys were conducted within:
  - the study area and off-site sewer line area on May 13, 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton and on July 20, 2015 by Amy Lee;
  - the off-site proposed and alternative water line areas on May 23 and July 5, 2016 by Amy Lee; and

  - the off-site eastern manufactured slope area on July 5, 2016 by Amy Lee; however, a spring focused plant survey has not yet been conducted in this area.4

- Focused burrowing owl surveys were conducted within:

  - the study area and off-site manufactured slopes, road improvement, and sewer line areas from May to July 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton; and

  - the proposed and alternative off-site water line areas from April to July 2016 by Amy Lee and Lauren Singleton.

4 *The western manufactured slope area was not surveyed since it does not support suitable habitat for special-status plant species.*

4.0
Description of Available Biological Information

This section summarizes the biological resources of the study area and proposed impacts as documented in the BRA, attached as Appendix A. Observed species lists are included as Appendix A to the BRA.

4.1 Plant Communities

The on-site study area totals 78.48 acres, including 69.01 acres of non-native dominated plant communities, 6.62 acres of native plant communities, 2.15 acres of sparsely vegetated rock outcrop/Riversidean sage scrub, and 0.70 acre of developed areas. Non-native plant communities include 38.04 acres of ruderal areas, 2.29 acres of ruderal/Riversidean sage scrub, 28.68 acres of disturbed areas. Native plant communities include 2.34 acres of brittlebush scrub, 0.31 acre of brittlebush scrub/ruderal, 0.09 acre of buckwheat scrub/ruderal, 0.78 acre of laurel sumac scrub/ruderal, and 3.10 acres of Riversidean sage scrub.

The off-site study areas totals 10.57 acres, including 7.15 acres of non-native dominated plant communities, 0.64 acre of native plant communities, 0.05 acre of sparsely vegetated river wash area, and 2.66 acres of developed areas. Non-native communities consist of 2.50 acres of ruderal areas, 0.04 acre of ruderal/brittlebush scrub, 0.43 acre of ruderal/Riversidean sage scrub, and 4.18 acres of disturbed areas. Native plant communities include 0.27 acre of brittlebush scrub, 0.21 acre of brittlebush scrub/ruderal, 0.04 acre of buckwheat scrub/ruderal, and 0.12 acre of Riversidean sage scrub, and 0.07 acre of Riversidean sage scrub/ruderal.

Descriptions and a map of the plant communities are provided in Section 4.2 and Figure 7, respectively, of the BRA prepared by ESA PCR included as Appendix A of this DBESP (2016) (Appendix A). On and off-site permanent impacts are proposed by the project to 69.96 acres of non-native plant communities, 2.91 acres of native plant communities, 0.01 acre of sparsely vegetated river wash, and 2.93 acres of developed areas. An additional 1.50 acres of impacts will occur as a result of on-site fuel modification activities as well as 5.22 acres of temporary on and off-site impacts. The total acreages of each plant community mapped within the study area, the proposed impacts to those communities, and proposed avoidance acreages are summarized in **Table 1**, *Existing and Impacted Acres of Plant Communities*.

TABLE 1
EXISTING AND IMPACTED ACRES OF PLANT COMMUNITIES

Plant Communities	Existing (acres)			Permanent Impacts (acres)			On-site Fuel Modification Impacts (acres)	Temporary Impacts (acres)		
	On-site	Off-site	Total	On-site	Off-site	Total		On-site	Off-site	Total
Brittlebush Scrub	2.34	0.27	2.61	0.87	0.05	0.92	0.32	0.46	0.23	0.69
Brittlebush Scrub/Ruderal	0.31	0.21	0.52	0.30	0.21	0.51	-	0.01	-	0.01
Buckwheat Scrub/Ruderal	0.09	0.04	0.13	0.09	0.04	0.13	-	-	-	-
Laurel Sumac Scrub/Ruderal	0.78	-	0.78	0.36	-	0.36	0.26	0.16	-	0.16
Riversidean Sage Scrub	3.10	0.12	3.22	0.95	0.03	0.98	0.19	0.24	0.09	0.33
Riversidean Sage Scrub/Ruderal	-	0.07	0.07	-	0.01	0.01	-	-	0.06	0.06
Rock Outcrop/Riversidean Sage Scrub	2.15	-	2.15	-	-	-	0.06	-	-	-
River Wash	-	0.05	0.05	-	0.01	0.01	-	-	0.04	0.04
Ruderal	38.04	2.50	40.54	36.94	0.72	37.66	0.35	0.14	1.78	1.92
Ruderal/Brittlebush Scrub	-	0.04	0.04	-	0.01	0.01	-	-	0.03	0.03
Ruderal/Riversidean Sage Scrub	2.29	0.43	2.72	1.32	0.43	1.75	0.13	0.03	-	0.03
Disturbed	28.68	4.18	32.86	27.74	2.80	30.54	0.19	0.15	1.37	1.52
Developed	0.70	2.66	3.36	0.7	2.23	2.93	-	<0.01	0.43	0.43
Total	**78.48**	**10.57**	**89.05**	**69.27**	**6.54**	**75.81**	**1.50**	**1.19**	**4.03**	**5.22**

SOURCE: ESA PCR, 2014 & 2016

4.2 Special-status Plant Species

Special-status plants include those listed, or candidates for listing, by the USFWS and CDFW; and species considered special-status by the CNPS (Lists 1A, 1B, and 2). Several special-status and CNPS-listed species were reported in the vicinity based on CNDDB and CNPS, totaling 65 species within the 9-quadrangle search. Of the 65 species reported in the vicinity of the study area, 12 species were identified as having a potential to occur within the study area based on the literature review and existing habitat, as listed in Appendix B to the BRA. The remaining 53 species were not considered to have a potential to occur based on the literature review and habitat present on the study area. Focused plant surveys were conducted in 2015 and off-site road improvement and sewer line areas and in 2016 on the off-site water line areas; none of the species determined to have a potential to occur on the study area and off-site water and sewer line study areas were observed. A summer focused survey was conducted within the off-site eastern manufactured slope area in 2016; however, a spring survey has not yet been conducted within this area. The off-site western manufactured slope area does not support suitable habitat for special-status plant species.

4.3 Special-status Wildlife Species

Sensitive wildlife species include those species listed as Endangered or Threatened under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA), candidates for listing by the USFWS or CDFW, and Species of Special Concern to the CDFW. Several sensitive wildlife species were reported in the vicinity based on CNDDB, totaling 43 species within the 9-quadrangle search. A total of 19 species were identified as having a potential to occur based on the literature review and habitat present on the study area. Of the species with the potential to occur, focused surveys were conducted for the burrowing owl in accordance with recommended protocols due to the presence of potentially suitable habitat on the study area. The remaining 24 species were not considered to have a potential to occur within the study area due to lack of suitable habitat or the location of these areas were outside of the species' range. A summary table of these species is provided in Appendix C to the BRA. The remaining 19 species with potential to occur are discussed further below in section 4.3.1, *Species with Potential to Occur.*

4.3.1 Species with Potential to Occur

The following 19 species were determined to have a potential to occur on the study area:

Coast horned lizard (*Phrynosoma blainvillii*): This reptile species is a state species of special concern and is a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers sandy riparian and sage scrub habitats, but also occurs in valley-foothill, hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet. Habitats include open country, especially sandy areas, washes, flood plains, and windblown deposits.

Coast horned lizard was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Harvester ants, this species main food source, were also observed (although the food source was not seen in the area supporting suitable habitat). Although habitat and a food source potentially exist on the study area, the majority of the potentially suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Orange-throated whiptail (*Aspidoscelis hyperythra*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, non-native grassland, Riversidean sage scrub, and juniper and oak woodlands. It is often associated with riparian areas and alluvial fan sage scrub habitats.

Orange-throated whiptail was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. These areas support perennial plants that may host this species preferred food source (termites).

Although habitat and a food source potentially exist on the study area, the majority of the suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Red Diamond Rattlesnake (*Crotalus ruber*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.

Red diamond rattlesnake was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Although these areas support some vegetation and crevices within the rock outcrops, the vegetation is not dense and rock crevices available for cover are limited. Higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Golden Eagle (*Aquila chrysaetos*): This raptor is a state fully protected species and is protected by the Bald and Golden Eagle Protection Act; it is also a Covered Species pursuant to the Western Riverside County MSHCP. This species nests on cliff faces and tall trees. Foraging habitat includes open country, including grasslands and early successional stages of forest and shrub habitats.

Golden eagle was determined to have a potential to occur only to forage within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered very low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to lack of cliffs on the study area, which is their preferred nesting habitat. Additionally, there is only one CNDDB occurrence record within the vicinity. This record was a breeding pair observed in fall 1979, spring 1980, and fall 1980 in San Timoteo Canyon, approximately 6.0 miles to the northeast. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Swainson's hawk (*Buteo swainsoni*): This bird species is listed as threatened by the state and is a Covered Species pursuant to the Western Riverside County MSHCP. It prefers Great Basin grasslands, riparian forests, riparian woodlands, and valley and foothill grasslands.

Swainson's hawk was determined to have a potential for foraging only within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to the limited number of trees on the study area and the proximity of the trees to roads and residential homes, which could create some noise disturbance.

Additionally, there are only two CNDDB occurrence records of nesting individuals within the vicinity; both records are from over 100 years ago. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Burrowing owl (*Athene cunicularia*): This bird species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal prairie, coastal scrub, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley and foothill grassland and disturbed habitats. It is known to occur in the study area vicinity based on CNDDB and the MSHCP, and the study area is within the MSHCP Burrowing Owl Survey Area, an overlay in the MSHCP that requires additional surveys.

Burrowing owl was determined to have potential to occur within the study area based on the presence of suitable habitat that was identified during the Step I survey, including disturbed, low-growing vegetation, bare ground, and a few small fossorial mammal burrows. Step II surveys were conducted from May to July 2015 within the study area and off-site sewer line area and slope stabilization areas. Step II surveys were conducted from April to July 2016 within the off-site water line areas. The subsequent Step II surveys did not identify individual burrowing owls, active burrowing owl burrows, or signs of burrowing owls within the survey area. Therefore, the study area and adjacent buffer area do not currently support burrowing owls. The results are also outlined in a separate survey reports included in the attached BRA as Appendices D and E.

Loggerhead shrike (*Lanius ludovicianus*): This bird species is listed as a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, and Sonoran desert scrub habitats.

Loggerhead shrike was observed foraging within the northwestern corner of study area during the third burrowing owl survey conducted on July 2, 2015. This area supports suitable foraging habitat for this species, which includes Riversidean sage scrub and brittlebush scrub. The potential for nesting for this species is considered moderate based on the presence of shrubs on the northwestern corner. Although this area supports shrubs that may be suitable for nesting, the northwestern corner is adjacent to developed, residential areas; higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area.

Coastal California gnatcatcher (*Polioptila californica californica*): This bird species is listed as Federally Threatened, state species of special concern, and a Covered Species pursuant to the Western Riverside County MSHCP. This species is an obligate inhabitant of coastal sage scrub habitat.

This species was observed on the study area during the focused burrowing owl survey conducted on May 13, 2015. Only one individual was heard during the survey.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*): This mammal species is listed as a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. It prefers chaparral and coastal sage scrub habitats, in addition to grassland and Riversidean alluvial fan sage scrub habitats.

Northwestern San Diego pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable coastal scrub and chaparral habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Stephens' kangaroo rat (*Dipodomys stephensi*): This mammal species is listed as federally endangered and state threatened. Take Authorization for Stephens' kangaroo rat is provided by the SKR HCP within its plan boundaries, and by the Western Riverside County MSHCP for areas outside of the SKR HCP but within the MSHCP area plan boundaries (this species is a MSHCP Covered Species). This species prefers open grasslands or sparse shrub lands within sandy to sandy loam soils and low clay and gravel content.

Stephens' kangaroo rat was determined to have a moderate potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. The study area is not within any core reserves identified by the SKR HCP. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Los Angeles pocket mouse (*Perognathus longimembris brevinasus*): This mammal species is listed as a state species of special concern and a conditionally Covered Species pursuant to the Western Riverside County MSHCP (surveys are required for areas within the survey overlay, with potential conservation). It prefers sparsely vegetated habitat areas within coastal sage scrub communities and in patches of fine sandy soils associated with washes.

Los Angeles pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable Riversidean sage scrub habitat in the northwestern portion. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*): This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers open brushlands and scrub habitats.

San Diego black-tailed jackrabbit was determined to have a moderate potential to occur within the study area. The majority of the study area supports suitable habitat for this species, including the Riversidean sage scrub on the northwestern corner and the ruderal areas (which support some short grasses). However, this species is highly conspicuous and no incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego desert woodrat: This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal scrub and chaparral habitats with areas containing rock outcrops and cliffs.

San Diego desert woodrat was determined to have a moderate potential to occur within the study area based on the presence of suitable habitat (e.g. Riversidean sage scrub, rock outcrop/Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Southern Grasshopper Mouse (*Onychomys torridus ramona*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

Southern grasshopper mouse was determined to have a potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub and Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. However, the potential was considered low since this species has not been recorded on CNDDB within the vicinity of study area since 1938. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

American badger (*Taxidea taxus*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

American badger was determined to have a potential to occur within the study area based on the presence of shrubs within the Riversidean sage scrub habitat on the northwestern corner of the study area. A few fossorial mammal burrows were observed, suggesting the presence of small mammals that could provide a possible food source. However, the potential was considered low since the majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Additionally, this species has not been recorded within the vicinity since 1908. No signs of this species were observed during any site surveys conducted in 2015.

Western Mastiff Bat (*Eumops perotis californicus*): This mammal species is a state species of special concern. This species prefers chaparral, cismontane woodlands, coastal scrub, and valley and foothill grassland habitats.

Western mastiff bat was determined to have a potential to occur for foraging only within the study area. However, the potential was considered low since although bats in this family are known to be strong fliers and can fly long distances to forage, habitat on the study area is disturbed and the majority is surrounded by development. This species preferred roosting habitat is not present on the study area and the nearest CNDDB occurrence record is from1990 approximately 3.0 miles to the southwest of the study area, in an area that is now a residential development. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pocketed free-tailed bat (*Nyctinomops femorasaccus*): This bat species is a state species of special concern and occurs in more arid habitats, roosting in rock crevices, caverns, or buildings.

Pocketed free-tailed bat was determined to have a potential to occur for roosting only within the study area based on the presence of rock outcrops. However, this potential was considered very low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat (CDFW, 2000). There are only 2 CNDDB occurrence records in the vicinity. The nearest record is from 1985 approximately 6.5 miles to the southwest of the study area near March Air Force Base. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Lesser long-nosed bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. Although day roosting habitat (caves or mines) are not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pallid bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. only within the study area based on the presence of rock outcrops. Although day roosting habitat (caves or mines) is not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

4.3.2 Migratory Birds and Raptors

The study area supports some potential nesting and foraging habitat for nesting birds and raptors, primarily in the northwestern corner of the study area where there are shrubs and some trees. Several species of birds were observed on-site and were identified by CNDDB as potentially occurring within the 9-quadrangle search area.

Raptors observed on-site include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). There is also a foraging potential for listed raptors within the 9-quadrangle search area according to CNDDB, such as golden eagle (State Fully Protected) and Swainson's hawk (Federally Threatened), though the potential of foraging is considered low and neither are expected to nest on-site. These special-status bird species are listed in Appendix C to the attached BRA.

4.4 Riverine Areas Setting

The study area is located within rolling valley topography located southeast of Reche Canyon and south/southwest of The Badlands mountain range. The study area is located within the Santa Ana Watershed and generally drains toward the south, eventually reaching the Perris Valley Storm Drain, which ultimately reaches the San Jacinto River and then Canyon Lake. The USGS Sunnymead topographic Quadrangle depicts a blueline stream originating in the foothills to the north with headwaters located approximately 2,000 linear feet from the on-site study area. The mapped blueline drainage feature enters the study area near the center of the northern project boundary and bisects the property. The property has been subjected to seasonal dry-farming and/or weed abatement activities for decades. Based on the jurisdictional assessments performed by ESA PCR, no discernible streambed or indicators of flow were observed within the area historically mapped as a blueline drainage feature during the September 19, 2014 assessment of Riparian/Riverine Areas. In order to determine if indicators of flow reestablish following moderate rain events, Amir Morales returned to investigate the study area following a series of early December 2014 storm events yielding a total of nearly 2-inches of rain over three consecutive days. In our experience, this amount of rain would have reestablished some evidence of flow capable of eroding a streambed. However, no ordinary water mark, sediment deposition/sorting, debris wracks, bed/bank, streambed associated vegetation, or other flow indicators were observed immediately following the consecutive rain events, and no vegetation was observed as establishing in those areas based on review of recent and historical imagery of the site. As a result, it was determined that no MSHCP Riparian/Riverine Areas occur within the area depicted as a USGS blueline drainage feature mapped within the study area.

It was noted that the USGS Sunnymead Quadrangle depicts a small water feature at the off-site headwaters of the blueline drainage feature, approximately 2,000 linear feet north of the study area where the feature originates. As such, it is feasible that the mapped water feature was formed in association with a historic stock pond, which may have supported a small drainage that ultimately extended to the study area when water was historically discharged from the pond feature and/or significant storm events caused it to overflow. However, based on review of current aerial imagery in Google Earth, no water feature appears to persist within the off-site headwaters in the current condition capable of supporting a discernible streambed. Consequently, the only Riverine Area identified within the on-site study area during the December 2014 site visit is a minor roadside ditch identified as Drainage A, which extends into the off-site Ironwood Avenue right-of-way. Riverine indicators within the off-site study areas are therefore limited to Drainage Complex B, comprised of a mainstem drainage identified as Drainage B, and its tributaries identified as Drainages B1 through B5.

No riparian and/or hydrophytic vegetation communities were observed on the study area that would warrant the need for a formal wetland analysis, and no depressional features were observed. Therefore, no wetland or vernal pool resources were determined to occur within the project study area.

Drainage A and Drainage Complex B are considered to meet the MSHCP definition of Riverine Areas (rather than MSHCP Riparian Areas) since they are supported by ephemeral[5] flows and do not support riparian vegetation communities. The extent of Riverine Areas associated with Drainage A and Drainage Complex B are considered to be equivalent to the extent of CDFW jurisdiction. Riverine Areas associated with the two drainage systems are discussed in further detail in Section 5.1, *Assessment of Riparian/Riverine and Vernal Pool Resources*, below.

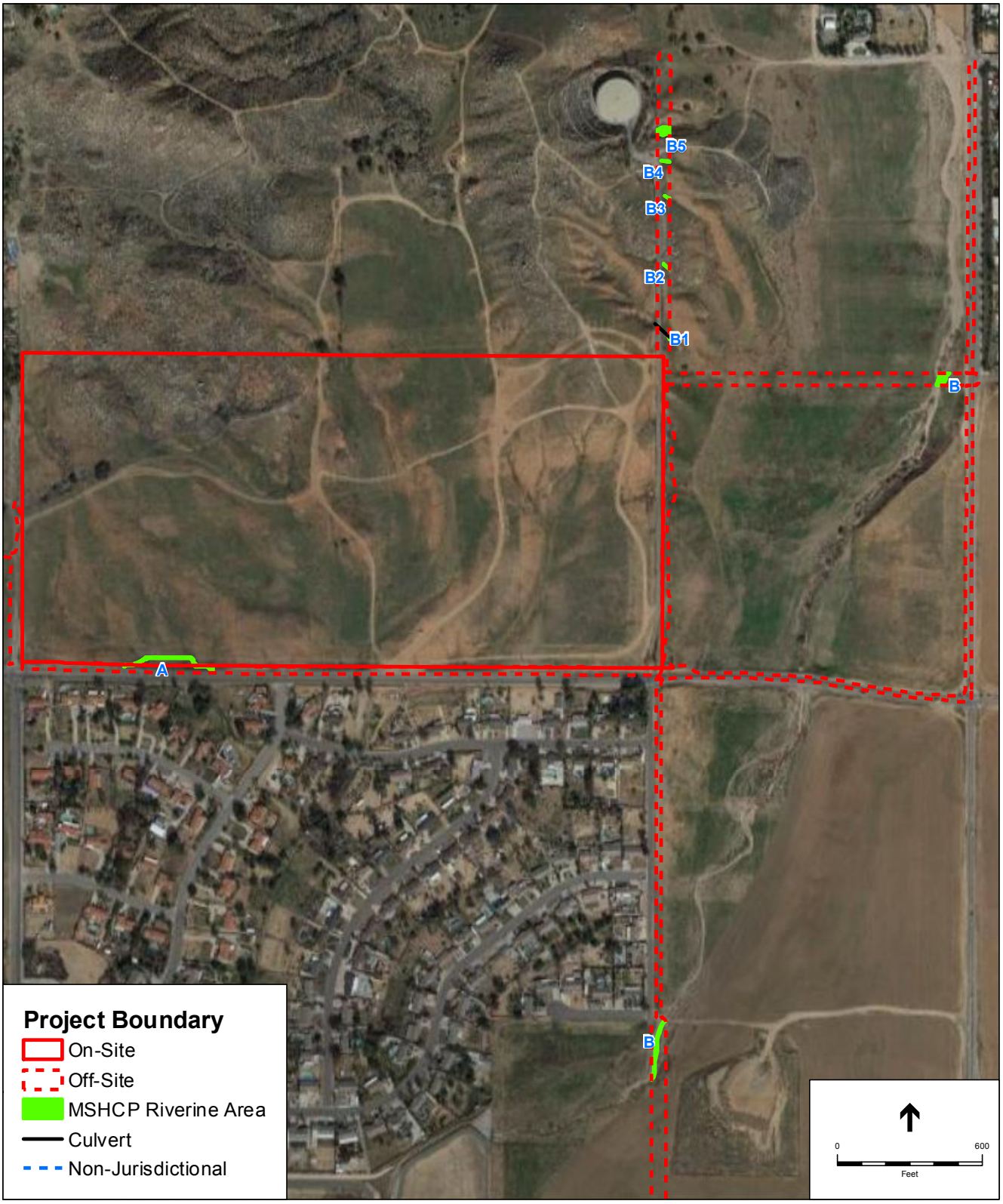
[5] *Ephemeral drainages are streambeds that generally convey runoff during, and immediately after, a storm event.*

5.0
Assessment of Riparian/Riverine and Vernal Pool Resources

5.1 Assessment of Riparian/Riverine and Vernal Pool Features

Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP provides for the protection of Riparian/Riverine Areas and Vernal Pools within the MSHCP Plan Area. Riparian/Riverine areas are defined in the MSHCP as "lands which contain habitat dominated by trees, shrubs, persistent emergents, 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." Vernal pools are defined in the MSHCP 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."

As shown in **Figure 7**, *MSHCP Riverine Areas*, the study area supports 0.165 acre of Riverine Areas, including 0.59 acre in Drainage A (0.046 acre on-site and 0.013 acre off-site), 0.069 acre in off-site Drainage B, 0.001 acre in off-site Drainages B1, 0.001 acre in off-site Drainage B2, 0.001 acre in off-site Drainage B3, 0.001 acre in off-site Drainage B4, and 0.033 acre in off-site Drainage B5. This acreage is equivalent to the CDFW jurisdiction for these drainages. All drainages meet the definition of Riverine Areas since they are supported by ephemeral flows and do not support any vegetation that is dependent on hydrology from the drainages. The acreages of MSHCP Riverine Areas in Drainage A and Drainage Complex B are summarized in **Table 2**, *MSHCP Riverine Areas*. Other types of aquatic features that could provide suitable habitat for MSHCP vernal pool species, such as fairy shrimp, are not present within the study area (i.e. vernal pools, swales, vernal pool-like ephemeral ponds, seasonal ponds, stock ponds, or other human-modified depressions such as tire ruts, etc.). Photographs of the drainages are provided in **Figures 8a** and **8b,** *Drainage Photographs*. Detailed descriptions of Drainage A and Drainage Complex B are provided in sections 5.1.1 and 5.1.2 below.



SOURCE: Google Maps, 2015 (Aerial).

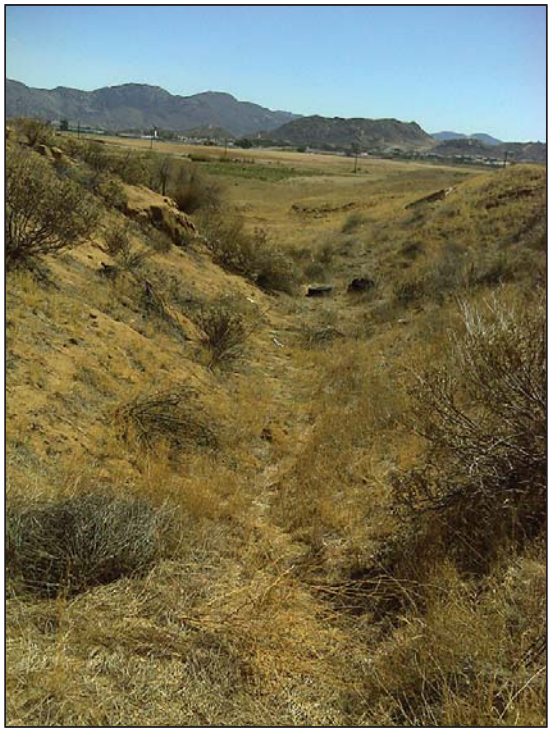
Ironwood Village Project
Figure 7
MSHCP Riverine Areas

ESA PCR

PHOTOGRAPH 1. View of Drainage A, facing northwest (upstream).

PHOTOGRAPH 2. View of Drainage B within the off-site sewer line area, facing south (downstream).

PHOTOGRAPH 3. View of Drainage B within the off-site water line area, facing north (upstream).



PHOTOGRAPH 4. View of Drainage B1, facing southeast (downstream).

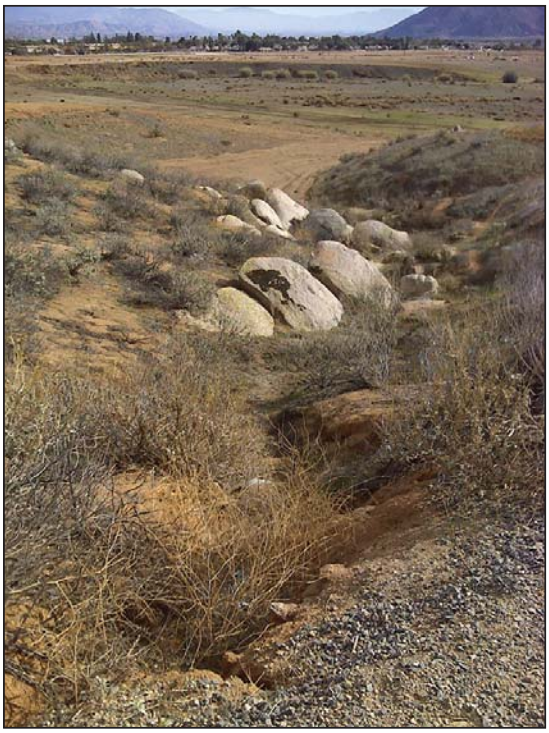
SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8a

Drainage Photographs

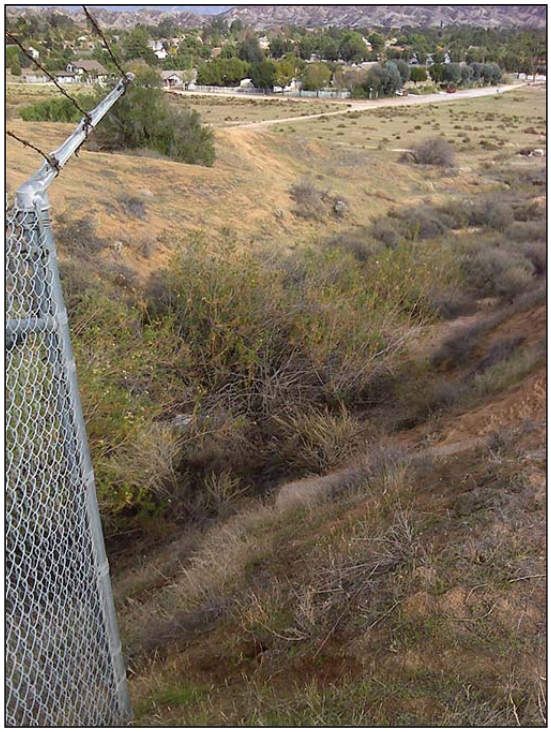
ESA PCR



PHOTOGRAPH 5. View of Drainage B2, facing southeast (downstream).

PHOTOGRAPH 6. View of Drainage B3, facing southeast (downstream).

PHOTOGRAPH 7. View of Drainage B4, facing southeast (downstream).



PHOTOGRAPH 8. View of Drainage B5, facing northeast (downstream).

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8b

Drainage Photographs

ESA PCR

TABLE 2
MSHCP RIVERINE AREAS[A]

Drainage (Study Area)	Length (ft)	Area (acres)	Riparian/Riverine Classification
A (On-Site)	285	0.046	Riverine
A (Off-Site)	111	0.013	Riverine
B (Off-Site)	306	0.069	Riverine
B1 (Off-Site)	0*	0.001	Riverine
B2 (Off-Site)	32	0.001	Riverine
B3 (Off-Site)	25	0.001	Riverine
B4 (Off-Site)	34	0.001	Riverine
B5 (Off-Site)	35	0.033	Riverine
Total	**828**	**0.165**	

NOTES:

** Less than one linear foot of jurisdiction occurs within Drainage B1 as the majority of the drainage within the off-site study area is associated with an existing corrugated metal pipe that was not quantified.*

Source: ESA PCR, 2014

5.1.1 Drainage A (MSHCP Riverine Area)

Drainage A is an unvegetated roadside ditch that establishes only when rain events generate sufficient runoff from Ironwood Avenue to erode a small channel through sandy disturbed soils. The ephemeral ditch enters the Ironwood Avenue Right-of-Way within the off-site study area then enters the on-site study area along the southern project boundary, extending for approximately 285 linear feet. The ditch then enters a corrugated metal pipe (CMP) beneath Ironwood Avenue, which is ultimately conveyed through the rural residential development to the south and into a water quality basin adjacent to SR-60. Drainage A measures approximately 3 feet in channel width and contains sandy loam soils that are periodically disturbed by weed abatement activities. A photograph of Drainage A is provided in Figure 8a.

Drainage A within the on and off-site study area supports a total of approximately 396 linear feet of ephemeral unvegetated roadside ditch, containing 0.46 acre of on-site and 0.013 acre of off-site CDFW jurisdictional streambed/MSHCP Riverine Areas totaling 0.059 acre.

5.1.2 Drainage Complex B (MSHCP Riverine Area)

Drainage B

Drainage B is an ephemeral sandy wash that originates off-site approximately 2 miles to the northwest along Reche Canyon Road. The drainage meanders along the road until it reaches the valley floor extending across Trust Way, crossing Kalmia Avenue, and then conveys runoff along the west side of Moreno Beach Drive for approximately a quarter-mile prior to crossing the off-site Water Line Alternative 1.

The drainage feature then extends south/southwest for another quarter-mile before entering a culvert beneath Ironwood Avenue and meandering for another quarter-mile prior to entering the off-site sewer line study area. Drainage B then continues for approximately 700 linear feet toward the southwest ultimately entering a detention basin located directly northeast of the Nason Street exit of SR-60. Drainage B within the off-site study areas ranges from approximately 4-10 feet in channel width and is entirely unvegetated. Soils within the wash are comprised of loamy sands of the Tujunga series consistent with the mapping by NRCS. Photographs of Drainage B are provided in Figure 8b.

Drainage B within the off-site sewer line and Water Line Alternative 1 total approximately 306 linear feet of unvegetated ephemeral sandy wash totaling approximately 0.069 acre of CDFW jurisdictional streambed/MSHCP Riverine Areas.

Drainages B1- B5

Drainages B1 through B5 are minor ephemeral drainages that with the exception of Drainage B5 (which appears to accept flow from a water tank bypass pipe) function to drain a very limited watershed west of the existing water district road that runs parallel to the eastern boundary of the study area. Drainage B5 appears to support flows from two small slope v-ditches as well as a pipe at its headwaters that appears to drain the existing water tank directly to the west, and was likely formed by controlled releases from the water tank structure. Otherwise, no natural watershed capable eroding such an incised drainage feature occurs upstream. Drainages B1 through B3 have small CMP culverts that convey limited runoff west of the water district road and support very weak indicators of flow and/or bed and bank. Drainage B4 does not support a pipe culvert rather a small pipe that drains surface flow from a small v-ditch directly west of the road. No discernible indicators associated with a streambed such as an ordinary high water mark, sediment deposition/sorting, debris wracks, or streambed associated vegetation were observed within Drainages B1-B4 immediately following the consecutive rain events of early December 2014. However, Drainages B1 through B4 do support topographic low points with banks typical of headwater swales. Drainage B5 was presumed to support Riverine Areas due to the presence of an ordinary high water mark, which ultimately became indiscernible after approximately 1,000 linear feet. Drainages B1 through B5 were all presumed to support CDFW jurisdictional streambed/MSHCP Riverine Areas.

Drainages B1 through B4 exhibit sparse upland scrub vegetation and ruderal grasses and are otherwise unvegetated. Drainage B5 supports a small patch of mule fat along approximately 15 linear feet of the headwaters directly downstream of the water tank pipe and mostly upland scrub vegetation beyond. Drainages B1 through B5 contain CDFW jurisdictional channel widths ranging from 0.5 to 3 feet, while Drainage B5 exhibits USACE jurisdiction averaging approximately 2 feet in channel width and a CDFW channel width approximately averaging 10 feet. Drainage Complex B drainage features all were observed to support sandy loam soils. Photographs of Drainage Complex B are provided in Figures 8a and 8b.

Drainage Complex B (Drainages B1 through B5) total approximately 0.037 acre of CDFW jurisdictional streambed/MSHCP Riverine Areas.

5.2 Assessment of Riparian/Riverine and Vernal Pool Plant and Wildlife Species

5.2.1 Riparian/Riverine Plant Species

A habitat assessment was conducted for species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 3**, *MSHCP Riparian/Riverine Plant Species*. Only one Riparian/Riverine plant species was determined to have a potential to occur on the study area, namely smooth tarplant (*Centromadia pungens* ssp. *laevis*). This species was considered to have a potential to occur only within the riverine habitat associated with the on- and off-site drainages; however, smooth tarplant was not observed during any of the focused plant surveys and therefore was concluded to be absent from the study area. The remaining MSHCP Riparian/Riverine plant species are not expected to occur within the study area due to the lack of suitable habitat or the location of the study area.

TABLE 3
MSHCP RIPARIAN/RIVERINE PLANT SPECIES

Species	Potential to Occur within the Study Area
Brand's phacelia *Phacelia stellaris*	Not expected to occur. This species has not been recorded in the Moreno Valley area. There is only one occurrence record in CNDDB within Riverside County, which was observed in 2000 in the City of Riverside near the Santa Ana River.
California Orcutt grass *Orcuttia californica*	Not expected to occur due to the lack of vernal pools.
Coulter's matilija poppy *Romneya coulteri*	Not expected to occur. This perennial plant has conspicuous flowers that would have been detected during the focused plant surveys if present.
Engelmann oak *Quercus engelmannii*	Not expected to occur. This is a conspicuous tree species that would have been detected during the focused plant surveys if present.
Fish's milkwort *Polygala cornuta* var. *fishiae*	Not expected to occur. The majority of occurrence records of this species on CNDDB are confined to the Santa Ana Mountains.
graceful tarplant *Holocarpha virgata* ssp. *Elongate*	Not expected to occur due to disturbance on-site. The study area is outside of the species' range; there are no known records of this species within the flatter agricultural areas east of the Santa Ana Mountains.
lemon lily *Lilium parryi*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
Mojave tarplant *Deinandra mohavensis*	Not expected to occur. The study area is outside the species range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
mud nama *Nama stenocarpum*	Not expected to occur due to the lack of wetlands. None were incidentally observed during any surveys (this species can occasionally occur in non-wetlands).
ocellated Humboldt lily *Lilium humboldtii* ssp. *Ocellatum*	Not expected to occur due to high disturbance within the drainages and lack of shade. This species is typically found at higher elevations.
Orcutt's brodiaea *Brodiaea orcuttii*	Not expected to occur due to the lack of vernal pools.

Species	Potential to Occur within the Study Area
Parish's meadowfoam *Limnanthes alba* ssp. *Parishii*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area is outside of this species' elevation range.
prostrate navarretia *Navarretia prostrata*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Diego button-celery *Eryngium aristulatum* var. *parishii*	Not expected to occur. The study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Jacinto Valley crownscale *Atriplex coronata* var. *notatior*	Not expected to occur due to the lack of suitable alkaline habitat.
San Miguel savory *Satureja chandleri*	Not expected to occur due to the lack of suitable metavolcanic substrate habitat.
Santa Ana River woollystar *Eriastrum densifolium* ssp. *sanctorum*	Not expected to occur due to lack of suitable habitat. The study area is outside the species range; this species is restricted to the Santa Ana River and alluvial fan sage scrub habitat.
slender-horned spineflower *Dodecahema leptoceras*	Not expected to occur due to the lack of alluvial fan habitat.
smooth tarplant *Centromadia pungens* ssp. *Laevis*	Potential, but not observed. This species was not observed during the focused plant surveys.
southern California black walnut *Juglans californica*	Not expected to occur. This is a conspicuous tree species that would have been detected if present.
spreading navarretia *Navarretia fossalis*	Not expected to occur due to the lack of vernal pools.
thread-leaved brodiaea *Brodiaea filifolia*	Not expected to occur due to the lack of vernal pools.
vernal barley *Hordeum intercedens*	Not expected to occur due to the lack of vernal pools.

Source: ESA PCR, 2016

5.2.2 Riparian/Riverine Wildlife Species

Habitat assessments were conducted for wildlife species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 4**, *MSHCP Riparian/Riverine Wildlife Species*. No riparian/riverine wildlife species are expected to occur on the study area due to the lack of suitable habitat.

TABLE 4
MSHCP RIPARIAN/RIVERINE WILDLIFE SPECIES

Species	Potential to Occur within the Study Area
arroyo toad *Anaxyrus californicus*	Not expected to occur due to the lack of suitable habitat (perennial streams).
mountain yellow-legged frog *Rana muscosa*	Not expected to occur due to the lack of suitable habitat (perennial streams).
California red-legged frog *Rana aurora draytonii*	Not expected to occur due to the lack of suitable habitat (perennial streams).
bald eagle *Haliaeetus leucocephalus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
least Bell's vireo *Vireo bellii pusillus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
American peregrine falcon *Falco peregrinus anatum*	Not expected to occur due to the lack of suitable habitat for foraging and nesting (cliffs overlooking open areas or large bodies of water).
southwestern willow flycatcher *Empidonax traillii extimus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Not expected to occur due to the lack of suitable habitat for foraging and nesting; outside of the species range.
Santa Ana sucker *Catostomus santaanae*	Not expected to occur due to the lack of suitable habitat (perennial streams).
Riverside fairy shrimp *Streptocephalus woottoni*	Not expected to occur due to the lack of suitable habitat (vernal pools).
vernal pool fairy shrimp *Branchinecta lynchi*	Not expected to occur due to the lack of suitable habitat (vernal pools).
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	Not expected to occur due to the lack of suitable habitat (vernal pools).

Source: ESA PCR, 2016

5.3 Assessment of Riverine Ecological Processes

The MSHCP Riverine Areas located on the study area support 0.059 acre in Drainage A (0.046 acre on-site and 0.013 acre off-site), 0.069 acre in off-site Drainage B, 0.001 acre in off-site Drainages B1, 0.001 acre in off-site Drainage B2, 0.001 acre in off-site Drainage B3, 0.001 acre in off-site Drainage B4, and 0.033 acre in off-site Drainage B5. Based on the limited watersheds and ephemeral nature of these features, the drainages have a reduced capacity to provide functions, including flood storage, groundwater recharge, flood flow attenuation, velocity dissipation, nutrient and sediment transport and trapping, carbon transport, and toxicant trapping from the stormwater and nuisance urban runoff entering these features. The ephemeral water sources most likely do not provide a large contribution to the hydrology of the downstream watershed and associated habitats for Conserved Species, such as the San Jacinto River where the flows ultimately drain. Furthermore, Drainage A and Drainage Complex B provide limited to no habitat for wildlife species. Drainage A is within a disturbed area that supports little to no associated vegetation and is unlikely to facilitate wildlife movement. Drainage B is a USGS mapped blueline stream and supports some ruderal and non-native vegetation (e.g. giant reed

[*Arundo donax*]) with small patches of sparsely vegetated riverwash areas outside of the project study areas. The smaller tributaries (Drainages B1 through B5) are also ephemeral drainages with limited upland vegetation, which initiate at the peak of a nearby but small ridge. Due to the limited vegetation and watershed, the tributaries do not facilitate wildlife movement through the study area. Based on this assessment, the biological and hydrological functions and values of the MSHCP Riverine Area associated with Drainage A (on-site and off-site portions) and the off-site Drainage Complex B are low.

6.0
Unavoidable Impacts to Riparian/Riverine and Vernal Pool Areas

6.1 Direct Impacts

Direct impacts are considered to be those that involve the loss, modification or disturbance of natural habitats (i.e., vegetation or plant communities), which in turn, directly affect plant and wildlife species dependent on that habitat. Direct impacts also include the destruction of individual plants or wildlife, which is typically the case in species of low mobility (i.e., plants, amphibians, reptiles, and small mammals). The collective loss of individuals in these manners may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and, hence, population stability.

As noted above, impacts (permanent and temporary) will be slightly reduced once the water line alternative is chosen. If the Alternative 1 Water Line is chosen, permanent and temporary direct impacts to Drainages B1 through B5 will be avoided. If Alternative 2 Water Line is chosen, permanent direct impacts to 0.007 acre and temporary direct impacts to 0.03 acre of Drainage B will be avoided.

6.1.1 Permanent Direct Impacts

As shown in **Figure 9**, *Impacts to Jurisdictional Features and MSHCP Riverine Areas*, and **Table 5**, *Existing and Proposed Impacts to MSHCP Riverine Areas*, the proposed project would result in permanent direct impacts to 0.059 acre of MSHCP Riverine Areas in Drainage A, including 0.046 acre of on-site MSHCP Riverine Areas and 0.013 acre of off-site MSHCP Riverine Areas. On and off-site impacts to the MSHCP Riverine Areas within Drainage A would occur to weedy species dominated by non-native species typical of ruderal areas. Drainage A does not support any MSHCP Riparian Areas. In addition, Drainage A does not support or have the potential to support any protected plant or wildlife species. The on-site impacts to Drainage A will occur as a result of grading activities and development of the site. The off-site impacts to Drainage A will occur as a result of road improvements proposed for Ironwood Avenue.

The proposed project would result in permanent direct impacts to 0.018 acre of MSHCP Riverine Areas off-site in the Drainage Complex B, including 0.011 acre permanent off-site impacts in Drainage B, <0.001 acre of permanent off-site impacts in Drainage B2, <0.001 acre of permanent off-site impacts in Drainage B3, <0.001 acre of permanent off-site impacts in Drainage B4 and 0.007 acre of permanent off-site impacts in Drainage B5.

