HELIX Environmental Planning

Canterwood Project (Tentative Tract Map No. 37439)

General Biological Resources Assessment

September 4, 2018 | BIL-05

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ACRONYMS AND ABBREVIATIONS

AD	Agricultural Ditch
AMSL	Above Mean Sea Level
APN	Assessor Parcel Number
BMPs	Best Management Practices
CASSA	Criteria Area Species Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Riverside
CRPR	California Rare Plant Rank
CWA	Clean Water Act
Dudek	Dudek & Associates
EPD	Environmental Programs Department
EPA	Environmental Protection Agency
ESA	Environmental Science Associates
FESA	Federal Endangered Species Act
HANS	Habitat Acquisition and Negotiation Strategy
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
LDMF	Local Development Mitigation Fee
MBTA	Migratory Bird Treaty Act
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPSSA	Narrow Endemic Plant Species Survey Area
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Canterwood Project
RPW	Relatively Permanent Water Body
RV Park	
RWQCB	Regional Water Quality Control Board

SSC	Species of Special Concern
TNW	Traditional Navigable Waters
TTM	Tentative Tract Map
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey

SUMMARY

The 170-acre Canterwood project site and adjacent 52-acre off-site areas (collectively, the study area) occur within the Western Riverside County Multiples Species Habitat Conservation Plan (MSHCP). The study area is located within the Sun City/Menifee Valley Area Plan and is not located within or adjacent to a MSHCP Criteria Area or a MSHCP Conservation Area. The study area is within the MSHCP Narrow Endemic Plant Species Survey Area 4 and the Burrowing Owl (*Athene cunicularia*) Survey Area. In 2017 and 2018, HELIX Environmental Planning, Inc. conducted a general biological survey, including vegetation mapping and a general habitat assessment; a MSHCP Riparian/Riverine and Vernal Pool habitat assessment; a jurisdictional assessment, including mapping of MSHCP Riparian/Riverine and Vernal Pool Areas; spring and summer rare plant surveys; and a habitat assessment and focused surveys for burrowing owl.

The study area contains four vegetation communities, including agriculture, eucalyptus woodland, disturbed, and developed. No native or sensitive vegetation communities occur on the study area. Rare plant surveys and focused burrowing owl surveys were negative. The study area supports suitable habitat for nesting migratory bird species. Two manmade ditches were observed on the study area, including an agricultural ditch and a roadside ditch. The ditches were excavated in uplands decades ago to support farming activities, which continues to be the dominant land use in the area. The agricultural ditch is located along the northern project boundary and was determined to support 0.14 acre of non-wetland California Department of Fish and Wildlife (CDFW) jurisdiction. Jurisdiction delineated within the agricultural ditch is consistent with recent biological findings for the proposed San Pedro Farms Project (TTM No. 36467) located to the north of the project site, which was approved by the County of Riverside Environmental Programs Department in 2017. A roadside ditch was observed within the off-site study area along Briggs Road. The off-site roadside ditch is a manmade feature historically excavated in uplands that parallels the existing Wilderness Lakes RV Resort's (RV park) southern boundary. Until a few years ago, flows within the ditch were directed into an isolated pond on the property located to south of the RV park. However, the roadside ditch was recently extended westward to a culvert that drains to a series of manmade lakes within The Lakes residential development, which ultimately discharges into Salt Creek approximately 1.9 miles northwest of the study area. As such, the roadside ditch is presumed to support 0.01 acre of non-wetland U.S. Army Corps of Engineers/Regional Water Quality Control Board jurisdictional waters of the U.S. and 0.03 acre of CDFW jurisdiction. The agricultural and roadside ditches do not meet the definition of a MSHCP Riparian/Riverine Area since the ditches do not support habitat dominated by trees, shrubs, persistent emergent vegetation, or emergent mosses or lichens that are dependent upon soil moisture from a nearby fresh water source, and do not accept flows from natural fresh water sources. No wetlands or other special aquatic sites were observed on the study area.

Potential significant impacts were identified for burrowing owl (if present during the 30-day pre-construction survey), CDFW jurisdiction, and nesting bird species. The project is required to comply with regulations of the MSHCP and Habitat Conservation Plan for Stephens' kangaroo rat (*Dipodomys stephensi*). The project proposes to permanently impact 221.64 acres, including 181.52 acres of agriculture, 1.85 acres of eucalyptus woodland, 30.38 acres of disturbed areas, and 7.89 acres of developed areas. In addition, the project would permanently impact 0.14 acre of non-wetland CDFW jurisdiction within the agricultural ditch. The project would avoid permanent and temporary impacts to the off-site roadside ditch along Briggs Road. No impacts to MSHCP Riparian/Riverine Areas are

proposed by the project; therefore, preparation of a Determination of a Biologically Equivalent or Superior Preservation and approval by federal and state wildlife agencies is not warranted.

Measures related to the following topics are proposed herein to fully mitigate potential impacts of the project: burrowing owl, CDFW jurisdiction, migratory nesting bird species, compliance with MSHCP landscaping restrictions, and payment of MSHCP and Stephens' kangaroo rat fees. Successful implementation of these measures would mitigate potential impacts to below a level of significance.

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report provides the County of Riverside (County; California Environmental Quality Act [CEQA] lead agency), resource agencies, and the public with current biological data to satisfy review of the proposed Canterwood Project (Tentative Tract Map [TTM] No. 37439; project) located in the eastern portion of Menifee Valley in unincorporated Riverside County, California. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project site and off-site areas (collectively, "study area"), and provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for project review under CEQA by the County and demonstrates project consistency with the Multiples Species Habitat Conservation Plan (MSHCP; Dudek and Associates [Dudek] 2003).

1.2 PROJECT LOCATION

The approximately 170-acre project site comprises two parcels with Assessor Parcel Numbers (APNs) 466-310-002 and -026 located in the eastern portion of Menifee Valley within unincorporated Riverside County, California. The project site is generally located to the east of the City of Menifee and Interstate 215 and to the west of State Route 79 (Figure 1, *Regional Location*). The project site is located in the U.S. Geological Survey (USGS) 7.5-minute Winchester quadrangle maps within Section 8 of Township 6 South and Range 2 West (Figure 2, *USGS Topography*). Specifically, the project site is located north of Craig Avenue, west of Eucalyptus Road, south of Holland Road, and east of Leon Road (Figure 3, *Aerial Vicinity*).

The project also includes off-site areas to accommodate infrastructure for the proposed residential development, which total 52.23 acres. The off-site areas are located within the USGS 7.5-minute Winchester and Romoland quadrangle maps within Section 7 of Township 6 South and Range 2 West, Section 1 of Township 6 South and Range 3 West, and Section 8 of Township 6 South and Range 2 West. The locations of the off-site areas are shown on Figure 3 and are briefly described below:

1. **Sewer Line** – The proposed sewer line alignment follows Holland Drive from Leon Road west to Briggs Road, and then turns north along Briggs Road to Gold Crest Drive. The alignment then turns west at the intersection of Gold Coast Drive and Briggs Road and extends along the northern boundary of Wilderness Lakes RV Resort, ultimately terminating into a proposed sewer lift station located at the intersection of Tres Lago Drive and Southshore Drive.

2. **Drainage Facility** – The proposed earthen drainage facility includes an area that extends from Leon Road at the midpoint between Holland Road and Craig Avenue diagonally to the northwest, ultimately terminating at the corner of Briggs Road and Holland Road. The drainage facility spans across a portion of seven parcels with APNs 466-120-002, -011, -014, -019, and -022 through -023. The drainage facility will be constructed within upland areas that do not currently support jurisdictional drainage features or MSHCP Riparian/Riverine Areas.

3. **Temporary Drainage Channels and Road Improvements** – A total of five temporary drainage channels are proposed along Craig Avenue and Eucalyptus Road. Another temporary drainage

channel is located north of Holland Road. The temporary channels will be constructed within upland areas that do not currently support jurisdictional drainage features or MSHCP Riparian/Riverine Areas. Roadway improvements are also proposed along Holland Road from west of Leon Road and east of Briggs Road. These areas are adjacent to the project site and are included within the project site boundary for the purpose of this report.

1.3 PROJECT DESCRIPTION

The proposed project is a residential community that includes 574 single-family lots and a park with a baseball field, two soccer fields, a basketball court, tot lot, picnic shelter, restroom, and parking. The project also comprises four adjacent off-site areas, including a sewer line, drainage facility, road improvements along Holland Road, and five temporary drainage channels. The off-site areas will support utility and roadway infrastructure, which will provide access and use of the property. The proposed site plan is provided as Figure 4, *Site Plan*.

2.0 METHODS

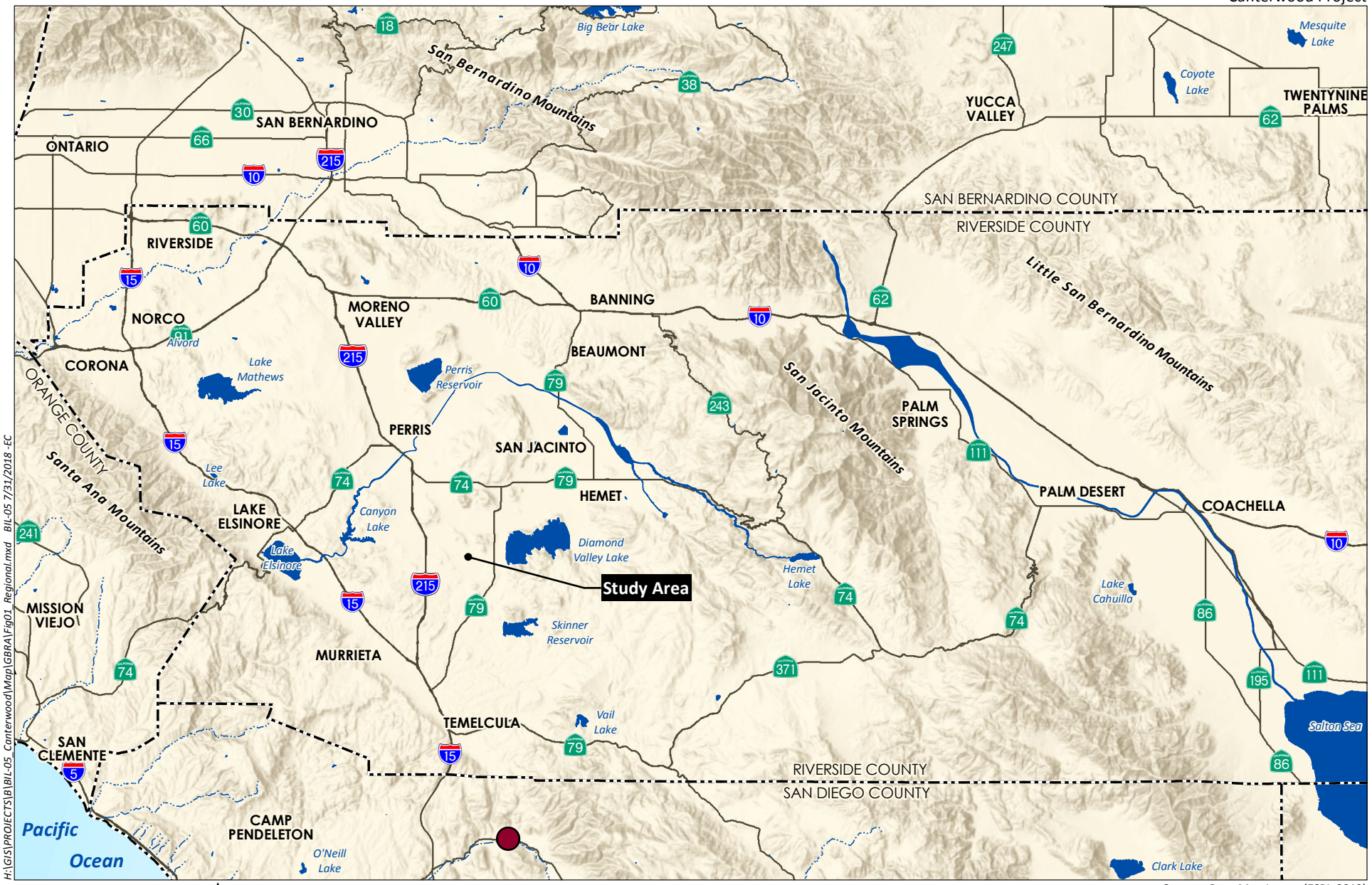
Project evaluation included a review of project plans; a literature review of biological resources occurring on the study area and surrounding vicinity; a general biological survey, including vegetation mapping and a general habitat assessment; a MSHCP Riparian/Riverine and Vernal Pool habitat assessment; a jurisdictional assessment, including mapping of MSHCP Riparian/Riverine and Vernal Pool Areas; spring and summer rare plant surveys; and a habitat assessment and focused surveys for burrowing owl (*Athene cunicularia*). The methods used to evaluate the biological resources present on the study area are discussed in this section.