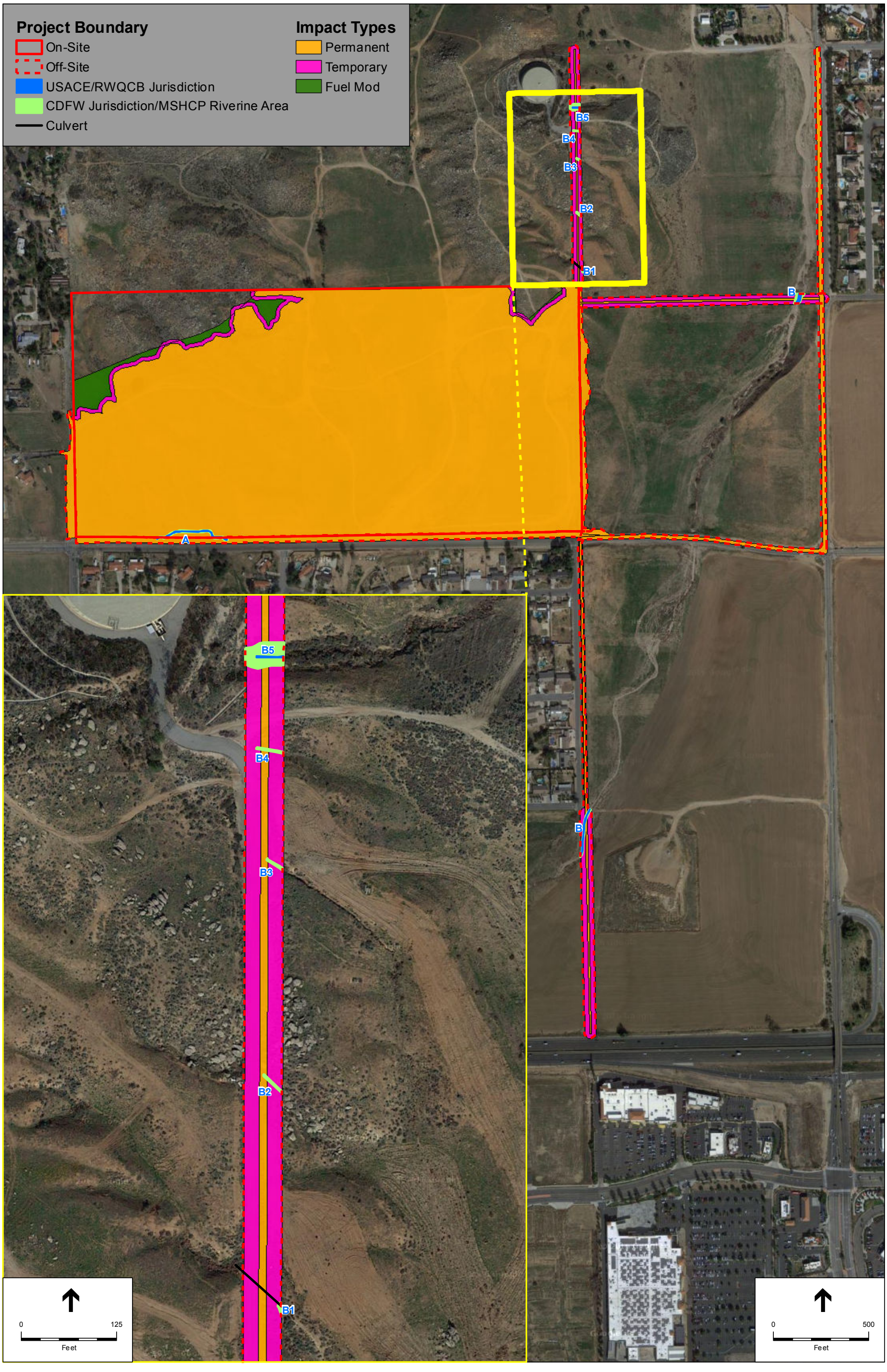
TABLE 5
EXISTING AND PROPOSED IMPACTS TO MSHCP RIVERINE AREAS

Drainage	Existing (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Drainage A (On-Site)	0.046	0.046	-
Drainage A (Off-Site)	0.013	0.013	-
Drainage B (Off-Site)	0.069	0.011	0.058
Drainage B1 (Off-Site)	0.001	0.000	0.001
Drainage B2 (Off-Site)	0.001	<0.001[b]	0.001
Drainage B3 (Off-Site)	0.001	<0.001[c]	0.001
Drainage B4 (Off-Site)	0.001	<0.001[d]	0.001
Drainage B5 (Off-Site)	0.033	0.007	0.026
Total	**0.165**	**0.077**	**0.088**

NOTES:
[a] MSHCP Riverine Areas are presumed equivalent to CDFW jurisdiction.
[b] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0003 acre.
[c] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0001 acre.
[d] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0004 acre.

Source: ESA PCR, 2016.

No permanent or direct impacts are proposed on-site within the Drainage Complex B. Impacts to the MSHCP Riverine Areas within Drainage B would be limited to areas of low biological function and value as this drainage was found to be sparsely vegetated with non-native invasive vegetation comprised of patches of arundo within the study area. Impacts to MSHCP Riverine Areas within Drainage B1 through B4 would occur to mostly unvegetated areas with only sparse patches of upland vegetation and ruderal grasses. Impacts to MSHCP Riverine Areas within Drainage B5 would be limited to a small patch of approximately 15 linear foot strip of mule fat. None of the plant communities found within the Drainage Complex B are considered high quality habitats. Further, the mule fat within Drainage B5 is of low quality, lacks composition and structure and is non-contiguous with larger riparian systems off-site. In addition, Drainage Complex B does not support or have the potential to support any protected plant or animal species. The off-site impacts to Drainage Complex B will occur as a result of the proposed sewer line along Oliver Street and the proposed Alternatives 1 and 2 Water Lines to the north and east of the property. In summary, permanent direct impacts to MSHCP Riverine Areas (on-site and off-site) within Drainages A and B total 46.7 percent of the total 0.165 acre of MSHCP Riverine Areas on the study area.



SOURCE: Google Maps, 2015.

Ironwood Village Project

Figure 9

Impacts to Jurisdictional Features and MSHCP Riverine Areas

ESA PCR

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6.1.2 Temporary Direct Impacts

As shown in Figure 9 and Table 5, temporary direct impacts are proposed to 0.088 acre of Riverine Areas off-site within the Drainage Complex B, including 0.058 acre of temporary direct off-site impacts in Drainage B, 0.001 acre of temporary direct off-site impacts in Drainage B1, 0.001 acre of temporary direct off-site impacts in Drainage B2, 0.001 acre of temporary direct off-site impacts in Drainage B3, 0.001 acre of temporary direct off-site impacts in Drainage B4 and 0.026 acre of temporary direct off-site impacts in Drainage B5. No temporary direct on-site impacts are proposed in Drainage Complex B. Further, no temporary direct on-site or off-site impacts are proposed in Drainage A. Temporary direct impacts to drainages within the study area are equivalent to the extent of impacts to CDFW streambed and total 53.3 percent of the total 0.165 acre of MSHCP RiverineAreas.

Similar to the proposed permanent direct off-site impacts to Drainage Complex B, the 0.088-acre of proposed temporary direct off-site impacts to the Drainage Complex B are associated with two types of impacts, including impacts associated with the proposed sewer line along Oliver Street and the proposed alternative water lines to the north and east of the property. Temporary direct impacts to vegetation within Drainage Complex B will be limited to sparse patches of upland vegetation and ruderal grasses as well as a small, low quality patch of mule fat within Drainage B5. Temporary impacts to the drainages will be returned to pre-project contours, which is described further in section 7.4, below.

6.2 Indirect Impacts

Indirect impacts are considered to be those that involve the effects of increases in ambient levels of sensory stimuli (e.g., noise, light), unnatural predators (e.g., domestic cats and other non-native animals), competitors (e.g., exotic plants, non-native animals), public use, and hydrology (hydrologic regime, flood storage, flood flow modification, nutrient retention and transformation, sediment trapping and transport, toxic trapping). Indirect impacts may be associated with the construction and/or eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to study area. Measures to address potential indirect impacts are provided in section 7.2 of this report.

6.2.1 Permanent Indirect Impacts

Permanent indirect impacts include the effects of increases in ambient levels of sensory stimuli (e.g. noise, light), unnatural predators (e.g. domestic cats and other non-native animals), competitors (e.g. exotic plants, non-native animals), and trampling and unauthorized recreational use due to the increase in human population. Other permanent indirect effects may occur that are related to water quality and storm water management, including trash/debris, toxic materials, and dust. Permanent indirect impacts may be associated with the eventual habitation/operation of a project.

The potential for permanent indirect impacts from water quality and storm water management from the proposed development will be addressed through the project's design features, as outlined in sections 7.2 and 7.5 of this report.

6.2.2 Temporary Indirect Impacts

Temporary indirect impacts may be associated with the construction and eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. Temporary indirect impacts may include increases in ambient levels of sensory stimuli (e.g. noise, light), dust, and trampling due to construction within the study area.

The potential for temporary indirect impacts from water quality and storm water management during construction of the development will be addressed through the project's design features, as outlined in sections 7.2 and 7.5 of this report.

7.0
Project Avoidance, Design Features, and Mitigation Measures

Impacts to MSHCP Riverine Areas were limited to the greatest extent feasible, as discussed in section 2.2 above and section 7.1 below. The design features and mitigation measures to compensate for unavoidable direct permanent impacts to these areas and indirect edge effects are discussed in this section under 7.2 and 7.3. The on-site mitigation approach discussed in this document is conceptual as the final design of the project is still in review for entitlement and any compensatory mitigation will ultimately be reviewed and approved as part of regulatory permits pursuant to Sections 404 and 401 of the Clean Water Act and Section 1602 of the California Fish & Game Code that will occur concurrently subsequent to the CEQA entitlement process. However, the mitigation ratios and mitigation types described in this section would not change and would be subject to a detailed Habitat Mitigation & Monitoring Plan (HMMP) in the event that the conceptual on-site mitigation described below is accepted by the resource agencies as part of future regulatory permitting and/or conditions of those permits. Therefore, the mitigation measures proposed in the project BRA and in this DBESP are written to allow for compensatory mitigation to be satisfied either on-site or off-site, in the event that more appropriate off-site mitigation is available and preferred by the resource agencies as part of subsequent DBESP approval and/or regulatory permitting by the resource agencies. This flexibility in the compensatory streambed mitigation approach has been developed for the project in light of the fact that some agencies such as the USACE have a preference for off-site mitigation credits over on-site mitigation, when available. Temporary impacts to the drainages will be returned to pre-project contours, which is also described in this section in 7.4 below.

7.1 Avoidance

Complete on-site and off-site avoidance 0.059 acre of the severely degraded roadside ditch associated with Drainage A is not feasible due to project-related water quality management requirements and the City required road improvements to Ironwood Avenue. However, on-site and off-site impacts to MSHCP Riverine Areas within Drainage A will only occur to a minimal area that was artificially created by the prior construction of Ironwood Avenue, totaling 0.046 acre on-site and 0.013 acre off-site permanent impacts. Flows within Drainage A establish only when rain events generate sufficient runoff from Ironwood Avenue to erode a small channel through sandy disturbed soils that are seasonally weed abated. Drainage A only exists because Ironwood Avenue does not contain curb-and-gutter facilities that would generally contain sheetflow from the road prior to discharge into off-site areas. Drainage A therefore collects this sheetflow for a short period of time after rain events and does not support vegetation which could

potentially support sensitive wildlife species. As such, the functions and values of Drainage A are considered very low and have not historically existed. The project proposes to construct a water quality basin, where Drainage A occurs on-site, which would serve to treat project-related flows, providing a greater benefit to groundwater recharge and dissipation of flows prior to entering off-site streambed areas. Off-site, 0.013 acre of Drainage A located within the Ironwood Avenue would be impacted as a result of improvements to Ironwood Avenue within the road right-of-way. As a result, Drainage A will be rerouted from the location it enters the off-site areas underground and into a stormdrain that will continue to carry flows through the rural residential development to the south and into the water quality basin adjacent to SR-60. In summary, the Riverine functions and values of this drainage will not be lost as a result of the proposed project. This drainage will continue to function in its currently capacity by carrying flows downstream.

A majority of the impacts (0.088 acre) within Drainage Complex B will be temporary in nature and will be recontoured to pre-project conditions following construction. This will allow re-establishment of the channel and vegetation, which therefore provides long-term avoidance. This is equivalent to 53.3 percent of the total 0.165 acre of Riverine Areas on and off-site. Permanent direct off-site impacts to 0.018 acre of MSHCP Riverine Areas within Drainage Complex B have been limited to areas subject to City required infrastructure necessary for development of the study area (i.e., sewer line and Alternatives 1 and 2 Water Lines). Impacts associated with the Alternative 2 Water Line may not occur if it is determined that the Alternative 1 Water Line route is more feasible. Should this be the case, than the project will avoid an additional 0.007 acres of permanent impacts and 0.03 acre of temporary impacts associated with Drainages B1 through B5. As such, long-term avoidance of MSHCP Riverine Areas on and off-site would then be equivalent to 77.6 percent of the total 0.165 acre of Riverine Areas on and off-site.

7.2 Design Features

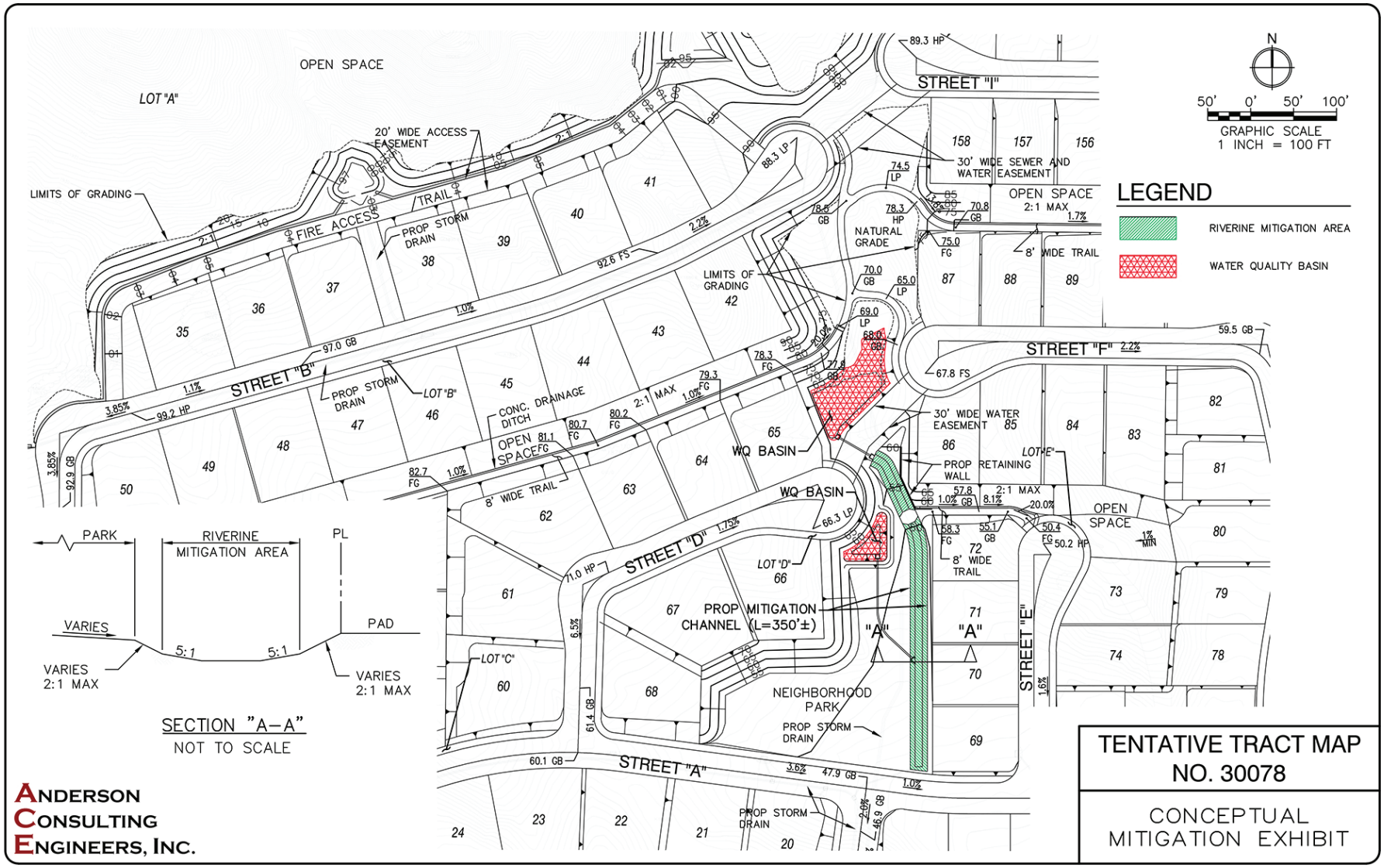
The project will be required to prepare a Water Quality Management Plan (WQMP) and Storm Water Pollution Prevention Plan (SWPPP) consistent with RWQCB, City of Moreno Valley, and County of Riverside requirements. These documents will outline measures and Best Management Practices (BMPs) to address water quality issues both during construction and post-construction, and to mitigate post-project flow rates to less than or equal to pre-project levels. Examples of measures and BMPs include minimizing urban runoff, minimizing the impervious footprint, constructing basins and swales, providing educational materials to residents, activity restrictions such as prohibiting dumping of oils, paint or masonry waste into streets and storm drains, requiring covered trash receptacles, and street sweeping. The Home Owner's Association (HOA) will be responsible for operations and maintenance of the post-construction BMPs. Detailed designs of the measures and BMPs, and operations and maintenance requirements including specific activities and checklists, will be provided during the final engineering.

7.3 Mitigation for Direct Impacts to MSHCP Riverine Areas

This DBESP proposes two (2) options for mitigation that will be determined as part of DBESP approvals and regulatory permitting, the processing of which is anticipated to occur somewhat concurrently to ensure only one mitigation option is ultimately required. Therefore, both on-site mitigation and off-site mitigation options are proposed in this DBESP in order to compensate for permanent impacts to MSHCP Riverine Areas (equivalent to CDFW jurisdictional areas) required to construct the project, in order to ensure that either on-site or off-site mitigation opportunities evaluated in this report are capable of providing biologically equivalent or superior preservation pursuant to requirements of the MSHCP. As such, compensatory mitigation for permanent impacts to Riverine Areas within the project study area is proposed at a minimum 2:1 ratio of mitigation-to-impacts. Maximum impacts to Riverine Areas may be as much as 0.07 acre, for a total of 0.14 acre of mitigation required depending on the which alternative water line is chosen. In addition, temporary impacts to as much as 0.088 acre of MSHCP Riverine Areas would be returned to pre-project conditions and revegetated with native species consistent with pre-project conditions, if any. The mitigation will be designed to provide habitat that is of higher quality than those Riverine areas impacted by the project. The proposed mitigation plan is shown on **Figure 10**, *Conceptual On-Site Mitigation*. The mitigation plan discussed in this document and shown on Figure 10 is conceptual as the final design of the project is still in review for entitlement. As such the mitigation plan could change slightly, if necessary, during final plan approval, including the mitigation configuration. However, the other components of the plan such as the goals, mitigation ratio and expected functional gains and success criteria described in this section would not change. The final configuration and specific details such as plant palettes and monitoring and management methods for the mitigation will be outlined in a Habitat Mitigation and Monitoring Plan (HMMP) that will be approved by the regulatory agencies during the processing of regulatory permits following adoption of the project Mitigated Negative Declaration.

7.3.1 Conceptual Mitigation Plan (On-Site Option vs. Off-Site Option)

Due to the uncertainty in the forthcoming regulatory permit application process, this DBESP is proposing both on-site and off-site mitigation options for impacts to MSHCP Riverine Areas (equivalent to CDFW jurisdictional areas) on the study area to demonstrate how either option will provide biologically equivalent or superior preservation pursuant to requirements of the MSHCP. The DBESP will also serve to support the Project's determination under the California Environmental Quality Act (CEQA), that impacts to jurisdictional areas are considered less than significant through the implementation of either mitigation option. The on-site mitigation option will include the creation or restoration of Riparian/Riverine habitat with upland transitional plant species. Currently, there are no agency approved mitigation banks or in-lieu fee programs available in the watershed to provide off-site compensatory mitigation.



SOURCE: Anderson Consulting Engineers, Inc., 2016

Ironwood Village Project

Figure 10

Conceptual On-Site Mitigation

ESA PCR

However, off-site mitigation opportunities do occur in adjacent watersheds subject to agency approval and may require higher mitigation ratios. Additional opportunities may arise in the future for off-site mitigation during forthcoming regulatory permit processing subject to agency approval. For example, potential opportunities could occur on lands owned by a local resource conservation district, the County of Riverside Regional Conservation Authority (RCA) or on alternate off-site lands as part of a collaborative group of developers. If approved by the regulatory agencies, off-site mitigation would provide more wide-reaching watershed benefits than on-site mitigation if part of a larger effort and/or within an area with greater habitat diversity, and would be preserved in perpetuity and managed by a pre-identified entity or entities. As such, on-site mitigation within a small ephemeral system provided by the permittee would be replaced by off-site mitigation within a larger drainage system in the watershed and pre-secured for in-perpetuity preservation and management by an agency-approved entity. Off-site mitigation is preferred by the USACE as it has been demonstrated to have a higher rate of success than on-site mitigation in general. Based on these reasons, off-site mitigation, if available in the future, may be preferred over the on-site option. On-site mitigation may also be deemed inadequate if the agencies require an increased mitigation ratio as part of the regulatory permitting process and are incapable meeting that ratio on-site, the agencies revise the regulatory requirements associated with on-site mitigation, or if USACE determine the mitigation is not consistent with their guidelines (known as the "Mitigation Rule"). The on-site mitigation would be proposed at a minimum 2:1 ratio for total impacts to acreage. If mitigated off-site, and within the Santa Ana Watershed mitigation is also proposed at a minimum 2:1 ratio. If mitigation cannot be established within the Santa Ana watershed, mitigation will be met at a 3:1 ratio.

Both the on-site and off-site mitigation opportunities would require regulatory agency approval during the permitting process discussed in the preceding paragraph. The intent is to provide the same mitigation to satisfy the requirements of the regulatory agencies and RCA, thus avoiding double-mitigating for impacts to the same streambed resources. The on-site and off-site mitigation would provide compensation for the loss of primarily unvegetated ephemeral habitat by enhancing habitat with riparian and/or riparian transition vegetation and removing non-native weeds. Details of the on-site mitigation (if implemented), including plant palette, monitoring term, and success criteria, will be included in a five-year HMMP prepared for the proposed Project during the permitting process with the USACE and RWQCB to obtain a Section 404 Nationwide Permit and a Section 401 Water Quality Certification under the Clean Water Act (CWA), respectively, and the CDFW to obtain a Streambed Alteration Agreement (SAA) under Section 1602 of the California Fish and Game Code. The off-site mitigation option would be part of a larger mitigation effort that would be implemented, monitored and maintained pursuant to an existing document prepared for the entire program. The expected functional gains and success of both the on-site and off-site mitigation options are discussed in section 7.3.2 below[6].

[6] Due to the uncertainty in the forthcoming regulatory permit application process, this DBESP is proposing both an on-site and off-site mitigation for impacts to MSHCP Riverine Areas (equivalent to CDFW jurisdictional areas) on the study area to demonstrate how either option will provide biologically equivalent or superior preservation pursuant to requirements of the MSHCP. The DBESP will also serve to support the Project's determination under CEQA that impacts to jurisdictional areas are considered less than significant through the implementation of either mitigation option.

On-Site Mitigation Option

If the on-site mitigation is implemented, potential opportunities would include mitigating total permanent direct impacts to as much as 0.077 acre at a 2:1 ratio through the creation of habitat on-site (establishment). The mitigation area will be located within the northwestern section of the development area in the vicinity of two water quality basins and a neighborhood park as depicted on Figure 10. Establishment would occur by planting riparian/riverine habitat and transitional upland habitat within an open space area that will be constructed downstream from a water quality basin. The specific goals of the mitigation are as follows:

1. Restore the hydrological function of the study area as a result of permanent impacts to Drainages by creating a riparian/riverine and upland transitional habitat that functions to transport and filter water. The mitigation area will be supported by the increased flows as a result of treated run-off from the proposed development flows that will be discharged from a water quality basin north and west of the mitigation area.

2. Create riparian/riverine and upland transitional habitat with a diversity of native species appropriate for Riverine Areas in proximity to the site, in order to provide potential habitat for wildlife species, which is currently lacking on the study area. Native streambed vegetation proposed for planting would include species appropriate for the local area and the hydrology of the channel. Planting of additional species would increase the diversity of vegetation and provide higher quality habitat for wildlife species. In addition, the plant palette would include a range of herbaceous and shrub species planted as seed, cuttings, and/or container stock to provide vegetation structure that would further increase the wildlife value of the habitat.

3. Develop and monitor the mitigation area in accordance with a resource agency approved HMMP that will include qualitative and quantitative monitoring measures and specific success criteria goals.

4. Preserve the mitigation area in perpetuity through an appropriate legal preservation mechanism that will be approved by the regulatory agencies during the permitting process.

Off-Site Mitigation Option

The off-site mitigation would include establishment, restoration and/or enhancement[7] of habitat associated with existing drainages within the Santa Ana watershed or possibly within an adjacent watershed. Feasible off-site mitigation opportunities as close to the study area as possible would be selected and it should be noted that off-site mitigation outside of the Santa Ana watershed, if approved by the resource agencies, will require a higher mitigation ratio to adequately offset project impacts. It is expected that habitat enhancement would include removal of non-native weed species and planting with native riparian habitat, as appropriate. If off-site mitigation is proposed on land purchased for mitigation by the project, a HMMP will be prepared and provided to the regulatory agencies for review and approval. As mentioned above, proof of off-site

[7] Proposed off-site establishment, restoration, and/or enhancement follow the definitions provided by the Santa Ana RWQCB, which are also consistent with USACE definitions. Establishment creates an aquatic resource at a site where that resource was not historically present. Restoration is divided into two categories: re-establishment and rehabilitation. Re-establishment returns natural/historic functions to a site while rehabilitation improves multiple functions of a degraded site. Enhancement improves one or two functions of an existing aquatic resource.

mitigation purchase would be provided to the regulatory agencies for participation in an approved mitigation bank, in-lieu fee program, private bank, or off-site permittee responsible mitigation opportunities.

7.3.2 Summary of Mitigation Compensation

The proposed mitigation provides a 2:1 ratio of compensation to as much as 0.077 acre of permanent impacts to MSHCP Riverine Areas, for a total of 0.154 acre of riparian/riverine and upland transitional habitat creation. The final acreage of mitigation will be based on the total final impacts, which could be slightly less than 0.077 acre based on which Alternative Water Line is chosen. The drainages are considered of low function and value and are primarily unvegetated with the exception of a few patches of native and non-native invasive vegetation. The mitigation would provide compensation for impacts to limited function and values of the existing drainages at a net gain by improving the channel morphology through creation of a system with a more defined bed and bank, providing additional hydrology, eliminating the current disturbance that the drainages are subjected to, and creating habitat where none currently exists.

7.3.3 Expected Functional Gains of the Mitigation On-Site Mitigation

On-Site Mitigation

The on-site mitigation set forth in section 7.3.1 above will compensate for the loss of on and off-site MSHCP Riverine Areas on the study area. The on-site mitigation would result in higher function and value drainages than currently exist. The drainages proposed for impacts are considered low function and value in their current state due to the structure of the drainages, the limited hydrologic regime, and the lack of vegetation. Based on these factors, the drainages do not currently support any potential habitat for MSHCP Riparian/Riverine species. An increase in function and value as a result of the mitigation would be achieved through the creation of a streambed channel, creation of riparian habitat, and improving the hydrologic regime. Any planting would be designed to provide species diversity by planting additional species not currently known to occur on-site but that are known to occur in similar habitats in the vicinity; provide vegetation structure by planting herbaceous, shrub and tree species; and provide native cover, all of which do not currently exist in the drainages. Considering these factors, the following functional gains would be expected as a result of the mitigation:

1. Compensation for impacts to low quality disturbed drainages that are primarily unvegetated by replacing with riparian/riverine and transitional upland habitat that will provide biogeochemical and water quality functions.

The mitigation would include planting with appropriate native species for the area that are consistent with the expected hydrology for the drainages. The existing drainages proposed for impacts are highly disturbed and primarily unvegetated with only sparse patches of a few native and non-native species. The planting would be designed to provide native species diversity, vegetation structure, and native cover within the habitat utilizing the limited native species observed on-site and other similar habitats in the area. As such, the proposed replacement of

disturbed drainages with riparian/riverine and transitional upland habitat would improve water quality and provide biogeochemical functions within the watershed. Specifically, the vegetation will result in increased trapping of sediment, and the microbial action in the root zone of plants removes toxins, nitrogen, and other nutrients from the runoff, thereby improving water quality and helping to reduce the impacts of non-point source pollution (Schaefer and Brown, 1992) through natural filtering of pollutants (bio-filtration effects). Heterotrophic microorganisms, which thrive in riparian areas, are also responsible for converting detritus from leaf litter and other dead organic matter into consumable organic matter. This organic material forms the base for the riparian food chain and, within the drainages, can be released downstream as dissolved organic matter (Gregory, et al., 1991; Schaefer and Brown, 1992). Knight and Bottorff (1984) reported that up to 1000g/m2/yr of detritus are processed by aquatic macrophytes in riparian zones and this provides a food chain base for these ecosystems, promoting their biodiversity. Improvement of water quality and biogeochemical functions will take place as these nutrients pass through the drainages and are transformed or sequestered into the plant tissue. In addition, the deposition of fine and coarse woody debris will provide important habitat for amphibians, reptiles, and other wildlife.

2. Compensation for impacts to low quality disturbed drainages that are primarily unvegetated by replacing with native riparian/riverine and transitional upland habitat that will provide hydrologic functions.

The disturbed drainage channels will be replaced with a defined drainage channel that is vegetated with native species. This will provide improved energy dissipation and storage during storm events. In addition, the drainage will be supported by existing hydrology and flows from the development post-construction, resulting in an increase in hydrologic input to support the vegetation. Increasing plant cover also stabilizes soil to deter channel and habitat degradation by storm flows. Interception and retention of storm flows by vegetation regulates sharp run-off peaks and slows discharges over a longer time period to avoid erosional issues and may also contribute to groundwater recharge.

3. Compensation for impacts to low quality disturbed drainages that are primarily unvegetated by replacing with defined drainage channels vegetated with native riparian habitat that will provide biological functions.

The planting of native vegetation will provide potential habitat for wildlife that utilize drainage areas, which does not occur under current conditions. The planting will provide a diversity of plant species with structural and spatial diversity to encourage wildlife species to utilize the habitat for foraging, cover and/or breeding.

Off-Site Mitigation

The off-site mitigation set forth in section 7.3.1 above will compensate for the loss of primarily ruderal and ephemeral habitat within the study area. Although a site-specific analysis of off-site mitigation cannot be completed at present since the resource agencies have yet to determine what they will accept as compensatory mitigation for the project, the mitigation would be expected to include the creation, restoration, and/or enhancement of a drainage with native species, likely within a larger drainage system than supported on the study area. The off-site mitigation would

result in a higher function and value than the primarily ruderal and ephemeral habitat currently on the study area, which is consistent with the proposed on-site mitigation option. However, the off-site mitigation also has a potential to provide higher function and value than the on-site mitigation from a regional benefit perspective. For example if new drainage habitat was created, the mitigation was part of a larger drainage system, and/or the mitigation was part of a wider-reaching mitigation effort. Considering these factors, the following functional gains would be expected:

1. Compensation for impacts to the primarily ruderal and ephemeral habitat with native vegetated habitat will provide biogeochemical and water quality functions.

The off-site mitigation would be expected to include removal of non-native species and planting with natives, as appropriate. The impacted drainages on the study area currently support vegetation that is primarily non-native. As such, the proposed native vegetation would provide water quality and biogeochemical functions consistent with the on-site mitigation option described above. In addition, improving these functions within a larger drainage system and/or as part of a wider-reaching mitigation effort would have the potential to provide a more regional collective benefit to the watershed.

2. Compensation for impacts to the primarily ruderal and ephemeral habitat with native vegetated habitat will provide hydrologic functions.

Native vegetation will provide energy dissipation and storage during storm events that is currently not provided on the study area. Increasing plant cover also stabilizes soil to deter channel and habitat degradation by storm flows. The improvement of these functions is consistent with the on-site mitigation option described above. In addition, improving these functions within a larger drainage system and/or as part of a wider-reaching mitigation effort would have the potential to provide a more collective benefit to the watershed.

3. Compensation for impacts to the primarily ruderal and ephemeral habitat with native vegetated habitat will provide biological functions.

Native vegetation will increase potential wildlife habitat by providing more diversity of plant species, forage and cover for wildlife, consistent with the on-site mitigation option described above. In addition, improving these functions within a larger drainage system and/or as part of a wider-reaching mitigation effort would have the potential to provide a more collective benefit to the watershed.

7.3.4 Success Criteria for the Mitigation

In addition to compensating for streambed loss, the mitigation will provide native plant cover for wildlife habitat and to stabilize the drainage system. The success criteria below will be incorporated into a final HMMP for the on-site mitigation following approval by the regulatory agencies.

1. The habitat mitigation will contribute to regional biodiversity in perpetuity.

The proposed mitigation will include the goal of creating a drainage channel with improved morphology, a native species plant cover, and hydrology provided by existing flows and treated flows from the development. This will create habitat for wildlife populations within the mitigation and general area to ensure a more diverse habitat structure and stable watershed, and also improve the hydrologic conditions both on-site and downstream of the study area. The on-site mitigation is proposed for conservation in perpetuity pursuant to a conservation easement, deed restriction, restrictive covenant, or other appropriate legal mechanism as approved by the regulatory agencies.

2. The habitat mitigation will be self-sustaining and will not require supplemental watering or outside input for recruitment and propagation of plant species.

A HMMP will be prepared for the on-site mitigation and will include a number of specific interim and ultimate success criteria over a five-year program that would require the site to then be self-sustaining. Typically mitigation sites are required to demonstrate survival without irrigation for a minimum of two years before the regulatory agencies will deem the mitigation complete.

3. The entire range of biological components, processes, and interactions will be present in each community.

As discussed above, success criteria will be developed as part of the HMMP that will include criteria related to habitat structural diversity, habitat coverage and spatial diversity, percent of non-native vegetation, and hydrologic regime, and will allow for monitoring of the expected range of biological components, processes and interactions within the mitigation area.

4. Natural processes of ecological succession will be allowed to occur.

The success criteria and/or goals in the HMMP will ensure the long-term survivability of the habitats created, including self-sustaining habitat that will follow natural ecological succession including processes such as nutrient cycling.

Off-Site Mitigation

In addition to compensating for streambed loss, the off-site mitigation will provide increased native plant cover for wildlife habitat and to stabilize the drainage system, consistent with the on-site mitigation option described above. For banks or in-lieu fee programs it is expected that the success criteria below are already incorporated into a restoration plan prepared for the entire effort. However, if lands are secured for off-site mitigation, these success criteria will be incorporated into a final HMMP to ensure long-term success of the mitigation.

1. The mitigation will contribute to regional biodiversity in perpetuity.

The proposed mitigation will include the goal of increasing native plant cover and removing non-native weeds. This will create habitat for wildlife populations within the mitigation site and general area to ensure a more diverse habitat structure and stable watershed. Off-site mitigation within an approved mitigation bank, private bank, or in-lieu free program will be part of a larger

mitigation effort benefitting the regional watershed that is preserved in perpetuity typically through an existing preservation mechanism. For off-site land purchased for preservation, a preservation mechanism will be established to ensure in-perpetuity conservation of the mitigation.

2. The habitat mitigation will be self-sustaining and will not require supplemental watering or outside input for recruitment and propagation of plant species.

For off-site mitigation on acquired lands, a HMMP will be prepared and will include a number of specific interim and ultimate success criteria over a five-year program that would require the site to be self-sustaining, consistent with the on-site mitigation option described above. It is expected that agency approved mitigation banks, in-lieu fee programs, and private banks would have existing success criteria outlined in a plan prepared as part of the larger mitigation effort. The plan is expected to include criteria for demonstrating the mitigation is self-sustaining, which is typical for mitigation plans.

3. The entire range of biological components, processes, and interactions will be present in each community.

As discussed above, success criteria will be developed as part of the HMMP or are anticipated to be part of existing plans for approved mitigation banks, in-lieu fee programs, and private banks. These will, or are expected to, include criteria related to habitat structural diversity, habitat coverage and spatial diversity, percent of non-native vegetation, and hydrologic regime, and will allow for monitoring of the expected range of biological components, processes and interactions within the mitigation site.

4. Natural processes of ecological succession will be allowed to occur.

The success criteria and/or goals in the HMMP or existing plans will ensure the long-term survivability of the habitats created, including self-sustaining habitat that will follow natural ecological succession including processes such as nutrient cycling.

7.4 Returning Temporary Impact Areas to Pre-project Contours

A total of 0.088 acre of Drainage Complex B is proposed for temporary impacts to allow for construction of the sewer and water line. Consistent with the definition of “temporary impacts” recognized by the resource agencies, temporarily impacted drainages will be returned to pre-project contours and revegetated where appropriate.

7.5 Project Design Features and Mitigation Measures to Address Edge Effects

Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, of the MSHCP presents a number of guidelines that are intended to address indirect effects associated with locating developments in proximity to a MSHCP Conservation Area. These guidelines address the quantity and quality of any runoff generated by the development, night lighting, noise, and

domestic predators. The study area is not within or adjacent to any Criteria Cells and, as such, development of these areas is not expected to result in indirect effects to MSHCP Conservation Areas related to night lighting, noise, and grading/land development. However, runoff from the study area has the potential to affect the quantity and quality of water downstream to MSHCP Conservation Areas within the watershed, in addition to transporting non-native plant seeds. Furthermore, the study area supports MSHCP Riverine Areas up and down stream of Drainage Complex B. Although mitigation is proposed for temporary impacts to recontour the areas back to pre-project conditions, allowing for re-establishment of the channel and vegetation, the project has a potential to indirectly effect up and downstream areas during and following construction. Project design features are proposed that will address indirect impacts of the proposed project and to minimize edge effects beyond the limits of grading at the urban/wildlands interface, consistent with Section 6.1.4 of the MSHCP.

Drainage (Urban and Storm Water Runoff): The project will be required to comply with flood and water quality standards, including preparation of a WQMP and SWPPP as outlined in section 7.2 above. As such, no indirect effects from the quantity and quality of run-off will occur to the avoided MSHCP Riverine Areas or mitigation area, or to any downstream MSHCP Conservation Areas. The project will be required to maintain flows, treat the water, maintain water quality, and address flood control/erosion pursuant to RWQCB and County of Riverside standards. Examples of measures and BMPs that may be required include the construction of water quality basins, the implementation of street sweeping and waste management, dust-control measures during construction, and providing education materials to inform the residents on water quality issues. Thus all water leaving the development will be treated and will be discharged at rates that will prevent downstream erosion, and the frequency of storm events discharging to the drainages will not be affected. This is expected to allow the continued survival of the habitat. These measures will avoid any indirect effects from the development drainage in MSHCP Riverine Areas on and off-site (including the mitigation area) and in downstream MSHCP Conservation Areas as a result of the proposed project.

Toxic Material: Construction of the proposed project will incorporate erosion control measures (e.g., sand bags and/or straw wattles as appropriate) around the perimeter of the work area to ensure all water leaving the site is filtered and an increase in siltation does not occur. In addition, for the long-term operation of the Project, the measures and BMPs outlined in the WQMP and SWPPP will treat project-generated flows and remove pollutants (see above and also section 7.2 of this report). These measures will avoid any indirect effects from toxic materials to avoided MSHCP Riverine Areas on-site (including the mitigation area) and to downstream MSHCP Conservation Areas as a result of the proposed project.

Trash/Debris: The project will be required to minimize and address the amount of trash/debris created by the development, and avoid trash/debris from entering downstream areas. These may include activity restrictions placed on the occupants, the distribution of educational materials, street sweeping and waste management, and will be outlined in the project's WQMP and SWPPP. These measures will avoid any indirect effects from trash/debris to nearby MSHCP Riverine Areas located off-site and/or to downstream MSHCP Conservation Areas as a result of the proposed project.

Lighting: The project has been designed to minimize night lighting while remaining compliant with City ordinances related to street lighting. All lighting will be directed away from off-site MSHCP Riverine Areas and/or mitigation areas both during construction and post-construction. As such, no effects from lighting are anticipated to these areas.

Noise: The proposed use of the site for residential development is not anticipated to result in noise-generating activities apart from increased traffic noise. The project will comply with all City requirements pertaining to noise and traffic standards.

Invasives: No invasive, non-native plant species listed in Table 6-2 of the MSHCP, Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area, will be utilized in the landscape plans. This will avoid dispersal of invasive plant seeds in the watershed.

Barriers: The MSHCP requires the incorporation of barriers, such as native landscaping, rocks/boulders, fencing, walls, and/or signage, for proposed land uses adjacent to preservation areas to minimize unauthorized public access, trampling, introduction of urban wildlife, and/or illegal dumping within the preservation areas. The proposed project is not located adjacent to any preservation areas, but is located adjacent to MSHCP Riverine Areas and associated mitigation. The project will include fences and/or walls around the entire development, including adjacent to the MSHCP Riverine Areas.

Grading/Land Development and/or Fuel Modification Activities: Manufactured slopes are contained within the study area identified and do not extend beyond the limits analyzed in this report or into any proposed avoidance and mitigation areas. Brush management, as well as all ground disturbing activities associated with construction and operation of the project development, will also be contained within the project's impact footprint and shall not encroach into the avoided areas in accordance with Section 6.4 of the MSHCP. Off-site impacts are limited to manufactured slope areas, road improvements, sewer line extension, and water line extensions and will be mitigated as described in this document.

The Fuels Management guidelines presented in Section 6.4 of the MSHCP are intended to address brush management activities around new development within or adjacent to the MSHCP Conservation Area. Fuel modification has been incorporated into the project design and does not extend into off-site or into the proposed mitigation area.

7.6 Measures to Address MSHCP Riparian/Riverine Species

The project proposes the following mitigation measure (MM) to ensure compliance with the Migratory Bird Treaty Act. Conditions of Approval (COAs) recommended to the City of Moreno Valley as part of the project CEQA document are also proposed to address compliance with regulatory permitting of impacts to jurisdictional areas (all of which are also considered MSHCP Riverine Areas) and compliance with the MSHCP. The MM and COAs are provided in the BRA (section 7.2 in Appendix A) and are also included verbatim below. The on-site and off-site mitigation proposed in this DBESP would be considered to provide compensation for impacts to

jurisdictional drainages pursuant to COA BIO-2, in addition to MSHCP Riverine Areas pursuant to COA BIO-3.