2.1 NOMENCLATURE

Nomenclature for this report follows Baldwin et al. (2012) for plants and the MSHCP (Dudek 2003) for vegetation community classifications, with additional vegetation community information taken from Oberbauer (2008) and Holland (1986). Animal nomenclature follows Emmel and Emmel (1973) for butterflies, Center for North American Herpetology (Taggart 2014) for reptiles and amphibians, American Ornithologists' Union (2018) for birds, and Baker et al. (2003) for mammals. Rare plant and sensitive animal statuses are from the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (2018) and the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; 2018). Rare plant species' habitats and flowering periods are from the Jepson Manual (Baldwin et al. 2012), MSHCP (Dudek 2003), CNPS (2018), and CNDDB (California Department of Fish and Wildlife [CDFW] 2018). Soil classifications were obtained from the Natural Resources Conservation Service's (NRCS) Web Soil Survey (2018).

2.2 LITERATURE REVIEW

Prior to visiting the study area, HELIX Environmental Planning, Inc. (HELIX) reviewed regional planning documents, Google Earth aerials (2018), Web Soil Survey (Natural Resources Conservation Service [NRCS] 2018), and sensitive species database records, including the Inventory of Rare and Endangered Plants of California (California Native Plant Society [CNPS] 2018) CNDDB (CDFW 2018), U.S. Fish and



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Source: Base Map Layers (ESRI, 2013)

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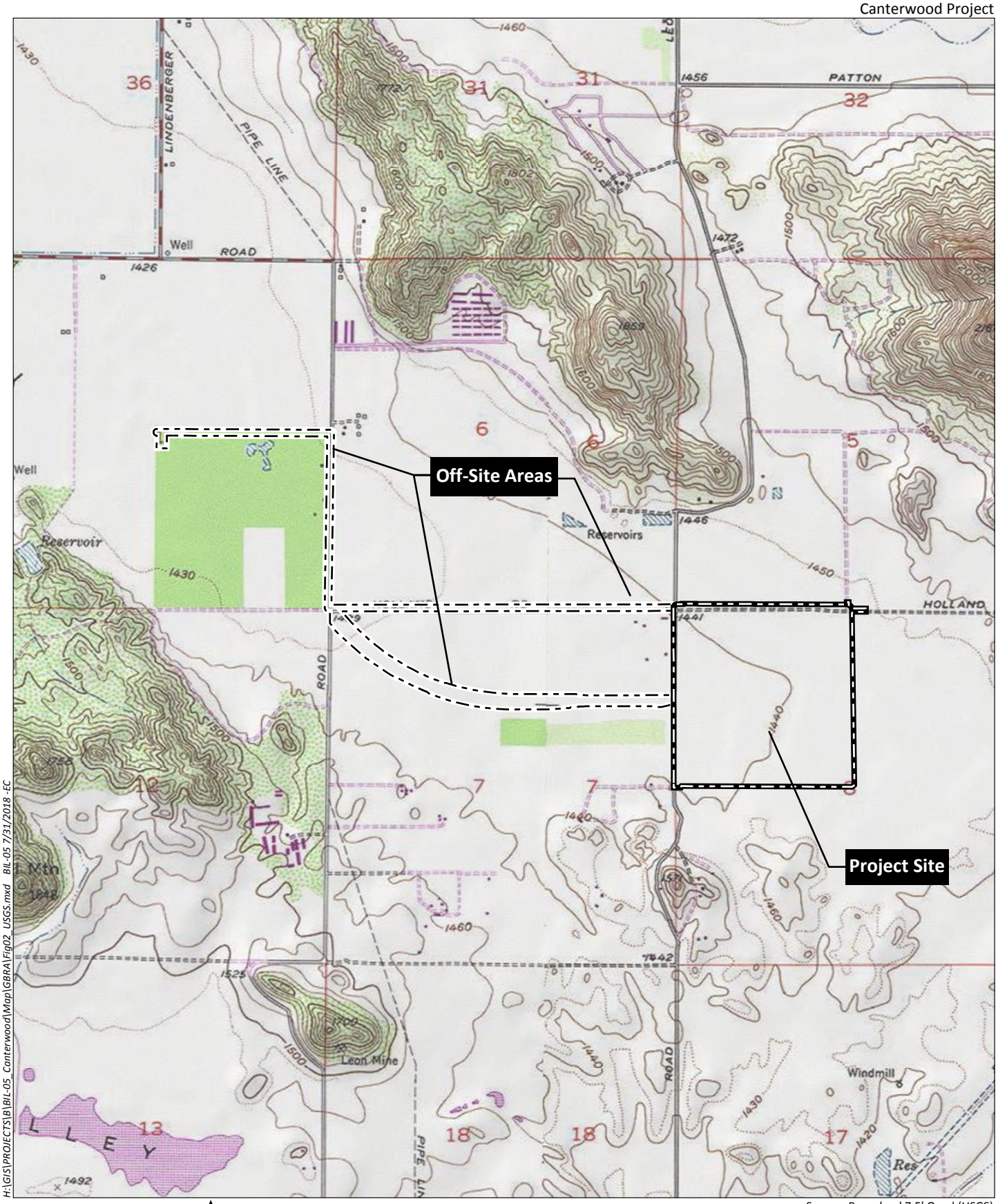
Regional Location

Figure 1



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0 2,000 Feet

Source: Romoland 7.5' Quad (USGS)

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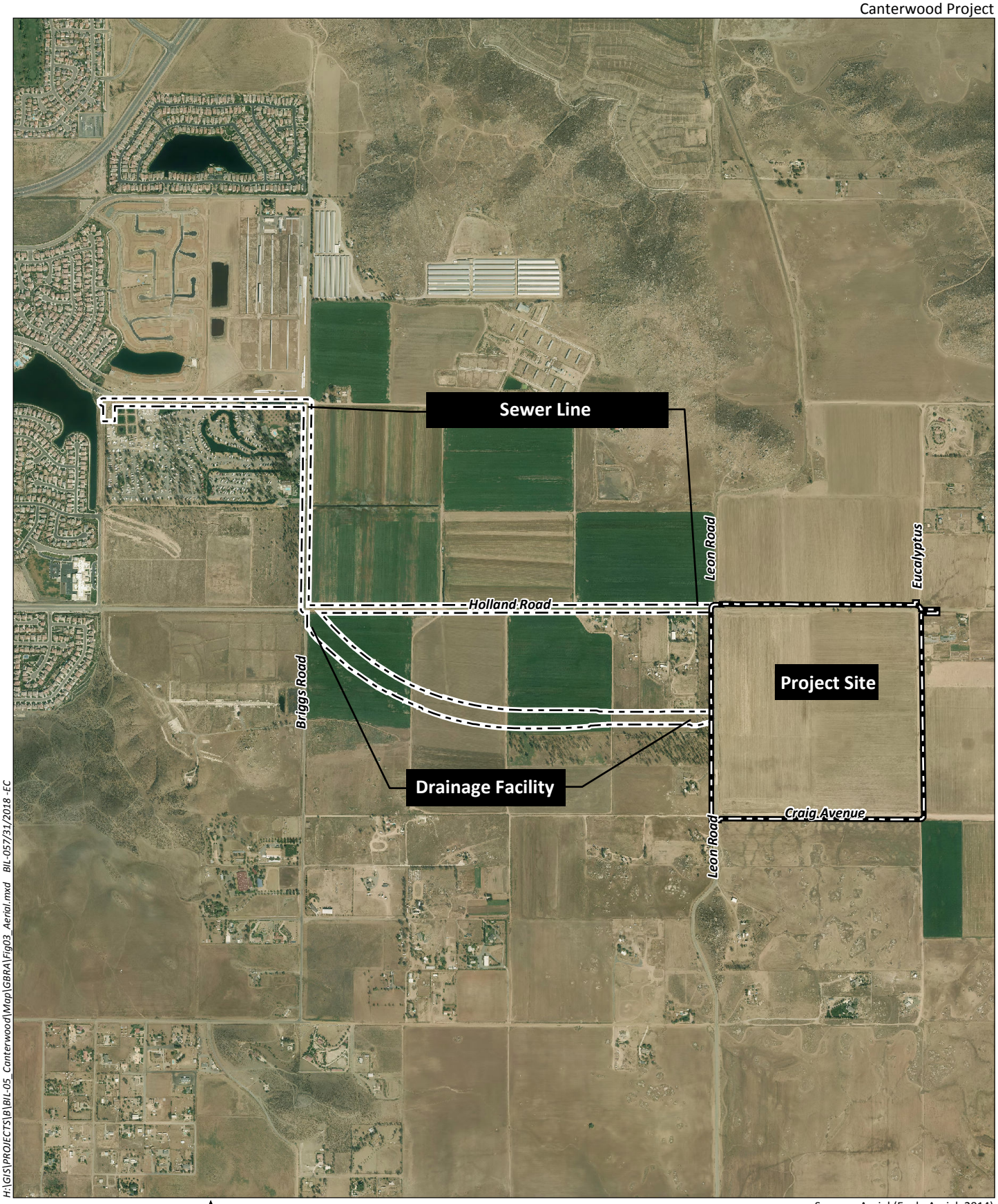
USGS Topography

Figure 2



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0 1,700 Feet

Source: Aerial (Eagle Aerial, 2014)

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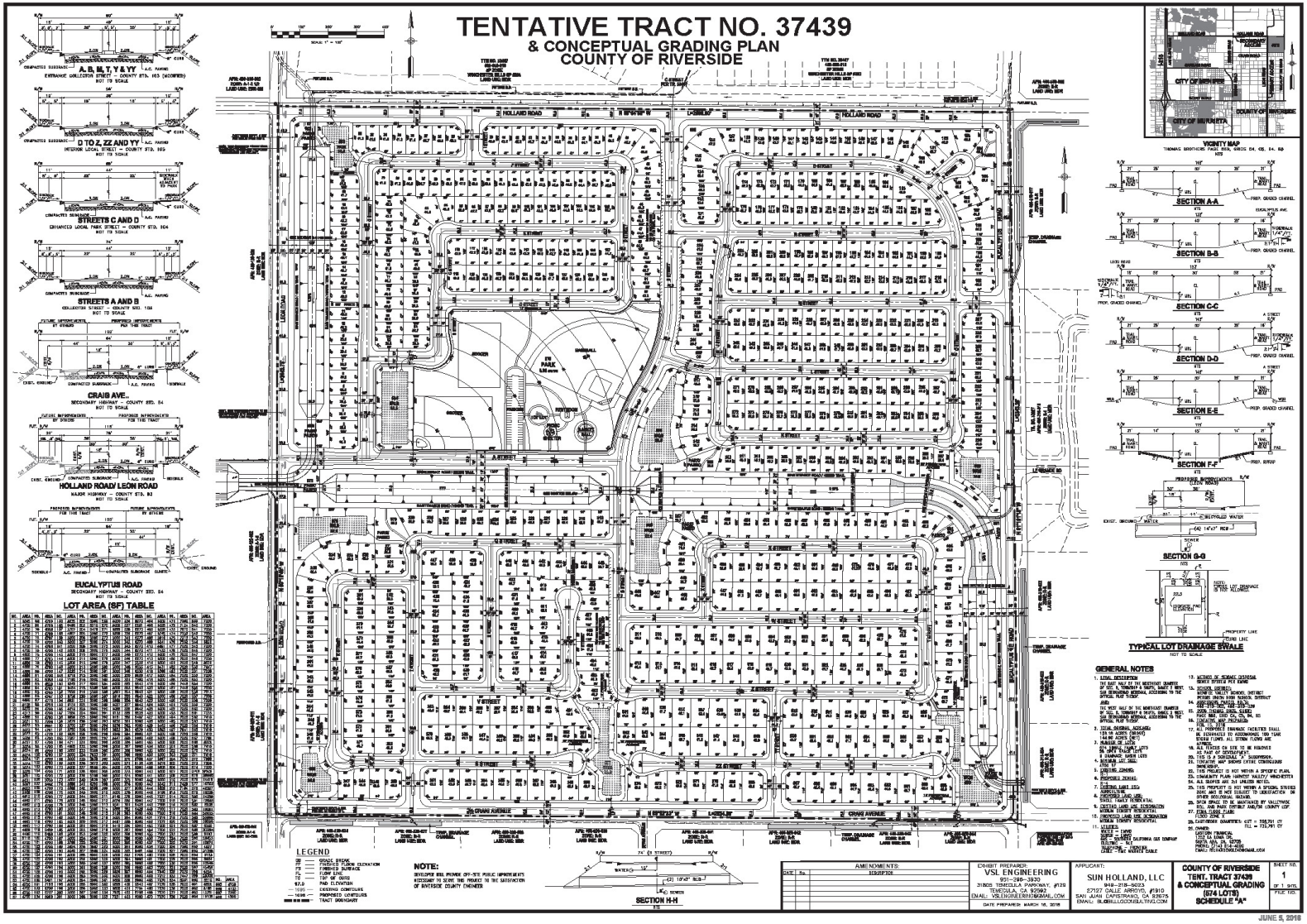
Aerial Vicinity

Figure 3



Source: VSL Engineering, 2018

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Site Plan

Figure 4

Wildlife Service's (USFWS) critical habitat maps (2018a). A twelve-quadrangle database search was conducted on CNDDB and CNPS, which included the following quadrangles: Bachelor Mtn., Hemet, Lake Elsinore, Lakeview, Murrieta, Perris, Romoland, Sage, San Jacinto, Steele Peak, Wildomar, and Winchester. In addition, the MSHCP (Dudek 2003) and the Western Riverside County Regional Conservation Authority's MSHCP Information App (2018) were consulted to ensure project compliance with the MSHCP.