MM BIO-3 Prior to the issuance of any grading permit that would remove potentially suitable nesting habitat for raptors or songbirds, the project applicant shall demonstrate to the satisfaction of the City that either of the following have been or will be accomplished:

1. Vegetation removal activities shall be scheduled outside the nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors) to avoid potential impacts to nesting birds.

2. Any construction activities that occur during the nesting season (February 15 to August 31 for songbirds; January 15 to August 31 for raptors) will require that all suitable habitat be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected a buffer of 300 feet (500 feet for raptors) around the nest adjacent to construction will be delineated, flagged, and avoided until the nesting cycle is complete. The buffer may be modified and/or other recommendations proposed as determined appropriate by the biological monitor to minimize impacts.

COA BIO-2 Prior to the issuance of any grading permit for permanent impacts in the areas designated as jurisdictional features, the project applicant shall obtain regulatory permits from the USACE, RWQCB, and CDFW. The following shall be incorporated into the permitting, subject to approval by the regulatory agencies:

1. On-site or off-site creation, restoration and/or enhancement of USACE/RWQCB jurisdictional "waters of the U.S." within the Santa Ana watershed at a ratio no less than 2:1 or within an adjacent watershed at a ratio no less than 3:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

2. On-site or off-site creation, restoration, and/or enhancement of CDFW jurisdictional streambed within the Santa Ana watershed at a ratio no less than 2:1 or within an adjacent watershed at a ratio no less than 3:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

Purchase of any mitigation credits through an agency-approved mitigation bank or in-lieu fee program should occur prior to any impacts to jurisdictional drainages. Any mitigation proposed on land acquired for the purpose of in-perpetuity mitigation that is not part of an agency-approved mitigation bank or in-lieu fee program shall include the creation, restoration, and/or enhancement of similar streambed habitat pursuant to a resource agency-approved HMMP. The HMMP shall be prepared prior to any impacts to jurisdictional features, and shall provide details as to the implementation of the mitigation, maintenance, and future monitoring of mitigation areas. The goal of the

mitigation shall be to create, restore, and/or enhance similar habitat with equal or greater function and value than the impacted habitat.

COA BIO-3 Prior to the issuance of any grading permit the project applicant shall comply with all of the provisions of the MSHCP, including payment of the MSHCP Local Development Mitigation Fee, compliance with Section 6.1.2 of the MSHCP pertaining to Riparian/Riverine Areas, implementation of drainage, toxics and non-native species guidelines pertaining to the Urban/Wildlands Interface in Section 6.1.4 of the MSHCP, and compliance with Section 6.3.2 of the MSHCP pertaining to Burrowing Owl Survey Area requirements.

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8.0
Determination of Biologically Equivalent or Superior Preservation

Section 6.1.2 of the MSHCP, Volume I, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, is intended to ensure protection of Riparian/Riverine Areas within the entire MSHCP Plan Area such that habitat values are preserved for those species within the MSHCP Conservation Area. The project site and off-site areas support disturbed Riverine areas that do not support any sensitive species listed in Section 6.1.2 of the MSHCP.

The proposed project, inclusive of all project design features and mitigation measures, is biologically superior to an avoidance alternative by replacing low function and value disturbed MSHCP Riverine Areas with a higher function and value riparian habitat typical of similar drainage systems in the local area, and by avoiding any potential impacts to downstream areas through implementation of measures to address water quality and dispersal of non-native seeds downstream. A summary of this statement is provided below based on the analysis in this report, and further assessed in Sections 8.1 through 8.3.

- The proposed permanent impacts are limited to a maximum of 0.077 acre of the total 0.165 acre of MSHCP Riverine Areas both on-site and off-site. The majority of these impacts are due to City required infrastructure and road improvements, with a small acreage of impacts required for a water quality basin associated with Drainage A. The MSHCP Riverine Areas proposed for impacts have a low function and value due to ongoing disturbance and the absence of vegetation and/or signs of hydrology for most of the year.

- The remaining 0.088-acre of the total 0.165 acre of MSHCP Riverine Areas will be temporarily impacted to allow construction of City required infrastructure and road improvements off-site.

- The proposed mitigation for impacts is at a 2:1 ratio for total permanent impacts which could be as high as 0.154 acre. This will include riparian/riverine and transitional upland habitat creation that will provide higher function and value habitat than the existing condition by creating habitat with native species coverage that also provides consistent hydrology through existing flows and treated discharge from the development. As a result, the impacts to low function and value drainages will be compensated by providing a net gain in acreage and functions and values, including habitat that currently does not exist. The net increase in native habitat acreage would provide improved functions such as water quality, water storage and wildlife habitat. Temporary impacts will be returned to pre-project contours consistent with the resource agencies definition of temporary impacts.

- If on-site mitigation occurs, it will be conserved in perpetuity through a conservation easement, deed restriction, restrictive covenant, or other appropriate legal mechanism as approved by the regulatory agencies. Preservation will ensure protection of MSHCP Riverine

Areas as intended pursuant to Volume I, Section 6.1.2 of the MSHCP, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*. The preserved mitigation area is proposed to occur within dedicated open space. Currently the on-site drainages are unprotected and are largely non-existent due to disturbance.

- The success of the mitigation would be ensured through an approved project-specific HMMP that will be prepared and submitted to the USACE, RWQCB, and CDFW for review and/or approval as part of the regulatory permitting process. The mitigation would be monitored regularly pursuant to a five-year program, and analyzed against a number of interim and target success criteria. The success criteria will ensure that the mitigation efforts are successful.

- The project is not located within or adjacent to any MSHCP Conservation Areas but will avoid indirect impacts to the on-site mitigation area and any protected areas downstream through measures that will be proposed in the WQMP and SWPPP to manage daily nuisance flows and initial first flush storm flows generated by the development. As such, the water discharged downstream will be treated for both sediment and pollutants. Also, current flow rates to downstream areas will be maintained to prevent erosion, but the overall volume of water discharged downstream will increase providing at minimum sufficient hydrology to maintain and even increase downstream habitats. The native plant species coverage in the mitigation area is also expected to provide biofiltration and water quality benefits for the watershed system.

- A number of additional project design features have been incorporated to address edge effects (i.e., indirect impacts) such as noise, lighting, and non-native invasive species.

8.1 Effects on Riparian/Riverine Planning Species

- The study area is within the Burrowing Owl Survey Area and Riverine resources were found on-site. As such, focused surveys for burrowing owl were conducted due to the presence of potentially suitable habitat for this species within the study area. Habitat assessments were also conducted for the Riparian/Riverine planning species listed under Section 6.1.2 of the MSHCP. The results of the burrowing owl focused surveys were negative, and pre-construction surveys will be conducted to confirm continued absence. For the Riparian/Riverine species, suitable habitat was determined present on the study area for one Riparian/Riverine planning species, smooth tarplant. However, smooth tarplant was not observed during any of the focused plant surveys and therefore was concluded to be absent from the study area. As such, no significant effects on Riparian/Riverine planning species (or burrowing owl) are expected to occur as a result of the Project.

- The proposed mitigation (on-site and off-site) will include riparian/riverine and transitional upland habitat creation and planting with native riparian/riparian-transition habitat, as appropriate, at a minimum 2:1 ratio to total impacts. This will increase the acreage of native habitat and replace non-native habitats with riparian/riparian-transition habitat that has increased spatial, structural and species diversity to encourage wildlife use. The mitigation will also improve water quality and hydrology functions. As such, the proposed mitigation will improve the quality of the habitat for wildlife species and provide potential habitat for Riparian/Riverine planning species.

- The improved quality of water and expected increase in volume of water due to impervious surfaces and additional input (e.g., from irrigation; the flow rate will not increase), would be

beneficial to the on-site mitigation and areas downstream of the project for supporting any existing wildlife habitat and potentially allowing additional habitat to establish.

8.2 Effects on Conserved Habitats

- The proposed project impacts low function and value MSHCP Riverine areas that are subject to on-going disturbance. The mitigation would improve the function and value of the hydrology in the area by creating structure, hydrology, and vegetation in the created riparian channel. As such, the project impacts would be compensated by a net gain of streambed acreage and of biogeochemical, hydrologic and habitat functions to benefit MSHCP conserved habitats. The on-site mitigation area will be within dedicated open space lots. In addition, the mitigation area would be protected in perpetuity through a conservation easement, deed restriction, restrictive covenant, or other appropriate legal mechanism as approved by the regulatory agencies. The mitigation would therefore contribute to the acreage of conserved habitats within the MSHCP.

- The proposed project would contribute higher function and value habitat to be conserved within the MSHCP. The MSHCP Riverine Areas proposed for impacts are primarily unvegetated due to ongoing disturbance, and therefore lacks native species cover to provide appropriate habitat features for the Riparian/Riverine wildlife species listed under Section 6.1.2 of the MSHCP. The main function of the drainages in their current condition is conveyance of flows during large storm events, with limited ecological functions (i.e., limited sediment transport, transport of nutrients and aquatic chemicals to downstream waters, seasonal flood storage, flood flow attenuation, toxicant trapping, and velocity dissipation). The proposed mitigation would provide these ecological functions through the creation of a riparian channel, hydrology from existing and treated development flows, and planting of native species that would occur pursuant to an agency approved HMMP. The mitigation would be designed to provide wildlife habitat that could potentially support species listed in Section 6.1.2 of the MSHCP. Furthermore, the mitigation would allow for greater nutrient and toxicant trapping, which would be beneficial to downstream water quality. The on-site mitigation is within a dedicated open space area, and the mitigation area itself will be protected in perpetuity through an appropriate and approved legal mechanism, as described in the preceding bullet.

8.3 Effects on Linkages and Functions of the MSHCP Conservation Area

- The project site and off-site areas are not located within or adjacent to any MSHCP Cores, Linkages or Conservation Areas, and measures have been incorporated into the project design to avoid potential indirect edge effects to such areas through drainage, including maintaining the flows and improving water quality to downstream areas. As such, the project would not impact the functions of any MSHCP Cores, Linkages or Conservation Areas.

- The proposed project impacts low function and value Riverine Areas subject to ongoing disturbance that would be replaced with a net gain of higher function and value riparian habitat by the proposed mitigation that will be preserved in perpetuity.

- The project's WQMP and SWPPP will ensure that water quality standards are met. The flow rate will be similar to existing conditions; however the volume of water will increase which will be beneficial to the on-site mitigation and downstream areas by providing increased hydrology to support wildlife habitat functions. In addition, measures proposed in these

documents will protect against flooding, prevent downstream erosion, and improve water quality by filtering pollutants from previously untreated flows. Thus, all water leaving the study area will be of a higher quality compared to existing site conditions. The mitigation is also expected to provide additional biofiltration functions through the planting of native vegetation. As such, both the project development and mitigation would improve the overall water quality of flows downstream and within MSHCP Conservation Areas, and potentially provide habitat for MSHCP planning species, making this a superior alternative to the existing disturbed conditions.

9.0
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Appendix A

Biological Resources Assessment

IRONWOOD VILLAGE

Biological Resources Assessment

Prepared for
1BH1 LLC

August 2016

IRONWOOD VILLAGE

Biological Resources Assessment

Prepared for
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1.0 INTRODUCTION

1.1 Background and Purpose

This report presents the findings of a Biological Resources Assessment & Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis conducted by **ESA PCR** for the approximately 78.48-acre project site proposed for development of a single-family residential development associated with Assessor's Parcel Number (APN) 473-160-004 and approximately 10.57-acre off-site areas (collectively, the "study area"). The study area is located directly northeast of the intersection of Ironwood Avenue and Nason Street within the City of Moreno Valley, in Riverside County, California. The purpose of this study is to satisfy the requirements of the Western Riverside County Multiple Species Habitat Conservation (MSHCP), the California Environmental Quality Act (CEQA), and to supplement subsequent regulatory applications pursuant to Sections 404 and 401 of the Clean Water Act (CWA) and Section 1602 of the California Fish & Game Code (CF&G).

1.2 Sources

This Biological Resources Assessment & MSHCP Consistency Analysis (collectively, the "BRA") is based on information compiled through field reconnaissance and appropriate reference materials. A general biological survey, vegetation mapping, and investigation of jurisdictional waters and wetlands was conducted by ESA PCR. Focused surveys for special-status plant species and burrowing owl (*Athene cunicularia*) were also conducted. The information sources used in preparation of this BRA are provided in Section 9, *References*.

1.3 Study Area Location

The approximately 78.48-acre on-site study area and approximately10.57-acre off-site study areas are regionally situated north of State Route (SR) 60 and northeast of Interstate (I) 215 (**Figure 1**, *Regional Map*). Specifically, the study area is located northeast of the intersection of Ironwood Avenue and Nason Street in the City of Moreno Valley. The on-site and off-site project study areas are depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle (S34, T2S, R3W & S3, T3S, R3W) (USGS, 1967; Earth Survey, 2015), as shown in **Figure 2**, *Vicinity Map.* The specific location of each project study area is depicted on **Figure 3**, *Study Areas*. Off-site study areas associated with four types of proposed project improvements include manufactured slopes, road improvements, a sewer line extension, and water line extensions and described in detail below:

Manufactured Slopes (West & East) – There are two (2) off-site study area locations proposed to support manufactured slopes, including one area adjacent to Nason Street (West) and a second area adjacent to the eastern boundary of the project site (East).

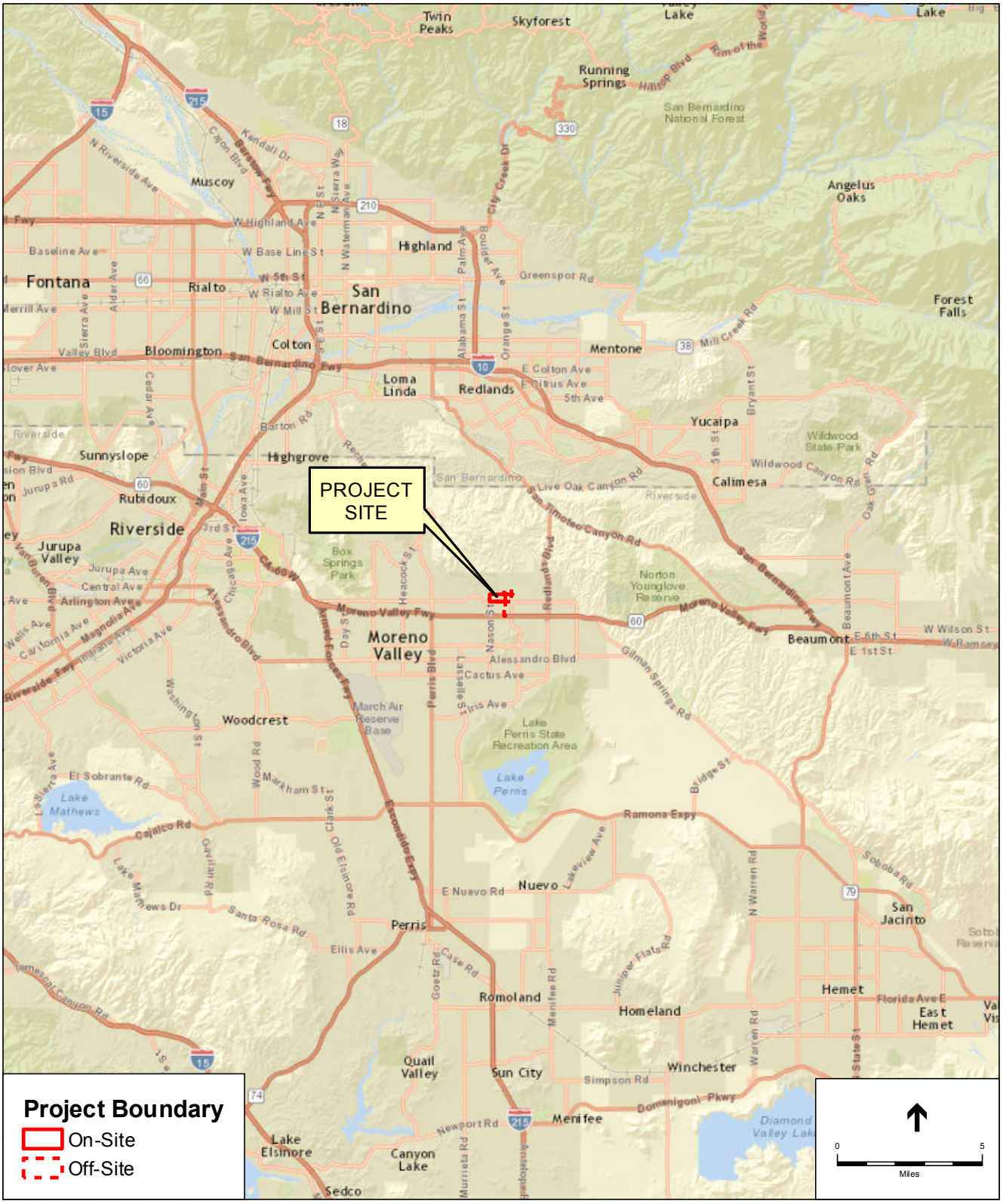
Road Improvements – There is one (1) road improvement area proposed between the area located directly north of Ironwood Avenue and south of the project site boundary.

Sewer Line – The sewer line is proposed to connect at the southeast corner of the project site at the intersection of Ironwood Avenue and Oliver Street and extend south along Oliver Avenue, ultimately ending at the SR-60 freeway.

Water line (Proposed and Alternatives) – Although the exact location of the final water line extension is still unknown, one proposed alignment and two (2) alternative alignments were assessed as part of the off-site project study areas. The Proposed Water Line would commence at the intersection of Ironwood Avenue and Oliver Street and extend east along Ironwood Avenue, continuing north along Moreno Beach Drive, and terminating at the intersection of Moreno Beach Drive and Kalmia Avenue. Water Line Alternative 1 would connect the water line at the northeast corner of the project site and extend north to an existing off-site water tower. Water Line Alternative 2 would commence at the northeastern corner of the project site and extend east toward the intersection of Moreno Beach Drive and Juniper Avenue.

1.4 Scope of Study

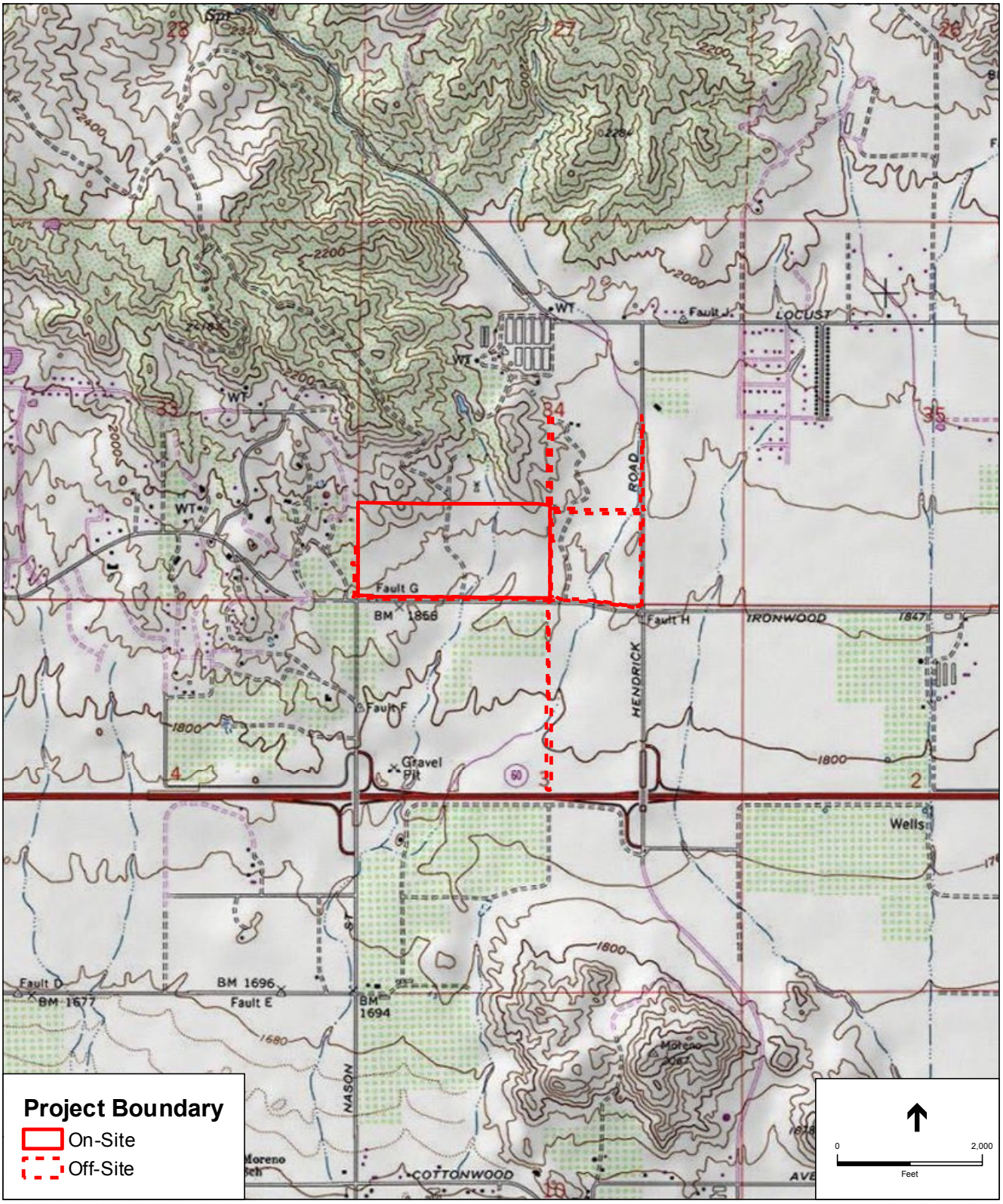
The scope of this BRA encompasses descriptions of the project, methods of study, and existing site conditions including vegetation communities and the potential for special-status biological resources, followed by an evaluation of impacts to special-status biological resources pursuant to CEQA thresholds and compliance with the Western Riverside County MSHCP. Avoidance, minimization, and/or mitigation measures are proposed to reduce any potential adverse effects to biological resources to less than significant under CEQA where appropriate.



SOURCE: ESRI Street Map, 2009.

Ironwood Village Project
Figure 1
Regional Map

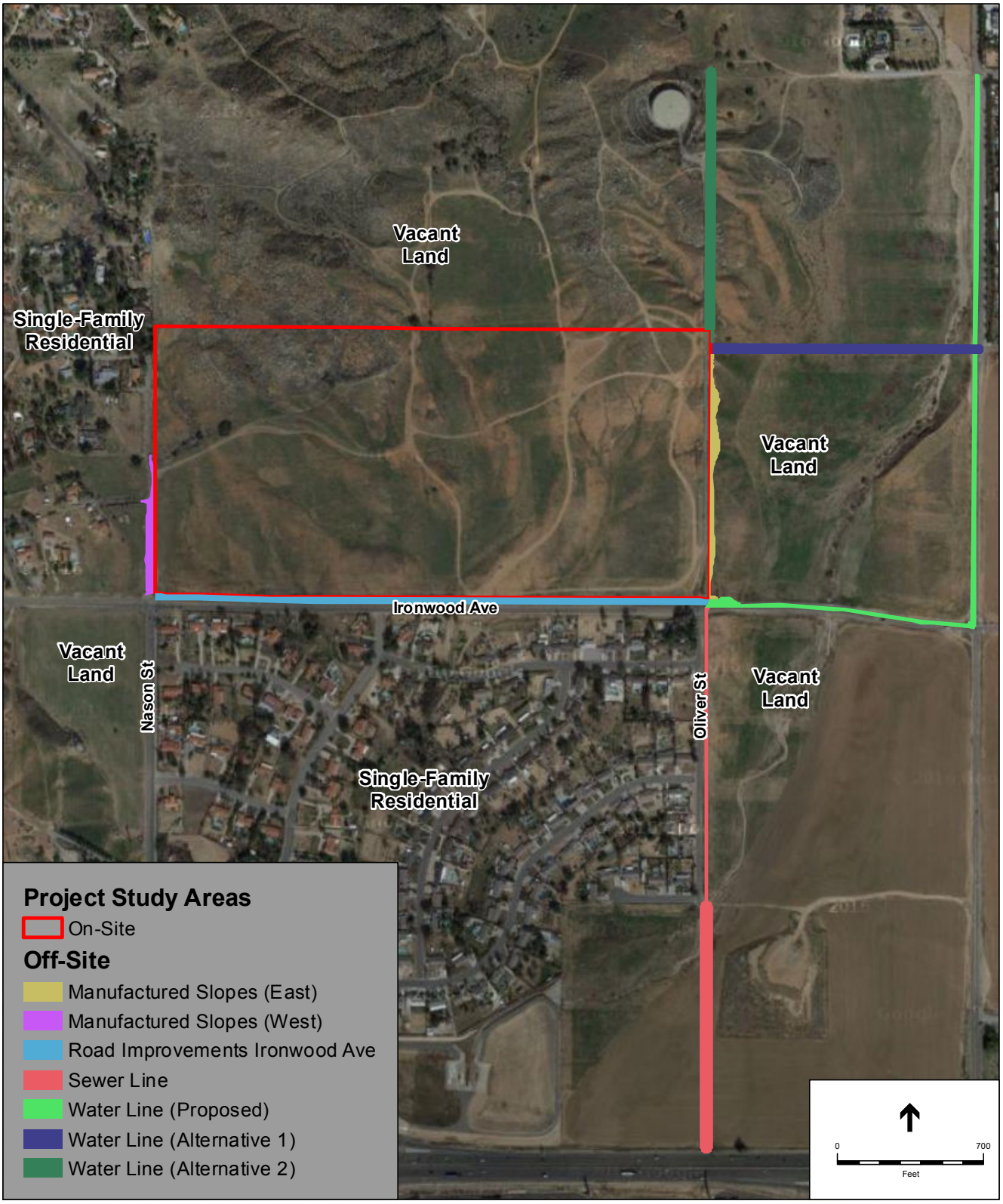
ESA PCR



SOURCE: USGS Topographic Series (Sunnymead, CA).

Ironwood Village Project
Figure 2
Vicinity Map

ESA PCR



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 3
Study Areas

ESA PCR

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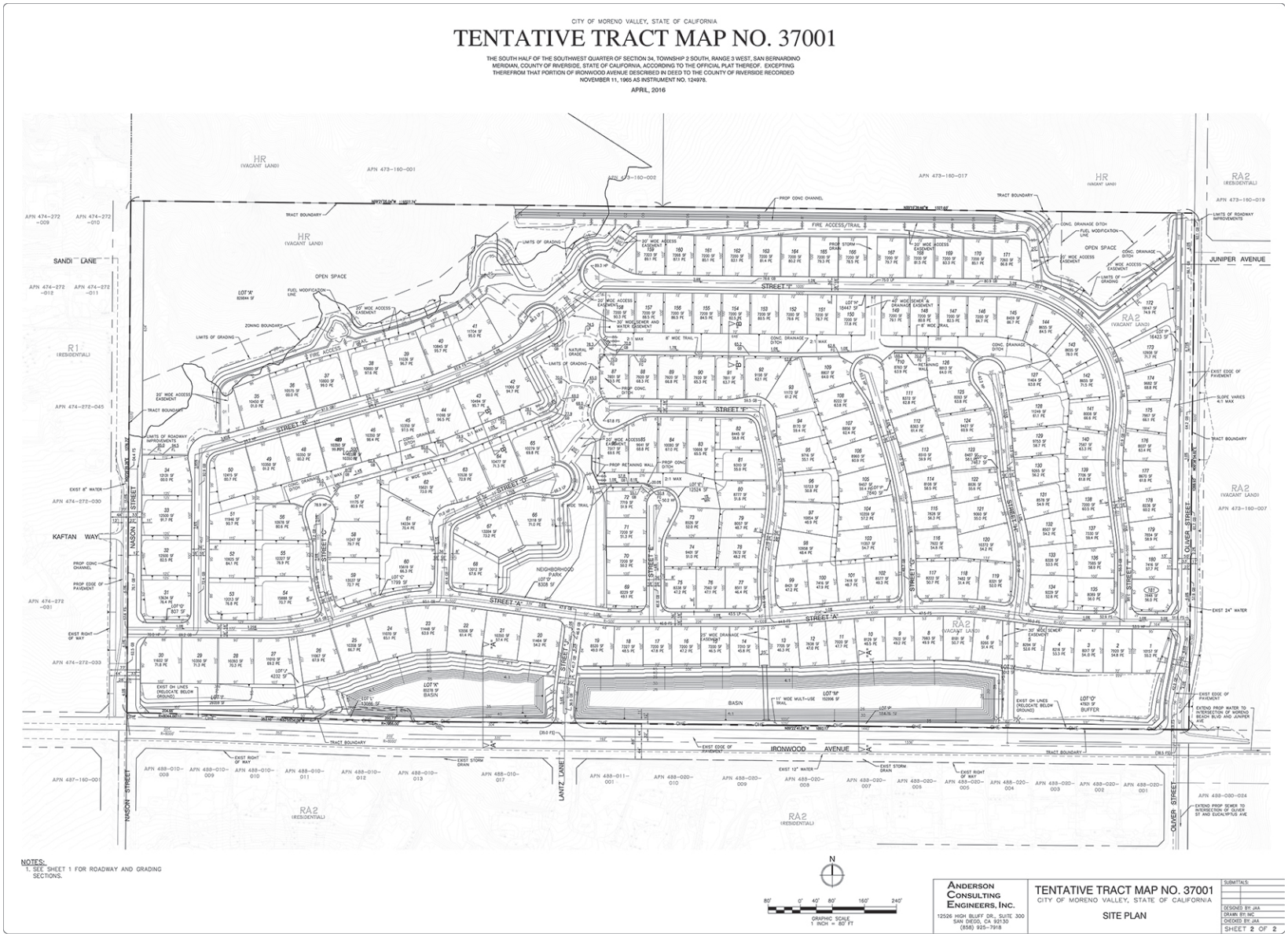
2.0 PROJECT DESCRIPTION

2.1 Project Description

The 78.48-acre project site is a proposed single-family residential development occupying approximately 38.5 acres, as shown in (**Figure 4**, *Site Plan*). The remaining acreage will be open space areas, which will consist of community open space areas that will be planted as appropriate to the project's climate and avoided areas in the northwestern and northeastern corner of the project site, which encompass native vegetation and rock outcroppings that will be preserved. Per Figure 3, there are four types of off-site areas associated with the project totaling 10.57 acres, including manufactured slope areas, road improvements, sewer line extension, and water line extensions (proposed and alternative). Sewer and water lines will be extended onto the site from existing utilities. Primary access to the development would occur from Ironwood Avenue between Nason Street and Oliver Street, immediately opposite from and north of Lantz Lane. Secondary access would be provided by driveways on both Nason Street and Oliver Street just north of Ironwood Avenue.

2.2 Project Avoidance

The project study areas consist primarily of non-native vegetation characterized by ruderal vegetation and disturbed areas that consist of little to no vegetation. There are some areas that support native plant communities, such as Riversidean sage scrub and brittlebush scrub, which predominantly reside in the northwestern corner of the on-site study area. The project proposes avoidance of the northwestern and northeastern corners of the on-site study area, which are located on hillsides that transition into the foothills of the Badlands mountain range located to the north of the project site. These avoided areas will be maintained as natural open space to preserve the scenic views of the hillsides from the City of Moreno Valley. The project on- and off-site study areas also support two drainage systems, which include Drainage A and Drainage Complex B, approximately 40% of which will be avoided.



SOURCE: Anderson Consulting Engineers, Inc., 2016

Ironwood Village Project

Figure 4
Site Plan

ESA PCR

3.0 METHODS OF STUDY

3.1 Approach

This BRA is based on information compiled through field reconnaissance and appropriate reference materials. Surveys included a general biological survey and vegetation mapping; an investigation of jurisdictional waters; focused plant surveys; and focused burrowing owl surveys.

3.2 Literature Review

Assessment of the study area began with a review of relevant literature on the biological resources of the study area and surrounding vicinity. The California Natural Diversity Database (CNDDB), a California Department of Fish and Wildlife (CDFW) species account database, was reviewed for all pertinent information regarding the localities of known observations of special-status species and habitats in the vicinity of the study area (CDFW, 2015). The vicinity of the study area included the following USGS topographic quadrangles: San Bernardino South, Redlands, Yucaipa, Riverside East, El Casco, Steele Peak, Perris, and Lakeview. Federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) (USFWS, 2015a), CDFW and the California Native Plant Society (CNPS, 2015) were reviewed in conjunction with anticipated Federally and State listed species potentially occurring within the vicinity. Other data sources reviewed include USFWS critical habitat maps (USFWS, 2015b) and United States Department of Agriculture Natural Resources Conservation Service (NRCS) soils mapping (NRCS, 2015). In addition, numerous regional flora and fauna field guides were utilized to assist in the identification of species and suitable habitats, in addition to relevant local policies such as the *Western Riverside County Multiple Species Habitat Conservation Plan* (MSHCP) (Dudek & Associates, 2003). A list of all relevant references reviewed is included in Section 9.0, *References*.

3.3 Field Investigations

A general biological survey and vegetation mapping was conducted by ESA PCR Senior Biologist Ezekiel Cooley on September 19, 2014 and investigations of jurisdictional waters were conducted by Principal Regulatory Scientist Amir Morales on September 19 and December 10, 2014. The observed vegetation communities, jurisdictional features, and other biological features or species observations of interest were mapped on aerial photographs. Biological surveys were conducted over all on-site and off-site study areas, with special attention to sensitive habitats such as those suitable for the burrowing owl and those areas potentially supporting special-status flora. The only exception is an off-site study area located directly east of the project study area proposed to support manufactured slopes. The eastern manufactured slopes support suitable

habitat for special-status plant species and a spring focused survey has not yet been conducted. As such, a mitigation measure addressing the potential for special-status plants to occur within this off-site area is included in Section 7.2.1 of this BRA. The following summarizes the extent of focused surveys conducted within the study areas identified on Figure 3.

Focused plant surveys were conducted within:

- the project site and off-site road improvement and sewer line areas on May 13, 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton and on July 20, 2015 by Amy Lee;
- the off-site proposed and alternative water line areas on May 23 and July 5, 2016 by Amy Lee; and
- the off-site manufactured slope areas on July 5, 2016 by Amy Lee. However, a spring focused plant survey has not been conducted within the off-site manufactured slope area located directly east of the site.

Focused burrowing owl surveys were conducted within:

- the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas from May to July 2015 by ESA PCR Biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton; and
- the alternative off-site water line areas from April to July 2016 by Amy Lee and Lauren Singleton.

During the course of all field visits, an inventory of plant and wildlife species observed was compiled. The methods for these field investigations are described in detail below.

3.3.1 Plant Community Mapping

Plant communities were mapped directly in the field utilizing a 125-scale (1”=125’) aerial photograph focusing on dominant plant species. Plant community names, codes, and descriptions follow *A Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf, and Evens, 2009) or Holland’s *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986). The California Natural Community Code (CaCodes) or Holland’s Element Code is in parentheses next to each community name, when applicable. After completing the fieldwork, the plant community polygons were digitized using Geographic Information System (GIS) technology to calculate acreages.

3.3.2 Sensitive Habitats

Sensitive habitats are listed by CDFW on their *List of Vegetation Alliances and Associations* (CDFW, 2010).[1] Communities on this list are given a Global (G) and State (S) rarity ranking on a scale of 1 to 5, where communities with a ranking of 5 are the most common and communities

[1] *Available online at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp*

with a ranking of 1 are the rarest and of the highest priority to preserve. These high priority communities are denoted on the CDFW list with asterisks. For the purpose of this report, sensitive habitats are those communities that have a state ranking of S3 or rarer. Any sensitive habitats located on the study area were identified based on the mapped natural communities (see section 3.3.1, *Plant Community Mapping*).

3.3.3 General Plant Inventory

All plant species observed during the general and focused surveys were either identified in the field or collected and later identified using taxonomic keys. Plant taxonomy follows Baldwin (2012). Common plant names, when not available from Baldwin, were taken from Munz (1974) and/or Clarke (2007). Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All plant species observed were recorded in field notes. Special-status plant species are discussed below in section 3.3.4, *Special-status Plant Species*.

3.3.4 Special-status Plant Species

The potential for special-status plant species was assessed based upon the known occurrence of species in the area as identified from CDFW, USFWS and CNPS databases (see Section 3.2, *Literature Review*), and the presence or absence of suitable habitat within the study area based on plant community mapping (see section 3.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities, soils and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and CNPS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the study area and local knowledge. A table of special-status plant species for which potentially suitable habitat occurs within the study area was prepared, and the potential for occurrence for each species was determined following completion of the vegetation mapping conducted during the field survey.

Due to the presence of potentially suitable habitat, focused plant surveys were conducted on the project site and off-site road improvement and sewer line areas by ESA PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton on May 13, 2015 and by Amy Lee on July 20, 2015. Focused plant surveys were also conducted on the off-site water line areas by Amy Lee on March 23, 2016 and July 5, 2016. Although a summer focused plant survey was conducted within the manufactured slope areas on July 5, 2016 by Amy Lee, a spring survey has not yet been performed in these areas. The manufactured slope area located west of the project boundary does not support suitable habitat for plants associated with the spring survey requirement. However, the manufactured slope area located east of the project boundary does require completion of a spring focused plant survey as summarized in Section 7.1.2 below. All focused plant surveys conducted to date were implemented in accordance with published agency guidelines (CDFW, 2009; CDFW, 2000a; and USFWS, 2000) and during the appropriate blooming periods of potential plant species to ensure detection of any special-status plants.

3.3.5 General Wildlife Inventory

All wildlife species observed within the study area, as well as any diagnostic sign (call, tracks, nests, scat, remains, or other sign), were recorded in field notes. Binoculars and regional field guides were utilized for the identification of wildlife, as necessary. Wildlife taxonomy follows Stebbins (2003) and California Herps (2015) for amphibians and reptiles, the American Ornithologists' Union (1998) for birds, and Jameson and Peeters (1988) for mammals. Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All wildlife species detected were recorded in field notes. Special-status wildlife species are discussed below in section 3.3.6, *Special-status Wildlife Species*.

3.3.6 Special-status Wildlife Species

The potential for special-status wildlife species was assessed based upon the known occurrence of species in the area as identified from CDFW and USFWS databases (see section 3.2, *Literature Review*), and the presence or absence of suitable habitat within the study area based on plant community mapping (see section 3.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and USFWS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the study area as well as local knowledge. A table of special-status wildlife species for which potentially suitable habitat occurs within the study area was prepared, and the potential for occurrence for each species was determined following completion of the vegetation mapping conducted during the field survey.

Due to the presence of potentially suitable habitat and MSHCP requirements, focused surveys were conducted for burrowing owl. A summary of the survey methodology is provided below; a separate survey report was also prepared following completion of the focused surveys. No other focused surveys were conducted for special-status wildlife species.

Burrowing Owl

The study area supports potentially suitable habitat for burrowing owl. As such, focused surveys for burrowing owl were conducted on the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas by ESA PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton on May 13; June 3; and July 2 and 27, 2015. Focused burrowing owl surveys were conducted within the off-site alternative water areas by Lauren Singleton on April 28, 2016 and by Amy Lee on May 23; June 9; and July 7, 2016. Step I and Step II surveys for burrowing owls were conducted on the project site and off-site areas in accordance with the County of Riverside's *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside, 2006). Step I is a Habitat Assessment and Step II consists of Locating Burrows and Burrowing Owls.

Suitable habitat was identified during the Step I Habitat Assessment, which was conducted by Ezekiel Cooley on September 19, 2014 during the general biological survey, including disturbed,

low-growing vegetation; bare ground; and a few small fossorial mammal burrows. Suitable habitat included disturbed, low-growing vegetation; bare ground; and a few small fossorial mammal burrows. Due to the presence of suitable habitat identified during the Step I survey, Step II surveys were conducted within the study area plus a 150-meter (approximately 500 feet) buffer zone around the perimeter of the study area (collectively, the "survey area"). Step II surveys focused on the detection of BUOW individuals, small fossorial mammal burrows potentially suitable for BUOW, and BUOW diagnostic sign (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Transects were utilized, spaced no more than 100 feet apart, to allow 100 percent visual coverage of the ground surface. The four surveys were conducted during the burrowing owl breeding season (March 1 to August 31) on separate days between two hours before sunset to one hour after or one hour before sunrise to two hours after.[2]

3.3.7 Regional Connectivity/Wildlife Movement Corridor

An analysis of wildlife movement was conducted based on information compiled from the literature, analysis of aerial photographs and topographic maps, direct observations made in the field during survey work, and an analysis of existing wildlife movement functions. Relative to corridor issues, the focus of this assessment was to determine if the change of the existing land use within the study area would have significant impacts on the regional wildlife movement associated with the study area as well as the immediate vicinity.

The Western Riverside County MSHCP was reviewed to identify any linkage or Core Areas proposed for preservation on the study area (Dudek & Associates, 2003). Additionally, the South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion document was reviewed (South Coast Wildlands, 2008).

3.3.8 Investigation of Jurisdictional Waters

A jurisdictional determination of existing on-site drainage and wetland features was conducted by ESA PCR Principal Regulatory Scientist Amir Morales on September 19 and December 10, 2014. The purpose of the delineation was to assess the location, extent and acreage of "waters of the U.S." and/or wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB), and the limits of streambed and associated riparian habitat under the jurisdiction of CDFW. All areas were delineated using the protocol stipulated by CDFW under Section 1600-1607 of the California Fish and Wildlife Code, and by the USACE and RWQCB under Section 404 and Section 401 of the Clean Water Act (CWA), respectively. No potential for wetlands or other special aquatic sites were observed within project study areas. Therefore, a wetland delineation using the procedures stipulated in the USACE Wetland Delineation Manual (Environmental Laboratory, 1987) and Arid West Supplement (USACE, 2008a and USACE, 2008b) were not performed or warranted for this project.

[2] For projects within the Western Riverside County MSHCP plan area, it has been PCR's experience that the County of Riverside has preferred that Step II surveys be conducted at least one week apart.

The potential for USACE jurisdictional "waters of the U.S." was based primarily on the presence or absence of jurisdictional field indicators consistent with the USACE guidelines (USACE, 2008a) such as the presence of an OHWM and/or secondary indicators of hydrology, including evidence of the deposition of debris, scour, sediment sorting, and changes in vegetation. The extent of CDFW jurisdiction was assessed based on the limits of the defined bed and bank and includes riparian streambed associated vegetation, where applicable. If these criteria were met, data was collected to estimate the length and width of jurisdictional features potentially regulated by the resource agencies. Upon completion of the field work, documentation of all jurisdictional wetlands, waters, and streambed were completed. The documentation included a map illustrating the location, extent and acreage of all jurisdictional features. Downstream surface connections to known USACE jurisdictional waters were also evaluated in the field and by using satellite imagery and mapping, for the purpose of establishing a connection (i.e. federal nexus) to "waters of the U.S.," where applicable. The results of the ESA PCR jurisdictional assessment are subject to review and approval by the resource agencies as part of future regulatory permits for the project, if required.

4.0 EXISTING CONDITIONS

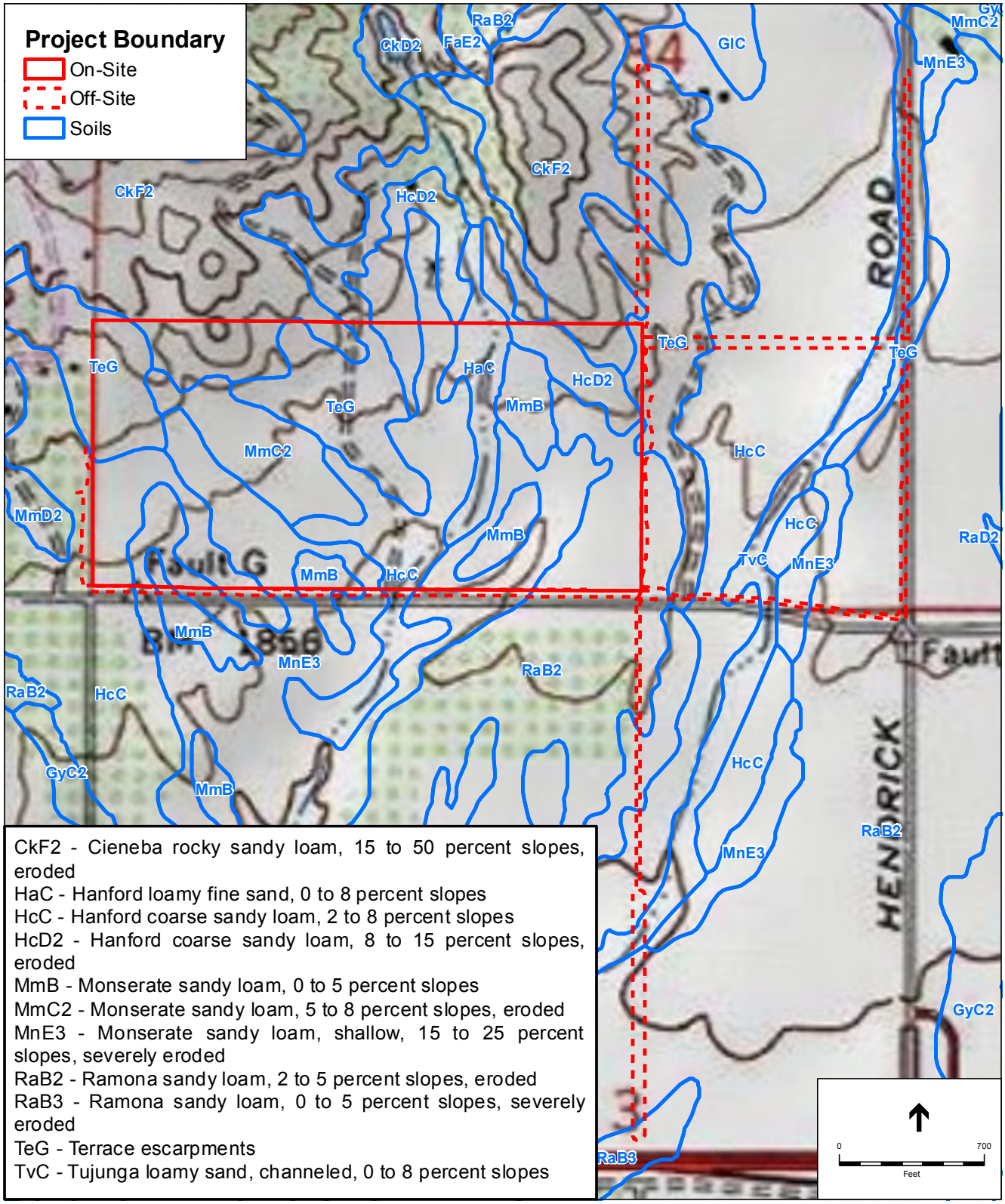
4.1 Characteristics of the Study Area and Surrounding Area

4.1.1 On-Site Characteristics

The approximately 79-acre project site and the 10.57-acre off-site areas are located in the City of Moreno Valley in Riverside County. The project site consists primarily of non-native vegetation characterized by ruderal vegetation and disturbed areas that consist of little to no vegetation. There are some areas that support native plant communities, such as Riversidean sage scrub and brittlebush scrub, which predominantly reside in the northwestern corner of the project site. The study area supports two drainage systems observed to support field indicators associated with USACE, RWQCB, and CDFW (collectively "the resource agencies") jurisdictional waters, referred to in this report as Drainage A and Drainage Complex B, although only Drainage A occurs on-site. The topography on-site is generally flat with gently rolling hills throughout the project site and steeper rock outcrops on the northwest corner. On-site elevations range from the lowest of approximately 1,830 feet above mean sea level (MSL) along the southern boundary of the project site to a high of approximately 1,975 feet above MSL along the northwest boundary of the site. On-site mapped soils in the project area include nine soil types as follows (NRCS, 2015), as shown in **Figure 5**, *Soils Map*:

- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded;
- Hanford loamy fine sand, 0 to 8 percent slopes;
- Hanford coarse sandy loam, 2 to 8 percent slopes;
- Hanford coarse sandy loam, 8 to 15 percent slopes, eroded;
- Monserate sandy loam, 0 to 5 percent slopes;
- Monserate sandy loam, 5 to 8 percent slopes, eroded ;
- Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded;
- Ramona sandy loam, 2 to 5 percent slopes, eroded; and
- Terrace escarpments.

Immediate surrounding land uses include residential development to the south and west and vacant land to the north and east. The entire project site is within the Reche Canyon/Badlands Area Plan of the MSHCP (**Figure 6**, *Relationship to the MSHCP*).

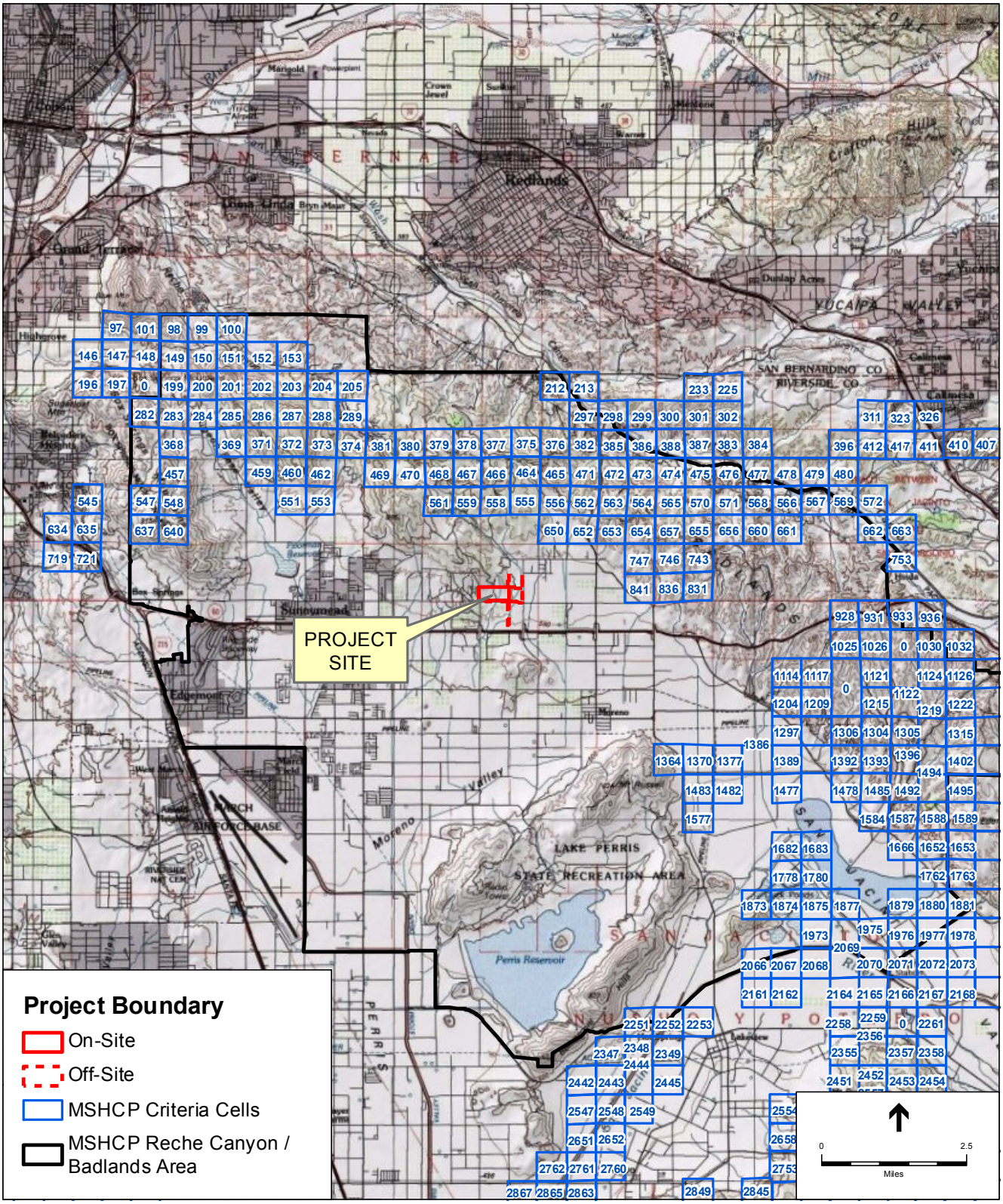


CkF2 - Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
HaC - Hanford loamy fine sand, 0 to 8 percent slopes
HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
MmB - Monserate sandy loam, 0 to 5 percent slopes
MmC2 - Monserate sandy loam, 5 to 8 percent slopes, eroded
MnE3 - Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded
RaB2 - Ramona sandy loam, 2 to 5 percent slopes, eroded
RaB3 - Ramona sandy loam, 0 to 5 percent slopes, severely eroded
TeG - Terrace escarpments
TvC - Tujunga loamy sand, channeled, 0 to 8 percent slopes

SOURCE: USGS Topographic Series (Sunnymead, CA), USDA NRCS SSURGO.

Ironwood Village Project
Figure 5
Soils Map

ESA PCR



SOURCE: USGS Topographic Series; MSHCP.

Ironwood Village Project

Figure 6

Relationship to the MSHCP

ESA PCR

4.1.2 Off-Site Characteristics

The 10.57-acre off-site areas include the proposed manufactured slopes, road improvements, sewer line, and water line areas. The off-site areas are dominated by ruderal vegetation and disturbed areas with only a small acreage of native brittlebush scrub and Riversidean sage scrub. The off-site areas also support some areas of sparsely vegetated river wash areas. A portion of Drainage A and the entirety of Drainage Complex B occurs within the off-site area. The topography of the off-site areas is generally flat with the exception of the proposed northern water line area near an existing water tank, which consists of a fairly steep east-facing slope supporting some native vegetation and rocky outcrops. Elevations within the off-site areas range from the lowest of approximately 1,793 feet above MSL at the southern end of the proposed sewer line to a high of approximately 1,948 feet above MSL at the steepest portion of the proposed water line area. Off-site mapped soils in the project area include seven soil types as follows (NRCS, 2015), as shown in Figure 5:

- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded;
- Hanford course sandy loam, 2 to 8 percent slopes;
- Monserate sandy loam, shallow, 15 to 25 percent slopes, severely eroded
- Ramona sandy loam, 0 to 5 percent slopes, severely eroded;
- Ramona sandy loam, 2 to 5 percent slopes, eroded;
- Terrace escarpments; and
- Tujunga loamy sand, channeled, 0 to 8 percent slopes.

Land uses immediately surrounding the off-site sewer line include a residential community to the west, SR-60 to the south, and vacant land to the north and east. Land uses immediately surrounding the potential water line areas include residential development to the north, east, and southwest and vacant land to the south and west. Since the proposed manufactured slope areas are directly adjacent to the project site, surrounding land uses are identical to those described in section 4.1.1 above.

4.2 Plant Communities

Descriptions of each of the plant communities found within the study area are provided below, with CDFW CaCodes or Holland Element Codes in parentheses next to each community name. The locations of each of the plant communities are shown in **Figure 7**, *Plant Communities*. **Table 1**, *Plant Communities*, lists each of the plant communities observed, as well as the acreage within the study area. Representative photographs of plant communities found within the study area are included in **Figures 8a** and **8b**, *Site Photographs*.

TABLE 1
PLANT COMMUNITIES

Plant Communities	On-site (acres)	Off-site (acres)
Brittlebush Scrub	2.34	0.27
Brittlebush Scrub/Ruderal	0.31	0.21
Buckwheat Scrub/Ruderal	0.09	0.04
Laurel Sumac Scrub/Ruderal	0.78	-
Riversidean Sage Scrub	3.10	0.12
Riversidean Sage Scrub/Ruderal	-	0.07
Rock Outcrop/Riversidean Sage Scrub	2.15	-
River Wash	-	0.05
Ruderal	38.04	2.50
Ruderal/Brittlebush Scrub	-	0.04
Ruderal/Riversidean Sage Scrub	2.29	0.43
Disturbed	28.68	4.18
Developed	0.70	2.66
Total	**78.48**	**10.57**

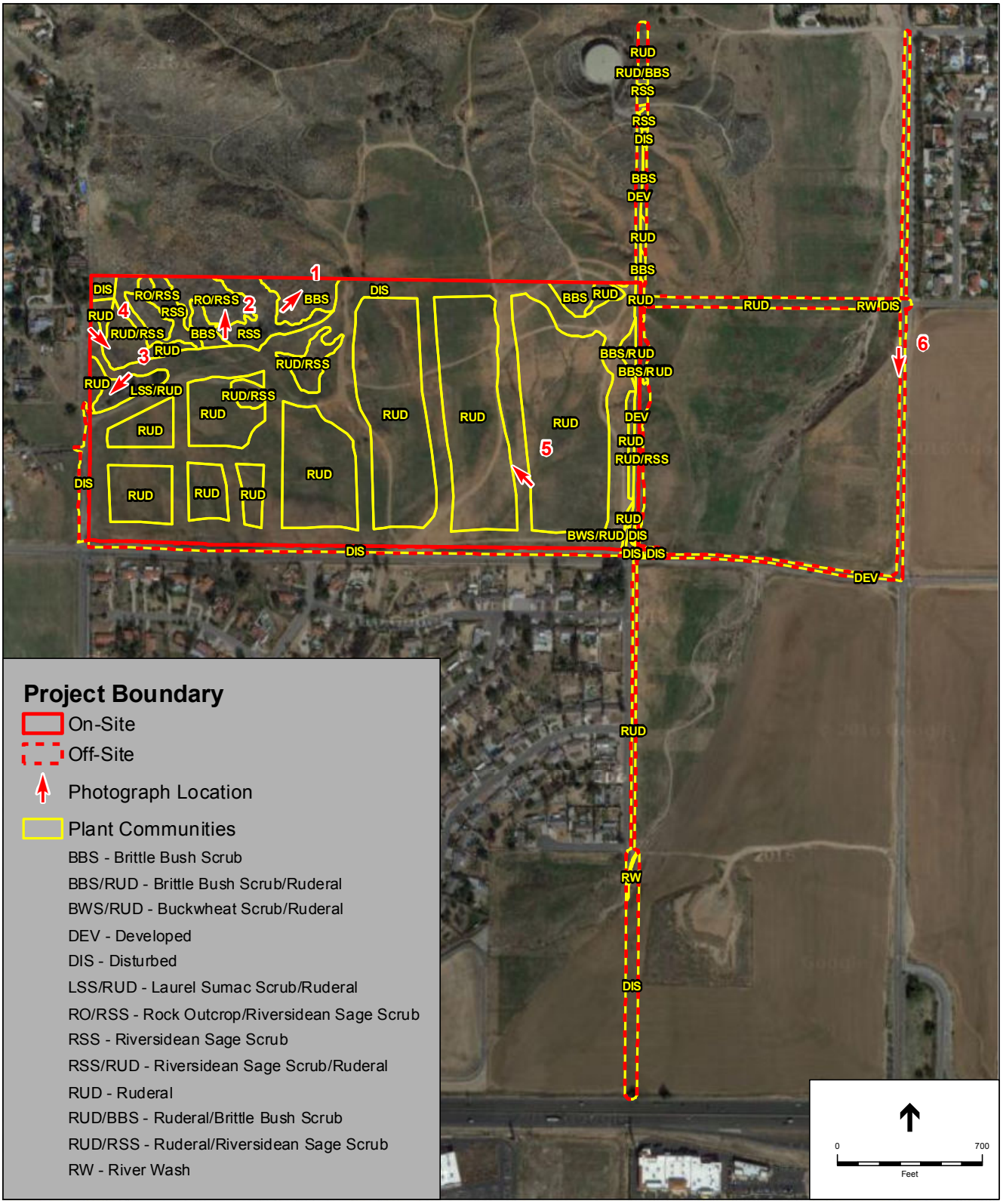
SOURCE: ESA PCR, 2016

4.2.1 Brittlebush Scrub (CaCode 33.030.00)

Brittlebush scrub is a drought tolerant subtype of Riversidean sage scrub dominated by an almost monotypic community of brittlebush (*Encelia farinosa*). Associated species observed within this community included sparsely growing California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and chia (*Salvia columbariae*). Brittlebush scrub on-site occurs primarily in two patches on the northwestern corner of the project site and a smaller patch in the northeastern corner, comprising approximately 2.34 acres on-site. There is also a small patch of this community located within the off-site water line areas, occupying approximately 0.27 acre off-site.

4.2.2 Brittlebush Scrub/Ruderal (CaCode 33.030.00/Not Applicable)

Brittlebush scrub/ruderal is dominated by species found within the brittlebush scrub community (primarily brittlebush) with interspersed ruderal species. In addition to brittlebush, associated native species found in this community included native species such as blue elderberry (*Sambucus nigra ssp. caerulea*), common fiddleneck (*Amsinckia intermedia*), dove weed (*Croton setigerus*), mule fat (*Baccharis salicifolia*), pinebush (*Ericameria pinifolia*), and western ragweed (*Ambrosia psilostachya*). The ruderal community is described in further detail below (see section 4.2.9). Brittlebush scrub/ruderal occurs on-site in a small area along the eastern boundary in the northeastern portion of the project site and comprises approximately 0.31 acre. There is also a small patch of this community located within the eastern manufactured slope area, occupying approximately 0.21 acre off-site.



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 7
Plant Communities

ESA PCR

PHOTOGRAPH 1. View of the brittlebush scrub community, facing northeast.

PHOTOGRAPH 2. View of the rock outcrop/Riversidean sage scrub community, facing north.

PHOTOGRAPH 3. View of the ruderal community in foreground and the laurel sumac scrub/ruderal community in the background to the left, facing southwest.

Note: Refer to Figure 7 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8a

Site Photographs

ESA PCR

PHOTOGRAPH 4. View of the ruderal/Riversidean sage scrub community, facing southeast.

PHOTOGRAPH 5. View of the ruderal community, facing northwest.

PHOTOGRAPH 6. View of the ruderal community within the off-site water line extension area, facing south.

Note: Refer to Figure 7 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 8b

Site Photographs

ESA PCR

4.2.3 Buckwheat Scrub/Ruderal (CaCode 32.040.02/Not Applicable)

Buckwheat scrub/ruderal community is dominated by California buckwheat (*Eriogonum fasciculatum*) and other species commonly associated with the buckwheat scrub community, including pinebush and brittlebush. This community also supports interspersed areas of ruderal vegetation; the ruderal community is described in further detail below (see section 4.2.9). Buckwheat scrub/ruderal community occurs within one small patch on-site (0.09 acre) and within the off-site eastern manufactured slope area (0.04 acre).

4.2.4 Laurel Sumac Scrub/Ruderal (CaCode 45.455.00/Not Applicable)

Laurel sumac scrub/ruderal is primarily composed of those species found within the laurel sumac scrub community, which is dominated by laurel sumac (*Malosma laurina*) and often associated with other drought-tolerant shrubs, such as California buckwheat or black sage (*Salvia mellifera*). While this community largely consists of species found within the laurel sumac scrub community, ruderal species are interspersed throughout the community. The ruderal community is described in further detail below (see section 4.2.9). Laurel sumac scrub/ruderal community occurs in one area along the western boundary and comprises approximately 0.78 acre on-site only.

4.2.5 Riversidean Sage Scrub (Holland Element Code 32700)

Riversidean sage scrub is characterized by low growing shrubs adapted to semi-arid Mediterranean climate, and are most often found on steep or low gradient slopes that are rarely flooded. This community is fairly open and dominated by California sagebrush, California buckwheat, , and foxtail chess. Other associated species include pinebush, brittlebush, and caterpillar phacelia (*Phacelia cicutaria*). The Riversidean sage scrub community occurs in two patches on the northwestern corner of the project site and comprises approximately 3.10 acres on-site. There is also a small patch of this community located within the off-site water line areas, occupying approximately 0.12 acre off-site.

4.2.6 Riversidean Sage Scrub/Ruderal (Holland Element Code 32700/ Not Applicable)

Riversidean sage scrub/ruderal is primarily composed of those species found within the Riversidean sage scrub community, which is described in section 4.2.5 above. While this community largely consists of species found within the Riversidean sage scrub community, ruderal species are interspersed throughout the community. The ruderal community is described in further detail below (see section 4.2.9). Riversidean sage scrub/ruderal community occurs in one area along the western boundary and comprises approximately 0.07 acre off-site only.

4.2.7 Rock Outcrop/Riversidean Sage Scrub (Not Applicable/Element Code 32700)

Rock outcrop/Riversidean sage scrub includes rock outcrop areas, which consist of rocky, sparsely vegetated areas typically found along the hillsides on the northwest corner of the project site, and is interspersed with vegetation that is characteristic of the Riversidean sage scrub community described in section 4.2.5 above. Additional associated species observed in the rock outcrop/Riversidean sage scrub communities on-site included cane cholla (*Cylindropuntia californica* var. *parkeri*) and two-color rabbit tobacco (*Pseudognaphalium bicolor*). There are two patches of rock outcrop/Riversidean sage scrub on the northwestern corner of the project site, which occupies approximately 2.15 acres on-site only.

4.2.8 River Wash (Not Applicable)

River wash consists of prevailingly coarse-textured but variable material, ranging from sand to gravel. It usually is flood-swept, though it may lie slightly above present overflows. The sandy areas are loose with some silt and other fine materials. Sparse vegetation within the river wash areas include giant reed (*Arundo donax*), flatspine bur ragweed (*Ambrosia acanthicarpa*), pucturevine (*Tribulus terrestris*), and common sunflower (*Helianthus anuus*). River wash areas comprise approximately 0.05 acre off-site only associated with the mainstem Drainage B within the sewer line and water line areas.

4.2.9 Ruderal (Not Applicable)

Ruderal vegetation is found in areas heavily disturbed by human activities, such as roadsides, graded fields, and manufactured slopes. Within the study area, ruderal species observed include cheeseweed (*Malva parviflora*), cudweed aster (*Corethrogyne filaginifolia*), foxtail chess (*Bromus madritensis* ssp. *rubens*), gum tree (*Eucalyptus* sp.), London rocket (*Sisymbrium irio*), Mediterranean schismus (*Schismus barbatus*), Mexican palo verde (*Parkinsonia aculeata*), ripgut grass (*Bromus diandrus*), shortpod mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), tree tobacco (*Nicotiana glauca*), wild oat (*Avena* sp.), and wild radish (*Raphanus raphanistrum*). Ruderal areas dominant the project site and comprised approximately 38.04 acres on-site. The ruderal community is also prominent throughout the off-site areas, totaling 2.50 acres.

4.2.10 Ruderal/Brittlebush Scrub (Not Applicable/ CaCode 33.030.00)

Ruderal/brittlebush scrub is dominated by ruderal, weedy species but exhibit sparse, remnant species associated with the brittlebush scrub community. The brittlebush scrub and ruderal communities are described above in sections 4.2.1 and 4.2.9, respectively. Only one small ruderal/brittlebush scrub patch was observed within the water line area, consisting of approximately 0.04 acre off-site only.

4.2.11 Ruderal/Riversidean Sage Scrub (Not Applicable/Holland Element Code 32700)

Ruderal/Riversidean sage scrub is dominated by ruderal, weedy species but exhibit sparse, remnant species associated with the Riversidean sage scrub community. The Riversidean sage scrub and ruderal communities are described above in sections 4.2.5 and 4.2.9, respectively. The ruderal/Riversidean sage scrub community occupies the northwestern corner and the center of the project site, consisting of approximately 2.29 acres on-site. This community also occurs within the eastern manufactured slope area, consisting of approximately 0.43 acre off-site.

4.2.12 Disturbed (Not Applicable)

Disturbed areas are heavily affected by human activities, including dirt roads, graded fields, and manufactured slopes; as a consequence, these areas support little to no vegetation. While ruderal areas comprise the majority of the project site, disturbed areas account for much of the remaining space occupying approximately 28.68 acres on-site. Disturbed areas dominate the off-site areas, consisting of 4.18 acres.

4.2.13 Developed (Not Applicable)

Developed areas are associated with an unpaved access road that occurs along the eastern boundary of the project site and off-site manufactured slope areas. Developed areas occupied approximately 0.70 acre on-site and 2.66 acres off-site.

4.3 General Plant Inventory

The plant communities discussed above are comprised of numerous plant species. Observations regarding the plant species present were made during the field visits to the study area, and a list of all plant species observed is provided in **Appendix A**, *Floral and Faunal Compendium*. Special-status plant species occurring or potentially occurring within the study area are discussed below in section 4.7.5, *Special-status Plant Species*.

4.4 General Wildlife Inventory

The plant communities discussed above provide habitat for common wildlife species. Observations regarding the wildlife species present were made during the field visits to the study area, and a list of all species observed is provided in **Appendix A**. Special-status wildlife species occurring or potentially occurring are discussed below in section 4.7.6, *Special-status Wildlife Species*.

4.5 Wildlife Movement

4.5.1 Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by

urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic material (MacArthur and Wilson, 1967; Soulé, 1987; Harris and Gallagher, 1989; Bennett, 1990).

Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health and long-term viability.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss, 1983; Fahrig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and, (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Although the nature of each of these types of movement is species specific, large open spaces will generally support a diverse wildlife community representing all types of movement. Each type of movement may also be represented at a variety of scales from non-migratory movement of amphibians, reptiles, and some birds on a "local" level to home ranges encompassing many square-miles for large mammals moving on a "regional" level. A number of terms have been used in various wildlife movement studies, such as "wildlife corridor," "travel route," and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

<u>Travel Route</u>: A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den areas). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relatively direct link between target habitat areas.

Wildlife Corridor: A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

Wildlife Crossing: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

4.5.2 Wildlife Movement Within the Study Area

As previously described, wildlife movement activities occur at a variety of scales from a "local" level to a "regional" level. Regional movement through the study area is restricted due to the urbanization of the region and the proximity to a major freeway (SR-60) (refer to **Figure 9**, *Regional Aerial Photograph*). The study area is immediately surrounded by residential development to the south and west. Although there is vacant land directly to the north and east of the study area, the land to the east is highly disturbed and mostly cleared of natural vegetation and there are a number of residential communities adjacent to the eastern boundary of the vacant land. Additionally, the study area is located about 0.5 mile to north of the SR-60. Although regional movement through this area is likely limited, there is some potential for local movement through the study area via the open area directly to the north which comprises the foothills of the Badlands. Although the study area connects to the open area to the north, the study area is dominated by ruderal and disturbed areas with limited native vegetation.

The project site only supports one ephemeral drainage that conveys minor road runoff from Ironwood Avenue with no associated vegetation (Drainage A), which is unlikely to facilitate wildlife movement. Additionally, Drainage A initiates on-site and meanders for approximately 396 linear feet before exiting the project site via a culvert beneath Ironwood Avenue. Drainage Complex B occurs within the off-site areas and comprises the mainstem Drainage B, which is a USGS mapped blueline stream, and five small tributaries (Drainages B1 through B5). The mainstem Drainage B does support some ruderal and non-native vegetation (e.g. giant reed). Drainage B appears to initiate in the foothills of the Badlands to the north of the off-site areas and becomes channelized just west of the off-site sewer line area.

SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project
Figure 9
Regional Aerial Photograph

ESA PCR

Due to the limited vegetation within Drainage B and lack of connection to suitable habitat downstream due to development, Drainage B is not expected to function as a wildlife movement corridor. The smaller tributaries (Drainages B1 through B5) are also ephemeral drainages with limited upland vegetation, which initiate at the peak of a small ridge upstream from the off-site water line area and appear to support little to no surface connection to the mainstem Drainage B likely due to decades of disturbance from agriculture and/or weed abatement activities. Drainage B5 does not appear to support any natural watershed and appears to be relict in nature. Vegetation within the drainage appears to be supported by artificial discharges from the water tank blow-off pipe observed at the headwaters of Drainage B5. Due to the limited vegetation and watershed, as well as the disturbed nature of the downstream areas off-site, the tributaries do not facilitate wildlife movement through the study area.

The study area is not within any Core or Linkage areas as identified by the MSHCP (Dudek & Associates, 2003). There is one proposed linkage (Proposed Linkage 4) approximately 2.1 miles to the north of the study area and one existing core (Core H) roughly 4.0 miles to the south of the study area. Proposed Linkage 4 would include upland habitat within Reche Canyon and provide connection to Box Springs Reserve, the Badlands, and San Bernardino County. The open area directly to the north of the study area does directly connect to Proposed Linkage 4. Existing Core H includes Lake Perris State Recreation Area and San Jacinto Wildlife Area. There is no direct connection from the study area to Core H, which are separated by urban development. The study area is not within any linkages identified by the South Coast Missing Linkages report; the nearest linkage design identified is for the San Bernardino–San Jacinto Connection located approximately 3.5 miles to the east (South Coast Wildlands, 2008). Since the study area is not identified as a linkage by the MSHCP or South Coast Wildlands, and it does not support habitat that connects two or more habitat patches that would otherwise be fragmented or isolated from one another, the study area is not considered a wildlife corridor. The study area may provide limited opportunities for wildlife movement, more likely for local wildlife movement as described below.

Movement on a smaller or “local” scale could occur within the study area for species that are less restricted in movement pathway requirements or are adapted to urban areas (e.g., raccoon [*Procyon lotor*], stripped skunk [*Mephitis mephitis*], coyote [*Canis latrans*], and bird species in general). Habitat within the study area is dominated by ruderal and disturbed areas with some portions supporting native vegetation, including brittlebush scrub, buckwheat scrub, and Riversidean sage scrub. As such, it likely supports some wildlife movement within the study area and/or nearby areas for foraging and shelter. Data gathered from the biological survey indicates that the study area contains habitat that supports common species of invertebrates, reptiles, birds, and small mammals. The home range and average dispersal distance of many of these species may be entirely contained within the study area and immediate vicinity.

Populations of animals such as insects, reptiles, small mammals, and a few bird species may find all their resource requirements without moving far or outside of the study area at all. Occasionally, individuals expanding their home range or dispersing from their parental range could attempt to move outside of the study area, if feasible, based on the surrounding restrictions to movement from development (see above). Bird species may fly over the development and

freeways to utilize the study area for foraging, although this is expected to be limited due to the high level of human activity in the region and higher quality foraging habitats in nearby open areas with less human disturbance, particularly the Badlands to the north.

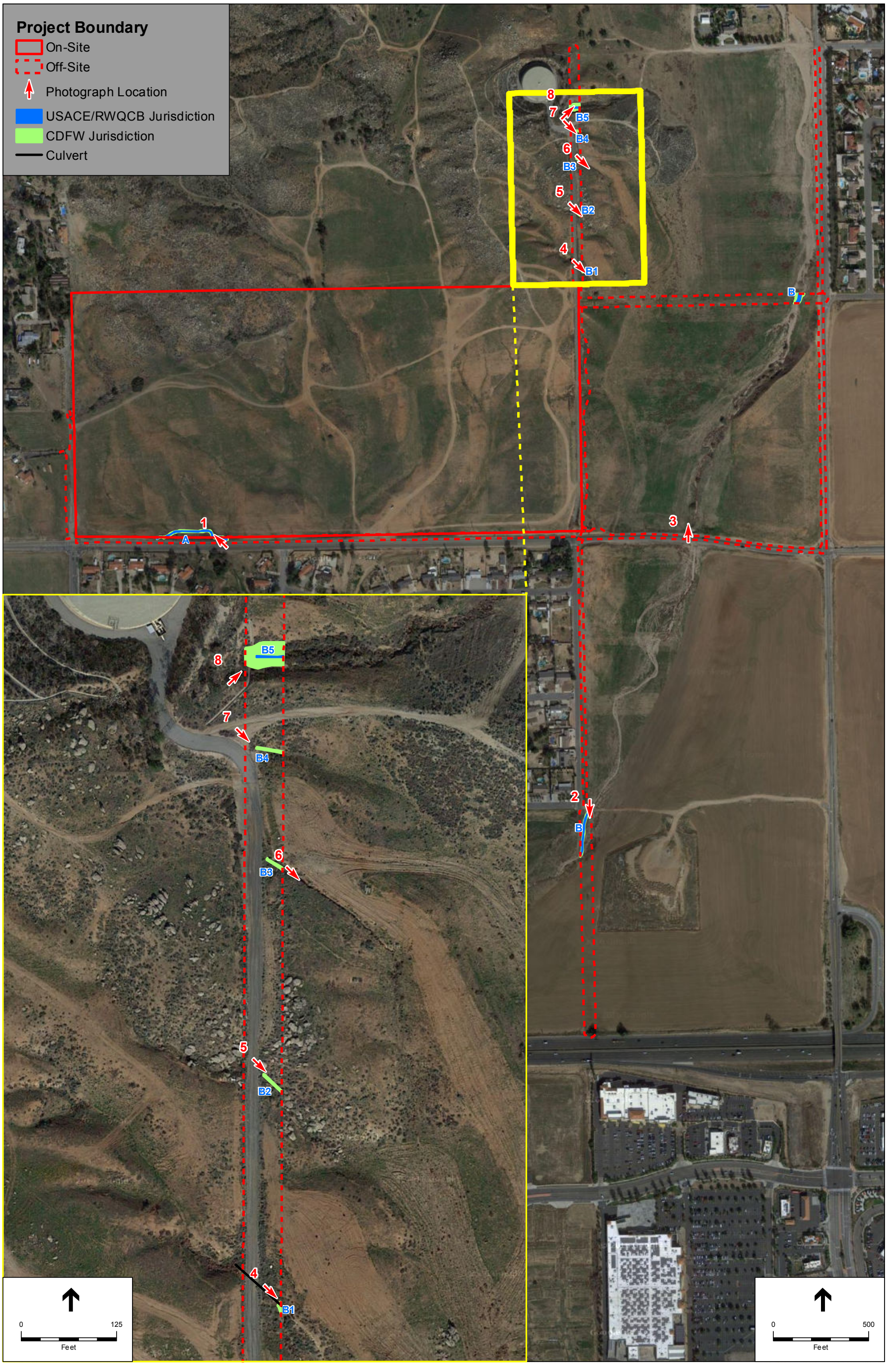
In summary, the study area may support live-in and movement habitat for species on a local scale (i.e., some live-in and at least marginal movement habitat for invertebrates, reptiles, birds, and small mammal species). However, due to surrounding development, the proximity to the I-60 freeway, and the ephemeral nature and limited watershed of the drainages, the study area likely provides little to no function to facilitate movement for wildlife species on a regional scale and it is not identified as a regionally important dispersal or seasonal migration corridor by the MSHCP or by South Coast Wildlands.

4.6 Jurisdictional Waters

An investigation of on- and off-site jurisdictional waters was performed by Amir Morales, Principal Regulatory Scientist, on September 19, 2014. An additional site visit was conducted by Amir Morales on December 10, 2014 following a series of storm events that occurred on December 2, 3, and 4, 2014 totaling nearly two inches of rain in that period.[3] Based on the results of the investigation, Drainage A and Drainage Complex B (Drainages B & B1through B5) were determined to support a total of approximately 0.057 acre of USACE/RWQCB "waters of the U.S." and 0.165 acre of CDFW jurisdictional streambed (**Figure 10**, *Jurisdictional Features*). A summary of jurisdictional features assessed within the study area is provided in **Table 2**, *Jurisdictional Features*. Photographs of drainage features are provided as **Figures 11a** and **11b**, *Drainage Photographs*.

The study area is located within rolling valley topography located southeast of Reche Canyon and south/southwest of The Badlands mountain range. The study area is located within the San Jacinto Watershed and generally drains toward the south, eventually reaching the Perris Valley Storm Drain which ultimately reaches the San Jacinto River and then Canyon Lake. The USGS Sunnymead topographic Quadrangle depicts a blueline stream originating in the foothills to the north with headwaters located approximately 2,000 linear feet from the on-site study area. The mapped blueline drainage feature enters the project site near the center of the northern project boundary and bisects the property. The property has been subjected to seasonal dry-farming and/or weed abatement activities for several decades. Based on the jurisdictional assessments performed by ESA PCR, no discernible streambed or indicators of flow were observed within the area historically mapped as a blueline drainage feature during the September 19, 2014 jurisdictional delineation. In order to determine if jurisdictional field indicators reestablish following moderate rain events, Amir Morales returned to investigate the site following a series of early December 2014 storm events yielding nearly 2-inches of rain over three consecutive days. In our experience, this amount of rain would have reestablished some evidence of flow capable of eroding a streambed and/or supporting some jurisdictional field indicators based on the USACE's arid delineation guidelines.

[3] Based on WeatherCurrents.com precipitation data accessed at http://weathercurrents.com/morenovalley/ArchiveDec2014.do obtained on July 26, 2016.



SOURCE: Google Maps, 2015.

Ironwood Village Project
Figure 10
Jurisdictional Features

ESA PCR

TABLE 2
JURISDICTIONAL FEATURES

Drainage (Study Area)	Length (ft)	USACE/ RWQCB (acres)	CDFW (acres)	Flow Classification
A (On-Site)	285	0.023	0.046	Ephemeral
A (Off-Site)	111	0.007	0.013	Ephemeral
Drainage A Subtotal	***396***	***0.030***	***0.059***	
B (Off-Site)	306	0.026	0.069	Ephemeral
B1 (Off-Site)[b]	0[a]	N/A	0.001	Ephemeral
B2 (Off-Site)[b]	32	N/A	0.001	Ephemeral
B3 (Off-Site)[b]	25	N/A	0.001	Ephemeral
B4 (Off-Site)[b]	34	N/A	0.001	Ephemeral
B5 (Off-Site)	35	0.002	0.033	Ephemeral
Drainage Complex B Subtotal	***432***	***0.028***	***0.106***	
Total	**828**	**0.058**	**0.165**	

[a] Less than one linear foot of jurisdiction occurs within Drainage B1 as the majority of the drainage within the off-site study area is associated with an existing corrugated metal pipe that was not quantified.

[b] Drainage did not support jurisdictional field indicators associated with "waters of the U.S" regulated by the USACE and RWQCB pursuant to the Clean Water Act.

SOURCE: ESA PCR, 2014

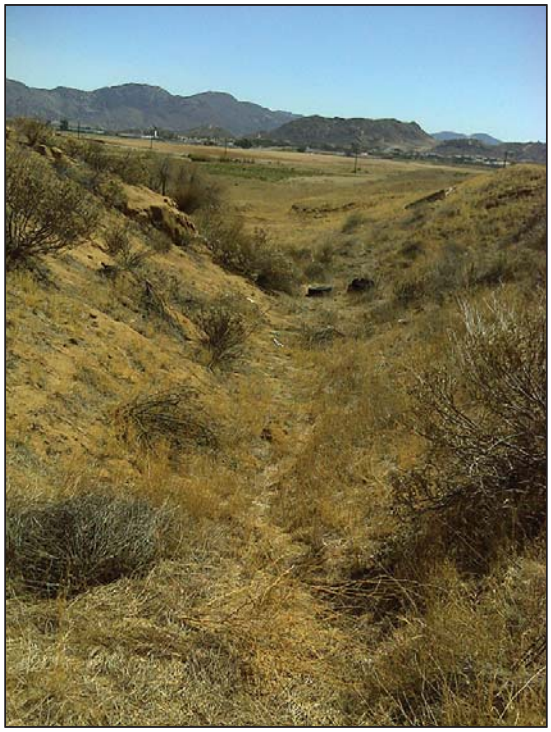
However, no ordinary water mark, sediment deposition/sorting, debris wracks, bed/bank, streambed associated vegetation, or other jurisdictional field indicators were observed immediately following the consecutive rain events. As a result, it was determined that no jurisdiction occurs within the area mapped as a blueline drainage feature within the study area.

It was noted that the USGS Sunnymead Quadrangle depicts a small water feature at the off-site headwaters, located approximately 2,000 linear feet north of the site where the blueline feature initiates. As such, it is feasible that the mapped water feature is associated with a historic stock pond, which may have supported a small drainage that ultimately extended to the project study area when water was historically discharged from the feature and/or significant storm events caused it to overflow. However, based on review of current aerial imagery in Google Earth, no water feature appears to persist within the off-site headwaters in the current condition capable of supporting a discernible streambed. Consequently, the only jurisdictional feature identified within the on-site study area during the December 2014 site visit is a minor roadside ditch identified as Drainage A. Jurisdiction within the off-site study areas is limited to a mainstem drainage identified as Drainage B, and Drainage Complex B which is comprised of tributary Drainages B1through B5. No riparian and/or hydrophytic vegetation communities were observed on the study area that would warrant the need for a formal wetland analysis. Therefore, no jurisdictional wetlands or special aquatic sites were determined to occur within the project study areas. The following provides a summary of jurisdictional drainage features identified within the project study areas:

PHOTOGRAPH 1. View of Drainage A, facing northwest (upstream).

PHOTOGRAPH 2. View of Drainage B within the off-site sewer line area, facing south (downstream).

PHOTOGRAPH 3. View of Drainage B within the off-site water line area, facing north (upstream).



PHOTOGRAPH 4. View of Drainage B1, facing southeast (downstream).

Note: Refer to Figure 10 for photograph locations.