2.3 FIELD SURVEYS

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

2.3.1 General Biological Survey

A general biological survey of the study area was conducted by HELIX Biologist Lauren Singleton on June 28, 2017, in accordance with vegetation community classification described in Section 2.1.3 of the MSHCP (Dudek 2003) and with additional information from Holland (1986) and Oberbauer (2008). Vegetation was mapped on a 675-foot (1 inch = 675 feet) aerial photograph of the site. Vegetation communities and land uses were mapped by HELIX to one-hundredth of an acre (0.10 acre). The entire site was surveyed on foot with the aid of binoculars. Representative photographs of the site were taken, with select photographs included in this report as Appendix C, *Site Photographs*. Plant and animal species observed or otherwise detected were recorded in field notebooks. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs.

2.3.2 Focused Species Surveys

2.3.2.1 Rare Plant Surveys

Rare plants investigated include those that are listed as threatened or endangered by the USFWS or the CDFW; those afforded a California Rare Plant Rank (CRPR) of 1 through 4 by CNPS; and those that require additional surveys pursuant to the MSHCP (Dudek 2003).

HELIX Biologist and Regulatory Specialist Ezekiel Cooley and Ms. Singleton conducted a summer rare plant survey on August 22, 2017, and Mr. Cooley, Ms. Singleton, and HELIX Biologist Daniel Torres conducted a spring rare plant survey on May 14, 2018, in accordance with published agency guidelines (CDFW 2009, CDFW 2000, and USFWS 2000) and during the appropriate flowering period to maximize the detection of those rare plant species with the potential occur on the study area. The study area was walked by foot and suitable habitats were inspected for the presence of rare plant species, with the

exception of the most northern portion of the off-site sewer alignment located to the north of the Wilderness Lakes RV Resort (RV park). This area was excluded during the original surveys due to access constraints. Access to this area was granted in 2018, and Ms. Singleton and Mr. Torres surveyed the area on June 29 and July 24, 2018.

2.3.2.2 Burrowing Owl Surveys

The study area is located within an MSHCP Burrowing Owl Survey Area. In accordance with the County's survey protocol, a Step I-Habitat Assessment for burrowing owl was conducted on the study area and within a 150-meter (approximately 500-foot) buffer zone around the periphery of the study area (survey area; County 2006). Mr. Cooley and Ms. Singleton completed the habitat assessment on June 28, 2017, during which potential suitable habitat for burrowing owl was observed.

After completing the habitat assessment, Step II surveys were conducted within the study area. Step II surveys, which consist of a focused burrow survey (Part A) and four focused burrowing owl surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or burrowing owls. The focused burrow survey was conducted concurrently with the first focused burrowing owl survey. Since suitable burrows were observed within the study area, three additional focused burrowing owl surveys were conducted. The biologists walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologists walked slowly and methodically, closely checking suitable habitat within the survey area for suitable burrows, burrowing owl diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual burrowing owls. Inaccessible areas of the survey area were visually assessed using binoculars.

Due to access restrictions, the most northern portion of the off-site sewer alignment located to the north of the RV park was surveyed separately from the project site and the rest of the off-site areas. Focused burrow and burrowing owl surveys were conducted on the project site, off-site sewer alignment (except northern portion), and off-site drainage facility by Mr. Cooley, Ms. Singleton, and HELIX Biologists Amy Lee and Hannah Lo between June and August 2017. A focused burrow survey and focused burrowing owl surveys were conducted within the northern portion of the off-site sewer alignment by Ms. Singleton and Mr. Torres between July and August 2018.

2.3.3 Jurisdictional Assessment

Prior to beginning fieldwork, aerial photographs (1 inch = 675 feet scale), topographic maps (1 inch = 675 feet scale), USGS quadrangle maps, and National Wetlands Inventory maps (USFWS 2018b) were reviewed to assist in determining the location of potential jurisdictional waters and wetlands in the study area. Mr. Ezekiel Cooley and Principal Regulatory Specialist Amir Morales conducted the jurisdictional assessment field work on June 28 and June 29, 2017, respectively. Data collection was targeted in areas that were deemed to have the potential to support jurisdictional resources, such as the presence of an ordinary high water mark (OHWM) and/or other surface indications of wetland hydrology. Areas determined to support MSHCP Riparian/Riverine Areas were assessed within the study area as well, as described Section 2.3.4 below.

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

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

The U.S. Army Corps of Engineers (USACE) waters of the U.S. (WUS) wetland boundaries or lack thereof were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). Areas were determined to be potential non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank) but either the vegetation or soils criterion was not met. Jurisdictional limits for these areas were measured according to the presence of a discernible OHWM, which is defined in 33 CFR Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; USACE 2008b), which also was considered during the jurisdictional assessment.

The jurisdictional assessment was conducted in accordance with court decisions (i.e., Rapanos v. United States, Carabell v. United States, and Solid Waste Agency of Northern Cook County v. USACE), as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007); and USACE and U.S. Environmental Protection Agency (EPA; 2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are a relatively permanent water body (RPW), which has year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation is used to determine if the non-RPW is jurisdictional. As an alternative to the significant nexus evaluation process, a preliminary jurisdictional delineation may be submitted to the USACE. The preliminary jurisdictional delineation treats all waters and wetlands on a site as if they are jurisdictional WUS (USACE 2008a).

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

2.3.3.2 California Department of Fish and Wildlife Jurisdiction

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow, if present. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses with surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Jurisdictional limits for CDFW streambeds were defined by the top of bank. Vegetated CDFW habitats were mapped at the limits of jurisdictional vegetation, if present.

2.3.4 Riparian/Riverine and Vernal Pool Habitat Assessment

In accordance with the MSHCP, a Riparian/Riverine and Vernal Pool habitat assessment was conducted by Mr. Cooley and Ms. Singleton on June 28, 2017. This habitat assessment was conducted concurrently with the general biological survey and jurisdictional assessment. The identification of Riparian/Riverine habitats is based on potential for the habitat to support, or are tributary to habitat that support, Riparian/Riverine Covered Species identified in MSHCP Section 6.1.2.

3.0 RESULTS

3.1 ENVIRONMENTAL SETTING

Agriculture dominates the study area and the surrounding area. The project site currently supports dryland farming, which has occurred on the project site since at least the 1930s (Historic Aerials 1938). Although the proposed off-site drainage facility primarily supports agriculture, there is a small patch of eucalyptus woodland in the eastern portion. Disturbed land on the study area comprises existing dirt roads along Craig Avenue, Eucalyptus Avenue, Holland Road, and Briggs Road as well as the area to the north of the RV park. Two developed areas were observed on the study area, which includes the paved portions of Leon Road and Briggs Road. Land uses adjacent to the project site include agriculture to the north, east, and south and rural residential to the east and west. The off-site areas are primarily surrounded by agriculture. A residential development is located to the north and west of the sewer line alignment proposed along Tres Lagos Drive and the RV park is located to the south. The RV park is also located to the west of the sewer alignment proposed along Briggs Road.

3.2 TOPOGRAPHY AND SOILS

Site topography of the study area is flat. Elevations on the study area range from approximately 1,428 feet above mean sea level (AMSL) within the off-site sewer line near the northern boundary of Wilderness Lakes RV Resort to approximately 1,448 feet AMSL along the northern boundary of the project site.

The MSHCP lists eight sensitive soil types as occurring within the MSHCP Plan Area, which include Altamont clay, Auld clay, Bosanko clay, Claypit, Domino clay, Porterville cobbly clay, Traver, and Willows (Dudek 2003). The study area does not support any of these eight sensitive soils types. The project site is mapped primarily as Exeter sandy loam (0 to 2 percent slopes; and 2 to 8 percent slopes), which is a well-drained soil typically associated with alluvial fans. The remainder of the project site supports patches of Domino fine sandy loam (eroded), Domino silt loam (saline-alkali), Greenfield sandy loam (0 to 2 percent slopes), Pachappa fine sandy loam (0-2 percent slopes), Pachappa fine sandy loam (2-8 percent slopes, eroded), and Vista rocky coarse sandy loam (2 to 35 percent slopes, eroded). Domino soil type is a moderately well-drained soil while Greenfield, Pachappa, and Vista soil types are well-drained soils. Domino and Pachappa soils are associated with alluvial fan landforms, Greenfield soil is associated with alluvial fan and terrace landforms, and Vista soil is associated with hills and uplands (NRCS 2018).

The off-site areas support similar soil types as listed above for the project site, including Exeter sandy loam (0 to 2 percent slopes; deep, 0 to 2 percent slopes; and slightly saline-alkali, 0 to 5 percent slopes), Exeter very fine sandy loam (0 to 5 percent slopes), Domino silt loam, Domino silt loam (saline-alkali), Domino fine sandy loam (eroded; and saline-alkali), Greenfield sandy loam (0 to 2 percent slopes), and Pachappa fine sandy loam (0 to 2 percent slopes).

Although the majority of the soils mapped on the study area are typically associated with alluvial fan habitats, the study area does not support natural habitats and has been used for agricultural purposes since at least the 1930s (Historic Aerials 1938).

3.3 VEGETATION COMMUNITIES

A total of four vegetation communities or land uses were mapped on the study area, including agriculture, eucalyptus woodland, disturbed, and developed (Table 1, *Vegetation Communities*; Figure 5, *Vegetation*). The study area is dominated by active agricultural land and supports no native vegetation communities. A brief description of each vegetation community and land uses mapped on the study area is provided below.

Table 1
VEGETATION COMMUNITIES

Vegetation Community	On-Site (acres)	Off-Site (acres)	Total (acres)
Agriculture	149.72	31.80	181.52
Eucalyptus Woodland	0.00	1.85	1.85
Disturbed	16.25	16.04	32.29
Developed	5.35	2.54	7.89
TOTAL	**171.32**	**52.23**	**223.55**

3.3.1 Agriculture

Agriculture is defined broadly as land used primarily for production of food and fiber. On satellite imagery, the chief indications of agricultural activity are distinctive geometric field and road patterns on the landscape and the traces produced by livestock or mechanized equipment. However, pasture and other lands where such equipment is used infrequently may not show as well-defined shapes as other areas. The number of building complexes is smaller and the density of the road and highway network is much lower in agriculture than in urban/developed land.

Agriculture dominates the study area, which totaled 181.52 (149.72 acres on site, 31.80 acres off site). Agriculture was observed within the project site, the off-site drainage facility, and the off-site sewer line adjacent to the roads. The main crops observed were barley (*Hordeum vulgare*) and watermelon (*Citrullus lanatus*). After crops were harvested, some non-native weedy species were observed within the fields, including Bermuda grass (*Cynodon dactylon*), slender oat (*Avena barbata*), and white tumbleweed (*Amaranthus albus*).

3.3.2 Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* spp.), an introduced species that has often been planted purposely for wind blocking, ornamental, and hardwood production purposes. Most

groves are monotypic with the most common species being either the blue gum (*Eucalyptus globulus*) or red gum (*Eucalyptus camaldulensis*). The understory within well-established groves is usually very sparse due to the closed canopy and allelopathic nature of the abundant leaf and bark litter. If sufficient moisture is available, this species becomes naturalized and can reproduce and expand its range. The sparse understory offers only limited wildlife habitat; however, these woodlands provide excellent nesting sites for a variety of raptors. During winter migrations, a large variety of warblers may be found feeding on the insects that are attracted to the eucalyptus flowers.

Eucalyptus woodland was observed within the eastern portion of the off-site drainage channel, which totaled 1.85 acres. Very few plants were observed within the understory, but included non-native, weedy species such as cheeseweed (*Malva parviflora*), London rocket (*Sisymbrium irio*), rancher's fiddleneck (*Amsinckia intermedia*), and red brome (*Bromus madritensis* ssp. *rubens*).

3.3.3 Disturbed

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a number of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Disturbed areas comprise existing dirt roads along Craig Avenue, Eucalyptus Avenue, Holland Road, and Briggs Road. The disturbed areas mapped within the study area totaled 32.29 acres (16.25 acres on site, 16.04 acres off site). These areas are mostly unvegetated, although a few species with high tolerance for disturbance were observed, such as cheeseweed, horseweed (*Erigeron canadensis*), nettle-leaf goosefoot (*Chenopodium murale*), prickly Russian thistle (*Salsola tragus*), short-pod mustard (*Hirschfeldia incana*), and wild lettuce (*Lactuca serriola*).