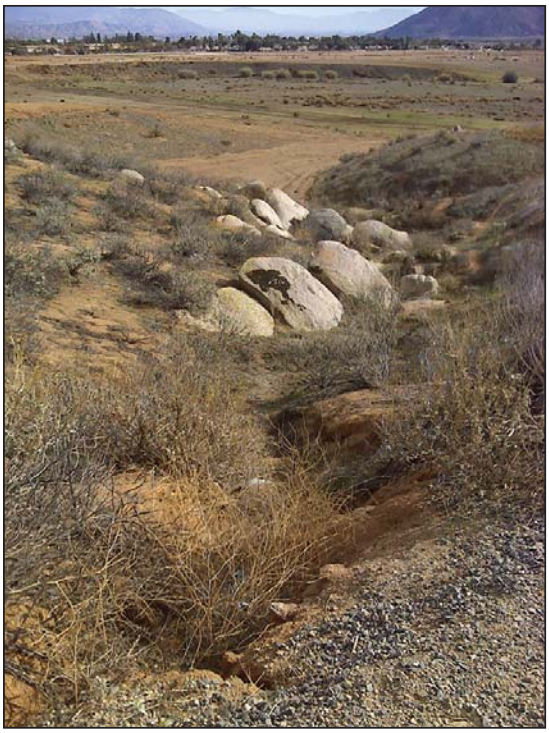
SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 11a

Drainage Photographs

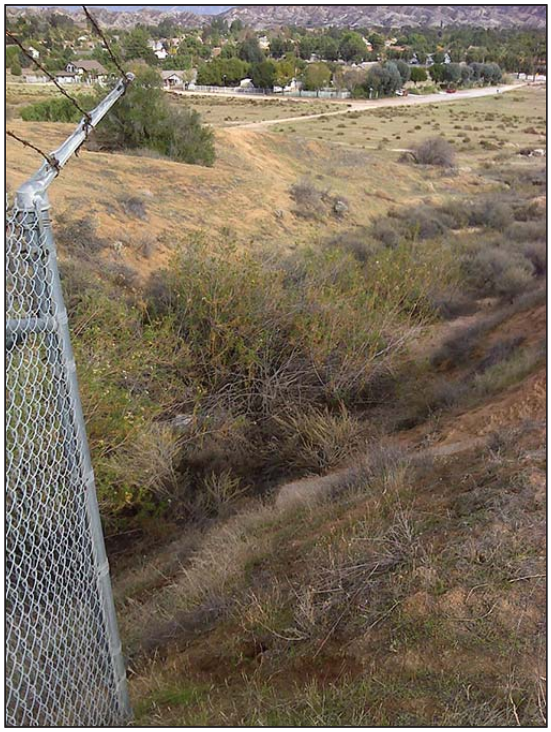
ESA PCR



PHOTOGRAPH 5. View of Drainage B2, facing southeast (downstream).

PHOTOGRAPH 6. View of Drainage B3, facing southeast (downstream).

PHOTOGRAPH 7. View of Drainage B4, facing southeast (downstream).



PHOTOGRAPH 8. View of Drainage B5, facing northeast (downstream).

Note: Refer to Figure 10 for photograph locations.

SOURCE: ESA PCR, 2016

Ironwood Village Project

Figure 11b

Drainage Photographs

ESA PCR

4.6.1 Drainage A

Drainage A is an unvegetated roadside ditch that establishes only when rain events generate sufficient runoff from Ironwood Avenue to erode a small channel through sandy disturbed soils. The ephemeral ditch enters the Ironwood Avenue Right-of-Way within the off-site study area then enters the on-site study area along the southern project boundary, extending for approximately 285 linear feet. The ditch then enters a corrugated metal pipe (CMP) beneath Ironwood Avenue which is ultimately conveyed through the rural residential development to the south and into a water quality basin adjacent to SR-60. Drainage A ranged from 2 to 3 feet in jurisdictional channel width and contains sandy loam soils that are periodically disturbed by weed abatement activities. A photograph of Drainage A is provided in Figure 11a.

Drainage A within the on-and off-site study area supports a total of approximately 396 linear feet of ephemeral unvegetated roadside ditch, containing 0.023 acre of on-site and 0.007 acre of off-site non-wetland USACE "waters of the U.S" totaling 0.030 acre, as well as 0.46 acre of on-site and 0.013 acre of off-site CDFW jurisdictional streambed totaling 0.059 acre.

4.6.2 Drainage Complex B

4.6.2.1 Drainage B

Drainage B is an ephemeral sandy wash that originates off-site approximately 2 miles to the northwest along Reche Canyon Road. The drainage meanders along the road until it reaches the valley floor extending across Trust Way, crossing Kalmia Avenue, and then conveys runoff along the west side of Moreno Beach Drive for approximately a quarter-mile prior to crossing the off-site Water Line Alternative 1. The drainage feature then extends south/southwest for another quarter-mile before entering a culvert beneath Ironwood Avenue and meandering for another quarter-mile prior to entering the off-site sewer line study area. Drainage B then continues for approximately 700 linear feet toward the southwest ultimately entering a detention basin located directly northeast of the Nason Street exit of SR-60. Drainage B within the off-site study areas ranges from approximately 4-10 feet in USACE/CDFW channel width and is entirely unvegetated. Soils within the wash are comprised of loamy sands of the Tujunga series consistent with the mapping by NRCS. Photographs of Drainage B are provided in Figure 11a.

Drainage B within the off-site sewer line and Water Line Alternative 1 total approximately 306 linear feet of unvegetated ephemeral sandy wash totaling approximately 0.026 acre of non-wetland USACE/RWQCB "waters of the U.S." and 0.069 acre of CDFW jurisdictional streambed.

4.6.2.2 Drainages B1- B5

Drainages B1through B5 are minor ephemeral drainages that with the exception of Drainage B5 (which appears to accept flow from a water tank bypass pipe) function to drain a very limited watershed west of the existing water district road that runs parallel to the eastern boundary of the project site. Drainage B5 appears to support flows from two small slope v-ditches as well as a pipe at its headwaters that appears to drain the existing water tank directly to the west, and was likely formed by controlled releases from the water tank structure. Otherwise, no natural

watershed capable eroding such an incised drainage feature occurs upstream. Drainages B1 through B3 have small CMP culverts that convey limited runoff west of the water district road and support very weak indicators of flow and/or bed and bank. Drainage B4 does not support a pipe culvert rather a small pipe that drains surface flow from a small v-ditch directly west of the road. No discernible indicators associated with "waters of the U.S." such as an ordinary high water mark, sediment deposition/sorting, debris wracks, streambed associated vegetation, or other USACE jurisdictional field indicators indicative of the arid southwest region were observed within Drainages B1-B4 immediately following the consecutive rain events of early December 2014. However, Drainages B1 through B4 do support topographic low points with banks typical of headwater swales. Drainage B5 was presumed to support USACE/RWQCB jurisdiction due to the presence of an ordinary high water mark, which ultimately became indiscernible after approximately 1,000 linear feet. Given the reasonable proximity to Drainage B5 observed in the field in light of periodic disturbance to the sandy soils from weed abatement activities, Drainage B5 was presumed to be regulated as "waters of the U.S." Drainages B1through B5 were all presumed to support CDFW jurisdictional streambed.

Drainages B1 through B4 exhibit sparse upland scrub vegetation and ruderal grasses and are otherwise unvegetated. Drainage B5 supports a small patch of mule fat along approximately 15 linear feet of the headwaters directly downstream of the water tank pipe and mostly upland scrub vegetation beyond. Drainages B1through B5 contain CDFW jurisdictional channel widths ranging from 0.5 to 3 feet, while Drainage B5 exhibits USACE jurisdiction averaging approximately 2 feet in channel width and a CDFW channel width approximately averaging 10 feet. Drainage Complex B drainage features all were observed to support sandy loam soils. Photographs of Drainage Complex B are provided in Figures 11a and 11b.

Drainage B5 within the Water Line Alternative 2 study area totals approximately 0.002 acre of non-wetland ephemeral "waters of the U.S." regulated by the USACE/RWQCB. Drainage Complex B (Drainages B1 through B5) total approximately 0.037 acre of CDFW jurisdictional streambed and associated vegetation.

4.7 Special-status Biological Resources

The following discussion describes the plant and wildlife species present, or potentially present, within the study area that have been afforded special recognition by Federal, State, or local resource conservation agencies and organizations. These species have declining or limited population sizes, usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife. Protected special-status species are classified by either Federal or State resource management agencies, or both, as threatened or endangered, under provisions of the Federal and State Endangered Species Acts (FESA and CESA, respectively).

4.7.1 Federal Special-status Resource Protection and Classifications

4.7.1.1 FESA

The FESA of 1973 defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA, unless properly permitted, it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action which could affect a federally listed plant or animal species, the property owner and agency are required to consult with USFWS pursuant to Section 7 of the ESA if there is a federal nexus, or pursuant to Section 10 of the ESA. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

All references to Federally-protected species in this BRA include the most current published status or candidate category to which each species has been assigned by USFWS. For purposes of this assessment the following acronyms are used for Federal status species, as applicable:

- FE Federally-listed as Endangered
- FT Federally-listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FPD Federally proposed for delisting
- FC Federal candidate species (former C1 species)

Some of the USFWS offices maintain a database of listed species within their jurisdiction, for example the Sacramento[4] and Carlsbad[5] offices. The Carlsbad USFWS Office jurisdiction encompasses the counties of Los Angeles, Orange, Riverside, San Bernardino, Imperial, and San Diego.

4.7.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects individuals as well as any part, nest, or eggs of any bird listed as migratory. In practice, Federal permits issued for activities that potentially

4 http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-overview.htm
5 http://www.fws.gov/carlsbad/SpeciesStatusList/CFWO_Species_Status_List.htm

impact migratory birds typically have conditions that require pre-disturbance surveys for nesting birds. In the event nesting is observed, a buffer area with a specified radius must be established, within which no disturbance or intrusion is allowed until the young have fledged and left the nest, or it has been determined that the nest has failed. If not otherwise specified in the permit, the size of the buffer area varies with species and local circumstances (e.g., presence of busy roads, intervening topography, etc.), and is based on the professional judgment of a monitoring biologist. A list of migratory bird species protected under the MBTA is published by USFWS.

4.7.1.3 Federal Clean Water Act, Section 404

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into waters of the U.S. and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Implementing regulations for the CWA define waters of the U.S. as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The permit review process entails an assessment of potentially adverse impacts to USACE jurisdictional waters of the U.S.

Over the years, the USACE has modified its regulations, typically due to evolving policy or judicial decisions, through the issuance of Regulatory Guidance Letters, memorandums, or more expansive instruction guidebooks. These guidance documents help to update and define how jurisdiction is claimed, and how these waters of the U.S. will be regulated. The most recent, significant modification occurred on June 5, 2007, subsequently updated in December 2008, when the USACE and the U.S. Environmental Protection Agency (USEPA) issued a series of guidance documents outlining the requirements and procedures, effective immediately, to establish jurisdiction under Section 404 of the CWA and the Section 10 of the Rivers and Harbors Act of 1899. These documents are intended to be used for all jurisdictional delineations and provide specific guidance for the jurisdictional determination of potentially jurisdictional features affected by the U.S. Supreme Court rulings in *Rapanos v. the United States* and *Carabell v. the United States* 547 U.S. 715 (2006) (jointly referred to as *Rapanos*).

The *Rapanos* case outlines the conditions and criteria used by the USACE to assess and claim jurisdiction over non-isolated, non-navigable, ephemeral tributaries. Under a plurality ruling, the Court noted that certain "not relatively permanent" (i.e., ephemeral), non-navigable tributaries must have a "significant nexus" to downstream traditional navigable waters to be jurisdictional. An ephemeral tributary has a significant nexus to downstream navigable "waters" when it has "more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a Traditional Navigable Water (TNW)." A significant nexus is established through the consideration of a variety of hydrologic, geologic and ecological factors specific to the particular drainage feature in question. For drainage features that do not meet the significant nexus criteria, a significant nexus determination is provided by the USACE to the USEPA for the final determination of federal jurisdiction. Drainage features that do not meet the significant nexus criteria based on completion of an AJD, and/or are determined to be isolated pursuant to the SWANCC ruling (see below), may still be regulated by California Department of Fish and

Wildlife (CDFW) under Fish and Game Code Section 1600 or the Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Water Quality Act.

On January 15, 2003, the USACE and USEPA issued a Joint Memorandum to provide clarifying guidance regarding the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) ("the SWANCC ruling"), (Federal Register: Vol. 68, No. 10.). This ruling held that the CWA does not give the federal government regulatory authority over non-navigable, isolated, intrastate waters. As a result of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which are not hydrologically connected to other intra- or inter-state "waters of the U.S.," are no longer regulated by the USACE.

4.7.1.4 Federal Clean Water Act, Section 401

The mission of the RWQCB is to develop and enforce water quality objectives and implement plans that will best protect the beneficial uses of the state's waters, recognizing local differences in climate, topography, geology, and hydrology. The California RWQCB is responsible for implementing compliance not only with state codes such as the California Water Code, but also some federal acts such as Section 401 of the CWA. Section 401 of the CWA requires that any applicant for a federal permit for activities that involve a discharge to waters of the state shall provide the federal permitting agency with a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal CWA.[6] As such, before the USACE will issue a CWA Section 404 permit, applicants must apply for and receive a Section 401 water quality certification (WQC) from the RWQCB. The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect "waters of the state" (Water Code § 13260 (a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act which defines RWQCB jurisdictional "waters of the state" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code § 13050 (e)).

With the exception of isolated waters and wetlands, most discharges of fill to waters of the state are also subject to a CWA Section 404 permit. If a CWA Section 404 permit is not required for the project, the RWQCB may still require issuance of Waste Discharge Requirements (WDR) under the Porter-Cologne Water Quality Control Act. The RWQCB may regulate isolated waters that are not under jurisdiction of the USACE through issuance of WDR's. However, projects that obtain a Section 401 WQC are simultaneously enrolled in a statewide general WDR. Processing of Section 401 WQC's generally requires submittal of 1) a construction storm water pollution prevention plan (SWPPP), 2) a final water quality technical report that demonstrates that post-construction storm water Best Management Practices (BMPs) comply with the local design standards for municipal storm drain permits (MS4 permits) implemented by the State Water Resources Control Board effective January 1, 2011, and 3) a conceptual Habitat Mitigation and Monitoring Plan (HMMP) to compensate for permanent impacts to RWQCB waters, if any. In

[6] 33 USC 1341 *(a) (1)*.

addition to submittal of a draft CEQA document, a WQC application typically requires a discussion of avoidance and minimization of impacts to RWQCB jurisdictional resources, and efforts to protect beneficial uses as defined by the local RWQCB basin plan for the project. The RWQCB cannot issue a Section 401 WQC until the project CEQA document is certified by the lead agency.

4.7.2 State of California Special-status Resource Protection and Classifications

4.7.2.1 CESA

California's Endangered Species Act (CESA) defines an endangered species as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.*

The State defines a threatened species as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species.*

Candidate species are defined as:

> *…a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.*

Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Wildlife Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species by stating:

> *…no person shall import into this State, export out of this State, or take, possess, purchase, or sell within this State, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided.*

Under the CESA, "take" is defined as, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Additionally, some special-status mammals and birds are protected by the State as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Wildlife Code, Sections 4700 and 3511, respectively.

California Species of Special Concern are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. Informally listed species are not protected per se, but warrant consideration in the preparation of biological assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest areas.

For the purposes of this BRA, the following acronyms are used for State status species, as applicable:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SR State-listed as Rare
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened
- SFP State Fully Protected
- SSC California Species of Special Concern

Protection of Birds

Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Activities that result in the abandonment of an active bird of prey nest may also be considered in violation of this code. In addition, California Fish and Game Code, Section 3511 prohibits the taking of any bird listed as fully protected, and California Fish and Game Code, Section 3515 states that is it unlawful to take any non-game migratory bird protected under the MBTA.

4.7.2.2 State of California Fish and Game Code, Section 1602

Section 1602 of the California Fish and Game Code requires any entity (e.g., person, state or local government agency, or public utility) who proposes a project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake to notify the CDFW of the proposed project. In the course of this notification process, the CDFW will review the proposed project as it affects streambed habitats within the project area. The CDFW may then place conditions in the Section 1602 Streambed Alteration Agreement to avoid, minimize, and mitigate any potentially significant adverse impacts within CDFW jurisdictional limits.

4.7.2.3 California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of special-status species in California. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California (CNPS 2012). The list serves as the candidate list for listing as Threatened and Endangered by CDFW. CNPS has developed five categories of rarity, of which Ranks 1A, 1B, and 2 are particularly considered special-status:

- Rank 1A Presumed extinct in California.
- Rank 1B Plants Rare, Threatened, or Endangered in California and elsewhere.
- Rank 2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- Rank 3 Plants about which we need more information – a review list.
- Rank 4 Plants of limited distribution – a watch list.

The CNPS recently added "threat ranks" which parallel the ranks used by the CNDDB. These ranks are added as a decimal code after the CNPS List (e.g., Rank 1B.1). The threat codes are as follows:

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

Special-status species that occur or potentially could occur within the study area is based on one or more of the following: (1) the direct observation of the species within the study area during any field surveys; (2) a record reported in the CNDDB; and (3) the study area is within known distribution of a species and contains appropriate habitat.

4.7.2.4 Sensitive Plant Communities

Sensitive plant communities include those habitat types considered rare by resource agencies, namely the CDFW, due to their scarcity and/or their ability to support State and Federally-listed Endangered, Threatened, and Rare vascular plants, as well as several special-status bird and reptile species. CDFW maintains a natural plant community list, the *List of California Terrestrial Natural Communities*.[7] Special-status natural communities (also referred to by CDFW as 'rare' or 'special concern') are identified on the list by an asterisk and are considered high priority vegetation types (CDFW, 2010; CDFW, 2000a).

[7] Available online at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp.

4.7.3 Local Special-status Resource Protection and Classifications

Western Riverside County MSHCP

The study area is within the Western Riverside County MSHCP which was adopted by the Riverside County Board of Supervisors (June 17, 2003). The MSHCP functions as an Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the FESA and as a Natural Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The USFWS and CDFW have authorized the take of a number special-status plant and wildlife species (Covered Species) within the MSHCP Plan Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Stephens' kangaroo rat (SKR) HCP provides Take Authorization for SKR within its boundaries as implemented by legal agreements executed among the Riverside County Habitat Conservation Agency (RCHCA), its member agencies, USFWS, CDFW, BLM , U.S. Department of Interior, State of California Resources Agency, and other agencies as appropriate.[8] The MSHCP provides Take Authorization for SKR outside the boundaries of the SKR HCP, but within the MSHCP Plan Area boundaries. The seven core reserves established by the SKR HCP will be managed as part of the MSHCP Conservation Area consistent with the SKR HCP.

The study area is within the boundaries of the SKR HCP but is not within any of the core reserves. As such, the project would be required to pay a SKR mitigation fee for coverage under the SKR HCP.

4.7.4 Sensitive Plant Communities

The study area does not support any communities considered by CDFW as sensitive habitats.

4.7.5 Special-status Plant Species

Special-status plants include those listed, or candidates for listing, by the USFWS and CDFW; and species considered special-status by the CNPS (particularly Lists 1A, 1B, and 2). Several special-status plant species were reported in the vicinity based on CNDDB and CNPS, totaling 65 species within the 9-quadrangle search (as indicated in **Appendix B**, *Special-Status Plant Species*). A total of 12 species were identified as having a potential to occur within the study area based on the literature review and existing habitat on the study area, as listed in Appendix B. Focused plant surveys were conducted in 2015 on the project site and off-site road improvement and sewer line areas and in 2016 on the off-site water line areas; none of the species determined to have a potential to occur on the project site and off-site water and sewer line areas were observed. A summer focused survey was conducted within the off-site eastern manufactured slope area in 2016; however, a spring survey has not yet been conducted within this area. The western manufactured slope areas do not support suitable habitat for special-status plant species.

[8] *http://www.skrplan.org/index.html*

4.7.6 Special-status Wildlife Species

Special-status wildlife include those species listed as Endangered or Threatened under the FESA or CESA, candidates for listing by the USFWS or CDFW, and species of special concern to the CDFW. Several special-status wildlife species were reported in the vicinity based on CNDDB, totaling 43 species within the 9-quadrangle search. A total of 19 species were identified as having a potential to occur within or use the study area based on the literature review and habitat present on the study area, as listed in **Appendix C**, *Special-status Wildlife Species*.

In addition, focused surveys were conducted for the burrowing owl in accordance with recommended protocols and the potential for foraging and nesting migratory bird and raptor species were also analyzed due to known presence within the study area or within the vicinity (see Appendix C). The species with a potential to occur on the study area are discussed below, including the results of the burrowing owl surveys and the migratory birds and raptors assessment.

Species With Potential to Occur On-site

Coast horned lizard (*Phrynosoma blainvillii*): This reptile species is a state species of special concern and is a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers sandy riparian and sage scrub habitats, but also occurs in valley-foothill, hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet. Habitats include open country, especially sandy areas, washes, flood plains, and windblown deposits.

Coast horned lizard was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Harvester ants, this species main food source, were also observed (although the food source was not seen in the area supporting suitable habitat). Although habitat and a food source potentially exist on the study area, the majority of the potentially suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Orange-throated whiptail (*Aspidoscelis hyperythra*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, non-native grassland, Riversidean sage scrub, and juniper and oak woodlands. It is often associated with riparian areas and alluvial fan sage scrub habitats.

Orange-throated whiptail was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. These areas support perennial plants that may host this species preferred food source (termites). Although habitat and a food source potentially exist on the study area, the majority of the potentially suitable habitat is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon)

and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Red Diamond Rattlesnake (*Crotalus ruber*): This reptile species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.

Red diamond rattlesnake was determined to have a moderate potential to occur within the study area based on the presence of some potentially suitable habitat on the northwestern corner of the on-site area, which includes Riversidean sage scrub and brittlebush scrub. Although these areas support some vegetation and crevices within the rock outcrops, the vegetation is not dense and rock crevices available for cover are limited. Higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Golden Eagle (*Aquila chrysaetos*): This raptor is a state fully protected species and is protected by the Bald and Golden Eagle Protection Act; it is also a Covered Species pursuant to the Western Riverside County MSHCP. This species nests on cliff faces and tall trees. Foraging habitat includes open country, including grasslands and early successional stages of forest and shrub habitats.

Golden eagle was determined to have a potential to occur only to forage within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered very low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to lack of cliffs on the study area, which is their preferred nesting habitat. Additionally, there is only one CNDDB occurrence record within the vicinity. This record was a breeding pair observed in fall 1979, spring 1980, and fall 1980 in San Timoteo Canyon, approximately 6.0 miles to the northeast. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Swainson's hawk (*Buteo swainsoni*): This bird species is listed as threatened by the state and is a Covered Species pursuant to the Western Riverside County MSHCP. It prefers Great Basin grasslands, riparian forests, riparian woodlands, and valley and foothill grasslands.

Swainson's hawk was determined to have a potential for foraging only within the study area based on the presence of a few fossorial mammal burrows within the disturbed areas on-site, suggesting the presence of small mammals that could provide a possible food source. However, the potential for foraging was considered low since the majority of the site is surrounded by development and is highly disturbed, making it a less optimal habitat. This species is not expected to nest due to the limited number of trees on the study area and the proximity of the trees to roads and residential homes, which could create some noise disturbance. Additionally, there are only two CNDDB occurrence records of nesting individuals within the vicinity; both

records are from over 100 years ago. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Burrowing owl: This bird species is a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal prairie, coastal scrub, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley and foothill grassland and disturbed habitats. It is known to occur in the project vicinity based on CNDDB and the MSHCP, and the study area is within the MSHCP Burrowing Owl Survey Area, an overlay in the MSHCP that requires additional surveys.

Burrowing owl was determined to have potential to occur within the study area based on the presence of suitable habitat that was identified during the Step I survey, including disturbed, low-growing vegetation, bare ground, and a few small fossorial mammal burrows. Step II surveys were conducted from May to July 2015 within the project site and off-site manufactured slopes, road improvement, proposed water line, and sewer line areas. Step II surveys were conducted from April to July 2016 within the off-site alternative water line areas. The subsequent Step II surveys did not identify individual burrowing owls, active burrowing owl burrows, or signs of burrowing owls within the survey area. Therefore, the study area and adjacent buffer area do not currently support burrowing owls. The results are also outlined in a separate survey reports attached as **Appendix D**, 2015 *Burrowing Owl Focused Survey Report* and **Appendix E**, 2016 *Burrowing Owl Focused Survey Report*.

Loggerhead shrike (*Lanius ludovicianus*): This bird species is listed as a state species of special concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, and Sonoran desert scrub habitats.

Loggerhead shrike was observed foraging within the northwestern corner of study area during the third burrowing owl survey conducted on July 2, 2015. This area supports suitable foraging habitat for this species, which includes Riversidean sage scrub and brittlebush scrub. The potential for nesting for this species is considered moderate based on the presence of shrubs on the northwestern corner. Although this area supports shrubs that may be suitable for nesting, the northwestern corner is adjacent to developed, residential areas; higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area.

Coastal California gnatcatcher (*Polioptila californica californica*): This bird species is listed as Federally Threatened, state species of special concern, and a Covered Species pursuant to the Western Riverside County MSHCP. This species is an obligate inhabitant of coastal sage scrub habitat.

This species was observed on the study area during the focused burrowing owl survey conducted on May 13, 2015. Only one individual was heard during the survey.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*): This mammal species is listed as a state species of special concern and a Covered Species pursuant to the Western

Riverside County MSHCP. It prefers chaparral and coastal sage scrub habitats, in addition to grassland and Riversidean alluvial fan sage scrub habitats.

Northwestern San Diego pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable coastal scrub and chaparral habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Stephens' kangaroo rat (*Dipodomys stephensi*): This mammal species is listed as federally endangered and state threatened. Take Authorization for Stephens' kangaroo rat is provided by the SKR HCP within its plan boundaries, and by the Western Riverside County MSHCP for areas outside of the SKR HCP but within the MSHCP area plan boundaries (this species is a MSHCP Covered Species). This species prefers open grasslands or sparse shrub lands within sandy to sandy loam soils and low clay and gravel content.

Stephens' kangaroo rat was determined to have a moderate potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub, Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. The study area is not within any core reserves identified by the SKR HCP. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Los Angeles pocket mouse (*Perognathus longimembris brevinasus*): This mammal species is listed as a state species of special concern and a conditionally Covered Species pursuant to the Western Riverside County MSHCP (surveys are required for areas within the survey overlay, with potential conservation). It prefers sparsely vegetated habitat areas within coastal sage scrub communities and in patches of fine sandy soils associated with washes.

Los Angeles pocket mouse was determined to have a moderate potential to occur within the study area based on the presence of suitable Riversidean sage scrub habitat in the northwestern portion. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*): This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers open brushlands and scrub habitats.

San Diego black-tailed jackrabbit was determined to have a moderate potential to occur within the study area. The majority of the study area supports suitable habitat for this species, including the Riversidean sage scrub on the northwestern corner and the ruderal areas (which support some short grasses). However, this species is highly conspicuous and no incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

San Diego desert woodrat: This mammal species is a California Species of Special Concern and a Covered Species pursuant to the Western Riverside County MSHCP. This species prefers coastal scrub and chaparral habitats with areas containing rock outcrops and cliffs.

San Diego desert woodrat was determined to have a moderate potential to occur within the study area based on the presence of suitable habitat (e.g. Riversidean sage scrub, rock outcrop/Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Southern Grasshopper Mouse (*Onychomys torridus ramona*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

Southern grasshopper mouse was determined to have a potential to occur within the study area based on the presence of suitable shrub habitat (e.g. brittle bush scrub and Riversidean sage scrub) in the northwestern portion and small fossorial mammal burrows. However, the potential was considered low since this species has not been recorded on CNDDB within the vicinity of study area since 1938. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

American badger (*Taxidea taxus*): This mammal species is a state species of special concern. This species prefers grasslands, desert areas, and especially scrub with friable soils.

American badger was determined to have a potential to occur within the study area based on the presence of shrubs within the Riversidean sage scrub habitat on the northwestern corner of the study area. A few fossorial mammal burrows were observed, suggesting the presence of small mammals that could provide a possible food source. However, the potential was considered low since the majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Additionally, this species has not been recorded within the vicinity since 1908. No signs of this species were observed during any site surveys conducted in 2015.

Western Mastiff Bat (*Eumops perotis californicus*): This mammal species is a state species of special concern. This species prefers chaparral, cismontane woodlands, coastal scrub, and valley and foothill grassland habitats.

Western mastiff bat was determined to have a potential to occur for foraging only within the study area. However, the potential was considered low since although bats in this family are known to be strong fliers and can fly long distances to forage, habitat on the study area is disturbed and the majority of the study area is surrounded by development. This species preferred roosting habitat is not present on the study area and the nearest CNDDB occurrence record is from1990 approximately 3.0 miles to the southwest of the study area, in an area that is now a residential development. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pocketed free-tailed bat (*Nyctinomops femorasaccus*): This bat species is a state species of special concern and occurs in more arid habitats, roosting in rock crevices, caverns, or buildings.

Pocketed free-tailed bat was determined to have a potential to occur for roosting only within the study area based on the presence of rock outcrops. However, this potential was considered very

low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat (CDFW, 2000b). There are only 2 CNDDB occurrence records in the vicinity. The nearest record is from 1985 approximately 6.5 miles to the southwest of the study area near March Air Force Base. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Lesser long-nosed bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. Although day roosting habitat (caves or mines) are not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Pallid bat (*Leptonycteris verbabuenae*): This bat species is a federally endangered species and occurs in more arid habitats, such as desert grasslands and shrublands.

Pocketed free-tailed bat was determined to have a potential to occur for roosting and foraging. Potential night roosts included a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. Although day roosting habitat (caves or mines) is not present on the study area, this species can travel long distances between day roosting and foraging sites. However, the potential was considered very low for both roosting and foraging since this species not typically found in California and recorded sightings are typically vagrant migrants. There is only one CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa. No incidental sightings of this species occurred during any site surveys conducted in 2015 and 2016.

Migratory Birds and Raptors

The study area supports some potential nesting and foraging habitat for nesting birds and raptors, primarily in the northwestern corner of the study area where there are shrubs and some trees. Several species of birds were observed on-site (see Appendix A) and were identified by CNDDB as potentially occurring within the 9-quadrangle search area (see Appendix C). Raptors observed on-site include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). There is also a foraging potential for listed raptors within the 9-quadrangle search area according to CNDDB, such as golden eagle (State Fully Protected) and Swainson's hawk (Federally Threatened), though the potential of foraging is considered low and neither are expected to nest on-site (see Appendix C).

4.7.7 Study Area's Relationship to the Western Riverside County MSHCP

This section provides a discussion of the study area's relationship to the MSHCP policies, including the location within the MSHCP Area Plan, Criteria Cells, and cores and linkages, and the presence of MSHCP protected biological resources.

4.7.7.1 Location of the Study Area within the MSHCP Area Plan and Criteria Cells

The entire study area is within the Reche Canyon/Badlands Area Plan (see Figure 6) of the MSHCP but is not within a Criteria Cell, a designated Cell Group, or a subunit within the Southwest Area Plan that requires conservation of land for inclusion in the MSHCP Conservation Area (Riverside County TLMA, 2015).

4.7.7.2 Location of the Study Area within MSHCP Cores and Linkages

As mentioned previously in section 4.5.2, *Wildlife Movement within the Study Area*, the study area is not within any cores or linkages (i.e., Special Linkage Areas) as identified in the Reche Canyon/Badlands Area Plan.

4.7.7.3 Riparian/Riverine Areas and Vernal Pools

Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools,* of the MSHCP provides for the protection of Riparian/Riverine Areas and Vernal Pools within the MSHCP Plan Area. Riparian/Riverine areas are defined in the MSHCP as "lands which contain habitat dominated by trees, shrubs, persistent emergents, 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." Vernal pools are defined in the MSHCP 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."

As shown in **Figure 12**, *MSHCP Riverine Areas*, and summarized in **Table 3**, *MSHCP Riverine* Areas, The project study areas support a total 0.165 acre of MSHCP Riverine Areas including 0.059 acre in Drainage A (0.046 acre on-site and 0.013 acre off-site), 0.070 acre in Drainage B, 0.001 acre in Drainage B1, 0.001 acre in Drainage B2, 0.001 acre in Drainage B3, 0.002 acre in Drainage B4, and 0.033 acre in Drainage B5. All drainages are considered MSHCP Riverine Areas (rather than MSHCP Riparian Areas) since they are supported by ephemeral[9] flows and do not support riparian vegetation communities. No vernal pools occur within the on- and off-site study areas. Due to the presence of MSHCP Riverine features, the project will require a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis for any impacts proposed to these areas. The DBESP is required to provide details on any proposed impacts and compensatory mitigation for compliance with MSHCP requirements for submittal to the County of Riverside Environmental Programs Department (EPD), subject to approval by the

[9] Riparian drainages are streambeds that generally convey runoff during, and immediately after, a storm event.

County of Riverside Regional Conservation Authority (RCA) and the State and Federal Wildlife Agencies (CDFW and USFWS).

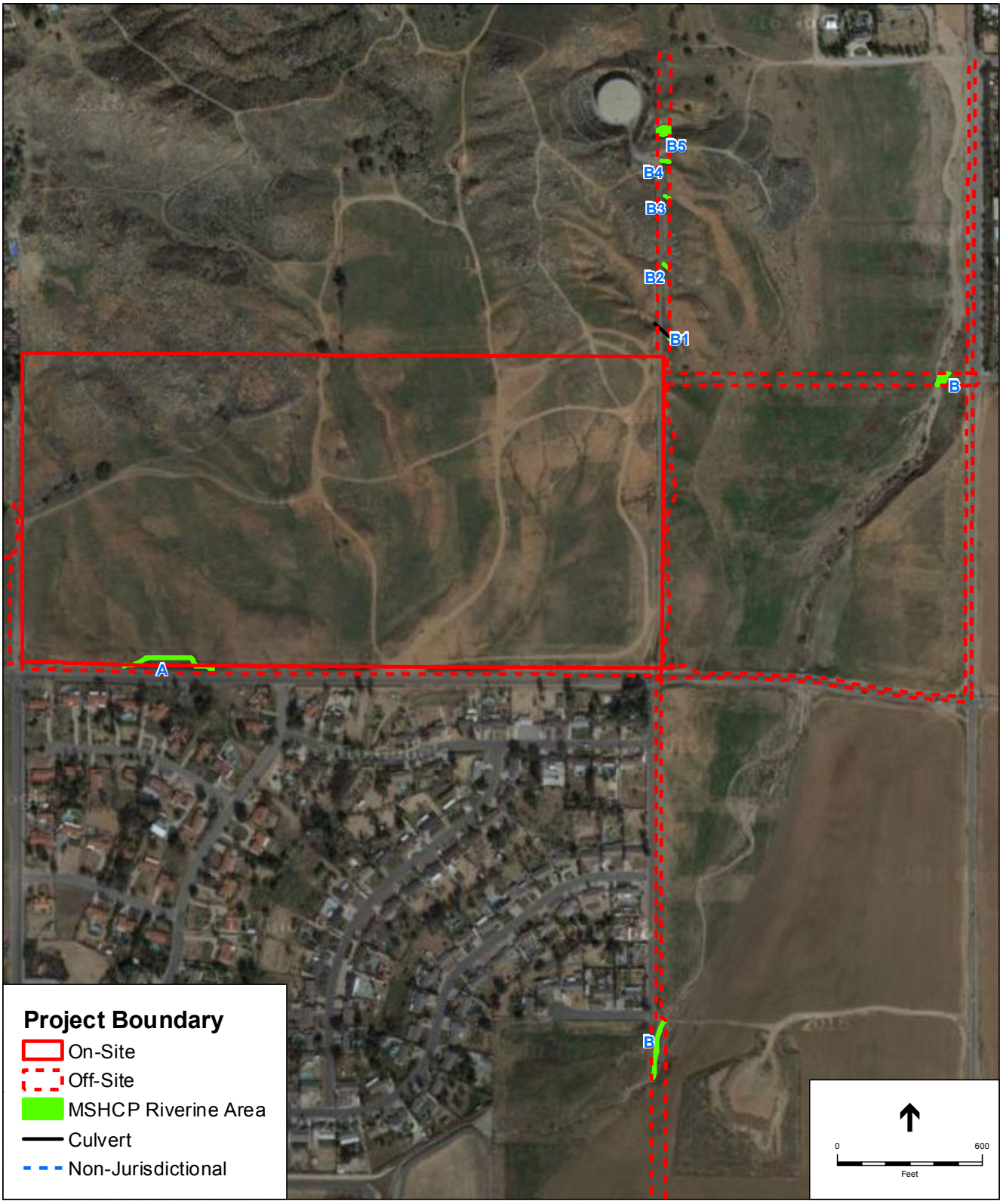
TABLE 3
MSHCP RIVERINE AREAS

Drainage (Study Area)	Length (ft)	Area (acres)	Riparian/Riverine Flow Classification
A (On-Site)	285	0.046	Riverine
A (Off-Site)	111	0.013	Riverine
B (Off-Site)	306	0.069	Riverine
B1 (Off-Site)	0*	0.001	Riverine
B2 (Off-Site)	32	0.001	Riverine
B3 (Off-Site)	25	0.001	Riverine
B4 (Off-Site)	34	0.001	Riverine
B5 (Off-Site)	35	0.033	Riverine
Total	**828**	**0.165**	

** Less than one linear foot of jurisdiction occurs within Drainage B1 as the majority of the drainage within the off-site study area is associated with an existing corrugated metal pipe that was not quantified.*

Source: ESA PCR, 2014

The biological function and value of the on- and off-site Riverine Areas within Drainage A and Drainage Complex B include the transport of water, which is limited based on the ephemeral flows of the drainage and limited watershed. The function and value of the drainages are also limited since they are primarily unvegetated and support only some small patches of upland and/or ruderal vegetation. Other types of aquatic features that could provide suitable habitat for Riparian/Riverine species, such as fairy shrimp, are not present within the study area (i.e. vernal pools, swales, vernal pool-like ephemeral ponds, seasonal ponds, stock ponds, or other human-modified depressions such as tire ruts, etc.).



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project

Figure 12

MSHCP Riverine Areas

ESA PCR

Riparian/Riverine Plant Species

A habitat assessment was conducted for species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 4**, *MSHCP Riparian/Riverine Plant Species*. Only one Riparian/Riverine plant species was determined to have a potential to occur on the study area, namely smooth tarplant (*Centromadia pungens* ssp. *laevis*). This species was considered to have a potential to occur only within the riverine habitat associated with the on- and off-site drainages; however, smooth tarplant was not observed during any of the focused plant surveys and therefore was concluded to be absent from the project site. The remaining MSHCP Riparian/Riverine plant species are not expected to occur within the study area due to the lack of suitable habitat or the location of the study area.

TABLE 4
MSHCP RIPARIAN/RIVERINE PLANT SPECIES

Species	Potential to Occur within the Study Area
Brand's phacelia *Phacelia stellaris*	Not expected to occur. This species has not been recorded in the Moreno Valley area. There is only one occurrence record in CNDDB within Riverside County, which was observed in 2000 in the City of Riverside near the Santa Ana River.
California Orcutt grass *Orcuttia californica*	Not expected to occur due to the lack of vernal pools.
Coulter's matilija poppy *Romneya coulteri*	Not expected to occur. This perennial plant has conspicuous flowers that would have been detected during the focused plant surveys if present.
Engelmann oak *Quercus engelmannii*	Not expected to occur. This is a conspicuous tree species that would have been detected during the focused plant surveys if present.
Fish's milkwort *Polygala cornuta* var. *fishiae*	Not expected to occur. The majority of occurrence records of this species on CNDDB are confined to the Santa Ana Mountains.
graceful tarplant *Holocarpha virgata* ssp. *Elongate*	Not expected to occur due to disturbance on-site. The study area is outside of the species' range; there are no known records of this species within the flatter agricultural areas east of the Santa Ana Mountains.
lemon lily *Lilium parryi*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
Mojave tarplant *Deinandra mohavensis*	Not expected to occur. The study area is outside the species range; this species is restricted to the San Jacinto Mountains. The study area is outside of species' elevation range.
mud nama *Nama stenocarpum*	Not expected to occur due to the lack of wetlands. None were incidentally observed during any surveys (this species can occasionally occur in non-wetlands).
ocellated Humboldt lily *Lilium humboldtii* ssp. *ocellatum*	Not expected to occur due to high disturbance within the drainages and lack of shade. This species is typically found at higher elevations.
Orcutt's brodiaea *Brodiaea orcuttii*	Not expected to occur due to the lack of vernal pools.
Parish's meadowfoam *Limnanthes alba* ssp. *parishii*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area is outside of this species' elevation range.

Species	Potential to Occur within the Study Area
prostrate navarretia *Navarretia prostrata*	Not expected to occur due to the lack of suitable habitat. Also, the study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Diego button-celery *Eryngium aristulatum* var. *parishii*	Not expected to occur. The study area is outside the species' range; this species is restricted to the Santa Rosa Plateau within the MSHCP Plan Area. The study area does not support suitable vernal pool habitat.
San Jacinto Valley crownscale *Atriplex coronata* var. *notatior*	Not expected to occur due to the lack of suitable alkaline habitat.
San Miguel savory *Satureja chandleri*	Not expected to occur due to the lack of suitable metavolcanic substrate habitat.
Santa Ana River woollystar *Eriastrum densifolium* ssp. *sanctorum*	Not expected to occur due to lack of suitable habitat. The study area is outside the species range; this species is restricted to the Santa Ana River and alluvial fan sage scrub habitat.
slender-horned spineflower *Dodecahema leptoceras*	Not expected to occur due to the lack of alluvial fan habitat.
smooth tarplant *Centromadia pungens* ssp. *laevis*	Potential, but not observed. This species was not observed during the focused plant surveys.
southern California black walnut *Juglans californica*	Not expected to occur. This is a conspicuous tree species that would have been detected if present.
spreading navarretia *Navarretia fossalis*	Not expected to occur due to the lack of vernal pools.
thread-leaved brodiaea *Brodiaea filifolia*	Not expected to occur due to the lack of vernal pools.
vernal barley *Hordeum intercedens*	Not expected to occur due to the lack of vernal pools.

SOURCE: ESA PCR, 2016

Riparian/Riverine Wildlife Species

Habitat assessments were conducted for wildlife species listed in Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, of the MSHCP. The results are presented in **Table 5**, *MSHCP Riparian/Riverine Wildlife Species*. No riparian/riverine wildlife species are expected to occur on the study area due to the lack of suitable habitat.

TABLE 5
MSHCP RIPARIAN/RIVERINE WILDLIFE SPECIES

Species	Potential to Occur within the Study Area
arroyo toad *Anaxyrus californicus*	Not expected to occur due to the lack of suitable habitat (perennial streams).
mountain yellow-legged frog *Rana muscosa*	Not expected to occur due to the lack of suitable habitat (perennial streams).
California red-legged frog *Rana aurora draytonii*	Not expected to occur due to the lack of suitable habitat (perennial streams).

Species	Potential to Occur within the Study Area
bald eagle *Haliaeetus leucocephalus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
least Bell's vireo *Vireo bellii pusillus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
American peregrine falcon *Falco peregrinus anatum*	Not expected to occur due to the lack of suitable habitat for foraging and nesting (cliffs overlooking open areas or large bodies of water).
southwestern willow flycatcher *Empidonax traillii extimus*	Not expected to occur due to the lack of suitable habitat for foraging and nesting.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Not expected to occur due to the lack of suitable habitat for foraging and nesting; outside of the species range.
Santa Ana sucker *Catostomus santaanae*	Not expected to occur due to the lack of suitable habitat (perennial streams).
Riverside fairy shrimp *Streptocephalus woottoni*	Not expected to occur due to the lack of suitable habitat (vernal pools).
vernal pool fairy shrimp *Branchinecta lynchi*	Not expected to occur due to the lack of suitable habitat (vernal pools).
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	Not expected to occur due to the lack of suitable habitat (vernal pools).