3.3.4 Developed

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

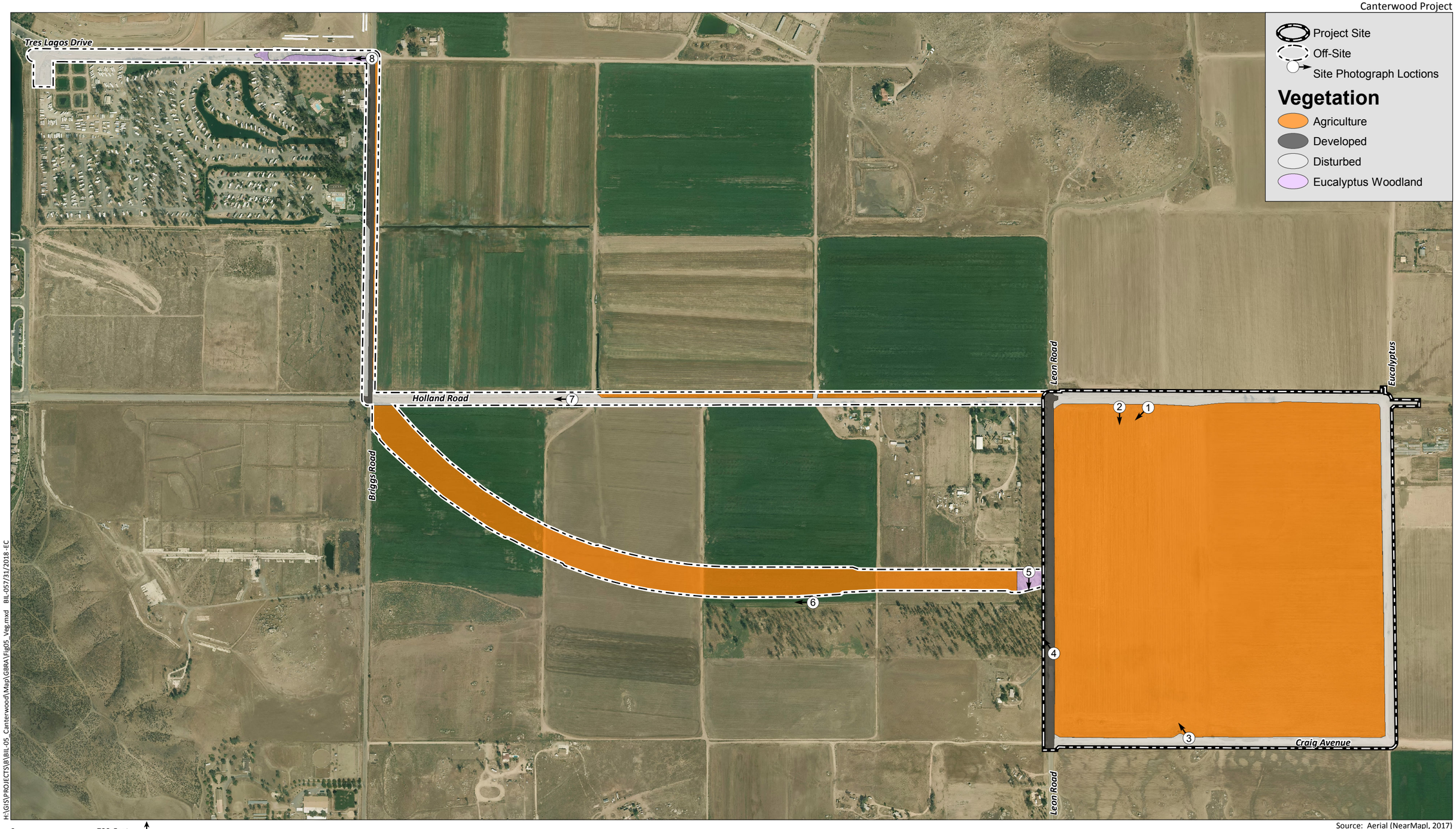
Two small developed areas were observed within the study area, which included paved portions of Leon Road and Briggs Road. The developed areas mapped within the study area totaled 7.89 acres (5.35 acres on site and 2.54 acres off site). There was no vegetation observed within the developed areas.

3.4 PLANTS

HELIX identified a total of 74 plant species within the study area during surveys to date, of which 48 species (65 percent) are non-native species (Appendix A). The predominance of non-native species is indicative of the high degree of disturbance as a result of historical and current agricultural use of the site.

3.5 ANIMALS

A total of 32 animal species were identified on the study area during biological surveys, including 30 bird species and 2 mammal species (Appendix B).



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Source: Aerial (NearMapl, 2017)

HELIX Environmental Planning

Vegetation

Figure 5

3.6 SENSITIVE BIOLOGICAL RESOURCES

3.6.1 Rare Plant Species

Rare plant species are uncommon or limited in that they: (1) are only found in the western Riverside County region; (2) are a local representative of a species or association of species not otherwise found in the region; or (3) are severely depleted within their ranges or within the region. Rare plant species include those species listed by CNPS with a CRPR of 1 or 2 (CNPS 2018), federally and state listed endangered and threatened species, or those species that require additional surveys by the MSHCP (Dudek 2003). Additional MSHCP survey requirements for rare plant species is discussed in Section 4.2.3 below.

A total of 55 rare plant species were recorded within the 12-quadrangle database search conducted on CNDDB and CNPS (CDFW 2018, CNPS 2018). These species are included in Appendix E, *Rare Plant Species Potential to Occur.* Of the 55 rare plant species recorded within the vicinity of the study area, 50 species are considered to have no potential to occur on the study area based on geographic range, elevation range, and/or lack of suitable habitat on the study area. The remaining five species are to have a potential to occur on the study area primarily based on the presence of mapped saline-alkaline soils and/or some ponding associated with the agricultural ditch (see Appendix E). These species include San Diego ambrosia (*Ambrosia pumila*), spreading navarretia (*Navarretia fossalis*), Parish's brittlescale (*Atriplex parishii*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), and San Bernardino aster (*Symphyotrichum defoliatum*). An evaluation of each rare plant species' potential to occur on the study area is provided in Appendix E.

Rare plant surveys were conducted on the study area (with the exception of the northern portion of the off-site sewer alignment) on August 22, 2017 and May 14, 2018 to determine the presence or absence of rare plant species on the study area. The most northern portion of the off-site sewer alignment located to the north of the RV park was surveyed on June 28, 2018 and July 24, 2018. Smooth tarplant, which is an annual herb, was observed in the northern portion of the project site within an agricultural ditch. A total of two individuals were observed during the August 2017 survey and one individual was observed during the May 2018 survey (Figure 6, *Smooth Tarplant Locations*). No rare plants were observed within the northern portion of the off-site sewer alignment during the June or July 2018 surveys.

3.6.2 Sensitive Animal Species

Sensitive animal species include federally and state listed endangered and threatened, candidate species for listing by USFWS or CDFW, and/or are species of special concern (SSC) pursuant to CDFW. Additional MSHCP survey requirements for burrowing owl are discussed in Section 4.2.4.3 below.

A total of 48 sensitive animal species were recorded within the 12-quadrangle database search conducted on CNDDB (CDFW 2018). These species are included in Appendix F, *Sensitive Animal Species Potential to Occur.* Of the 48 sensitive animal species recorded within the vicinity of the study area, 35 species are considered to have no potential to occur on the study area due to lack of suitable habitat and four species (golden eagle [*Aquila chrysaetos*], Swainson's hawk [*Buteo swainsoni*], northern harrier [*Circus cyaneus*], and Townsend's big-eared bat [*Corynorhinus townsendii*]) are not expected to occur due to lack of suitable habitat for residence and/or breeding, but may disperse through or across the study area.

Of the remaining nine species, four species were determined to have a low potential to occur on the study area based on the presence of low quality habitat, limited acreage of habitat, and lack of recent observations within the immediate vicinity of the study area. These species include western spadefoot toad (*Spea hammondii*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), white-tailed kite (*Elanus leucurus*), and western mastiff bat (*Eumops perotis californicus*). Two species were determined to have a moderate potential to occur on the study area based on the presence of some habitat (although disturbed) and/or small extent of habitat. These species include loggerhead shrike (*Lanius ludovicianus*) and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). Three species (vernal pool fairy shrimp [*Branchinecta lynchi*], Riverside fairy shrimp [*Streptocephalus woottoni*], and burrowing owl) are presumed absent from the study area based on negative surveys. An evaluation of each sensitive animal species' potential to occur on the study area is provided in Appendix F.

Dry season fairy shrimp surveys were conducted for the San Pedro Farms Project (TTM No. 36467; Rocks Biological Consulting 2015). The surveys were conducted within the agricultural ditch located near the northern project boundary, as required by the County. Rocks Biological Consulting conducted the surveys in September 2015. The dry season surveys were conducted following USFWS's *Survey Guidelines for Listed Large Branchiopods* (2015). No listed fairy shrimp eggs were collected from the agricultural ditch during the survey. The survey methods and results are discussed in detail in a separate letter report, which is provided as Appendix G, *San Pedro Farms Dry Season Fairy Shrimp Survey Report*. A relict ditch associated with prior dairy activities was observed within the off-site sewer alignment to the north of the RV park and is believed to have been used for containment of runoff and waste generated directly by historic dairy farm activities. This portion of the alignment occurs within the Rockport Ranch Project, which was evaluated under CEQA and deemed by the City of Menifee in compliance with the MSHCP. No suitable fairy shrimp habitat was noted in the MSHCP Consistency report prepared by LSA Associates, Inc. (2016).

Focused surveys for burrowing owl were conducted in accordance with the County's survey protocol, as previously described in Section 2.3.2.2 above (County of Riverside [County] 2006). No burrowing owls or burrowing owl signs were observed on the project site, off-site sewer alignment (excluding the northern portion), or off-site drainage facility during the 2017 surveys (HELIX 2017), or within the northern portion of the off-site sewer alignment during the 2018 surveys (HELIX 2018). Therefore, these areas do not currently support burrowing owls. The survey methods and results are discussed in detail in separate letter reports, which are provided as Appendix H, *2017 Burrowing Owl Focused Survey Report* and Appendix I, *2018 Burrowing Owl Focused Survey Report*.

3.6.3 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitats are considered either rare within the region or sensitive by CDFW (CDFW 2010, Holland 1986). Communities are given a Global (G) and State (S) ranking on a scale of 1 to 5. Communities afforded a rank of 5 are most common while communities with a rank of 1 are considered highly periled. CDFW considers sensitive communities as those with a rank between S1 and S3.

No sensitive vegetation communities/habitats pursuant to CDFW were mapped on the study area.

Source: Aerial (Eagle Aerial, 2014)

HELIX Environmental Planning

Smooth Tarplant Locations

Figure 6

3.6.4 Habitat and Wildlife Corridor

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

The study area does not directly connect to large blocks of habitat. The study area is entirely surrounded by existing agriculture and residential communities and does not support any native vegetation communities. Therefore, the study area does not function as a wildlife corridor. Local wildlife corridors likely occur within the hills to the north of the study area, which support native vegetation that may provide habitat for resident wildlife. Regional wildlife corridors likely occur within larger habitat blocks within the hills further southeast and south of the study area (e.g., Bachelor Mountain and Black Mountain).

The study area is not located within any MSHCP Linkages, which are portions of the Plan Area that were identified as having the potential to facilitate wildlife movement. The nearest linkages to the study area are Constrained Linkage B, which is approximately 1.7 miles to the north of the study area and comprises Salt Creek, and Proposed Constrained Linkage 17, which is approximately 1.7 miles to the south of the study area and comprises Paloma Valley. The study area is not located within any linkages recognized by the South Coast Missing Linkages report. The nearest linkage described by the South Coast Missing Linkages report is the San Bernardino – San Jacinto Connection, approximately 16.5 miles to the north of the study area (South Coast Wildlands 2008).

Although the study area does not function as a wildlife corridor, it does support eucalyptus trees and some herbaceous ground cover that may provide limited opportunities for local wildlife movement of small mammals and birds. Smaller mammals that are adapted to human disturbance (e.g., California ground squirrel [*Otospermophilus beecheyi*] and cottontail rabbits [*Sylvilagus* sp.]) may use the study area for foraging and/or cover and bird species may use the study area for foraging and/or nesting. Therefore, the study area may support limited opportunities for local wildlife movement of small mammals and birds, but does not function as wildlife corridor since it does not connect large blocks of habitat.

3.6.5 Jurisdictional Waters

Based on the results of the jurisdictional assessment, two jurisdictional ditches (agricultural ditch and roadside ditch) were observed within the study area. The agricultural ditch is a manmade, isolated agricultural drainage feature located near the northern project boundary. As described in detail below, the agricultural ditch supports 0.14 acre of non-wetland CDFW jurisdiction, which is based on the biological findings presented in the CEQA document for the proposed San Pedro Farms Project (TTM No. 36467; Figure 7, *Jurisdictional Features*; Table 2, *Jurisdictional Features*). Since jurisdictional field indicators (e.g., OHWM, defined bed and bank) were absent and the ditch is an isolated manmade feature used solely for agricultural purposes that is filled seasonally from an adjacent waterline, the agricultural ditch is presumed to not support USACE/RWQCB jurisdiction. The roadside ditch is located within the off-site sewer alignment on the west side of Briggs Road, commencing within the study area

near the southeast corner of the RV park. Jurisdictional field indicators were observed within the roadside ditch and the ditch connects to Menifee Lakes to the west. Therefore, the roadside ditch supports 0.01 acre of non-wetland USACE/RWQCB jurisdiction and 0.03 acre of non-wetland CDFW jurisdiction and (Figure 7; Table 2).

In addition to the two jurisdictional features described above, the study area supports a system of earthen irrigation ditches that convey water to the agricultural fields located on and adjacent to the study area. The irrigation ditches were determined to be non-jurisdictional due to lack of jurisdictional field indicators (Figure 7). A relict ditch associated with prior dairy activities was observed within the off-site sewer alignment to the north of the RV park and is believed to have been used for containment of runoff and waste generated directly by historic dairy farm activities. This portion of the alignment occurs within the Rockport Ranch Project, which was evaluated under CEQA and approved by the City of Menifee. The relict ditch was determined non-jurisdictional (and not to support MSHCP Riparian/Riverine) by LSA Associates, Inc. (2016).

Jurisdictional and non-jurisdictional features are described in detail below.

Table 2
JURISDICTIONAL FEATURES[1]

Drainage	USACE/RWQCB (acres)[2]	CDFW (acres)
Agricultural Ditch	-	0.14
Roadside Ditch	0.01	0.03
TOTAL	**0.01**	**0.17**

[1] Jurisdictional acreages overlap and are not additive (e.g., USACE/RWQCB acreages are included in the CDFW acreages.
[2] Acreage is rounded to the nearest hundredths.

3.6.5.1 Agricultural Ditch

The agricultural ditch is located near the northern project boundary (Figure 7). The ditch was created as part of the San Pedro Farms operation to the north of the study area and accepts irrigation runoff. The agricultural field and associated ditch were operational as early as 1967 (Historic Aerials 1967). The agricultural ditch is completely isolated and does not convey water to, or accept flows from, any natural or artificial drainage systems. The soil within the ditch is mapped as Greenfield sandy loam (0 to 2 percent slopes; NRCS 2018). No water was observed within the ditch during the general biological survey/jurisdictional assessment. However, the agricultural ditch is visible on Google Earth aerials full of agricultural water as recent as February 2018 (Google Earth 2018). Native and non-native species observed within the agricultural ditch include alkali-mallow (*Malvella leprosa*), annual beardgrass (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), Mediterranean canary grass (*Phalaris minor*), Mexican sprangle-top (*Leptochloa fusca* ssp. *uninervia*), nettle-leaf goosefoot, prostrate knotweed (*Polygonum aviculare*), saltgrass (*Distichlis spicata*), and yellow nutsedge (*Cyperus eragrostis*).

Environmental Science Associates (ESA) conducted a jurisdictional delineation for the San Pedro Farms project located near the northern project boundary, which included the agricultural ditch (Environmental Science Associates 2015). ESA dug a wetland pit within the low-flow channel of the agricultural ditch to determine whether wetlands were present within the ditch. ESA determined that

Canterwood Project

Project Site
Off-Site
Drainage Photograph Locations

Jurisdictional Features

USACE Jurisdiction
CDFW Jurisdiction

Non-Jurisdictional Features

Irrigation Ditch
Pipe

Tres Lagos Drive
Holland Road
Briggs Road
Leon Road
Eucalyptus
Craig Avenue
Leon Road

Agricultural Ditch

Roadside Ditch

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0 700 Feet

Source: Aerial (Eagle Aerial, 2014)

HELIX Environmental Planning

Jurisdictional Features

Figure 7

hydrology indicators and hydric soil indicators were absent. Therefore, ESA concluded that wetlands are not present within the agricultural ditch. The jurisdictional delineation report prepared for the San Pedro Farms project by ESA is included as Appendix J, *San Pedro Farms Jurisdictional Delineation Report*.

The agricultural ditch was presumed to not support USACE/RWQCB jurisdiction since flow indicators (e.g., OHWM, defined bed and bank) were absent and the ditch is an isolated artificial feature. However, the agricultural ditch is considered CDFW jurisdictional, totaling approximately 0.14 acre.

3.6.5.2 Roadside Ditch

The roadside ditch is located within the off-site sewer alignment on the west side of Briggs Road, near the southeast corner of the RV park (Figure 7). The roadside ditch collects road runoff and conveys water to a drainage directly south of the RV park, located outside of the study area. Historically, the roadside ditch drained to an isolated basin located on the property south of the RV park. However, the basin was hydraulically removed from the system and connected to Menifee Lakes to the west. Flow indicators were observed within the roadside ditch and the ditch connects to Menifee Lakes. Water from Menifee Lakes drains into Salt Creek, which flows west and feeds into Canyon Lake approximately 5.3 miles to the west of the study area. Water flows from Canyon Lake into Lake Elsinore via San Jacinto River, ultimately draining into the Santa Ana River at the Prado Flood Control Basin in San Bernardino County. The Santa Ana River discharges into the Pacific Ocean south of Huntington Beach in Orange County approximately 50 miles to the southwest of the study area. The roadside ditch is mostly unvegetated, with some weedy non-native species observed including prickly Russian thistle, red brome, and short-pod mustard.

Within the study area, the roadside ditch supports 0.01 acre of USACE/RWQCB jurisdiction and approximately 0.03 acre of CDFW jurisdiction.

3.6.5.3 Irrigation Ditches (Non-Jurisdictional)

A number of irrigation ditches were observed throughout the study area (Figure 7). The earthen ditches convey water to the agricultural fields located within and adjacent to the study area. Water flow within the irrigation ditches is controlled by the farming operations and water has been observed being pumped into the ditches during HELIX's field assessments. Little to no vegetation was observed within the ditches, which appeared to be periodically cleared to maintain water flow through the ditches. When vegetation was present, species observed included alkali weed (*Cressa truxillensis*), English plantain (*Plantago lanceolata*), prickly Russian thistle, red brome, and salt heliotrope (*Heliotropium curassavicum* var. *oculatum*). The irrigation ditches are not considered to be USACE/RWQCB or CDFW jurisdictional since no jurisdictional field indicators associated with streambeds (e.g., OHWM or a defined bed and bank). The ditches are maintained on a regular basis, are wholly excavated in uplands, do not drain to jurisdictional waters downstream, and convey water for agricultural purposes only. A representative photograph of the irrigation ditches is included in Appendix C (see Photograph 3).

3.7 WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY ANALYSIS

The MSHCP is a comprehensive multi-jurisdictional effort that includes Riverside County and multiple cities in western Riverside County. Rather than addressing sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Dudek 2003). Most

importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the Riverside County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004. This section demonstrates impacts proposed within the study area are not in conflict with the MSHCP.

3.7.1 Project Location Within the MSHCP

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

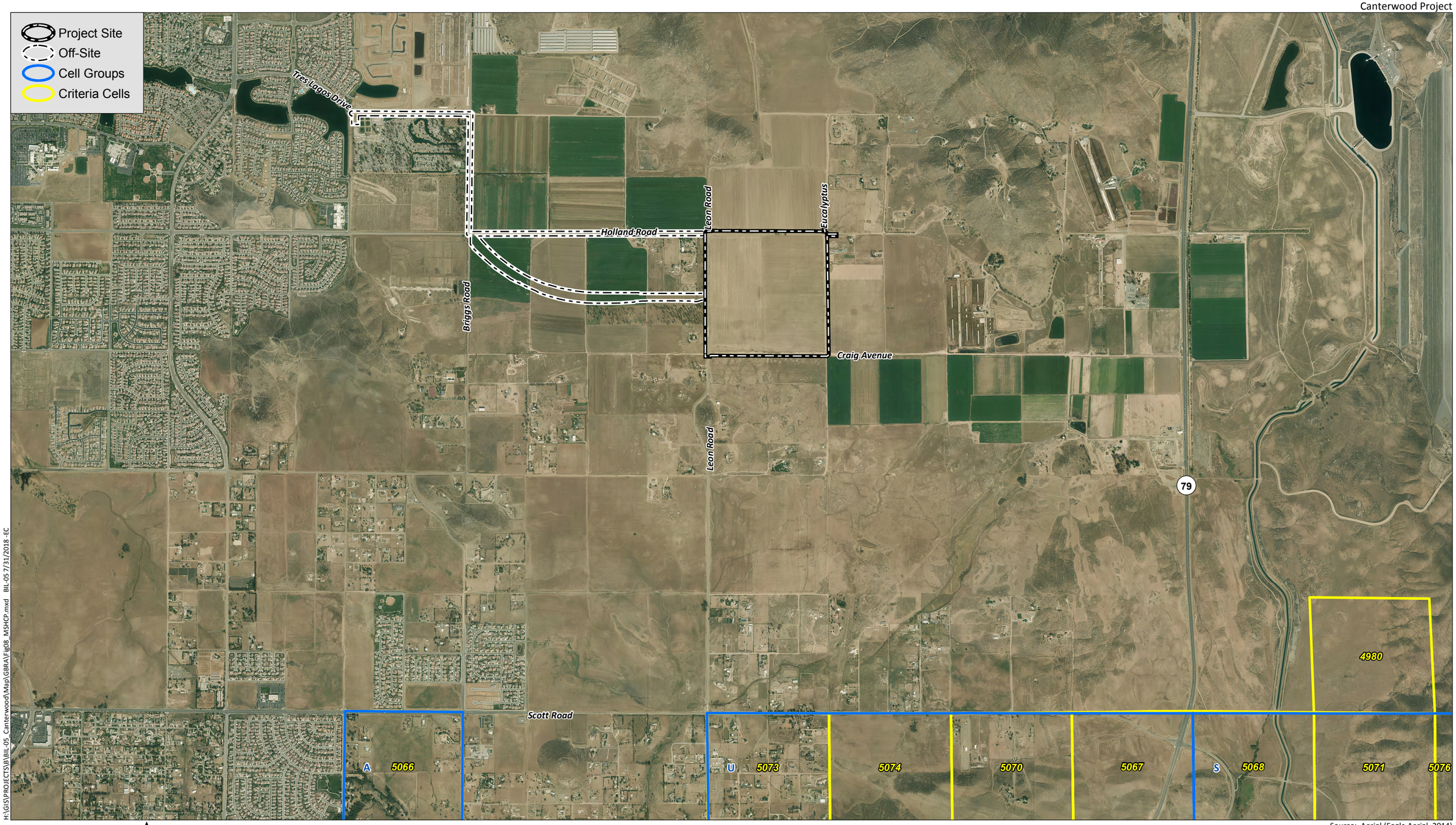
As described in Section 2.1.2 of the MSHCP, the study area is located in the Riverside Lowlands bioregion, an area lying generally below 2,000 AMSL and characterized by Riversidean sage scrub and annual grasslands. The relatively arid climate is partly the result of rain shadow cast by the Santa Ana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

The study area is located within the Sun City/Menifee Valley Area Plan and is not located within or adjacent to a MSHCP Criteria Area; therefore, the study area is not subject to special conservation requirements that apply to cells and is not required to undergo the HANS process. The nearest criteria cell to the study area is Cell 5073, located approximately 1.5 miles to the south (Figure 8, *MSHCP Criteria Cell*). The study area is not located within or directly adjacent to any MSHCP Conservation Areas. The study area is located approximately 1.7 miles to the south of Constrained Linkage B and 1.7 miles to the north of Proposed Constrained Linkage 17. Existing development and agriculture separates the study area from MSHCP Conservation Areas.

3.7.2 Riparian/Riverine and Vernal Pools

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

Canterwood Project



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0 2,000 Feet

Source: Aerial (Eagle Aerial, 2014)

HELIX Environmental Planning

MSHCP Criteria Cell

Figure 8

Although the agricultural ditch is considered CDFW jurisdictional and the roadside ditch is considered USACE/RWQCB and CDFW jurisdictional, the ditches do not meet the definition of MSHCP Riparian/Riverine since they (1) do not support habitat dominated by support trees, shrubs, persistent emergent vegetation, or emergent mosses or lichens; and (2) do not accept flows from fresh water sources. There is no natural fresh water source on or within the immediate vicinity of the study area. The agricultural ditch was created to support the agricultural activities that occur on the property to the north of the project site, which is filled with water from an adjacent waterline to support the farming operation. The roadside ditch collects road runoff and conveys water off site. The ditches do not meet the definition of MSHCP Vernal Pools since the three wetland indicators (soils, vegetation, and hydrology) were not all observed, and the ditches are manmade features.

3.7.2.1 Riparian/Riverine and Vernal Pool Species

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

Plant Species

The MSHCP lists 23 rare plant species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are listed below in Table 3, *Multiples Species Habitat Conservation Plan Riparian/Riverine and Vernal Pool Plant Species*. Although the study area does not support MSHCP Riparian/Riverine or Vernal Pools, the agricultural ditches were assessed for plant species identified by the MSHCP. Of the 23 species, two species were determined to have a potential to occur on the study area based on the species' geographic range, elevation range, preferred habitat, and/or nearby occurrence records. The two species with a potential to occur include smooth tarplant and spreading navarretia.

Smooth tarplant was observed in the northern portion of the study area within the agricultural ditch. A total of two individuals were observed during the August 2017 rare plant survey and one individual was observed during the May 2018 survey (Figure 6). A list of plant species observed during the field surveys is provided as Attachment B.