SOURCE: ESA PCR, 2016

4.7.7.4 Narrow Endemic Plant Species Survey Area

The study area is not within the Narrow Endemic Plant Species Survey Area; therefore, no surveys were required for Narrow Endemic plant species.

4.7.7.5 Additional Survey Needs and Procedures

Section 6.3.2, *Additional Survey Needs and Procedures*, of the MSHCP provides for additional survey needs for the burrowing owl, as well as a number of special-status plant, amphibian, and mammal species.

Burrowing Owl Survey Area

The study area is within the Burrowing Owl Survey Area; therefore, in compliance with the Western Riverside County MSHCP, surveys are required for this species. As discussed above in section 4.7.6 Special-status Wildlife Species, Step I and Step II surveys conducted for the project following Western Riverside County MSHCP protocol were negative. Although the site does not currently support burrowing owls, pre-construction surveys are required within 30 days of ground disturbance based on the presence of suitable habitat.

Criteria Area Species Survey Area

The study area is not within the Criteria Area Species Survey Area; therefore, no surveys were required for Criteria Area plant species.

Amphibian Species Survey Area

The study area is not within the Amphibian Species Survey Area; therefore, no surveys are required.

Mammal Species Survey Area

The study area is not within the Mammal Species Survey Area; therefore, no surveys are required.

4.7.7.6Urban/Wildlands Interface

Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, of the MSHCP presents a number of guidelines that are intended to address indirect effects associated with locating developments in proximity to a Western Riverside County MSHCP Conservation Area. These guidelines address the quantity and quality of any 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 is not within or in the vicinity of any Criteria Cells (see Figure 6) and, as such, development of the site is not expected to result in indirect effects to MSHCP Conservation Areas related to night lighting, noise, and grading/land development, and barriers would not be necessary. Drainage A and Drainage Complex B ultimately drain to the San Jacinto River, which is a Constrained Linkage (19) and where Criteria Cells are located. Runoff from the site therefore has the potential to affect the quantity and quality of water downstream, in addition to the transport of plant seeds. Since the project will be required to comply with flood and water quality standards[10], no indirect effects from the quantity and quality of run-off will occur to downstream areas. At minimum, no invasive, non-native plant species listed in Tables 6-2 of the MSHCP, *Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area*, will be utilized in the landscape plans. This will avoid dispersal of invasive plant seeds in the watershed. Despite the study area not being within any Criteria Cells or adjacent to any MSHCP Conservation Areas, it does support one on-site drainage and one off-site drainage complex that are considered Riverine Areas. The above measures will avoid indirect impacts to these drainages from runoff and invasive species.

[10] The project will be required to prepare a Water Quality Management Plan and Storm Water Pollution Prevention Plan consistent with Regional Water Quality Control Board and County requirements that will outline measures such as Best Management Practices (BMPS) to address water quantity and quality, and to address any potential flooding.

5.0 THRESHOLDS OF SIGNIFICANCE

The environmental impacts relative to biological resources are assessed using impact significance threshold criteria which mirror the policy statement contained in the CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State to:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

Determining whether or not a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7, Thresholds of Significance, each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the State CEQA Guidelines, Appendix G, *Environmental Checklist Form*. Section 15065(a) states that a project may have a significant effect where:

> *"The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species..."*

Appendix G of the State CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including: candidate or other special-status species; riparian habitat or other special-status natural communities; Federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and, adopted HCPs. This is done in the form of a checklist of questions to be answered during the Initial Study leading to the preparation of the appropriate environmental documentation for a project [i.e., Negative Declaration, Mitigated Negative Declaration, or Environmental Impacts Report (EIR)]. Because these questions are derived from standards in other laws, regulations, and other commonly used thresholds, it is reasonable to use these

standards as a basis for defining significance thresholds in an EIR. Therefore, for the purpose of this analysis, impacts to biological resources are considered potentially significant (before considering offsetting mitigation measures) if one or more of the following conditions would result from implementation of the proposed Project.

Threshold BIO-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 the California Department of Fish and Wildlife or U.S. Wildlife Service.

Note: Threshold BIO-A also encompasses the threshold on the Riverside County Environmental Assessment/Initial Study form as follows: "Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)."

Threshold BIO-B Have a substantial adverse effect on any riparian habitat or other sensitive plant community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service.

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

Threshold BIO-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 areas.

Threshold BIO-E Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Threshold BIO-F Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

For the purposes of this impact analysis the following definitions apply:

- "Substantial adverse effect" means loss or harm of a magnitude which, based on current scientific data and knowledge would: (1) substantially reduce population numbers of a listed, candidate, sensitive, rare, or otherwise special status species; (2) substantially reduce the distribution of a sensitive plant community/habitat type; or (3) eliminate or substantially

impair the functions and values of a biological resource (e.g., streams, wetlands, or woodlands) in a geographical area defined by interrelated biological components and systems. In the case of this analysis, the prescribed geographical area is considered to be the region that includes the USGS topographic quadrangle for the study area, namely Sunnymead. For some species, the geographic area may extend to the vicinity of the study area based on known distributions of the species. The vicinity of the study area is considered to comprise the following USGS topographic quadrangles: San Bernardino South, Redlands, Yucaipa, Riverside East, El Casco, Steele Peak, Perris, and Lakeview.

- "Conflict" means contradiction of a magnitude, which based on foreseeable circumstances, would preclude or prevent substantial compliance.

- "Rare" means: (1) that the species exists in such small numbers throughout all, or a significant portion of, its range that it may become endangered if its environment worsens; or (2) the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the FESA.

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6.0 PROJECT RELATED IMPACTS

6.1 Regulatory Setting

Special-status species are provided protection by either Federal or State resource management agencies, or both, under provisions of the FESA and CESA.

There are a number of performance criteria and standard conditions that must be met as part of any review and approval of the proposed project. These include compliance with all of the terms, provisions, and requirements with applicable laws that relate to Federal, State, and local regulating agencies related to potential impacts to special-status plant and wildlife species, wetlands, riparian habitats, and blue lined stream courses. The following summarizes federal and state regulations, and CNPS, as previously discussed in section 4.7, *Special-Status Biological Resources*.

6.1.1 Federal Regulations

As previously discussed in section 4.7.1, Federal Sensitive Resource Protection and Classifications of this BRA, under provisions of Section 9(a)(1)(B) of the FESA, unless properly permitted, it is unlawful to "take" any listed species. In a case where a property owner seeks permission from a Federal agency for an action which could affect a Federally-listed plant and animal species, the property owner and agency are required to consult with USFWS to obtain appropriate permits. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants. In addition to FESA, take of migratory birds, or bald or golden eagles, require permits pursuant to the MBTA and the Bald and Golden Eagle Protection Act, respectively. Furthermore, any impacts to USACE and RWQCB jurisdictional waters would require permitting pursuant to Sections 404 and 401 of the CWA, respectively.

6.1.2 State of California Regulations

As previously discussed in section 4.7.2, *State of California Sensitive Resource Protection and Classifications* of this BRA, Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species. Exceptions authorized by the State to allow "take" require permits or memoranda of understanding and can be authorized for "endangered species, threatened species, or candidate species for scientific, educational, or management purposes." Sections 1901 and 1913 of the California Fish and Wildlife Code provide that notification is required by an initiator prior to disturbance. State regulations also exist for protection of birds pursuant to the MBTA, and for acquiring permits for impacts to CDFW jurisdictional streambeds pursuant to Section 1602 of the Fish and Game Code.

6.1.3 California Native Plant Society

As previously discussed in section 4.7.2, *State of California Sensitive Resource Protection and Classifications* of this BRA, the CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California which classifies plant species into categories of rarity. Informally ranked species are not protected per se, but warrant consideration in the preparation of biological assessments.

6.1.4 Local Regulations

The study area is within the adopted Western Riverside County MSHCP Plan area. The Western Riverside County MSHCP provides permits for the take of all species identified in the MSHCP as covered and conditionally covered, so long as the conditions imposed are satisfied (see also sections 4.7.3 and 4.7.7 above).

6.2 Project Related Impacts

The analysis in section *6.3 Impact Analysis* of this BRA examines the potential impacts to plant and wildlife resources that may occur as a result of implementation of the project. For the purpose of this assessment, project-related impacts take two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification or disturbance of natural habitats (i.e., vegetation or plant communities), which in turn, directly affect plant and wildlife species dependent on that habitat. Direct impacts also include the destruction of individual plants or wildlife, which is typically the case in species of low mobility (i.e., plants, amphibians, reptiles, and small mammals). The collective loss of individuals in these manners may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and, hence, population stability.

Indirect impacts are considered to be those that involve the effects of increases in ambient levels of sensory stimuli (e.g., noise, light), unnatural predators (e.g., domestic cats and other non-native animals), and competitors (e.g., exotic plants, non-native animals). Indirect impacts may be associated with the construction and/or eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to study area.

The determination of impacts in this analysis is based on both the proposed project development plan and the biological values of the habitat and/or sensitivity of plant and wildlife species to be affected. Any recommended mitigation measures to address impacts are discussed in section 7.0 below, and compliance with existing regulations are also outlined in section 7.0 as Conditions of Approval.

The biological values of resources within, adjacent to, and outside the area to be affected by the proposed project were determined by consideration of several factors, as applicable. These included the overall size of habitats to be affected, the study area’s previous land uses and

disturbance history, the study area's surrounding environment and regional context, the on-site biological diversity and abundance, the presence of special-status plant and wildlife species, the study area's importance to regional populations of these species, and the degree to which on-site habitats are limited or restricted in distribution on a regional basis and, therefore, are considered sensitive in themselves. Therefore, the focus of this impacts analysis is on sensitive plant communities/habitats, resources that play an important role in the regional biological systems, and special-status species.

Impacts to biological resources as a result of project development were analyzed in GIS using Computer-Aided Design (CAD) data of the project footprint and guidelines on temporary impact areas for the drainage crossings, both provided by the project engineer. Acreages of impacts were calculated by overlaying the CAD data and adding the fuel modification zones over GPS data of biological resources collected by ESA PCR during the surveys.

6.3 Impact Analysis

6.3.1 Impacts to Special-Status Species

Threshold BIO-A: Would the project 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 the California Department of Fish and Wildlife or U.S. Wildlife Service?

Less than Significant with Mitigation Incorporated

6.3.1.1 Special-Status Plant Species

Development of the study area would result in the direct removal of numerous common plant species; a list of plant species observed within the study area is included in Appendix A. Common plant species present within the study area occur in large numbers throughout the region and their removal does not meet the significance thresholds defined in Section 5.0, *Thresholds of Significance* above. Therefore, impacts to common plant species would not be considered a significant impact and no mitigation measures are required.

A total of 53 special-status plant species of the 65 species identified as occurring in the project vicinity in available databases (see section 4.7.5 above) are not expected to occur within the study area due to the lack of suitable habitat or because the site is outside the known distribution or elevation range for the species. These species are listed in Appendix B. As discussed in section 4.7.5, above, the remaining 12 special-status plant species were determined to have a potential to occur on the study area; however, these 12 species are not expected to occur within the project site or off-site water and sewer line areas since focused surveys conducted within these areas were negative. As such, no impacts to special-status plant species would occur as a result development on the project site and within the proposed off-site water and sewer lines and no mitigation is required.

Although a summer focused survey was performed within the off-site manufactured slope area to the east of the project site, a spring focused survey has not been conducted within this off-site

area. Of the 12 species with a potential to occur, seven (7) species are not expected to occur within the off-site manufactured slope area since these species were not detected during the summer focused survey or the area does not support suitable habitat, including California screw most (*Tortula californica*), smooth tarplant, San Bernardino aster (*Symphyotrichum defoliatum*), chaparral sand-verbena (*Abronia villosa* var. *aurita*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), salt spring checkerbloom (*Sidalcea neomexicana*), and mesa horkelia (*Horkelia cuneate* var. *puberula*). The blooming period of the remaining five (5) species with the potential to occur within the off-site manufactured slope area east of the project boundary fall outside of the summer survey window, which include Nevin's barberry (*Berberis nevinii*), Jaeger's bush milk-vetch (*Astragalus pachypus* var. *jaegeri*), round-leaved filaree (*California macrophylla*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), and white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*). Of these five species, Nevin's barberry, Jaeger's bush milk-vetch, and round-leaved filaree are covered by the MSHCP. Parry's spineflower and white-bracted spineflower are not currently covered by the MSHCP and impacts to these individuals, if present, would be significant. As such, a mitigation measure is prescribed as MM BIO-1 in section 7.2.1, which requires a spring focused plant survey to be conducted within the off-site manufactured slope area located directly east of the site prior to ground disturbance in the appropriate blooming period (between April and June) to determine the presence/absence of Parry's spineflower and white-bracted spineflower. If either or both of these species are found within the off-site eastern manufactured slope area, MM BIO-1 outlines the necessary actions that are required to reduce impacts to the special-status plant species to less than significant.

6.3.1.2 Special-status Wildlife Species

Development of the study area would result in the disruption and removal of habitat and the loss and displacement of common wildlife species. A list of wildlife species observed within the study area is included in Appendix A. Due to the limited amount of native habitat to be removed and the level of existing disturbance from human activity within the vicinity (e.g., nearby development), these impacts would not be expected to reduce the general wildlife populations below self-sustaining levels within the region and impacts to common wildlife species do not meet the significance thresholds defined in Section 5.0, *Thresholds of Significance* above. Therefore, impacts to common wildlife species would not be considered a significant impact and no mitigation measures are required.

A total of 25 special-status wildlife species of the 43 species identified as occurring in the project vicinity in available databases (see section 4.7.6 above) are not considered to have a potential to occur within the study area due to the lack of suitable habitat or because the site is outside the known distribution range for the species. These species are listed in Appendix C. Since these species are not expected to be present on the study area, no impacts would occur as a result of project development and no mitigation measures are required.

As discussed in section 4.7.6, above, the remaining 19 special-status wildlife species were determined to have a potential to occur on the study area. Of these species, focused surveys were conducted for burrowing owl, which is conditionally covered by the MSHCP with additional surveys and mitigation required as discussed in further detail below. Of the remaining 17

potential special-status wildlife species, 12 species are covered by the MSHCP with no survey or conservation requirements for the study area, including coast horned lizard, orange-throated whiptail, red diamondback rattlesnake, golden eagle, Swainson's hawk, loggerhead shrike, coastal California gnatcatcher, northwestern San Diego pocket mouse, Stephens' kangaroo rat (covered by the SKR HCP), Los Angeles pocket mouse, San Diego black-tailed jackrabbit, and San Diego desert woodrat. Therefore, assuming payment of the applicable fees (the MSHCP Local Development Mitigation Fee and the SKR HCP fee for the Stephens' kangaroo rat) and compliance with required guidelines in the MSHCP (see section 7.2.5 below), no additional mitigation is required for these species.

The remaining six (6) species, the southern grasshopper mouse, American badger, western mastiff bat, pocketed free-tailed bat, lesser long-nosed bat, and pallid bat are not covered by the MSHCP. These species are listed as species of special concern by the CDFW and do not carry a federal or state listing as threatened or endangered. These species are considered to have a low to very low potential to occur on the study area based on the limited habitat and/or quality of the habitat, and no significant impacts are anticipated to these species as described below. The study area also has the potential to support migratory birds and raptors that are discussed further in 6.2.4.2 of this report.

- No significant impact to southern grasshopper mouse since this species is only considered to have a low potential to occur as it has not been recorded on CNDDB within the vicinity of the study area since 1938.

- No significant impact to American badger since this species was considered to have low potential to occur. The majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Additionally, this species has not been recorded on CNDDB within the vicinity of the study area since 1908.

- No significant impact to western mastiff bat since this species was only considered to have a low potential to occur for foraging with no suitable roosting habitat on the study area. Although bats in this family are known to be strong fliers and can fly long distances to forage, there is only a low probability that these species will travel to the study area based on the disturbance present on the study area and presence of surrounding development. The nearest CNDDB occurrence record of this species was recorded in 1990 approximately 3.0 miles to the southwest of the study area.

- No significant impact to pocketed free-tailed bat since this species was only considered to have a very low potential to occur for roost with no suitable roosting habitat on the study area. The potential for roosting was considered very low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat.[11] There are only two CNDDB occurrence records in the vicinity.

11 CDFW. 2000. California Wildlife Habitat Relationships System: Pocketed Free-tailed Bat. State of California, The Resources Agency. May 2000.

The nearest record is from 1985 approximately 6.5 miles to the southwest of the study area near March Air Force Base.

- No significant impact to lesser long-nosed bat since this species was only considered to have a very low potential to roost and forage on the study area. The potential was considered low since this species is not typically found in California. Records in California are typically vagrant migrants. This species has only been recorded once on CNDDB within the vicinity of the study area, which was in 1993 approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa.

- No significant impact to pallid bat since this species was only considered to have a very low potential to roost and forage on the study area. The potential was considered very low because of evidence of disturbance on the study area and the presence of surrounding development to the south, northeast, and west; this species is highly sensitive to disturbance. Additionally, this species has not been recorded on CNDDB within the vicinity since 1929.

The above six species were not considered for coverage under the MSHCP, indicating that regionally significant populations of these species do not exist within the MSHCP boundaries. Based on the above discussion, the study area is not capable of supporting large populations of these species and a loss of a few individuals, if present, would not expect to reduce regional population numbers. Therefore, any impacts to these species would be less than significant and no mitigation measures are considered required.

Burrowing Owl

The study area supports potentially suitable burrowing owl (Species of Special Concern) habitat, but no active burrowing owl burrows, signs, or individuals were found on-site during the Step I and Step II surveys.

Although the study area does not currently support burrowing owls, a pre-construction survey is required in compliance with the MSHCP. Specifically, in accordance with the County of Riverside's *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside, 2006), a pre-construction survey for burrowing owl within the study area is required within 30 days prior to ground disturbance to avoid potential direct take of burrowing owls in the future. A Condition of Approval (COA BIO-1) requiring this survey is provided in section 7.2.2 below, in addition to a recommended mitigation measure (MM BIO-2) should burrowing owls be present in the future. Mitigation is proposed consistent with the burrowing owl mitigation guidelines published by CDFW (CDFW, 2012).

6.3.2 Impacts to Sensitive Plant Communities

Threshold BIO-B: Would the project have a substantial adverse effect on any riparian habitat or other sensitive plant community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service?

No Impacts (Sensitive Plant Communities)

Less than Significant with Regulatory Compliance (CDFW Jurisdiction)

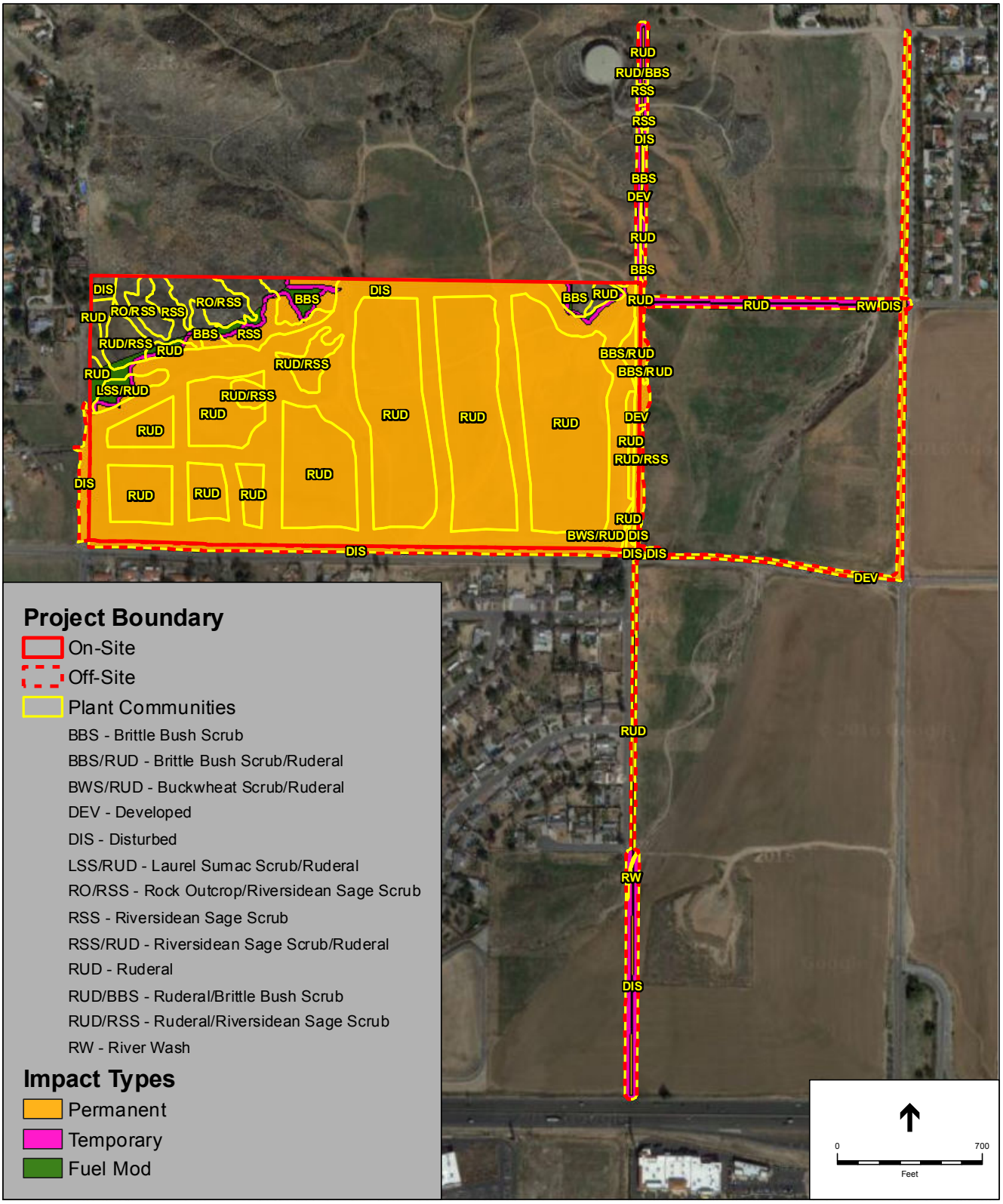
6.3.2.1 Sensitive Plant Communities

Sensitive plant communities were not observed within the study area; therefore, no impacts would occur. There are seven native communities on the study area that total 9.48 acres, including brittlebush scrub, brittlebush scrub/ruderal, buckwheat scrub/ruderal, laurel sumac scrub/ruderal, Riversidean sage scrub, Riversidean sage scrub/ruderal, and rock outcrop/Riversidean sage scrub. Permanent impacts to native communities on the study area are proposed to 2.91 acres, which is only 3.8 percent of the total proposed permanent impacts (75.81 acres) to plant communities. The majority of permanent impacts are proposed to ruderal (37.66 acres) and disturbed (30.54 acres) areas, which are dominated by non-native species. Impacts to these areas comprise 90.0 percent of the total impacts to plant communities on the study area. In addition to permanent impacts, 0.83 acres of fuel modification and 1.25 acres of temporary impacts are proposed to native communities on the study area. Impacts to plant communities are shown in **Figure 13**, *Impacts to Plant Communities* and **Table 6**, *Existing and Proposed Impacts to Plant Communities*.

TABLE 6
EXISTING AND PROPOSED IMPACTS TO PLANT COMMUNITIES

Plant Communities	Existing (acres)	Permanent Impacts (acres)	Fuel Modification Impacts (acres)	Temporary Impacts (acres)
Brittlebush Scrub	2.61	0.92	0.32	0.69
Brittlebush Scrub/Ruderal	0.52	0.51	0.00	0.01
Buckwheat Scrub/Ruderal	0.13	0.13	0.00	0.00
Laurel Sumac Scrub/Ruderal	0.78	0.36	0.26	0.16
Riversidean Sage Scrub	3.22	0.98	0.19	0.33
Riversidean Sage Scrub/Ruderal	0.07	0.01	0.00	0.06
Rock Outcrop/Riversidean Sage Scrub	2.15	0.00	0.06	0.00
River Wash	0.05	0.01	0.00	0.04
Ruderal	40.54	37.66	0.35	1.92
Ruderal/Brittlebush Scrub	0.04	0.01	0.00	0.03
Ruderal/Riversidean Sage Scrub	2.72	1.75	0.13	0.03
Disturbed	32.86	30.54	0.19	1.52
Developed	3.36	2.93	0.00	0.43
Total	**89.05**	**75.81**	**1.50**	**5.22**

SOURCE: ESA PCR, 2016



SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project

Figure 13

Impacts to Plant Communities

ESA PCR

6.3.2.2 CDFW Jurisdiction

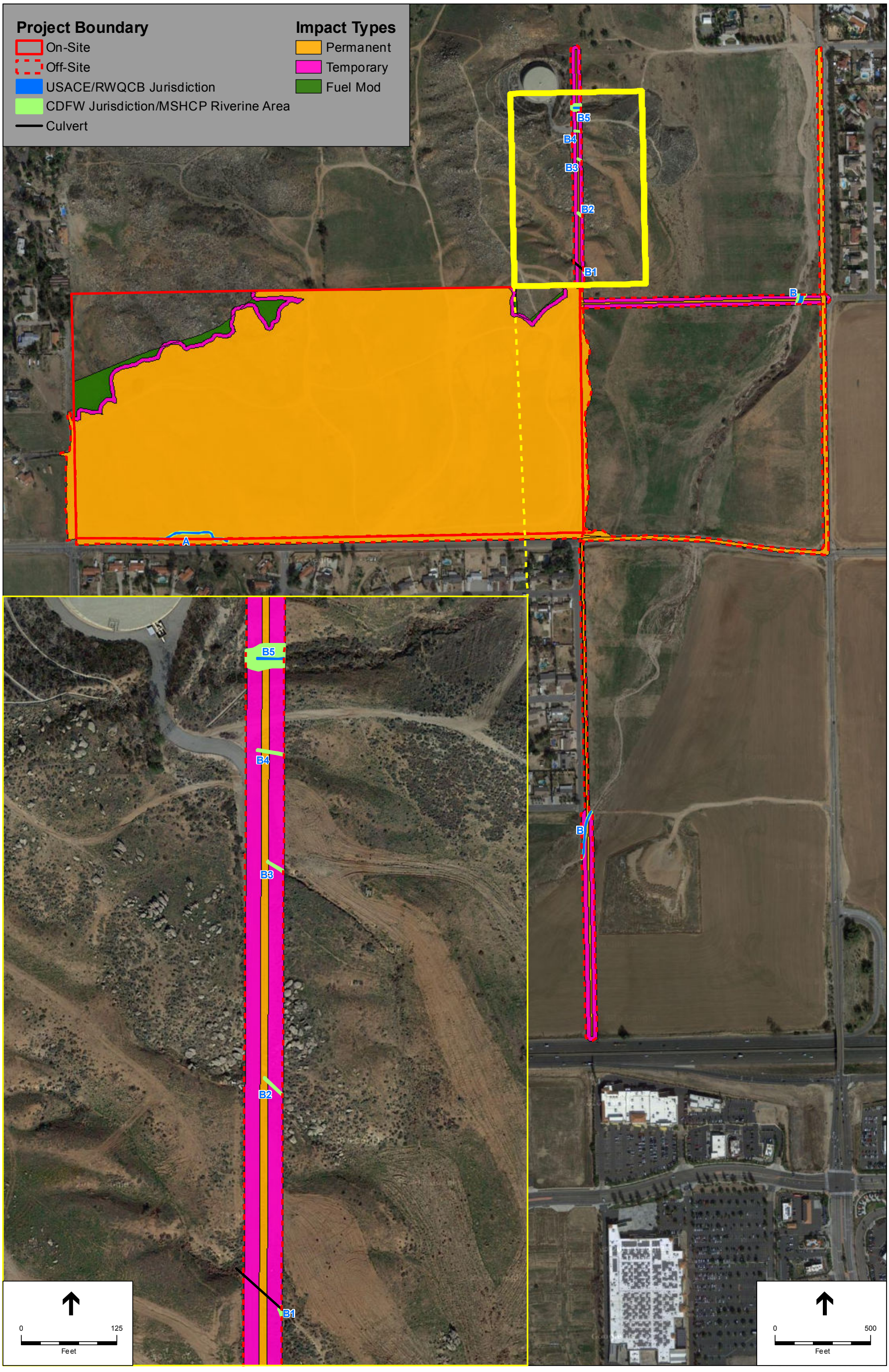
The project study areas support drainages that are considered CDFW jurisdictional streambeds pursuant to Section 1602 of the California Fish and Game Code and are proposed for impacts. Drainage A and Drainage Complex B are all jurisdictional, of which permanent impacts are proposed to Drainages A, B, B2, B3, B4, and B5 totaling 0.077 acre of permanent impacts (including 0.046 acre on-site and 0.031 acre off-site), as shown on **Figure 14**, *Impacts to Jurisdictional Features and MSHCP Riverine Areas*. Existing and impact acreages are summarized in **Table 7**, *Permanent Impacts to CDFW Jurisdictional Features and MSHCP Riverine Areas*. The permanent impacts total approximately 47 percent of the total 0.165 acre of CDFW jurisdiction identified within the on-site and off-site study areas. It should be noted that this report presumes combined impacts associated with the proposed water line alignment and two alternative alignments will occur. However, only one water line alignment will ultimately by implemented. Therefore, permanent and temporary impacts to CDFW jurisdictional waters will be slightly reduced once the final water line alignment is determined. Compensatory mitigation for permanent impacts to CDFW jurisdictional waters will be required for the project based only on impacts associated with the final water line alignment as part of subsequent CDFW Section 1602 permitting requirements. Temporarily impacted CDFW jurisdictional areas will be restored to pre-project conditions following completion of construction.

TABLE 7
IMPACTS TO CDFW JURISDICTIONAL FEATURES AND MSHCP RIVERINE AREAS[a]

Drainage (Study Area)	Existing (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Drainage A (On-Site)	0.046	0.046	-
Drainage A (Off-Site)	0.013	0.013	-
Drainage B (Off-Site)	0.069	0.011	0.058
Drainage B1 (Off-Site)	0.001	0.000	0.001
Drainage B2 (Off-Site)	0.001	0.000[b]	0.001
Drainage B3 (Off-Site)	0.001	0.000[c]	0.001
Drainage B4 (Off-Site)	0.001	0.000[d]	0.001
Drainage B5 (Off-Site)	0.033	0.007	0.026
Total	**0.165**	**0.077**	**0.088**

NOTES:
[a] MSHCP Riverine Areas are presumed equivalent to CDFW jurisdiction.
[b] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0003 acre.
[c] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0001 acre.
[d] Impacts are considered negligible; actual acreage of impacts to four decimal places is 0.0004 acre.

SOURCE: ESA PCR, 2016.



SOURCE: Google Maps, 2015.

Ironwood Village Project

Figure 14

Impacts to Jurisdictional Features and MSHCP Riverine Areas

ESA PCR

Impacts to CDFW jurisdictional features would be required to comply with Section 1602 of the California Fish and Game Code, including applying for a permit and providing compensatory streambed mitigation as stated above. A Condition of Approval (COA BIO-2) is proposed in section *7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features* of this BRA to comply with the compensatory mitigation requirement of this regulation, subject to approval by CDFW. Compliance with Section 1602 of the California Fish and Game Code would reduce impacts to a less than significant level.

6.3.3 Impacts to Wetlands

Threshold BIO-C: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Regulatory Compliance

The project study areas do not support wetlands as defined by Section 404 of the Clean Water Act. However, the project study areas do support USACE/RWQCB ephemeral non-wetland jurisdictional streambeds regulated under Sections 404/401 of the Clean Water Act (CWA) that are proposed for impacts. Drainage A and Drainage B5 are considered jurisdictional "waters of the U.S.", of which permanent impacts are proposed totaling 0.034 acre(0.023 acre on-site and 0.011 acre off-site), as shown on Figure 14. Existing and permanent impact acreages are summarized in **Table 8**, *Permanent Impacts to USACE/RWQCB Jurisdictional Features*. The permanent impacts total less than 60 percent of the total 0.058 acre of USACE/RWQCB jurisdiction on-site and off-site. Temporarily impacted areas will be restored to pre-project conditions.

TABLE 8
IMPACTS TO USACE/RWQCB JURISDICTIONAL FEATURES

Drainage	Existing (acres)		Permanent Impacts (acres)		Temporary Impacts (acres)	
	Length (ft)	Area (acres)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Drainage A	285	0.023	285	0.023	0	0.000
Drainage A (off-site)	111	0.007	111	0.007	0	0.000
Drainage B (off-site)	306	0.026	40	0.004	266	0.022
Drainage B5 (off-site)	35	0.002	10	0.001	25	0.001
Total	**737**	**0.058**	**436**	**0.034**	**366**	**0.023**

SOURCE: ESA PCR, 2016

Impacts to USACE and RWQCB jurisdictional "waters of the U.S." would be required to comply with Sections 404 and 401 of the CWA, respectively, including applying for a permit and mitigation subject to approval by USACE and/or RWQCB. A Condition of Approval (COA

BIO-2) is proposed in section *7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features* of this BRA to comply with the compensatory mitigation requirement of these regulations, subject to approval by USACE and RWQCB. Compliance with Sections 404 and 401 of the CWA is intended to reduce impacts to a less than significant level.

6.3.4 Impacts to Wildlife Movement and Migratory Species

Threshold BIO-D: Would the project 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 areas?

Less Than Significant (Wildlife Movement)

Less than Significant with Mitigation Incorporated (Migratory Species)

6.3.4.1 Wildlife Movement

As described in section 4.5.2 above, the study area supports potential live-in and movement habitat for species on a local scale (i.e., some limited live-in and at least marginal movement habitat for reptile, bird, and mammal species), but it likely provides little to no function to facilitate wildlife movement for wildlife species on a regional scale, and is not identified as a regionally important dispersal or seasonal migration corridor. Movement on a local scale likely occurs with species adapted to urban environments due to the development and disturbances in the vicinity of the study area. Although implementation of the project would result in disturbances to local wildlife movement within the study area, those species adapted to urban areas would be expected to persist on-site following construction, particularly within the open space areas. As such, impacts would be less than significant and no mitigation measures would be required. Since the study area does not function as a regional wildlife corridor and are not known to support wildlife nursery area(s), no impacts would occur and no mitigation measures would be required.

6.3.4.2 Migratory Species

Migratory Birds and Raptors

As previously discussed in section 4.7.6, *Special-status Wildlife Species*, the site supports potential nesting and foraging habitat for migratory birds, in addition to potential foraging habitat for raptors. Based on the disturbed nature of the site from agriculture and ongoing maintenance activities, the quality of foraging habitat is considered to be low. Higher quality foraging habitat is considered to occur in less developed areas with larger expanses of open space. The loss of a relatively small acreage of low quality foraging habitat as a result of the project would not be expected to impact the foraging of these species. Therefore, impacts to foraging habitat would be considered less than significant and no mitigation measures are considered required.

The study area has the potential to support songbird and raptor nests due to the presence of shrubs, ground cover, and limited trees on-site. Nesting activity typically occurs from February 15 to August 31. Disturbing or destroying active nests is a violation of the MBTA (16 U.S.C.

703 et seq.). In addition, nests and eggs are protected under Fish and Wildlife Code Section 3503. As such direct impacts to breeding birds (e.g. through nest removal) or indirect impacts (e.g. by noise causing abandonment of the nest) is considered a potentially significant impact as defined by the thresholds of significance (Threshold BIO-D) in Section 6.0 above. Compliance with the MBTA would reduce impacts to a less than significant level, as detailed in MM BIO-3 (see section 7.2.4).

6.2.5 Consistency with Local Policies and Ordinances

Threshold BIO-E: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impacts

The project does not conflict with any local policies or ordinances protecting biological resources, such as tree preservations or ordinances.

6.2.6 Consistency with Adopted Natural Community Conservation Plan

Threshold BIO-F: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant with Mitigation Incorporated

The study area is within the Western Riverside County MSHCP and requires payment of the Local Development Mitigation Fee, compliance with requirements of the MSHCP including the Burrowing Owl Survey Area guidelines (Section 6.3.2 of the MSHCP), and the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2 of the MSHCP). The study area is not within a cell, a designated cell group, or a subunit within the Reche Canyon/Badlands Area Plan; therefore, conservation of land on the study area is not required pursuant to the MSHCP. The study area is also not within the survey overlays for Criteria Area Species, Narrow Endemic Plant Species, Amphibian Species, or Mammal Species (Section 6.3.2 of the MSHCP). Since the study area is not within or in the vicinity of any Criteria Cells, the project will not result in edge effects that will adversely and directly affect biological resources within the MSHCP Conservation Area. As such, the project will not be subject to certain requirements outlined in the Guidelines Pertaining to the Urban/Wildlands Interface (Section 6.1.3 of the MSHCP) including those for the treatment and management of edge factors including night lighting, noise, barriers for public access and predators, and grading/land development limits. However, runoff from the site has the potential to indirectly affect MSHCP Conservation Areas downstream through the quantity and quality of water discharged from the site, in addition to the transport of plant seeds. Therefore compliance with the drainage, toxics, and invasive requirements outlined in Section 6.1.3 of the MSHCP would be required. A Condition of Approval (COA BIO-3) is proposed in section *7.2.5 Measures to Mitigate Potentially Significant Impacts to the MSHCP* of this BRA, which requires the project to comply

with all provisions of the MSHCP prior to issuance of a grading permit. Compliance with COA BIO-3 would reduce impacts to a less than significant level.

Project compliance with the MSHCP pertaining to Burrowing Owl, Riparian/Riverine, and Urban/Wildlands Interface requirements for drainage, toxics and invasives are summarized below:

- The study area is within the Burrowing Owl Survey Area of the MSHCP. Focused burrowing owl surveys were conducted within all portions of the study area that support potentially suitable habitat for this species. No burrowing owls were observed on the study area. However, due to the presence of potentially suitable habitat, a 30-day pre-construction survey for burrowing owl is required pursuant to the MSHCP. If burrowing owls are found within the study area during the 30-day pre-construction survey, impacts to this species would be potentially significant. The Condition of Approval (COA BIO-1) and mitigation measure (MM BIO-2) prescribed in section 7.2.1 below would reduce this impact to a less than significant level and ensure consistency with the MSHCP.

- Drainage A and Drainage Complex B on the study area meet the definition of Riverine Areas pursuant to the MSHCP. The project will result in permanent impacts to 0.078 acre of Riverine Areas, including 0.046 acre within the on-site portion of Drainage A, 0.013 acre in the off-site portion of Drainage A, and 0.018 acre within Drainage Complex B. The permanent impacts are equivalent to approximately 47 percent of the total 0.165 acre of Riverine Areas within the project study areas. The proposed Riverine Areas impacts are summarized in Table 7.

- The biological function and value of the on- and off-site Riverine Areas within Drainage A and Drainage Complex B include the transport of water, which is restricted based on the ephemeral flows of the drainage and limited watershed. The function and value of the drainages are also limited since they support only small patches of upland and/or ruderal vegetation and are primarily unvegetated. Other types of aquatic features that could provide suitable habitat for Riparian/Riverine species, such as fairy shrimp, are not present within the study area (i.e. vernal pools, swales, vernal pool-like ephemeral ponds, seasonal ponds, stock ponds, or other human-modified depressions such as tire ruts, etc.).

- Impacts to Riverine Areas would be potentially significant based on requirements of the MSHCP. According to section 6.1.2 of the MSHCP, if an avoidance alternative is not feasible a Determination of Biologically Equivalent or Superior Preservation (DBESP) shall be made by the Project applicant to ensure the replacement of any lost functions and values of habitat as it relates to MSHCP Covered Species. The condition of approval prescribed in section 7.2.3 below pertaining to jurisdictional drainages ensures consistency with the MSHCP. The DBESP would be submitted to the City and reviewed and approved by the City and the Wildlife Agencies.

- The project has the potential to affect the quantity and quality of water in downstream MSHCP Conservation Areas or Riverine areas via Drainage A and Drainage Complex B through runoff generated by the development and transport of invasive, non-native plants species from project landscaping. Since the project will be required to comply with flood and

water quality standards,[12] no indirect effects from the quantity and quality of run-off will occur to downstream areas. In addition, no invasive, non-native plant species listed in Tables 6-2 of the MSHCP, *Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area*, will be utilized in the landscape plans. These measures will avoid impacts to water quality and the dispersal of invasive plant seeds in the watershed and are outlined in the Condition of Approval recommended in section 7.2.5 below.

[12] The project will be required to prepare a Water Quality Management Plan and Storm Water Pollution Prevention Plan consistent with Regional Water Quality Control Board and County requirements that will outline measures such as Best Management Practices (BMPS) to address water quantity and quality, and to address any potential flooding.

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7.0 MITIGATION MEASURES AND CONDITIONS OF APPROVAL

7.1 Approach

Mitigation measures are recommended for those impacts determined to be significant to special-status biological resources (identified in italics in section 7.2 below). Mitigation measures for impacts considered to be "significant" were developed in an effort to reduce such impacts to a level of "insignificance," while at the same time allowing an opportunity to realize development goals under the proposed project. As stated in CEQA Guidelines Section 15370 mitigation includes:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

Where compliance with existing regulations and the issuance of permits by regulatory agencies would reduce impacts to a less than significant level, those measures are proposed as conditions of approval (identified in non-italics in section 7.2 below).

7.2 Mitigation Measures and Conditions of Approval for Significant Impacts

The following recommended mitigation measures (MM) and conditions of approval (COA) are intended to address potentially significant impacts from the proposed development Project.

7.2.1 Measures to Mitigate Potentially Significant Impacts to Special-Status Plant Species

MM BIO-1 Due to the presence of suitable habitat within the proposed off-site manufactured slope area located directly east of the project boundary, a spring focused plant survey to determine the presence/absence of Parry's spineflower and white-bracted spineflower is required to be conducted during the appropriate blooming periods of the two species (between April and June) prior to ground disturbance. If individuals are found,

significant impacts would occur as a result of implementation of the project unless mitigation is implemented to reduce impacts to less than significant. Mitigation includes seed collection of individuals that would be significantly impacted by the project at the end of the growing season and prior to ground disturbance. Collected seeds will be planted within an appropriate on-site or off-site mitigation area, which will be conserved as open space in perpetuity. Mitigation for significant impacts to Parry's spineflower and white-bracted spineflower will be implemented in consultation with the City of Moreno Valley and CDFW.

7.2.2 Measures to Mitigate Potentially Significant Impacts to Special-Status Wildlife Species

COA BIO-1 Due to the presence of suitable habitat and in compliance with the MSHCP, a pre-construction survey for burrowing owl is required within 30 days prior to ground disturbance to determine the presence of burrowing owls and avoid potential direct take of burrowing owls if present.