Table 3
MULTIPLES SPECIES HABITAT CONSERVATION PLAN (MSHCP)
RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

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

Table 3 (cont.)
MULTIPLES SPECIES HABITAT CONSERVATION PLAN (MSHCP)
RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

Common Name	Scientific Name	Habitat
smooth tarplant	*Centromadia pungens* ssp. *laevis*	Alkali scrubs, playas, and grasslands; riparian woodland and streams.
spreading navarretia	*Navarretia fossalis*	Vernal pools, depressions, and ditches.
thread-leaved brodiaea	*Brodiaea filifolia*	Clay soils in vernally moist grasslands and vernal pool periphery are typical locales.
vernal barley	*Hordeum intercedens*	Saline flats and depressions in grasslands or vernal pools.

Source: Dudek (2003).

Animal Species

The MSHCP lists 12 sensitive animal species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are provided in Table 4, *MSHCP Riparian/Riverine and Vernal Pool Animal Species*. Although the study area does not support MSHCP Riparian/Riverine or Vernal Pools, the agricultural ditches were assessed for animal species identified by the MSHCP. The MSHCP requires focused surveys to be conducted for projects that propose impacts to three invertebrate and three bird species, as described in detail below.

Invertebrates

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

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for the three sensitive fairy shrimp species discussed above. Suitable fairy shrimp habitat was observed within the agricultural ditch. Dry season fairy shrimp surveys were conducted within the agricultural ditch located in the northern portion of the study area. The surveys were conducted for the San Pedro Farms project located to the north of the study area, as required by the County. The dry season fairy shrimp surveys were negative for sensitive fairy shrimp species (see Attachment G).

Birds

Riparian/Riverine Areas within the MSHCP Plan Area provide suitable habitat for sensitive bird species, such as support least Bell's vireo, southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), bald eagle (*Haliaeetus leucocephalus*), and

peregrine falcon (*Falco peregrinus*). Typical habitat for least Bell's vireo consists of well-developed riparian scrub, woodland, or forest dominated by willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and Fremont's cottonwood (*Populus fremontii*). Least Bell's vireo will also use small patches of trees adjacent to dense, riparian habitat. Southwestern willow flycatcher and western yellow-billed cuckoo require mature riparian forest with a stratified canopy and nearby water. Both the bald eagle and peregrine falcon occur primarily in and adjacent to open water habitats, with peregrine falcon occurring in riparian areas.

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The study area does not support suitable habitat for Riparian/Riverine birds; therefore, no focused surveys were required.

Table 4
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL ANIMAL SPECIES

Common Name	Scientific Name	Habitat
Riverside fairy shrimp	*Streptocephalus woottoni*	Deep vernal pools and other ephemeral basins that hold water for typically 30 or more days.
Santa Rosa Plateau fairy shrimp	*Linderiella santarosae*	Limited to vernal pools within the Santa Rosa Plateau.
vernal pool fairy shrimp	*Branchinecta lynchi*	Vernal pools and other ephemeral basins within patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.
arroyo toad	*Anaxyrus californicus*	Washes and intermittent streams with open-canopy riparian forest.
California red-legged frog	*Rana aurora draytonii*	Perennial streams with dense, shrubby riparian vegetation.
mountain yellow-legged frog	*Rana muscosa*	Perennial waterways, often within open riparian vegetation.
Santa Ana sucker	*Catostomus santaanae*	Clear, cool perennial streams with loose sand, gravel, cobble, and boulders with algae, aquatic emergent vegetation, macroinvertebrates, and riparian vegetation.
bald eagle	*Haliaeetus leucocephalus*	Within close proximity to lakes or other water bodies.
least Bell's vireo	*Vireo bellii pusillus*	Well-developed riparian scrub, woodland, or forest.
peregrine falcon	*Falco peregrinus*	Generally, areas with cliffs or tall buildings near water where prey (shorebirds and ducks) is concentrated.
southwestern willow flycatcher	*Empidonax traillii extimus*	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Extensive stands of mature riparian woodland.

Source: Dudek (2003).

3.7.3 Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3)

The MSHCP requires focused plant surveys to be conducted for projects located within a Narrow Endemic Plant Species Survey Area (NEPSSA). The study area is within NEPSSA 4, which requires a habitat assessment for Munz's onion (*Allium munzii*), San Diego ambrosia, many-stemmed dudleya (*Dudleya multicaulis*), spreading navarretia, California Orcutt grass (*Orcuttia californica*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*). A habitat assessment was conducted by Mr. Cooley and Ms. Singleton on June 28, 2017. The study area was determined to have a low potential to support San Diego ambrosia due to the presence of some mapped sandy and alkaline soil and spreading navarretia due to the presence of some ponding associated with the agricultural ditch. The study area does not support suitable habitat for Munz's onion, many-stemmed dudleya, California Orcutt grass, or Wright's trichocoronis.

No Narrow Endemic Plant Species were observed on the study area during the rare plant survey surveys. A list of plant species observed during the field surveys are provided as Attachment B.

3.7.4 Additional Survey Needs and Procedures (MSHCP Section 6.3.2)

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

Criteria Area Species

Focused surveys for rare plant species must be conducted for projects located within a Criteria Area Species Survey Area (CASSA). There is a total of 13 criteria area species, which are associated with eight CASSAs located throughout the MSHCP Plan Area (see Table 6-1 in the MSHCP). Prior to conducting focused surveys, a habitat assessment should be conducted to determine whether the study area supports suitable habitat for plant species listed for the CASSA. If suitable habitat is present, focused surveys for species listed for the CASSA should be conducted. The study area is not within a CASSA; therefore, focused CASSA surveys were not required.

Amphibian Species

Focused surveys for arroyo toad (*Bufo californicus*), California red-legged frog (*Rana draytonii*), and mountain yellow-legged frog (*Rana muscosa*) must be conducted for projects located within an Amphibian Species Survey Area. The study area is not within the Amphibian Species Survey Area; therefore, focused surveys were not required.

Bird Species

Focused surveys for burrowing owl must be conducted for projects located within a Burrowing Owl Survey Area, which the study area is within the survey area. Burrowing owl surveys were conducted in accordance with the County's protocol, as described above in Section 2.3.3.2 of this report. No

burrowing owls or burrowing owl signs were observed on the study area during the 2017 or 2018 focused surveys (HELIX 2017, 2018).

Mammal Species

Focused surveys for Aguanga kangaroo rat (*Dipodomys merriami collinus*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) must be conducted for projects located within a Mammal Species Survey Area. The study area is not within the Mammal Species Survey Area; therefore, focused surveys were not required.

4.0 REGIONAL AND REGULATORY CONTEXT

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

4.1 FEDERAL REGULATIONS

4.1.1 Federal Endangered Species Act

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

Sections 4(d), 7, and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation is required when there is a nexus between federally listed species' use of the site and impacts to USACE jurisdictional areas. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. The MSHCP is the Section 10(a) permit for western Riverside County, including the study area.

4.1.2 Federal Clean Water Act, Section 404

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. Permitting for projects filling WUS, including wetlands and vernal pools, is overseen by USACE under

Section 404 of the CWA. Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits. Individual Permits are assessed individually based on the type of action, amount of fill, etc. Individual Permits typically require substantial time (often longer than six months) to review and approve, while Nationwide Permits are pre-approved if a project meets the appropriate conditions. A CWA Section 401 Water Quality Certification, which is administered by the State Water Resources Control Board, must be issued prior to any 404 Permit.

4.1.3 Migratory Bird Treaty Act

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

4.1.4 Critical Habitat

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

Critical habitat does not occur on the study area. The nearest critical habitat to the study area is coastal California gnatcatcher (*Polioptila californica californica*) critical habitat, which is approximately 0.80 mile to the northeast of the study area (USFWS 2018a).

4.2 STATE REGULATIONS

4.2.1 California Environmental Quality Act

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

4.2.2 California Endangered Species Act

The CESA is similar to the FESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of CESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. The MSHCP is the regional 2081 for this portion of the County, which includes the study area. The golden eagle and white-tailed kite are considered state fully protected species. Fully protected species may not be taken or possessed at any time, and no state licenses or permits may be issued for their take except for collecting the species necessary for scientific research and relocation of the bird species for the protection of livestock (California Fish and Game Code Sections 3511, 4700, 5050, and 5515).

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

4.2.3 Protection of Raptor Species

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

4.2.4 California Fish and Game Code, Section 1602

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

4.3 LOCAL REGULATIONS

4.3.1 Multiples Species Habitat Conservation Plan Consistency

The MSHCP is a comprehensive multi-jurisdictional effort that includes Riverside County and multiple cities in western Riverside County. Rather than addressing sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Dudek 2003). Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the Riverside County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004. Section 4.0 above and Section 6.6 below demonstrates the project's consistency with the MSHCP.

4.3.2 Stephens' Kangaroo Rat Habitat Conservation Plan

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

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

5.0 PROJECT EFFECTS

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

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

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

(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

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

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

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

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

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

5.1 SENSITIVE SPECIES

5.1.1 Rare Plant Species

Less than Significant Impacts

A total of 50 of the 55 rare plant species recorded within the vicinity of the study area were not considered to have a potential to occur based on geographic range, elevation range, and/or lack of suitable habitat (see Appendix E). The remaining five species are considered to have a potential to occur on the study area. A total of three smooth tarplant individuals were observed within the agricultural ditch (Figure 9, *Impact to Smooth Tarplant*). No other rare plants were observed on the study area.

Smooth tarplant does not carry a federal or state listing as threatened or endangered. Smooth tarplant is a conditionally covered species under the MSHCP. Surveys for this species are required if a project occurs within a CASSA 1, 2,3, or 4. Since the study area is not located within a CASSA, impacts to this species would be covered under the MSHCP. Permanent loss of three individuals would not threaten regional population numbers and impacts to this species are considered less than significant. Smooth tarplant is identified by the MSHCP as a Riparian/Riverine plant species, which is addressed in Section 5.6.1 below.

5.1.2 Sensitive Wildlife Species

Less than Significant Impacts with Mitigation Incorporated

Dry season fairy shrimp surveys were conducted within the agricultural ditch located in the northern portion of the project site. The surveys were conducted for the San Pedro Farms project located the north of the project site. Rocks Biological Consulting conducted the surveys in September 2015. The dry season surveys were conducted following USFWS's *Survey Guidelines for Listed Large Branchiopods* (2015). No listed fairy shrimp eggs were collected from the agricultural ditch during the survey. The survey methods and results are discussed in detail in a separate letter report, which is provided as Appendix G.

Of the 48 species recorded within the vicinity of the study area, 35 species are considered to have no potential to occur on the study area due to lack of suitable habitat and four species are not expected to occur due to lack of suitable habitat for residence and/or breeding, but may disperse through or across the study area (see Appendix F). Therefore, no significant impacts to these sensitive wildlife species are anticipated by the project.

Of the remaining nine sensitive wildlife species, four species were determined to have a low potential to occur (western spadefoot toad, coastal whiptail, white-tailed kite, and western mastiff bat), two species were determined to have a moderate potential to occur (loggerhead shrike and San Diego black-tailed jackrabbit), and three species are presumed currently absent from the study area based on negative survey results (vernal pool fairy shrimp, Riverside fairy shrimp, and burrowing owl).

Western spadefoot, coastal whiptail, white-tailed kite, loggerhead shrike, and San Diego black-tailed jackrabbit are fully covered species under the MSHCP. With payment of the MSHCP Local Development Mitigation Fee (LDMF), no additional mitigation is required for potential impacts to these species. In addition, the study area is located within the Stephens' kangaroo rat HCP and is required to pay a

Source: Aerial (Eagle Aerial, 2014)

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Impact to Smooth Tarplant

Figure 9

Stephens' kangaroo rat mitigation fee for incidental take authorization under the Stephens' kangaroo rat HCP. See Section 5.6.6 below for a more detailed discussion.

Although western mastiff bat is not a MSHCP covered species, this species is listed as a SSC by CDFW and does not carry a federal or state listing as threatened or endangered. The study area does not support suitable roosting habitat for western mastiff bat. There is some potential for foraging habitat, although the habitat is considered low quality based on the high-level of existing disturbance on the study area and surrounding vicinity. The nearest observation of this species on CNDDB was recorded in 1990, approximately 3.2 miles to the northwest of the study area in Sun City. Based on the presence of low quality habitat, lack of recent observations, and absence of suitable roosting habitat, no significant impacts to western mastiff bat are anticipated by the project.

Burrowing owl is considered a SSC and MSHCP conditionally covered species. Since the study area supports suitable habitat for burrowing owl, focused surveys were conducted in accordance with the County's survey protocol. No burrowing owls or sign of burrowing owls were observed on the study area during the 2017 or 2018 focused surveys. A mitigation measure requiring a pre-construction survey and avoidance of active nests and/or relocation of burrowing owl (if burrowing owls are observed) is included as BIO-1 below.

Dry season fairy shrimp surveys were conducted within the agricultural ditch located in the northern portion of the project site, as required by the County for the San Pedro Farms project located to the north of the project site. The dry season surveys were negative for sensitive fairy shrimp species (Riverside fairy shrimp and vernal pool fairy shrimp). Since no sensitive fairy shrimp species were detected, no significant impacts to sensitive fairy shrimp species are anticipated by the project.

5.2 SENSITIVE VEGETATION COMMUNITIES

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

No Impacts

The study area does not support any vegetation communities or habitats considered sensitive by CDFW. Therefore, no impacts are anticipated by the project. Impacts to vegetation are shown on Figure 10, *Impacts to Vegetation*.

Table 5
VEGETATION COMMUNITY IMPACTS[1]

Vegetation Community	Existing (acres)	Permanent Impacts (acres)
Agriculture	181.52	181.52
Eucalyptus Woodland	1.85	1.85
Disturbed	32.29	30.38
Developed	7.89	7.89
TOTAL	**223.55**	**221.64**

[1] Acreages of on-site and off-site areas are combined.

5.2.2 California Department of Fish and Wildlife Riparian Habitat and Streambed

Less than Significant with Mitigation Incorporated

The project will result in permanent impacts to approximately 0.14 acre of CDFW jurisdiction within the agricultural ditch. No temporary or permanent impacts are proposed to the roadside ditch. Proposed impacts to CDFW Jurisdiction are shown on Figure 11, *Impacts to Jurisdictional Features* and summarized in Table 6, *CDFW Jurisdiction Impacts*.

Impacts to CDFW jurisdiction will require a Section 1602 Stream Alteration Agreement from the CDFW, as described in BIO-2 included in Section 6.0 below. Compensatory mitigation for permanent impacts to CDFW jurisdiction will be required as part of subsequent Section 1602 permitting requirements.

Table 6
CDFW JURISDICTION IMPACTS

Drainage	Existing (acres)	Permanent Impacts (acres)
Agricultural Ditch	0.14	0.14
Roadside Ditch	0.03	0.00
TOTAL	**0.17**	**0.14**

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

No Impacts

Although 0.01 acre of USACE/RWQCB WUS was delineated within the roadside ditch, the project will avoid permanent and temporary impacts to WUS (Figure 11). Impacts are proposed to the agricultural ditch; however, this feature does not support USACE/RWQCB jurisdiction based on lack of jurisdictional field indicators (e.g., OHWM). Therefore, no impacts to USACE/RWQCB WUS are anticipated by the project.

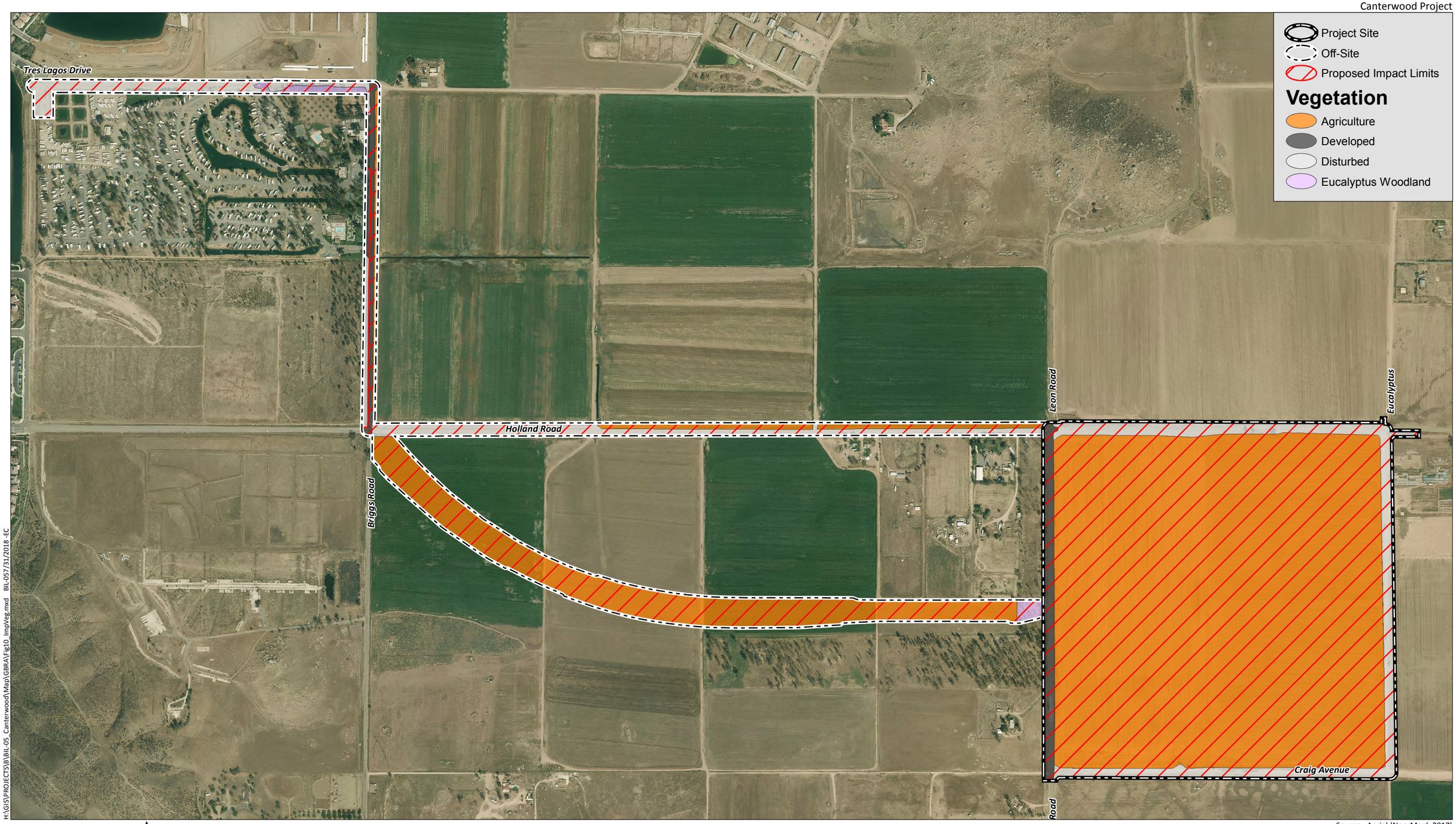
5.4 WILDLIFE MOVEMENT AND MIGRATORY SPECIES

5.4.1 Wildlife Movement

Less than Significant

The study area not part of a regional corridor and does not serve as a nursery site. The site is not identified by the MSHCP (Dudek 2003) or South Coast Missing Linkages (South Coast Wildlands 2008) as being part of a local or regional corridor or linkage. The study area has no direct connectivity to large blocks of habitat and is constrained by existing agricultural and development to the north, south, east, and west. Although implementation of the proposed project may result in some disturbance to local wildlife movement, the project would have a less than significant impact to wildlife movement and no mitigation measures would be required.

Canterwood Project



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0 700 Feet

Source: Aerial (NearMapl, 2017)

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Impacts to Vegetation

Figure 10

Canterwood Project

Project Site
Off-Site
Proposed Impact Limits

Jurisdictional Features

USACE Jurisdiction
CDFW Jurisdiction

Tres Lagos Drive
Holland Road
Briggs Road
Leon Road
Eucalyptus
Craig Avenue

Agricultural Ditch

Holland Road

Roadside Ditch

Briggs Road

0 700 Feet

N

Source: Aerial (Eagle Aerial, 2014)

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HELIX Environmental Planning

Impacts to Jurisdictional Features

Figure 11

5.4.2 Migratory Species

Less than Significant Impacts with Mitigation Incorporated

Development of the proposed project could disturb or destroy active migratory bird nests, including eggs and young. Disturbance to or destruction of migratory bird eggs, young, or adults is in violation of the MBTA and is considered a potentially significant impact. Although suitable habitat for nesting birds on the study area is limited, trees and herbaceous vegetation located within eucalyptus woodland and disturbed areas offer nesting habitat for protected nesting bird species. In addition, the agricultural field may support suitable habitat for ground nesting bird species. A mitigation measure is provided as BIO-3 in Section 6.0 below, which would ensure the project is in compliance with MBTA regulations.

5.5 LOCAL POLICIES AND ORDINANCES

No Impacts

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

5.6 ADOPTED HABITAT CONSERVATION PLANS

Less than Significant Impacts with Mitigation Incorporated

As discussed in Section 4.2.1 above, the study area is within the Sun City/Menifee Valley Area Plan of the MSHCP. The study area is not located within or adjacent to a MSHCP Criteria Area; therefore, the study area is not subject to special conservation requirements that apply to cells and is not required to undergo the HANS process. The following sections demonstrate the project's compliance with MSHCP requirements.

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

Section 6.1.2 of the MSHCP focuses on protection of Riparian/Riverine areas and Vernal Pool habitats capable of supporting MSHCP covered species, particularly within the identified Conservation Area. Section 6.1.2 of the MSHCP states:

> "The purpose of the procedures described in this section is to ensure that the biological functions and values of these areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained."

As previously discussed in Section 3.7.2.1 above, the agricultural ditches on the study area do not meet the definition of MSHCP Riparian/Riverine or Vernal Pools since they do not accept flows from fresh water sources and lack three-parameter wetlands. Therefore, no MSHCP Riparian/Riverine or Vernal Pools would be impacted.

Suitable habitat for four MSHCP Riparian/Riverine and Vernal Pool species was observed within the agricultural ditches, including smooth tarplant, spreading navarretia, Riverside fairy shrimp, and vernal pool fairy shrimp. No spreading navarretia were observed within the ditches. A total of three smooth tarplant individuals were observed within the agricultural ditch (Figure 9). Although smooth tarplant is a

MSHCP Riparian/Riverine and Vernal Pool species, the agricultural ditch was not identified as a Riparian/Riverine resource due to lack of connection with a fresh water source and absence of three-parameter wetlands. Smooth tarplant does not carry a federal or state listing as threatened or endangered. Smooth tarplant is a conditionally covered species under the MSHCP. Surveys for this species are required if a project occurs within a CASSA 1, 2,3, or 4. Since the study area is not located within a CASSA, impacts to this species would be covered under the MSHCP. Dry season fairy shrimp surveys were conducted within the agricultural ditch located near the northern project boundary, which were negative for sensitive fairy shrimp species (Riverside fairy shrimp and vernal pool fairy shrimp). Since no sensitive fairy shrimp species were detected, no significant impacts to sensitive fairy shrimp species are anticipated by the project. Since no MSHCP Riparian/Riverine and Vernal Pool Resources were identified on the study area and the study area is not located within a CASSA identified for smooth tarplant, the proposed project is consistent with Section 6.1.2 of the MSHCP.

5.6.2 Narrow Endemic Plant Species (MSHCP Section 6.1.3)

The study area is within NEPSSA 4 and supports marginal habitat for San Diego ambrosia and spreading navarretia. However, these species were not observed on the study area during the rare plant surveys. The study area does not support suitable habitat for any other NEPSSA species and no NEPSSA species were observed during the rare plant surveys. Therefore, no NEPSSA species would be impacted and the proposed project is consistent with Section 6.1.3 of the MSHCP.

5.6.3 Urban Wildland Interface Guidelines (MSHCP Section 6.1.4)

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

The study area does not occur adjacent to land targeted for conservation, or next to existing MSHCP Conservation Areas. The nearest MSHCP Conservation Areas are located approximately 1.70 miles to the north and south. Existing development and/or active agricultural operations separate the study area from MSHCP Conservation Areas. Since the study area is separated from the conservation areas, many of the Urban Wildland Interface Guidelines do not apply. As discussed below, the project will comply with each applicable guideline to ensure consistency with MSHCP Section 6.1.4.

5.6.3.1 Drainage

The study area does not support any natural drainage systems, but does support an agricultural ditch and a roadside ditch. The project will incorporate measures to avoid discharge of untreated surface runoff into downstream waters. Measures will include those required for construction pursuant to the State Water Resources Control Board General Construction Stormwater Permit and those required post-construction pursuant to the National Pollutant Discharge Elimination System and Municipal Storm Drain requirements. The project shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes downstream from the study area.

5.6.3.2 Toxics

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

5.6.3.3 Lighting

Although the study area is not located within or directly adjacent to a MSHCP Conservation Area, two existing Conservation Areas are located less than two miles of the study area. Temporary construction lighting and ambient lighting from the proposed development is required to be selectively placed, directed, and shielded away from the MSHCP Conservation Area. In addition, large spotlight-type lighting directed into conserved habitat will be prohibited.

5.6.3.4 Noise

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

5.6.3.5 Invasives

The project shall not use invasive plants for erosion control, landscaping, wind rows, or other purposes. A mitigation measure (BIO-4) is provided that requires the project to comply with the MSHCP and avoid the use of invasive, non-native plants in accordance with MSHCP Table 6.2.

5.6.3.6 Barriers

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

5.6.3.7 Grading/Land Development

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

5.6.4 Additional Surveys (MSHCP Section 6.3.2)

The study area is not within a CASSA or an amphibian or mammal survey area. No impacts to CASSA rare plant species or sensitive amphibian or mammal species are proposed.