MM BIO-2 If burrowing owls are determined present during the 30-day pre-construction survey, occupied burrows shall be avoided to the greatest extent feasible, following the guidelines in the Staff Report on Burrowing Owl Mitigation published by Department of Fish and Wildlife (CDFW, 2012) including, but not limited to, conducting pre-construction surveys, avoiding occupied burrows during the nesting and non-breeding seasons, implementing a worker awareness program, biological monitoring, establishing avoidance buffers, and flagging burrows for avoidance with visible markers. If occupied burrows cannot be avoided, acceptable methods may be used to exclude burrowing owl either temporarily or permanently, pursuant to a Burrowing Owl Exclusion Plan that shall be prepared and approved by the County of Riverside Environmental Programs Department (EPD), in coordination with the CDFW. The Burrowing Owl Exclusion Plan shall be prepared in accordance with the guidelines in the Staff Report on Burrowing Owl Mitigation and the MSHCP.

In accordance with the MSHCP, take of active nests will be avoided. Passive relocation (i.e., the scoping of the burrows by a burrowing owl biologist and collapsing burrows free of young) will occur when owls are present outside the nesting season. The EPD may require translocation sites for the burrowing owl to be created in the MSHCP reserve for the establishment of new colonies pursuant to MSHCP objectives for the species. Translocation sites, if required, will be identified in consultation with EPD and/or CDFW taking into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species.

7.2.3 Measures to Mitigate Potentially Significant Impacts to Jurisdictional Features

COA BIO-2 Prior to the issuance of any grading permit for permanent impacts in the areas designated as jurisdictional features, the project applicant shall obtain regulatory permits from the USACE, RWQCB, and CDFW. The following shall be incorporated into the permitting, subject to approval by the regulatory agencies:

1. On-site or off-site creation, restoration and/or enhancement of USACE/RWQCB jurisdictional "waters of the U.S." within the San Jacinto watershed at a ratio no less

than 1:1 or within an adjacent watershed at a ratio no less than 2:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

2. On-site or off-site creation, restoration, and/or enhancement of CDFW jurisdictional streambed within the San Jacinto watershed at a ratio no less than 1:1 or within an adjacent watershed at a ratio no less than 2:1 for permanent impacts, and for any temporary impacts to restore the impact area to pre-project conditions (i.e. pre-project contours). Off-site mitigation may occur on land acquired for the purpose of in-perpetuity preservation as approved by the resource agencies, or through the purchase of mitigation credits at a resource agency-approved off-site mitigation bank or in-lieu fee program.

Purchase of any mitigation credits through an agency-approved mitigation bank or in-lieu fee program should occur prior to any impacts to jurisdictional drainages. Any mitigation proposed on land acquired for the purpose of in-perpetuity mitigation that is not part of an agency-approved mitigation bank or in-lieu fee program shall include the creation, restoration, and/or enhancement of similar streambed habitat pursuant to a resource agency-approved Habitat Mitigation and Monitoring Plan (HMMP). The HMMP shall be prepared prior to any impacts to jurisdictional features, and shall provide details as to the implementation of the mitigation, maintenance, and future monitoring of mitigation areas. The goal of the mitigation shall be to create, restore, and/or enhance similar habitat with equal or greater function and value than the impacted habitat.

7.2.4 Measures to Mitigate Potentially Significant Impacts to Migratory or Nesting Birds

MM BIO-3 Prior to the issuance of any grading permit that would remove potentially suitable nesting habitat for raptors or songbirds, the project applicant shall demonstrate to the satisfaction of the City of Moreno Valley that either of the following have been or will be accomplished:

1. Vegetation removal activities shall be scheduled outside the nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors) to avoid potential impacts to nesting birds.

2. Any construction activities that occur during the nesting season (February 15 to August 31 for songbirds; January 15 to August 31 for raptors) will require that all suitable habitat be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected a buffer of 300 feet (500 feet for raptors) around the nest adjacent to construction will be delineated, flagged, and avoided until the nesting cycle is complete. The buffer may be modified and/or other recommendations proposed as determined appropriate by the biological monitor to minimize impacts.

7.2.5 Measures to Mitigate Potentially Significant Impacts to the MSHCP

COA BIO-3 Prior to the issuance of any grading permit the project applicant shall comply with all of the provisions of the MSHCP, including payment of the MSHCP Local Development Mitigation Fee, compliance with Section 6.1.2 of the MSHCP pertaining to Riparian/Riverine Areas, implementation of drainage, toxics and non-native species guidelines pertaining to the Urban/Wildlands Interface in Section 6.1.4 of the MSHCP, and compliance with Section 6.3.2 of the MSHCP pertaining to Burrowing Owl Survey Area requirements. Compliance with Section 6.1.2 of the MSHCP will require preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis outlining the impacts and proposed compensatory mitigation for impacts to the Riparian/Riverine Areas for submittal and approval by the City of Moreno Valley and the wildlife agencies (CDFW and USFWS).

8.0 IMPACTS AFTER MITIGATION

8.1 Level of Significance after Mitigation

The proposed project, inclusive of mitigation measures and conditions of approval, would have less than significant impacts to special-status species, jurisdictional features, and migratory and/or nesting birds, in addition to providing MSHCP consistency.

8.2 Cumulative Impacts

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered significant. "Related projects" refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed Project. CEQA deems a cumulative impact analysis to be adequate if a list of "related projects" is included in the EIR or the proposed project is consistent with an adopted general, specific, master, or comparable programmatic plan [Section 15130(b)(1)(B)]. CEQA also states that no further cumulative impact analysis is necessary for impacts of a proposed project consistent with an adopted general, specific, master, or comparable programmatic plan [Section 15130(d)].

The MSHCP identifies areas for long-term conservation and management. As such, cumulative impacts of proposed projects within authorized take lands are minimized through the conservation of land. Cumulative impacts to the biological resources listed below for the study area are considered to be less than significant based on compliance with the Western Riverside County MSHCP, and regulations for jurisdictional waters. This includes implementation of the mitigation measures and conditions of approval outlined above in section 6.*0*, *Project Related Impacts* and *7.0*, *Mitigation Measures and Conditions of Approval*. Since the study area was determined not to function as a regional wildlife movement corridor, this biological resource is not included below.

- Special-status plant species (Parry's spineflower and white-bracted spineflower);
- Burrowing owl;
- Migratory and/or nesting birds; and
- Drainage features (including USACE, RWQCB and CDFW jurisdictional features and MSHCP Riparian/Riverine areas).

The proposed mitigation would result in a minimum no-net-loss of the biological function and value of these resources, and the conditions of approval would ensure compliance with existing regulations (such as the Western Riverside County MSHCP) and regulations for jurisdictional drainages. Therefore, with the proposed mitigation and conditions of approval, impacts would not be considered cumulatively significant. A summary is provided below.

Special-Status Plant Species: Mitigation is proposed and includes a spring focused survey prior to ground disturbance to determine the presence/absence of Parry's spineflower and white-bracted spineflower within the off-site eastern manufactured slope area. If either or both of these species are observed, collection of seed and planting within an on-site or off-site mitigation site is required. The mitigation site is required to be preserved as open space in perpetuity. With this mitigation measure, any impacts to Parry's spineflower and white-bracted spineflower would not be considered cumulatively significant.

Special-Status Wildlife Species: Mitigation is proposed if burrowing owls are observed on the study area in the future, which would avoid direct impacts in compliance with the Western Riverside County MSHCP. Mitigation is also proposed to avoid direct impacts to raptors and migratory bird species through compliance with the MBTA. With these mitigation measures, any impacts would not be considered cumulatively significant.

Jurisdictional Drainages: Impacts to jurisdictional features would be subject to permitting with the regulatory agencies, including USACE, RWQCB and/or CDFW, including compensatory mitigation. With the proposed compliance of existing regulations through the permitting process, impacts would not be considered cumulatively significant.

Riparian/Riverine Areas: Impacts to MSHCP Riparian/Riverine areas would be subject to approval of a DBESP by the City of Moreno Valley and Wildlife Agencies, as required in Section 6.1.2 of the Western Riverside County MSHCP. With the approval and implementation of the DBESP impacts would not be considered cumulatively significant. Mitigation is proposed as compensation for impacts to jurisdictional drainages through the regulatory process as described above.

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APPENDIX A - FLORAL AND FAUNAL COMPENDIUM

ANGIOSPERMS (DICOTYLEDONS)

	Scientific Name	Common Name
	Adoxaceae	**Muskroot Family**
	Sambucus nigra ssp. *caerulea*	blue elderberry
	Anacardiaceae	**Sumac or Cashew Family**
	Rhus ovata	sugar sumac
	Asteraceae	**Sunflower Family**
	Ambrosia acanthicarpa	flatspine bur ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Baccharis salicifolia	mule fat
	Brickellia desertorum	desert brickellbush
*	*Centaurea melitensis*	tocalote
	Corethrogyne filaginifolia	common sandaster
	Deinandra fasciculata	fascicled tarplant
	Encelia farinosa	brittlebush
	Ericameria pinifolia	pinebush
	Erigeron canadensis	horseweed
*	*Helianthus annuus*	common sunflower
	Heterotheca grandiflora	telegraphweed
*	*Lactuca serriola*	prickly lettuce
*	*Oncosiphon piluliferum*	stinknet
	Pseudognaphalium bicolor	bicolored cudweed
*	*Salsola tragus*	prickly Russian thistle
	Stephanomeria virgata	rod wirelettuce
	Boraginaceae	**Borage Family**
	Amsinckia intermedia	common fiddleneck
	Phacelia cicutaria	caterpillar phacelia
	Brassicaceae	**Mustard Family**
*	*Hirschfeldia incana*	short pod mustard
*	*Raphanus raphanistrum*	wild radish
*	*Sisymbrium irio*	London rocket
	Sisymbrium sp.	mustard

** non-native*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Cactaceae	**Cactus Family**
Cylindropuntia californica var. *parkeri*	cane cholla
Opuntia littoralis	coast prickly pear
Chenopodiaceae	**Goosefoot Family**
* *Chenopodium murale*	nettle-leaved goosefoot
Convolvulaceae	**Morning-Glory Family**
* *Convolvulus arvensis*	field bindweed
Cucurbitaceae	**Gourd Family**
Cucurbita palmata	coyote gourd
Marah macrocarpa	wild cucumber
Cuscutaceae	**Dodder Family**
Cuscuta sp.	dodder
Euphorbiaceae	**Spurge Family**
Croton setigerus	dove weed
Euphorbia albomarginata	rattlesnake weed
Fabaceae	**Legume Family**
Acmispon americanus	Spanish lotus
Acmispon glaber var. *glaber*	deerweed
Geraniaceae	**Geranium Family**
* *Erodium botrys*	longbeak stork's bill
* *Erodium cicutarium*	red-stemmed filaree
Lamiaceae	**Mint Family**
* *Marrubium vulgare*	horehound
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Trichostema lanceolatum	vinegarweed
Malvaceae	**Mallow Family**
* *Malva parviflora*	cheeseweed
Myrtaceae	**Myrtle Family**
* *Eucalyptus camaldulensis*	red gum
* *Eucalyptus citriodora*	lemon scented gum
Nyctaginaceae	**Four O'Clock Family**
Mirabilis laevis	wishbone bush

** non-native*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
Salix gooddingii	black willow
Scrophulariaceae	**Figwort Family**
Antirrhinum nuttallianum	Nuttall's snapdragon
Scrophularia californica	California figwort
Solanaceae	**Nightshade Family**
Datura wrightii	jimsonweed
* *Nicotiana glauca*	tree tobacco
Solanum douglasii	Douglas' nightshade
Solanum xanti	purple nightshade
Zygophyllaceae	**Caltrop Family**
* *Tribulus terrestris*	puncturevine

ANGIOSPERMS (MONOCOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Arecaceae	**Palm Family**
* *Washingtonia robusta*	Mexican fan palm
Liliaceae	**Lily Family**
Chlorogalum pomeridianum	soap plant
Poaceae	**Grass Family**
* *Arundo donax*	giant reed
* *Avena fatua*	wild oat
* *Bromus diandrus*	ripgut grass
* *Bromus madritensis* ssp. *rubens*	foxtail chess
* *Festuca perennis*	Italian ryegrass
* *Hordeum vulgare*	barley
* *Lamarckia aurea*	goldentop
* *Polypogon monspeliensis*	annual beard grass
* *Schismus barbatus*	Mediterranean schismus

** non-native*

REPTILES

SCIENTIFIC NAME	COMMON NAME
Colubridae	**Colubrid Snakes**
Coluber flagellum	coachwhip
Phrynosomatidae	**Zebratail, Earless, Horned, Spiny, Fringe-Toed Lizards**
Sceloporus occidentalis	western fence lizard

BIRDS

SCIENTIFIC NAME		COMMON NAME
Cathartidae		**New World Vultures**
	Cathartes aura	*turkey vulture*
Accipitridae		**Hawks**
	Accipiter cooperii	*Cooper's hawk*
	Buteo jamaicensis	*red-tailed hawk*
Falconidae		**Falcons**
	Falco sparverius	*American kestrel*
Charadriidae		**Plovers**
	Charadrius vociferus	*killdeer*
Columbidae		**Pigeons and Doves**
*	*Columba livia*	*rock pigeon*
	Zenaida macroura	*mourning dove*
Apodidae		**Swifts**
	Aeronautes saxatalis	*white-throated swift*
Trochilidae		**Hummingbirds**
	Archilochus alexandri	*black-chinned hummingbird*
	Calypte anna	*Anna's hummingbird*
Picidae		**Woodpeckers**
	Picoides nuttallii	*Nuttall's woodpecker*
Tyrannidae		**Tyrant Flycatchers**
	Sayornis nigricans	*black phoebe*
	Sayornis saya	*Say's phoebe*
	Tyrannus verticalis	*western kingbird*
	Tyrannus vociferans	*Cassin's kingbird*
Laniidae		**Shrikes**
	Lanius ludovicianus	*loggerhead shrike*

** non-native*

BIRDS

SCIENTIFIC NAME		COMMON NAME
Corvidae		**Jays and Crows**
	Corvus brachyrhynchos	*American crow*
Alaudidae		**Larks**
	Eremophila alpestris	*horned lark*
Hirundinidae		**Swallows**
	Petrochelidon pyrrhonota	*cliff swallow*
	Hirundo rustica	*barn swallow*
	Stelgidopteryx serripennis	*northern rough-winged swallow*
Aegithalidae		**Bushtits**
	Psaltriparus minimus	*bushtit*
Polioptilidae		**Gnatcatchers**
	Polioptila californica californica	*coastal California gnatcatcher*
Sturnidae		**Starlings**
*	*Sturnus vulgaris*	*European starling*
Emberizidae		**Emberizine Sparrows and Allies**
	Melozone crissalis	*California towhee*
Icteridae		**Blackbirds**
	Agelaius phoeniceus	*red-winged blackbird*
Fringillidae		**Finches**
	Haemorhous mexicanus	*house finch*
	Spinus psaltria	*lesser goldfinch*
	Spinus tristis	*American goldfinch*
Passeridae		**Old World Sparrows**
*	*Passer domesticus*	*house sparrow*

MAMMALS

SCIENTIFIC NAME	COMMON NAME
Sylvilagus audubonii sanctidiegi	Audubon's cottontail

** non-native*

APPENDIX B: SPECIAL-STATUS PLANT SPECIES

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
BRYOPHYTES								
Bryaceae	**Moss Family**							
Tortula californica	California screw moss	N/A	NONE	NONE	1B.2	NONE	Sandy soil. Chenopod scrub, Valley and foothill grassland. 10-1460 meters.	**ABSENT**
ANGIOSPERMS (DICOTS)								
Asteraceae	**Sunflower Family**							
Ambrosia pumila	San Diego ambrosia	Apr.-Oct.	FE	NONE	1B.1	MSHCP(b)	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; often in disturbed areas; sometimes alkaline sandy loam or clay soils. 20-415 meters.	**NONE**
Artemisia palmeri	San Diego sagewort	May-Sep.	NONE	NONE	4.2	MSHCP	Coastal scrub, chaparral, riparian forest, riparian woodland, riparian scrub; found in sandy soils within drainages and riparian areas. 15-915 meters.	**NONE**
Centromadia pungens ssp. *laevis*	smooth tarplant	Apr.-Sep.	NONE	NONE	1B.1	MSHCP(d)	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline. 0-640 meters.	**ABSENT**
Deinandra paniculata	paniculate tarplant	Apr.-Nov.	NONE	NONE	4.2	NONE	Generally vernally mesic; coastal scrub; valley and foothill grassland; vernal pools 25-940 meters.	**NONE**
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Aug.-Oct.	NONE	NONE	1A	NONE	Freshwater marsh, salt marsh. 10-1675 meters.	**NONE**
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Feb.-Jun.	NONE	NONE	1B.1	MSHCP(d)	Marshes and swamps (coastal salt), playas, vernal pools. 1-1220 meters.	**NONE**

NONE = species not expected to occur on the study area due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = preferred habitat was considered present based on the literature review and observed habitat on the study area, however no individuals were observed during the focused sensitive plant survey.

Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Senecio astephanus	San Gabriel ragwort	May-Jul.	NONE	NONE	4.3	NONE	Chaparral, coastal bluff scrub; rocky slopes. 400-1500 meters.	**NONE**
Symphyotrichum defoliatum	San Bernardino aster	Jul.-Nov.	NONE	NONE	1B.2	NONE	Cismontane woodland; coastal scrub; lower montane coniferous forest; meadows and seeps; marshes and swamps; valley and foothill grassland (vernally mesic); near ditches, streams and springs. 2-2040 meters.	**ABSENT**
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	May-Sep.	NONE	NONE	2B.1	MSHCP(b)	Meadows and seeps, marshes and swamps, riparian scrub, vernal. 5-435 meters.	**NONE**
Aspleniaceae	**Spleenwort Family**							
Asplenium vespertinum	western spleenwort	Mar.-Jun.	NONE	NONE	4.2	NONE	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland. 274 - 825 meters.	**NONE**
Berberidaeeae	**Barberry Family**							
Berberis nevinii	Nevin's barberry	Mar.-Jun.	FE	SE	1B.1	MSHCP(d)	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian	**ABSENT**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
							scrub or woodland. 274 - 825 meters.	
Nasturtium gambelii	Gambel's water cress	Apr.-Oct.	FE	ST	1B.1	NONE	Marshes or swamps. 5-330 meters.	**NONE**
Boraginaceae	**Borage Family**							
Harpagonella palmeri	Palmer's grapplinghook	Mar.-May	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub, valley and foothill grassland; open grassy areas within shrubland; clay soils. 20-955 meters.	**NONE**
Brassicaceae	**Mustard Family**							
Caulanthus simulans	Payson's jewel-flower	Feb.-Jun.	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub; sandy, granitic soils. 90-2200 meters.	
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Jan.-Jul.	NONE	NONE	4.3	NONE	Chaparral, coastal scrub; shrubland; dry soils. 1-885 meters.	**NONE**
Cactaceae	**Cactus Family**							
Opuntia basilaris var. brachyclada	short-joint beavertail	Apr.-Jun.	NONE	NONE	1B.2	NONE	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland, riparian woodland; sandy or granitic soils. 425-1800 meters.	**NONE**
Caryophyllaceae	**Pink Family**							
Arenaria paludicola	marsh sandwort	May-Aug.	FE	SE	1B.1	NONE	Marshes and swamps (freshwater); grows through dense areas of *Typha*, *Juncus*, and *Scirpus*; found in sandy soils. 3-170 meters.	**NONE**
Chenopodiaceae	**Saltbush Family**							
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	Apr.-Aug.	FE	NONE	1B.1	MSHCP(d)	Alkaline flats, playas, valley and foothill grassland, vernal pools. 139-500 meters.	**NONE**
Atriplex pacifica	South Coast saltscale	Mar.-Oct.	NONE	NONE	1B.2	NONE	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas. 0-140 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Atriplex parishii	Parish's brittlescale	Jun.-Oct.	NONE	NONE	1B.1	MSHCP(d)	Shadscale scrub, alkali sinks, freshwater wetlands, wetland-riparian; playas, vernal pools. 25-1900 meters.	**NONE**
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Apr.-Oct.	NONE	NONE	1B.2	MSHCP(d)	Coastal sage scrub, wetland-riparian; coastal. 10-200 meters	**NONE**
Convolvulaceae	**Morning-glory Family**							
Convolvulus simulans	small-flowered morning-glory	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Clay soils, serpentinite seeps; openings in chaparral; coastal sage scrub; valley and foothill grassland. 30-700 meters.	**NONE**
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	Jul.-Oct.	NONE	NONE	2B.2	NONE	Marshes and swamps (freshwater). 15-280 meters.	**NONE**
Fabaceae	**Pea Family**							
Astragalus hornii var. hornii	Horn's milk-vetch	May-Oct.	NONE	NONE	1B.1	MSHCP	Meadows and seeps, playas, lake margins; alkali soils. 60-850 meters.	**NONE**
Astragalus pachypus var. jaegeri	Jaeger's bush milk-vetch	Dec.-Jun.	NONE	NONE	1B.1	MSHCP	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland; dry habitats, such as ridges, valleys, and sandy slopes, typically within grasslands and oak chaparral. 365-915 meters.	**ABSENT**
Rupertia rigida	Parish's rupertia	Jun.-Aug.	NONE	NONE	4.3	NONE	Chaparral, lower montane coniferous forest, cismontane woodland, meadows and seeps, pebble plain, valley and foothill grassland. 700-2500 meters	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Geraniaceae	**Geranium Family**							
California macrophylla	round-leaved filaree	Mar.-May	NONE	NONE	1B.1	MSHCP(d)	Cismontane woodland, valley and foothill grassland; clay. 15-1200 meters.	**ABSENT**
Grossulariaceae	**Gooseberry Family**							
Ribes divaricatum var. parishii	Parish's gooseberry	Feb.-Apr.	NONE	NONE	1A	NONE	Riparian woodland. 65-300 meters.	**NONE**
Hydrophyllaceae	**Waterleaf Family**							
Nama stenocarpa	mud nama	Jan.-Jul.	NONE	NONE	2.B2	MSHCP(d)	Marches and swamps (lake margins, riverbanks). 5-500 meters.	**NONE**
Juglandaceae	**Walnut Family**							
Juglans californica	California black walnut	Mar.-Jun.	NONE	NONE	4.2	MSHCP	Chaparral, coastal scrub, cismontane woodland, slopes, canyons, alluvial habitats. 50-900 meters.	**NONE**
Juglandaceae	**Walnut Family**							
Lepechinia cardiophylla	heart-leaved pitcher sage	Apr.-Jul.	NONE	NONE	1B.2	MSHCP(d)	Closed-cone coniferous forest, chaparral, cismontane woodland. 520-1370 meters.	**NONE**
Monardella macrantha ssp. *hallii*	Hall's monardella	Jun.-Oct.	NONE	NONE	1B.3	MSHCP	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. 730-2195 meters.	**NONE**
Monardella pringlei	Pringle's monardella	May-Jun.	NONE	NONE	1A	NONE	Coastal scrub; sandy soils. 300-400 meters.	**NONE**
Juncaceae	**Rush Family**							
Juncus duranii	Duran's rush	Jul.-Aug.	NONE	NONE	4.3	NONE	Meadows, lower and upper montane coniferous forest; wet areas. 1770-2805 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Malvaceae	**Stick-leaf Family**							
Malacothamnus parishii	Parish's bush-mallow	Jun.-Jul.	NONE	NONE	1A	NONE	Chaparral, coastal sage scrub; in washes. 305-455 meters.	**NONE**
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	Jun.-Aug.	NONE	SR	1B.2	NONE	Chaparral, cismontane woodland, lower montane coniferous forest; typically found in burned or cleared areas on dry, rocky hillsides and along edges of fire roads. 1000-2500 meters.	**NONE**
Sidalcea neomexicana	salt spring checkerbloom	Mar.-Jun.	NONE	NONE	2B.2	NONE	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas/alkaline, mesic. 15-1530 meters.	**ABSENT**
Nyctaginaceae	**Four O'Clock Family**							
Abronia villosa var. *aurita*	chaparral sand-verbena	Jan.-Sep.	NONE	NONE	1B.1	NONE	Chaparral, coastal scrub, desert dunes; sandy. 75-1600 meters.	**ABSENT**
Orobanchaceae	**Broom-rape Family**							
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	May-Oct.	FE	SE	1B.2	NONE	Coastal salt marsh, coastal dunes; limited to the higher zones of the salt marsh habitat 0-30 meters.	**NONE**
Papaveraceae	**Poppy Family**							
Romneya coulteri	Coulter's matilija poppy	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Dry washes and canyons in sage scrub and chaparral. 20-1200 meters.	**NONE**
Polemoniaceae	**Phlox Family**							
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Apr.-Sep.	FE	SE	1B.1	MSHCP	Chaparral, coastal scrub (alluvial fan); sandy or gravelly soils. 91-610 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Navarretia fossalis	spreading navarretia	Apr.-Jun.	FT	NONE	1B.1	MSHCP(b)	Coastal sage scrub, wetland-riparian; occurs almost always under natural conditions in wetlands. 30-655 meters.	**NONE**
Polygonaceae	**Buckwheat Family**							
Chorizanthe leptotheca	Peninsular spineflower	May-Aug.	NONE	NONE	4.2	MSHCP(e)	Chaparral, coastal scrub, lower montane coniferous forest; granitic soils and alluvial fans. 300-1900 meters.	**NONE**
Chorizanthe parryi var. *parryi*	Parry's spineflower	Apr.-Jun.	NONE	NONE	1B.1	MSHCP(e)	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; sandy or rocky, openings. 275-1220 meters.	**ABSENT** However, there is a potential for this species to occur within the off-site manufactured slope area east of the project boundary.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Apr.-Jul.	NONE	NONE	1B.2	MSHCP	Chaparral, coastal scrub, meadow and seep, valley and foothill grassland, vernal pools; ultramafic, often clay. 30-1530 meters.	**ABSENT**
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Apr.-June	NONE	NONE	1B.2	NONE	Coastal scrub(alluvial fans), Mojavean desert scrub, pinyon and juniper woodland; sandy or gravelly soils. 300-1200 meters.	**ABSENT** However, there is a potential for this species to occur within the off-site manufactured slope area east of the project boundary.
Dodecahema leptoceras	slender-horned spineflower	Apr.-Jun.	FE	SE	1B.1	MSHCP(b)	Chaparral, cismontane woodland, coastal scrub (alluvial fan); sandy. 200-760 meters.	**NONE**
Ranunculaceae	**Buttercup Family**							
Myosurus minimus ssp. *apus*	little mousetail	Mar.-Jun.	NONE	NONE	3.1	MSHCP(d)	Associated with vernal pools and inundated grassland habitats.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Rosaceae	**Rose Family**							
Horkelia cuneata var. *puberula*	mesa horkelia	Feb.-Sep.	NONE	NONE	1B.1	NONE	Chaparral (maritime), cismontane woodland, coastal scrub; sandy or gravelly soils. 70-810 meters.	**ABSENT**
Rubiaceae	**Coffee Family**							
Galium californicum ssp. *primum*	Alvin Meadow bedstraw	May-Jul.	NONE	NONE	1B.2	MSHCP(f)	Chaparral, Lower montane coniferous forest/granitic, sandy 1350-1700 meters.	**NONE**
Solanaceae	**Nightshade Family**							
Lycium parishii	Parish's desert-thorn	Mar.-Apr.	NONE	NONE	2B.3	NONE	Coastal scrub, Sonoran desert scrub. 135-1000 meters.	**NONE**
Themidaceae	**Butcher's-Broom Family**							
Brodiaea filifolia	thread-leaved brodiaea	Mar.-Jun.	FT	SE	1B.1	MSHCP(d)	Clay soils in coastal scrub, valley and foothill grassland, cismontane woodland, and vernal pools. 25-1120 meters.	**NONE**
Muilla coronate	crowned muilla	Mar.-Apr.	NONE	NONE	4.2	NONE	Joshua tree woodland, pinyon-juniper woodland, Mojavean desert scrub, chenopod scrub; found in sandy, granitic soils on barren flats and ridges. 670-1960 meters.	**NONE**
ANGIOSPERMS (MONOCOTS)								
Cyperaceae	**Sedge Family**							
Carex comosa	bristly sedge	May-Sep.	NONE	NONE	2B.1	NONE	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland. 0-625 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
Orchidaceae	**Orchid Family**							
Piperia leptopetala	narrow-petaled rein orchid	Mar.-Jul.	NONE	NONE	4.3	NONE	Cismontane woodland, lower and upper montane coniferous forest. 380-2225 meters.	**NONE**
Liliaceae	**Lily Family**							
Allium munzii	Munz's onion	Mar.-May	FE	ST	1B.1	MSHCP(b)	Prefers chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland; mesic, clay. 297-1070 meters.	**NONE**
Calochortus plummerae	Plummer's mariposa lily	May-Jul.	NONE	NONE	4.2	MSHCP(e)	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest; rocky and sandy areas, typically of granitic or alluvial material; typically common after fire. 100-1700 meters.	**NONE**
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Mar.-Jul.	NONE	NONE	4.2	MSHCP(e)	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, openings. 30-1800 meters.	**NONE**
Poaceae	**Grass Family**							
Hordeum intercedens	vernal barley	Mar.-Jun.	NONE	NONE	3.2	MSHCP	Valley and foothill grassland, vernal pools, coastal dunes, coastal scrub, dry saline streambeds, alkaline flats. 5-1000 meters.	**NONE**
Imperata brevifolia	California satintail	Sep.-May	NONE	NONE	2.1	NONE	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub/mesic. 0-1215 meters.	**NONE**
Sphenopholis obtusata	prairie wedge grass	Apr.-Jul.	NONE	NONE	2B.2	NONE	Cismontane woodland, meadows and seeps; mesic sites. 300-2000 meters.	**NONE**

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Scientific Name	Common Name	Flowering Period	Federal	State	CNPS	MSHCP	Preferred Habitat	Potential For Occurrence
FUNGI (ASCOMYCOTA)								
Caliciaceae	**Lichen-forming Fungi**							
Texosporium sancti-jacobi	woven-spored lichen	N/A	NONE	NONE	3	NONE	Chaparral; found in open areas with chamise, buckwheat, club moss, and sometimes on small mammal droppings. 290-660 meters.	**NONE**

Key to Species Listing Status Codes

FE	*Federally Endangered*	SE	*State Listed as Endangered*
FT	*Federally Threatened*	ST	*State Listed as Threatened*
FC	*Federal Candidate*	SCE	*State Candidate for Endangered*
FPE	*Federally Proposed as Endangered*	SCT	*State Candidate for Threatened*
FPT	*Federally Proposed as Threatened*	SFP	*State Fully Protected*
FPD	*Federally Proposed for Delisting*	SSC	*California Species of Special Concern*

MSHCP	*Western Riverside County Multiple Species Habitat Conservation Plan covered species*
MSHCP(a)	*Surveys may be required as part of wetlands mapping per MSHCP Section 6.1.2.*
MSHCP(b)	*Surveys may be required within Narrow Endemic Plant Species survey area per MSHCP Section 6.1.3.*
MSHCP(c)	*Surveys may be required per MSHCP Section 6.3.2.*
MSHCP(d)	*Surveys may be required within Criteria Area per MSHCP Section 6.3.2.*
MSHCP(e)	*These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met per MSHCP Section 9.0 (Table 9-3).*
MSHCP(f)	*These Covered Species will be considered to be 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 per MSHCP Table 9-3.*

Source: PCR Services Corporation, 2015

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Appendix C: Special-Status Wildlife Species

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
INVERTEBRATES						
ANOSTRACA	**Fairy Shrimp**					
Streptocephalus woottoni	Riverside fairy shrimp	FE	NONE	MSHCP(a)	Endemic to western Riverside, Orange and San Diego Counties In areas of tectonic swales and slump basins in grassland and coastal scrub. Inhabit seasonal pools filled by winter/spring rains. Hatch in warm water later in the season.	**NONE** No suitable habitat.
Diptera	**Flies**					
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	FE	NONE	MSHCP	Found in areas of the Delhi Sands formation in southwestern San Bernardino and northwestern Riverside Counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes and sparse vegetation.	**NONE** No suitable habitat. Although the study area is in the species range, Delhi Sands soils were not mapped by NRCS. Additionally, the majority of the site is highly disturbed.
Lepidoptera	**Butterflies and Moths**					
Euphydryas editha quino	quino checkerspot butterfly	FE	NONE	MSHCP	Chaparral and coastal scrub with sunny clearings. Require high densities of host plants, cuhs as *Plantago erecta*, *P. insularis*, and *Orthocarpus purpurescens*.	**NONE** No host species.
FISHES						
Catostomidae	**Suckers**					
Catostomus santaanae	Santa Ana sucker	FT	NONE	MSHCP	Habitat generalists, but prefer sand-rubble-boulder bottoms,	**NONE**

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NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

NONE (F) = Species not expected to forage due to lack of food sources, or the site's location is outside of the species' range.

NOT EXPECTED = Preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys.

POTENTIAL = Preferred habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (N) = Preferred nesting or roosting habitat was considered potentially present based on the literature review and observed habitat in the study area.

POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					cool, clear water, & algae.	No suitable habitat.
Cyprinidae	**Carps and Minnows**					
Gila orcutti	arroyo chub	NONE	SSC	MSHCP	Aquatic and south coast flowing waters; slow water stream sections with mud or sand bottoms; feeds heavily on aquatic vegetation and associated invertebrates.	**NONE** No suitable habitat.
Rhinichthys osculus ssp. *3*	Santa Ana speckled dace	NONE	SSC	NONE	Aquatic and south coast flowing waters. Prefer stony habitat where there are hiding spaces between stones, washed by moderate current.	**NONE** No suitable habitat.
AMPHIBIANS						
Ranidae	**True Frogs**					
Rana muscosa	southern mountain yellow-legged frog	FE, FSS	SSC	MSHCP(d)	Prefers rocky stream courses in the mountains of southern California. Inhabits mid- to upper-elevation, perennial streams, often in locations with bedrock pools. Always encountered within a few feet of water.	**NONE** No suitable habitat.
Scaphiopodidae	**North American Spadefoots**					
Spea hammondii	western spadefoot	NONE	SSC	MSHCP	Prefers burrow sites within relatively open areas in lowland grasslands, chaparral, and pine-oak woodlands, areas of sandy or gravelly soil in alluvial fans, washes, and floodplains.	**NONE** No suitable habitat.

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NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

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POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					Requires temporary pools for reproduction.	
REPTILES						
Anniellidae	**Legless Lizards**					
Anniella pulchra pulchra	silvery legless lizard	NONE	SSC	NONE	Sparse vegetation in beach, chaparral, and pine-oak woodland habitats as well as sycamores, cottonwoods, and oaks growing adjacent to streams. Needs loose soil for burrowing, moisture, warmth, and plant cover. Requires moisture.	**NONE** No suitable habitat.
Colubridae	**Colubrid Snakes**					
Lampropeltis zonata parvirubra	California mountain kingsnake (San Bernardino population)	NONE	SSC	MSHCP(f)	Well-lit canyons with rocky outcrops or rocky talus.	**NONE** No suitable habitat. Although the study area supports two small areas with rock outcrops, the outcrops are interspersed with vegetation and surrounded by unsuitable habitat. The study area also lacks rocky talus and is not within a canyon, which are both habitat features preferred by this species. The only CNDDB occurrence record in the vicinity is from 1997 on near Mill Creek off of SR-38, approximately 14.25 miles to the northeast of the study area.
Thamnophis hammondii	two-striped garter snake	NONE	SSC	NONE	Riparian and freshwater marshes with perennial water.	**NONE** No suitable habitat.

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NONE (N) = Species not expected to nest or roost due to the lack of suitable habitat, or the site's location is outside of the species' range.

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POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
Emydidae	**Box and Water Turtles**					
Emys marmorata	western pond turtle	NONE	SSC	MSHCP	Aquatic environments; artificial flowing waters; marsh and swamp; south coast flowing and standing waters; wetlands. Requires upland habitat up to 0.5 km from water for egg laying and sandy banks or open fields for basking.	**NONE** No suitable habitat.
Phrynosomatidae	**Zebratail, Earless, Horned, Spiny, Fringe-Toed Lizards**					
Phrynosoma blainvillii	coast horned lizard	NONE	SSC	MSHCP	Chaparral; cismontane woodland; coastal bluff scrub; coastal scrub; desert wash; pinyon and juniper woodlands; riparian scrub; riparian woodland; valley and foothill grassland. Requires opens areas for basking, bushes for cover, loose soil for burrowing, and insects for food.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of study area where Riversidean sage scrub and brittlebush scrub occurs. Harvester ants, this species main food source, were also observed (although the food source was not observed in the area supporting suitable habitat). Although suitable habitat and a possible food source exists on the study area, the majority is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
Teiidae	**Whiptail Lizards**					
Aspidoscelis hyperythra	orange-throated whiptail	NONE	SSC	MSHCP	Chaparral; cismontane woodland; coastal scrub. Typically found along washes and other sandy sites. Requires perennial plants that host termites.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of the study area where Riversidean sage scrub and brittlebush scrub occurs. These areas support perennial plants that may host this species preferred food source (termites). Although suitable habitat and a possible food source exists on the study area, the majority is disturbed and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.
Viperidae	**Vipers**					
Crotalus ruber	red diamond rattlesnake	None	SSC	MSHCP	Chaparral, woodland, and arid desert habitats in rocky areas with dense vegetation.	**POTENTIAL [MODERATE]** The majority of potentially suitable habitat resides on the northwestern corner of study area where Riversidean sage scrub and brittlebush scrub occurs. However, these areas support limited vegetation and crevices for cover required by this species and higher quality habitat is present to the northwest (Olive Hill and Reche Canyon) and northeast (the Badlands mountain range) of the

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
						study area. There are numerous CNDDB occurrence records for this species within the vicinity of the study area.
BIRDS						
Accipitridae	**Hawks**					
Aquila chrysaetos	golden eagle	NONE	SFP	MSHCP	Mountains, deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	**NONE (N); POTENTIAL(F, LOW)** There are few trees are present on the site, primarily near the western boundary in the laurel sumac scrub/ ruderal community. However, this species typically prefers to nest on cliffs, which are not present. This species is not expected to nest on the study area since it is highly disturbed, preferred nesting habitat is not present, and no records of nesting occur. There were some small mammal burrows observed in the disturbed areas of the study area, which could potentially provide a food source. However, there is only 1 CNDDB occurrence record within the vicinity. This record was a breeding pair observed in fall 1979, spring 1980, and fall 1980 in San Timoteo Canyon, approximately 6.0 miles to the northeast.
Buteo swainsoni	Swainson's hawk	NONE	ST	MSHCP	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands	**NONE (N); POTENTIAL (F, LOW)** There are a few trees present on the study area, primarily near the

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					with groves or lines of trees. Requires suitable foraging areas adjacent to breading areas such as grasslands that support rodent populations. This species will also hunt for reptiles and occasionally insects.	western boundary in the laurel sumac scrub/ ruderal community. However, these trees are limited and directly adjacent to roads and residential homes, which could create some noise disturbance. Disturbed areas supply open space with some potentially suitable habitat for burrowing animals and insects, and therefore may provide a food source for this species. There are only 2 CNDDB occurrence records of nesting individuals within the vicinity, both from over 100 years ago.
Elanus leucurus	white-tailed kite	NONE	SFP	MSHCP	Cismontane woodland; marsh and swamp; riparian woodland; valley and foothill grassland; wetland. Requires open grasslands, meadows, or marshes for foraging near isolated full-canopied trees for nesting.	**NONE (N); NONE (F)** No suitable habitat.
Haliaeetus leucocephalus	bald eagle	NONE	SE	MSHCP	Lower montane coniferous forest; old growth.	**NONE (N); NONE (F)** No suitable habitat.
Cuculidae	**Cuckoos, Roadrunners, and Anis**					
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FC	SE	MSHCP(a)	Riparian thickets and forests dominated by willows abutting slow-moving watercourses, backwaters, or seeps.	**NONE (N); NONE (F)** No suitable habitat.

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Strigidae	**True Owls**					
Athene cunicularia	burrowing owl	NONE	SSC	MSHCP(c)	Disturbed; low-growing vegetation within coastal prairie, coastal scrub, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley and foothill grassland; bare ground, disturbed.	**NOT EXPECTED** Potentially suitable habitat present. Presence/absence surveys conducted with no BUOW observed.
Asio otus	long-eared owl	NONE	SSC	NONE	Riparian bottomlands with tall willows & cottonwoods; also found in live oak patches along streams. Require adjacent open land with mice and old nests of crows, hawks, or magpies for breeding.	**NONE (N); NONE (F)** No suitable habitat.
Tyrannidae	**Tyrant Flycatchers**					
Empidonax traillii extimus	southwestern willow flycatcher	FE	SE	MSHCP(a)	Wet meadows, riparian woodlands that contain water and low growing willow thickets.	**NONE (N); NONE (F)** No suitable habitat.
LANIIDAE	**Shrikes**					
Lanius ludovicianus	loggerhead shrike	NONE	SSC	MSHCP	Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes; open country with perches for hunting and relatively dense shrubs for nesting.	**POTENTIAL (N, MODERATE); OBSERVED (F)** This species was observed during the third BUOW survey (7/2/2015).
Vireonidae	**Vireos**					
Vireo bellii pusillus	least Bell's vireo	FE	SE	MSHCP(a)	Riparian forest; riparian scrub; riparian woodland.	**NONE (N); NONE (F)** No suitable habitat.

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Troglodytidae	**Wrens**					
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	NONE	SSC	MSHCP	Coastal scrub. Requires tall, mature *Opuntia* or cholla cactus for nesting.	**NONE (N); NONE (F)** No suitable habitat. The cactus observed on-site (*Opuntia littoralis* and *Cylindropuntia californica* var. *parkeri*) are sparsely growing, immature individuals and are not suitable for nesting.
Parulidae	**Wood Warblers**					
Icteria virens	yellow-breasted chat	NONE	SSC	MSHCP	Nests in low, dense riparian willow thickets & other brushy tangles (e.g. blackberry, wild grape) near water. Forages and nests within 10 feet of ground.	**NONE (N); NONE (F)** No suitable habitat.
Setophaga petechia	yellow warbler	NONE	SSC	MSHCP	Riparian woodlands, montane chaparral, open ponderosa pine and mixed coniferous habitat with significant brush.	**NONE (N); NONE (F)** No suitable habitat.
Polioptilidae	**Gnatcatchers**					
Polioptila californica californica	coastal California gnatcatcher	FT	SSC	MSHCP	Coastal bluff scrub; coastal scrub.	**POTENTIAL (LOW, N); OBSERVED (F)** This species was observed on the study area after completing the burrowing owl survey conducted on 5/13/2015. There is potential for this species to nest on the study area based on the presence of suitable RSS habitat; however, the potential is low since the habitat is fragmented and interspersed with unsuitable habitat.

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Icteridae	**Blackbirds**					
Agelaius tricolor	tricolored blackbird	NONE	SSC	MSHCP	Highly colonial species. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**NONE (N); NONE (F)** No suitable habitat.
MAMMALS						
Heteromyidae	**Pocket Mice and Kangaroo Rats**					
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	NONE	SSC	MSHCP	Coastal scrub, chaparral, grasslands, sagebrush; sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**POTENTIAL [MODERATE]** The study area supports suitable coastal scrub and chaparral habitat within the northwestern portion (e.g. brittle bush scrub, Riversidean sage scrub). Additionally, a number of small fossorial mammal burrows were observed on the study area.
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE	NONE	MSHCP	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains.	**NONE** The study area does not support suitable alluvial scrub vegetation.
Dipodomys stephensi	Stephens' kangaroo rat	FE	ST	MSHCP/SKR HCP	Open grasslands or sparse shrub lands. Sandy to sandy loam soils with low clay to gravel content.	**POTENTIAL [MODERATE]** The study area supports potentially suitable shrub habitat within the northwestern portion (e.g. brittle bush scrub and Riversidean sage scrub communities). Additionally, a number of small fossorial

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						mammal burrows were observed on the study area.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	NONE	SSC	MSHCP(c)	Lower elevation grasslands and coastal sage communities. Sparsely vegetated habitat areas in patches of fine sandy soils associated with washes. May not dig burrows, rather using weeds and dead leaves.	**POTENTIAL [MODERATE]** The study area supports potentially suitable habitat within the Riversidean sage scrub in the northwestern corner.
Leporidae	**Hares and Rabbits**					
Lepus californicus bennettii	San Diego black-tailed jackrabbit	NONE	SSC	MSHCP	Arid regions with short grasses; coastal scrub.	**POTENTIAL [MODERATE]** The majority of the study area supports suitable habitat for this species, including the Riversidean sage scrub on the northwestern corner and the ruderal areas (which support some short grasses)
Muridae	**Mice, Rats, and Voles**					
Neotoma lepida intermedia	San Diego desert woodrat	NONE	SSC	MSHCP	Coastal scrub and chaparral. Prefer areas with moderate to dense canopy cover. Frequently found in areas with rock outcrops and cliffs.	**POTENTIAL [MODERATE]** The study area supports potentially suitable habitat within northwestern corner (e.g. Riversidean sage scrub, rock outcrop/Riversidean sage scrub).

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
Onychomys torridus ramona	southern grasshopper mouse	NONE	SSC	NONE	Low, open, and semi-open coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, chenopod scrub, and annual grasslands with scattered shrubs; food source is arthropods, especially scorpions and grasshoppers.	**POTENTIAL [LOW]** The study area supports potentially suitable shrub habitat within the northwestern portion (e.g. brittle bush scrub and Riversidean sage scrub). Additionally, a number of small fossorial mammal burrows were observed on the study area. The nearest CNDDB occurrence record of this species was recorded in 1938 approximately 4.3 miles to the southeast of the study area within the Badlands.
Mustelidae	**Weasels, Badgers, and Otters**					
Taxidea taxus	American badger	NONE	SSC	NONE	Open shrub, forest, and herbaceous habitats, with friable soils to dig burrows. Requires rodent populations for food source.	**POTENTIAL [LOW]** Shrub habitat is present on the study area within the Riversidean sage scrub community on the northwestern corner of the study area. A few mammal burrows were observed, suggesting the presence of small fossorial mammals that could provide a possible food source. However, the majority of the site is surrounded by development and a large portion of suitable habitat is disturbed. Nearest CNDDB occurrence record is from 1908 roughly 6.5 miles to the northwest of the study area.
Molossidae	**Free-Tailed Bats**					
Eumops perotis californicus	western mastiff bat	NONE	SSC	NONE	Chaparral; cismontane woodland; coastal scrub; valley	**NONE [N]; POTENTIAL [F, LOW]**

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					and foothill grassland. Roosts in crevices in cliff faces, high buildings, trees, and tunnels. Feed on insects.	No suitable roosting habitat exists on the study area. Bats in this family are known to be strong fliers and can fly long distances to forage. There is a probability that individuals may travel from roosts to forage on insects on the study area, but this is considered low based on the disturbance present on the study area and presence of surrounding development. The nearest CNDDB occurrence record is from1990 approximately 3.0 miles to the southwest of the study area.
Nyctinomops femorosaccus	pocketed free-tailed bat	NONE	SSC	NONE	Joshua tree woodland; pinyon and juniper woodland; desert scrub, palm oasis, desert wash, and desert riparian; Sonoran desert scrub. Typically roost in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying, over bodies of water or arid desert habitats to capture prey.	**POTENTIAL [N, VERY LOW]; NONE [F]** Rock outcrops are present on the study area, which may provide some potentially suitable habitat for roosting. However, this potential was considered very low since this species typically prefers steeper cliffs for roosting habitat. Although little is known regarding home range for this species, the potential for roosting is also unlikely since the study area does not support adjacent foraging habitat.[1] There are only 2 CNDDB occurrence records in the vicinity. The nearest record is from 1985 approximately 6.5 miles to the

1 *CDFW. 2000.* California Wildlife Habitat Relationships System: Pocketed Free-tailed Bat. *State of California, The Resources Agency. May 2000.*

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
						southwest of the study area near March Air Force Base.
Phyllostomidae	**Leaf-Nosed Bats**					
Leptonycteris yerbabuenae	lesser long-nosed bat	FE	NONE	NONE	Found in dry areas, such as desert grasslands and shrublands. Require caves or mines for day roosting and may additionally use rock crevices, trees & shrubs, and abandoned buildings for night roosting. Feed on cactus or agave fruit, nectar, and pollen (frugivorous). There are no records of breeding individuals in California, and occurrence records may only be vagrants.	**POTENTIAL [N, VERY LOW]; POTENTIAL [F, VERY LOW]** Some potentially suitable habitat is present on the study area. Potential night roosts include a limited number of trees and rock crevices on the northwestern corner of the project and scattered cactus may provide feeding opportunities. This species can travel long distances between day roosting and foraging sites. However, the potential was considered low since this species is not typically found in California. Records in California are typically vagrant migrants. There is only 1 CNDDB occurrence record within the vicinity from 1993, approximately 9.5 miles to the northeast in a residential neighborhood of Yucaipa.
Vespertilionidae	**Evening Bats**					
Antrozous pallidus	pallid bat	NONE	SSC	NONE	Chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, and valley and foothill grassland. Prefers rocky outcrops, cliffs, and crevices with access to open	**POTENTIAL [N, VERY LOW]; POTENTIAL [F, VERY LOW]** Some potentially suitable habitat is present on the study area. Potential roosting habitat includes the rock outcrops and Riversidean sage scrub on the northwestern corner of the study area and the

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Scientific Name	Common Name	Federal	State	MSHCP	Preferred Habitat	Potential For Occurrence
					habitats for foraging. Very sensitive to disturbance of roosting sites.	open ruderal areas may provide feeding opportunities. However, the potential was considered very low because of evidence of disturbance on the study area and the presence of surrounding development to the south, northeast, and west; this species is highly sensitive to disturbance. Additionally, this species has not been recorded on CNDDB within the vicinity since 1929.
Lasiurus xanthinus	western yellow bat	NONE	SSC	NONE	Desert wash. Known to occur in palm oases.	**NONE [N]; NONE [F]** No suitable habitat.

Key to Species Listing Status Codes

FE	*Federally Endangered*	SE	*State Listed as Endangered*
FT	*Federally Threatened*	ST	*State Listed as Threatened*
FC	*Federal Candidate*	SCE	*State Candidate for Endangered*
FPE	*Federally Proposed as Endangered*	SCT	*State Candidate for Threatened*
FPT	*Federally Proposed as Threatened*	SFP	*State Fully Protected*
FPD	*Federally Proposed for Delisting*	SSC	*California Species of Special Concern*

MSHCP	*Western Riverside County Multiple Species Habitat Conservation Plan covered species*
MSHCP(a)	*Surveys may be required as part of wetlands mapping per MSHCP Section 6.1.2.*
MSHCP(b)	*Surveys may be required within Narrow Endemic Plant Species survey area per MSHCP Section 6.1.3.*
MSHCP(c)	*Surveys may be required per MSHCP Section 6.3.2.*
MSHCP(d)	*Surveys may be required within Criteria Area per MSHCP Section 6.3.2.*
MSHCP(e)	*These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met per MSHCP Section 9.0 (Table 9-3).*
MSHCP(f)	*These Covered Species will be considered to be 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 per MSHCP Table 9-3.*

Source: PCR Services Corporation, 2015

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POTENTIAL (F) = Preferred foraging habitat was considered potentially present based on the literature review and observed habitat in the study area.

OBSERVED = Species was observed during surveys conducted on the site.

Appendix D

2015 Burrowing Owl Focused Survey Report

August 3, 2015

Mr. Joseph Rivani
GLOBAL INVESTMENT & DEVELOPMENT
3470 Wilshire Boulevard, Suite 1020
Los Angeles, CA 90010

Re: RESULTS OF FOCUSED BURROWING OWL SURVEYS FOR THE IRONWOOD PROJECT, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Dear Mr. Rivani:

This report summarizes the methodology and findings of focused burrowing owl (*Athene cunicularia*) (BUOW) surveys conducted by **PCR Services Corporation (PCR)** for the approximately 83-acre property located directly northeast of Ironwood Avenue and Nason Street (APN 473-160-004) ("project site") located in the City of Moreno Valley, Riverside County, California. The surveys encompassed the project site and a 500-foot survey buffer surrounding the perimeter of the project site where suitable habitat was present. The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[1]

PROJECT SITE DESCRIPTION

The approximately 83-acre project site is generally situated east of Interstate 10 (I-10) and north of State Route 60 (SR 60), as shown in **Figure 1**, *Regional Map*. Specifically, the project site is located northwest of the intersection of Ironwood Avenue and Nason Street. The project site is depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle map, Section 34, T. 2 S., R. 3 W., as shown in **Figure 2**, *Vicinity Map*. The topography of the project site is generally flat with gently rolling hills throughout and steep rocky hillsides along the northwestern portion of the project site. Elevations on the project site range from approximately 1,975 feet above mean sea level (MSL) along the northwestern boundary of the project site, to approximately 1,830 feet above MSL along the southern boundary of the project site. Surrounding land uses include residential development to the south, northeast, and west and undeveloped land to the north and southeast.

[1] *County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.

PLANT COMMUNITIES

The project site consists primarily of large ruderal areas. Plant communities found on the project site include brittlebush scrub, Riversidean sage scrub, rock outcrop/Riversidean sage scrub, brittlebush scrub/ruderal, laurel sumac scrub/ruderal, ruderal/Riversidean sage scrub, river wash, ruderal, disturbed, and developed. A brief summary of each plant community within the project site in which surveys were conducted is discussed below.

Brittlebush Scrub/Ruderal

Brittlebush scrub is a drought tolerant subtype of Riversidean Sage Scrub in which the dominate plant is brittlebush (*Encelia farinosa*). Additional native species within the brittlebush scrub community include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and chia (*Salvia columbariae*). Ruderal vegetation is also found within this community. Brittlebush scrub/ruderal areas occupy 0.29 acre throughout the project site.

River Wash

River wash consists of prevailingly course-textured but variable material, ranging from sand to gravel. Sparse vegetation within the river wash includes giant reed (*Arundo donax*), telegraph weed (*Heterotheca grandiflora*), doveweed, and Russian thistle (*Salsola tragus*). River wash occupies 0.03 acre throughout the project site.

Ruderal/Riversidean Sage Scrub

Ruderal/Riversidean sage scrub within the project site is heavily disturbed and is dominated by ruderal vegetation. Non-native species observed within this community include shortpod mustard (*Hirschfeldia incana*), foxtail chess (*Bromus madritensis*), and red-stemmed filaree (*Erodium cicutarium*). Native species found within this community include brittlebush (*Encelia farinosa*), California buckwheat, California sagebrush, common sunflower (*Helianthus annuus*), deerweed (*Acmispon glaber*), and pinebush (*Ericameria pinifolia*). Ruderal/Riversidean sage scrub occupies 1.31 acres throughout the project site.

Ruderal

Ruderal vegetation is found in areas heavily disturbed by human activities, such as roadsides, graded fields, and manufactured slopes. Within the project site, non-native species observed within this community include shortpod mustard, foxtail chess, red-stemmed filaree, ripgut brome (*Bromus diandrus*), and native species such as doveweed (*Croton setigerus*), common fiddleneck (*Amsinckia*

intermedia), and cudweed aster (*Corethrogyne filaginifolia*). Ruderal areas occupy 39.08 acres throughout the project site.

Disturbed

Disturbed areas consist of areas heavily disturbed by human activities, including dirt roads with little to no vegetation. Disturbed areas occupy 31.23 acres throughout the project site.

Developed

Developed areas consist of man-made structures such as homes and buildings, and these areas comprise 1.64 acres throughout the project site.

METHODOLOGY

Step I - Habitat Assessment

The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2] During the Step I Habitat Assessment, suitable habitat was identified on-site during the field survey, including disturbed, low-growing vegetation; bare ground; and small fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

Step II surveys were conducted within the project site plus an approximately 500-foot survey buffer around the project site perimeter. Surveys focused on the detection of small fossorial mammal burrows potentially suitable for BUOW, BUOW burrows, individual BUOW, and any diagnostic sign of their occurrence (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Off-site areas within the 500-foot survey buffer were surveyed by foot where accessible, or with the use of binoculars in areas which were inaccessible.

Surveys were conducted on May 13, June 3, July 2, and July 27, 2015 by PCR biologists Ezekiel Cooley, Amy Lee, and Lauren Singleton. Surveys consisted of four site visits, on four separate days, and were conducted between one hour prior to and two hours after sunrise during suitable weather conditions. Transects were utilized in all accessible areas, spaced no more than 100

[2] *County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.

feet apart, to allow for 100 percent visibility (**Figure 3**, *Transect Map*, attached). In addition, observations were made with the use of binoculars. Weather conditions consisted of hazy to cloudy skies with winds between 0 and 5 miles per house (mph) and air temperatures ranging from 52° to 76° Fahrenheit. Survey data is presented in **Table 1**, *Survey Data*, below.

Table 1

Survey Data

Date	Time	Wind (mph) (start/end)	Temperature (F) (start-end)	Weather (start-end)	Results	Surveyor
05/13/15	0615 – 0820	1-2/2-5	52° – 61°	70% Cloud Cover – 60% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
06/03/15	0600 – 0800	1-3/0-1	55° – 57°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
07/02/15	0545 – 0730	0-1/0-1	72° – 76°	60% Cloud Cover – 80% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton
07/27/15	0600 – 0730	0-1/0-1	62°– 66°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Cooley, Lee, Singleton

Source: PCR Services Corporation, 2015.

RESULTS

The project site is within the Burrowing Owl Survey Area for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The following results present the findings of the Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls.

Step I - Habitat Assessment

Results of the Step I, Habitat Assessment concluded that the project site and 500-foot survey buffer exhibited suitable BUOW habitat consisting of disturbed, low-growing vegetation; bare ground; and fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

The Step II surveys did not identify BUOW burrows, BUOW sign or BUOW within the project site or within the 500-foot survey buffer. A complete list of all avian species observed within the project site is included in **Appendix A**, *Avian Compendium*, attached.

RECOMMENDATIONS

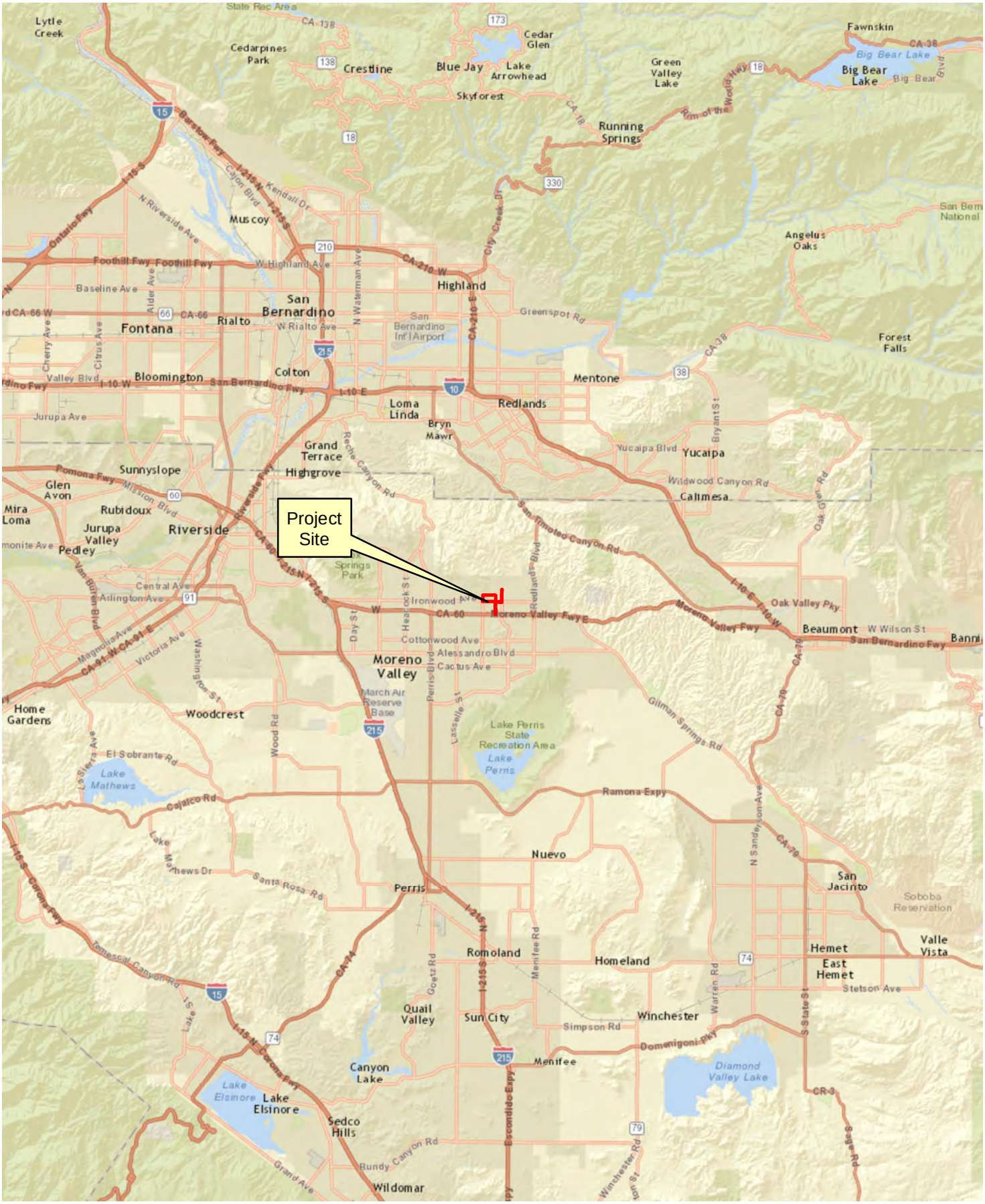
As required by the MSHCP, a pre-construction survey must be conducted 30 days prior to ground disturbance for project sites whether or not BUOW are found during the focused surveys to avoid the direct take of BUOW.

Should you have any questions concerning the methodology or findings in this report, please contact Ezekiel Cooley (E.Cooley@pcrnet.com) at (949) 753-7001.

Sincerely,
PCR SERVICES CORPORATION

Ezekiel Cooley	Amy Lee	Lauren Singleton
Senior Biologist	Biologist	Biologist

Attachments:
Figure 1: Regional Map
Figure 2: Vicinity Map
Figure 3: Transect Map
Appendix A: Avian Compendium



0 5 10 Miles

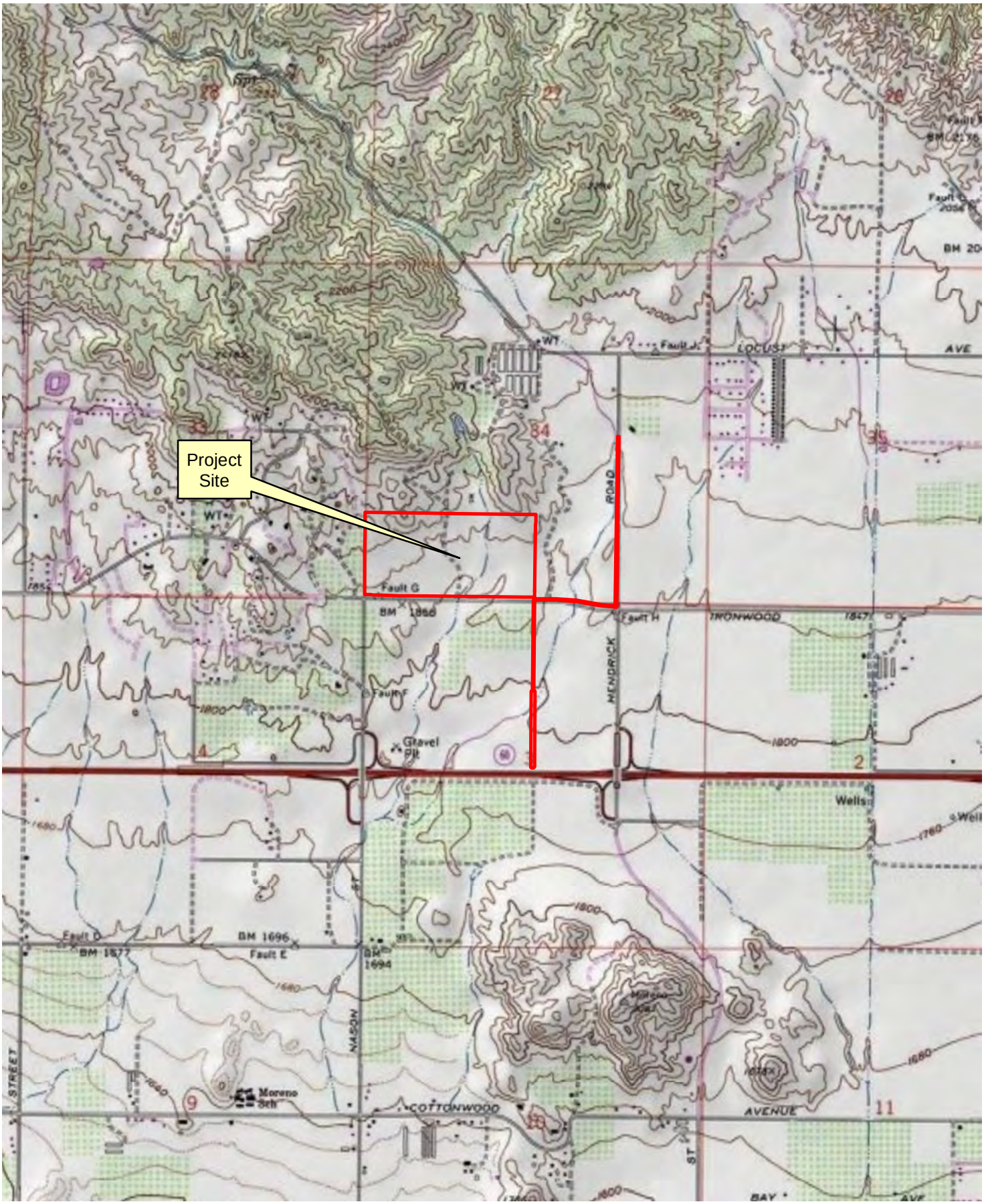
Regional Map

Ironwood Residential Project

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

1



N

0 2,000 4,000 Feet

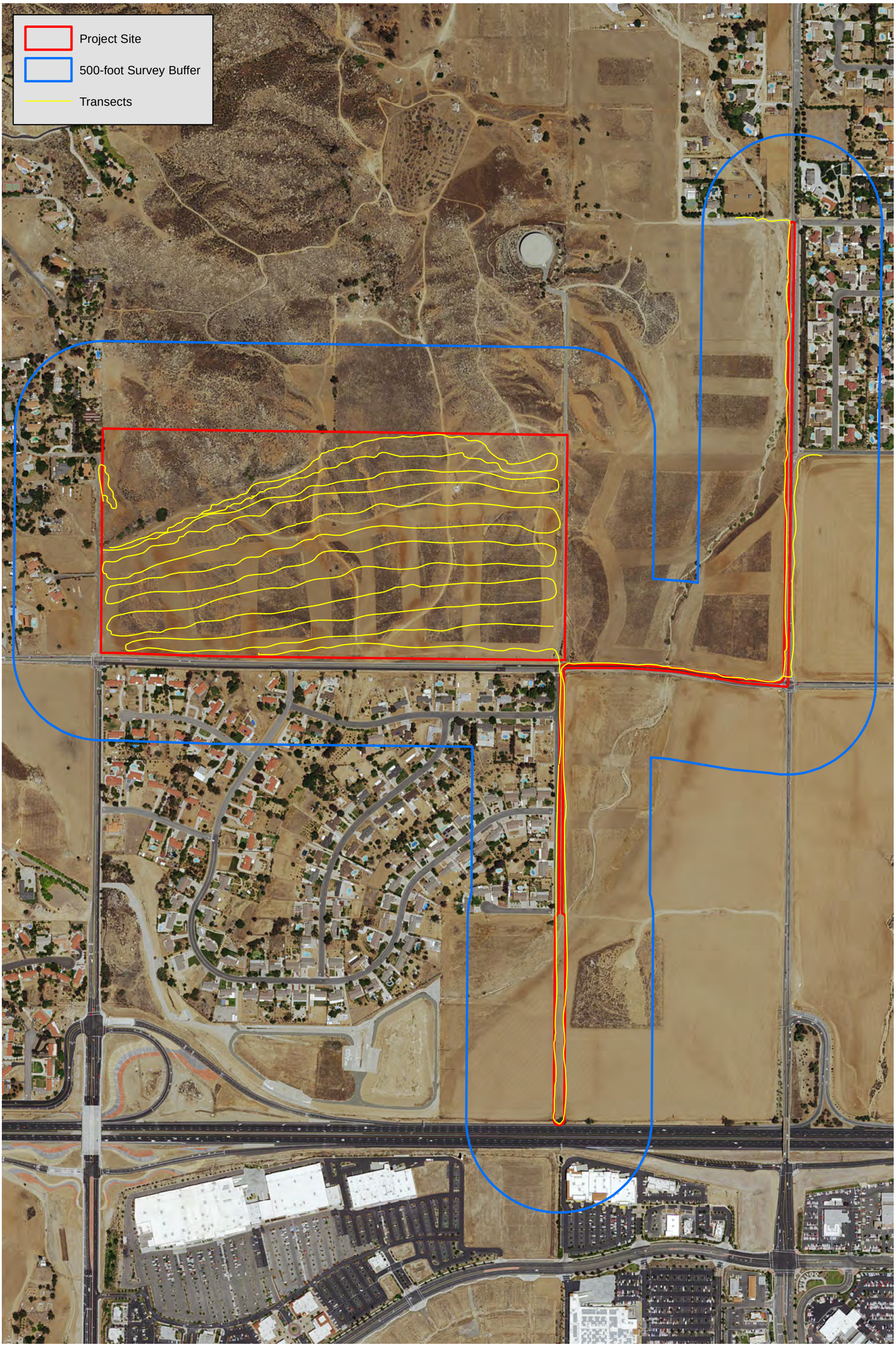
Vicinity Map

Ironwood Residential Project

Source: USGS Topographic Series (Sunnymead, CA); PCR Services Corporation, 2015.

FIGURE

2



PCR

N

0 500 1,000 Feet

Transect Map

Ironwood Residential Project

Source: Microsoft, 2010 (Aerial); PCR Services Corporation, 2015.

FIGURE

3

Appendix A: Avian Compendium

Scientific Name	Common Name
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Accipitridae	**Hawks**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Falconidae	**Falcons**
Falco sparverius	American kestrel
Charadriidae	**Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons and Doves**
* *Columba livia*	rock pigeon
Zenaida macroura	mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	white-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	black-chinned hummingbird
Calypte anna	Anna's hummingbird
Picidae	**Woodpeckers**
Picoides nuttallii	Nuttall's woodpecker
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Laniidae	**Shrikes**
Lanius ludovicianus	loggerhead shrike
Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Alaudidae	**Larks**
Eremophila alpestris	horned lark
Hirundinidae	**Swallows**
Petrochelidon pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit

* *Non-native species*

SCIENTIFIC NAME	COMMON NAME
Polioptilidae	**Gnatcatchers**
Polioptila californica californica	coastal California gnatcatcher
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Emberizidae	**Emberizine Sparrows and Allies**
Melozone crissalis	California towhee
Icteridae	**Blackbirds**
Agelaius phoeniceus	red-winged blackbird
Fringillidae	**Finches**
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	house sparrow

* *Non-native species*

Appendix E

2016 Burrowing Owl Focused Survey Report

ESA PCR

2121 Alton Parkway
Suite 100
Irvine, CA 92606
949.753.7001 phone
949.753.7002 fax

www.pcrnet.com

July 13, 2016

Mr. Joseph Rivani
Global Investment & Development
3470 Wilshire Boulevard, Suite 1020
Los Angeles, CA 90010

Subject: Results of Focused Burrowing Owl Surveys for the Alternative Off-site Waterline Area for the Ironwood Village Project, City of Moreno Valley, Riverside County, California

Dear Mr. Rivani:

This report summarizes the methodology and findings of focused burrowing owl (*Athene cunicularia*) (BUOW) surveys conducted by **ESA PCR** for the two proposed alternative off-site waterline areas associated with the approximately 78.48-acre Ironwood Village Project (APN 473-160-004) located directly northeast of Ironwood Avenue and Nason Street, City of Moreno Valley, Riverside County, California.[1] The surveys encompassed the two alternative off-site waterline areas (survey area) and a 500-foot survey buffer surrounding the survey area (survey buffer). The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2]

Survey Area Description

The survey area is generally situated south of Interstate 10 (I-10) and north of State Route 60 (SR 60), as shown in **Figure 1**, *Regional Map*. Specifically, the survey area includes a waterline alignment that runs north-south, immediately north of the intersection of Ironwood Avenue and Oliver Street along the Eastern Municipal Water District access road, and another which runs east-west, west of the intersection of Moreno Beach Drive and Juniper Avenue. The survey area and survey buffer are depicted on the U.S. Geological Survey (USGS) 7.5' Sunnymead topographic quadrangle map, Section 34, T. 2 S., R. 3 W., as shown in **Figure 2**, *Vicinity Map*. The topography of the survey area and survey buffer is generally flat with the expectation of fairly steep east-facing slope on the western portion. Elevations in the survey area are approximately 1,858 feet above mean sea level (MSL) along the midpoint of the east-west waterline, to approximately 1,945 feet above MSL at the northern terminus of north-south waterline. Surrounding land uses include residential development to the northeast and east, and undeveloped land to the northwest, west, and south.

Plant Communities

The survey area and survey buffer consists primarily of ruderal and disturbed habitat. Ruderal habitat is dominated by non-native species including mediterranean grass (*Schismus barbatus*), Russian thistle (*Salsola tragus*), and ripgut brome (*Bromus diandrus*). Disturbed areas consist of areas heavily disturbed by human activities, including dirt roads with little to no vegetation.

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1 Step II BUOW surveys were conducted in all suitable habitat for the Ironwood Village project during the 2015 breeding season.
2 County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area.

Methodology

Step I - Habitat Assessment

The surveys were conducted in accordance with the County of Riverside's 2006 *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*.[2] During the Step I Habitat Assessment, suitable habitat was identified on-site during the field survey, including disturbed, low-growing vegetation; bare ground; and small fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

Step II surveys were conducted within the survey area plus an approximately 500-foot survey buffer. Surveys focused on the detection of small fossorial mammal burrows potentially suitable for BUOW, BUOW burrows, individual BUOW, and any diagnostic sign of their occurrence (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance). Off-site areas within the 500-foot survey buffer were surveyed by foot where accessible, or with the use of binoculars in areas which were inaccessible.

Surveys were conducted on April 28, May 23, June 9, and July 5, 2016 by ESA PCR biologists Amy Lee and Lauren Singleton. Surveys consisted of four site visits, on four separate days, and were conducted between one hour prior to and two hours after sunrise during suitable weather conditions. Transects were utilized in all accessible areas, spaced no more than 100 feet apart, to allow for 100 percent visibility (**Figure 3**, *Survey Area*, attached). In addition, observations were made with the use of binoculars. Weather conditions consisted of 45 to 100 percent cloud cover with winds between 0 and 4 miles per hour (mph) and air temperatures ranging from 48° to 68° Fahrenheit. Survey data is presented in **Table 1**, *Survey Data*, below.

TABLE 1
SURVEY DATA

Date	Time	Wind (mph) (start/end)	Temperature (F) (start-end)	Weather (start-end)	Results	Surveyor
04/28/16	0600 – 0800	2-4/0-1	50° – 49°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Singleton
05/23/16	0550 – 0750	0-1/0-1	48° – 54°	90% Cloud Cover – 75% Cloud Cover	No BUOW or BUOW sign	Lee
06/09/16	0525 – 0715	0-1/0-1	61° – 68°	45% Cloud Cover – 45% Cloud Cover	No BUOW or BUOW sign	Lee
07/05/16	0550 – 0735	0-2/0-2	63°– 63°	100% Cloud Cover – 100% Cloud Cover	No BUOW or BUOW sign	Lee

Source: ESA PCR, 2016.

Results

The survey area is within the Burrowing Owl Survey Area for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The following results present the findings of the Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls.

Step I - Habitat Assessment

Results of the Step I, Habitat Assessment concluded that the survey area and 500-foot survey buffer exhibited suitable BUOW habitat consisting of disturbed, low-growing vegetation; bare ground; and fossorial mammal burrows.

Step II – Locating Burrows and Burrowing Owls

The Step II surveys did not identify BUOW burrows, BUOW sign or BUOW within the survey area or within the 500-foot survey buffer. A complete list of all avian species observed within the survey area and survey buffer is included in **Appendix A**, *Avian Compendium*, attached.

Recommendations

As required by the MSHCP, a pre-construction survey must be conducted 30 days prior to ground disturbance for project sites whether or not BUOW are found during the focused surveys to avoid the direct take of BUOW.

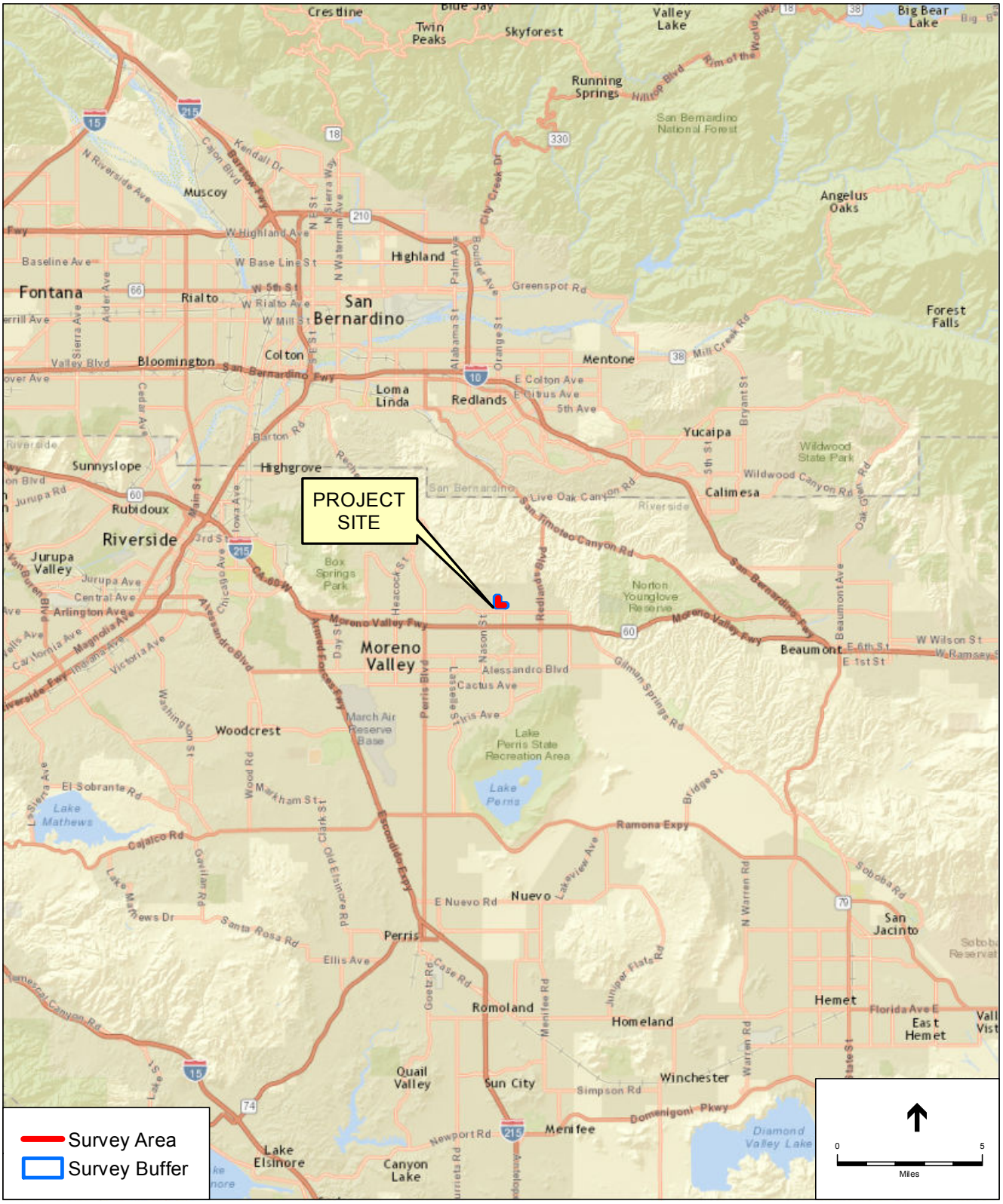
Should you have any questions concerning the methodology or findings in this report, please contact Amy Lee (A.Lee@pcrnet.com) at (949) 753-7001.

Sincerely,

Amy Lee
Biologist

Attachments

Fig 1 - Regional Map
Fig 2 - Vicinity Map
Fig 3 - Survey Area
Appendix A – Avian Compendium



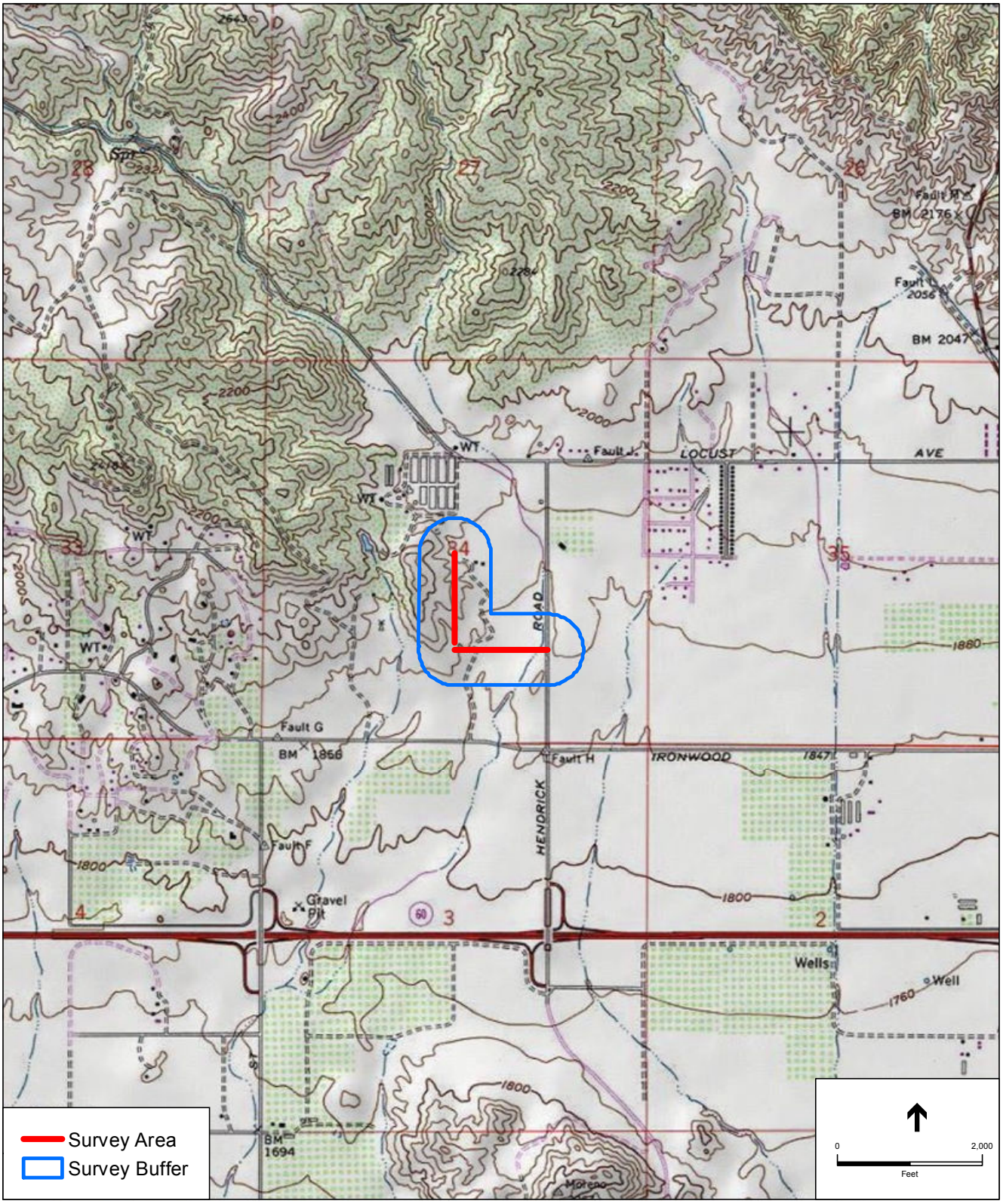
SOURCE: ESRI Street Map, 2009.

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 1

Regional Map

ESA PCR



SOURCE: USGS Topographic Series (Sunnymead, CA).

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 2

Vicinity Map

ESA PCR

SOURCE: Google Maps, 2015 (Aerial).

Ironwood Village Project - Alternative Off-site Waterline Area

Figure 3

Survey Area

ESA PCR

Appendix A - Avian Compendium

BIRDS

Scientific Name	Common Name
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Falconidae	**Falcons**
Falco sparverius	American kestrel
Charadriidae	**Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons and Doves**
Zenaida macroura	mourning dove
Cuculidae	**Cuckoos and Roadrunners**
Geococcyx californianus	greater roadrunner
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Salpinctes obsoletus	rock wren
Mimidae	**Thrashers**
Mimus polyglottos	northern mockingbird
Ptilogonatidae	**Silky-flycatchers**
Phainopepla nitens	phainopepla
Parulidae	**Wood Warblers**
Setophaga coronata	yellow-rumped warbler

* non-native

BIRDS

Scientific Name	Common Name
Emberizidae	**Emberizine Sparrows and Allies**
Melozone crissalis	California towhee
Pipilo maculatus	spotted towhee
Icteridae	**Blackbirds**
Icterus bullockii	Bullock's oriole
Icterus cucullatus	hooded oriole
Sturnella neglecta	western meadowlark
Fringillidae	**Finches**
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	house sparrow

* non-native