The study area is within the MSHCP Burrowing Owl Survey Area and the study area supports suitable habitat. Focused surveys were conducted in accordance with the County's survey protocol. No burrowing owls or sign of burrowing owls were observed within the study area. Due to the presence of suitable habitat, a pre-construction survey is required within 30 days of ground disturbance pursuant to the MSHCP. A mitigation measure requiring a pre-construction survey, avoidance or replacement of

burrowing owl habitat and individuals (if three or more pairs are observed), and avoidance of active nests and/or relocation of burrowing owl (if burrowing owls are observed) is included as BIO-1 below.

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

5.6.5 Fuels Management (MSHCP Section 6.4)

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

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

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

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

A mitigation measure (BIO-5) is provided that requires the project to pay the MSHCP LDMF and Stephens' kangaroo rat HCP fees.

6.0 MITIGATION MEASURES

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

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

If burrowing owls are observed during the pre-construction survey, active burrows shall be avoided by the project in accordance with the California Department of Fish and Wildlife's (CDFW) *Staff Report on Burrowing Owl Mitigation* (2012) or CDFW's most recent guidelines. The project proponent shall immediately inform the Western Riverside County Regional Conservation Authority (RCA) of burrowing owl observations. A Burrowing Owl Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by RCA prior to initiating ground disturbance. The RCA will coordinate directly with CDFW as needed to ensure that the plan is consistent with the MSHCP and CDFW guidelines. The plan shall detail avoidance

measures that shall be implemented during construction and passive or active relocation methodology. Relocation shall only occur outside of the nesting season (September 1 through January 31). The RCA may require translocation sites to be created within the MSHCP Conservation Area for the establishment of new colonies. If required, the translocation sites must take into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species in order to successfully create suitable habitat for burrowing owl. The translocation sites must be developed in consultation with RCA. If required, translocation sites would also be described in the agency-approved plan.

BIO-2 **CDFW Jurisdiction:** Prior to issuance of a grading permit for impacts to the agricultural ditch, the project proponent shall obtain a Section 1602 Stream Alteration Agreement from the CDFW. Compensatory mitigation for permanent impacts to CDFW jurisdiction shall be required as part of subsequent Section 1602 permitting requirements. Permanent impacts to CDFW jurisdiction shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of CDFW jurisdictional streambed at ratio of no less than 2:1. The following minimization measures will be implemented during construction:

1. Use of standard Best Management Practices (BMPs) to minimize the impacts during construction.

2. Construction-related equipment will be stored in upland areas, outside of drainages except as required by project design (restoration, trash removal, etc.).

3. Source control and treatment control BMPs will be implemented to minimize the potential contaminants that are generated during and after construction. Source control BMPs include landscape planning, roof runoff controls, trash storage areas, use of alternative building materials, and education of future tenants and residents. Treatment control BMPs include detention basins, vegetated swales (bio-swales), drain inlets, and vegetated buffers. Water quality BMPs will be implemented throughout the project to capture and treat contaminants.

4. To avoid attracting predators during construction, the project shall be kept clean of debris to the extent possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from site.

5. Employees shall strictly limit their activities, vehicles, equipment and construction material to the proposed project footprint, staging areas, and designated routes of travel.

6. Construction limits shall be fenced with orange snow screen and exclusion fencing should be maintained until the completion of construction activities.

BIO-3 **Nesting Birds:** No grubbing, clearing, or grading shall occur during the general songbird and raptor nesting season, which is generally January 15 to August 31. All grading permits, improvement plans, and the final map shall state the same.

If grubbing, clearing, or grading is proposed to occur during the general bird nesting season, a pre-construction survey within all suitable habitat shall be conducted by a qualified biologist to determine if active bird nests are present within the disturbance area. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within the disturbance area, clearing, grubbing, and grading shall be allowed to proceed. If active nests or nesting birds are observed within the disturbance area, the biologist shall delineate a buffer of 300 feet (500 feet for raptors) around each nest. Construction activities within the buffer shall not be permitted until nesting behavior has ceased, nests have failed, or young have fledged. The biological monitor may modify the buffer or propose other recommendations in order to minimize disturbance to nesting birds.

BIO-4 **MSHCP Landscaping Restrictions**: In accordance with MSHCP Section 6.1.4, no species listed in Table 6-2, *Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area*, shall be used in the project landscape plans (including hydroseed mix used for interim erosion control).

BIO-5 **Habitat Conservation Plan Fees**: The project applicant is subject to the MSHCP Local Development Mitigation Fee and the Stephens' Kangaroo Rat Habitat Conservation Plan Fee, which shall be paid prior to issuance of any grading permit.

7.0 CERTIFICATION/QUALIFICATION

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

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8.0 REFERENCES

American Ornithologists' Union. 2018. AOU checklist of North and Middle America birds. Retrieved from: http://checklist.aou.org/taxa/.

Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico. Occasional Papers of the Museum, Texas Tech University 223.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: Vascular plants of California. 2nd ed. University of California Press, Berkeley.

California Department of Fish and Wildlife (CDFW). 2018. California Natural Diversity Database and Rarefind. California Department of Fish and Wildlife: Sacramento, California. Retrieved from: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed February 16, 2018.

2010. *List of vegetation alliances and associations*. The Vegetation Classification and Mapping Program. Wildlife & Habitat Data Analysis Branch. September 2010.

2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. State of California, California Natural Resources Agency. November 24, 2009.

2000. Guidelines for assessing the effects of proposed projects on rare, threatened, and endangered plants and natural communities. State of California, The Resources Agency. December 9, 1983 revised May 8, 2000.

California Native Plant Society. 2018. Inventory of rare and endangered plants of California. California Native Plant Society. Retrieved from: http://www.rareplants.cnps.org/. Accessed February 16, 2018.

Dudek and Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Final MSHCP Volume I. Prepared for County of Riverside, Transportation and Land Management Agency. Available from: http://www.rctlma.org/Portals/0/mshcp/index.html.

Emmel, T.C. and J.F. Emmel. 1973. The butterflies of Southern California. Natural History Museum of Los Angeles County, Science Series 26: 1-148.

Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical report Y-87-1. Vicksburg (MS): U.S. Army Engineer Waterways Experiment Station. 100 p. with Appendices.

Environmental Science Associates. 2015. San Pedro Farms Jurisdictional Delineation Report. Prepared for Riverside County Planning Department on Behalf of the Rancon Group. September 2015.

Google Earth. 2018. Aerial imagery of the Canterwood Study Area, 33.667000°, -117.115336°. Aerial Imagery from February 19, 2018. Retrieved from: https://earth.google.com/web/. Accessed June 13, 2018.

Grumbles, B.H. and J.P. Woodley, Jr. 2007. Memorandum: Clean Water Act jurisdiction following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. June 5. 12 p.

HELIX Environmental Planning, Inc. 2018. Burrowing owl survey report for an off-site area associated with the Canterwood Project. August 18.

2017. Burrowing Owl survey report for the Canterwood Project. August 18.

Historic Aerials. 1938. Aerial imagery of Canterwood Project, 33.666902°, -117.115385°. Retrieved from: https://www.historicaerials.com/viewer. Accessed July 5, 2018.

Holland R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento. 156 pp.

LSA Associates, Inc. 2016. MSHCP Consistency Analysis and Habitat Assessment for the Rockport Ranch Project. Prepared for Excel Engineering. April 2016.

Natural Resources Conservation Service. 2018. Web Soil Survey. United States Department of Agriculture (USDA). Retrieved from: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.Aspx. Accessed February 16, 2018.

Oberbauer, T. 1996. Terrestrial vegetation communities in San Diego County based on Holland's descriptions, San Diego Association of Governments, San Diego, CA.

Riley, D.T. 2005. Ordinary High Water Mark. RGL No. 05-05. 4 p.

Riverside, County of (County). 2006. Burrowing owl survey instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Environmental Programs Department. Retrieved from: http://rctlma.org/Portals/1/EPD/consultant/burrowing_owl_survey_instructions.pdf.

2003. Ordinance 810.2. An Ordinance of the County of Riverside Amending Ordinance 810 to Establish the Western Riverside County Multiple Species Habitat Conservation Plan Mitigation Fee.

1996. Ordinance 663.10. An Ordinance of the County of Riverside Amending Ordinance 663 Establishing the Riverside County Stephens' Kangaro(o Rat Habitat Conservation Plan, Plan Fee Assessment Area, and Setting Mitigation Fees.

Rocks Biological Consultant. 2015. 90-day Dry Season Results, Vernal Pool Branchiopod Surveys at the San Pedro Farms Project, Riverside County, California. November 17, 2015.

South Coast Wildlands. 2008. South Coast missing linkages: A wildland network for the South Coast ecoregion. Retrieved from: http://www.scwildlands.org/reports/SCMLRegionalReport.pdf. March 2008.

Taggart, T. W. 2016. The Center for North American Herpetology: The Academic Portal to North American Herpetology. Retrieved from: http://www.cnah.org/.

U.S. Army Corps of Engineers (USACE). 2008a. Regional supplement to the Corps of Engineers wetland delineation manual: Arid west region (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERCD/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

2008b. A field guide to the identification of the ordinary high water mark (OHWM) in the Arid West region of the Unites States. Technical Report TR-08-12, Ed. R.W. Lichvar, S.M. McColley. Hanover, New Hampshire: Cold Regions Research and Engineering Laboratory.

2007. Questions and Answers for Rapanos and Carabell Decisions. June 5. 21 pp.

--- and EPA. 2007. Jurisdictional Determination Form Instructional Guidebook. May 30. 60 pp.

U.S. Fish and Wildlife Service (USFWS). 2018a. Critical habitat mapping. GIS files provided by USFWS. Retrieved from: https://ecos.fws.gov/ecp/report/table/critical-habitat.html. Accessed February 16, 2018.

2018b. National Wetlands Inventory. Retrieved from: https://www.fws.gov/wetlands/data/google-earth.html. Accessed February 16, 2018.

2015. Survey Guidelines for Listed Large Branchiopods. May 31, 2015.

2000. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. United States Fish and Wildlife Service. January 2000.

Western Riverside County Regional Conservation Authority. 2018. MSHCP information tool. Powered by ESRI. Accessed June 13, 2018.

Appendix A

Plant Species Observed

Appendix A
PLANT SPECIES OBSERVED

Family	Scientific Name	Common Name
ANGIOSPERMS – EUDICOTS		
Amaranthaceae	*Amaranthus blitoides*	prostrate amaranth
Asteraceae	*Ambrosia acanthicarpa*	annual bur-sage
	*Carduus pycnocephalus**	Italian thistle
	*Centaurea melitensis**	tocalote
	Centromadia pungens ssp. *laevis*†	smooth tarplant
	Deinandra paniculata	paniculate tarplant
	Erigeron canadensis	horseweed
	Gnaphalium palustre	lowland cudweed
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	*Lactuca serriola**	wild lettuce
	*Oncosiphon piluliferum**	stinknet
	*Pulicaria paludosa**	Spanish false fleabane
	*Sonchus asper**	prickly sow thistle
	Stylocline gnaphaloides	everlasting nest straw
Boraginaceae	*Amsinckia menziesii*	common fiddleneck
	Heliotropium curassavicum var. *oculatum*	salt heliotrope
Brassicaceae	*Capsella bursa-pastoris**	shepherd's purse
	*Hirschfeldia incana**	short-pod mustard
	*Lepidium latifolium**	perennial pepperweed
	*Raphanus sativus**	wild radish
	*Sisymbrium irio**	London rocket
Caryophyllaceae	*Spergularia bocconi**	Boccone's sand spurry
Chenopodiaceae	*Amaranthus albus**	white tumbleweed
	Amaranthus palmeri	Palmer's amaranth
	*Bassia hyssopifolia**	five-hook bassia
	*Chenopodium murale**	nettle-leaf goosefoot
	*Salsola tragus**	Russian thistle
Convolvulaceae	*Calystegia* sp.*	morning-glory
	Cressa truxillensis	alkali weed
Cucurbitaceae	*Citrullus lanatus**	watermelon
Euphorbiaceae	*Croton setigerus*	castor bean
	Euphorbia serpens	rattlesnake weed
Fabaceae	*Melilotus indicus**	Indian sweet clover
Geraniaceae	*Erodium cicutarium**	redstem filaree
Lemnaceae	*Lemna* sp.	duckweed
Lythraceae	*Lythrum hyssopifolia**	grass poly
Malvaceae	*Malva parviflora**	cheeseweed
	*Malvella leprosa**	alkali-mallow
Myrtaceae	*Eucalyptus camaldulensis**	river red gum
Onagraceae	*Epilobium ciliatum* ssp. *ciliatum*	willow herb
Phrymaceae	*Mimulus guttatus*	common monkey-flower
Polygonaceae	*Polygonum aviculare**	prostrate knotweed
	*Rumex crispus**	curly dock
	*Rumex pulcher**	fiddle dock
Portulacaceae	*Portulaca oleracea**	common purslane
Plantaginaceae	*Plantago lanceolata*	English plantain
Salicaceae	*Salix laevigata*	red willow

Appendix A (cont.)
PLANT SPECIES OBSERVED

Family	Scientific Name	Common Name
ANGIOSPERMS – EUDICOTS (cont.)		
Solanaceae	*Datura wrightii*	jimson weed
	*Nicotiana glauca**	tree tobacco
	Solanum americanum	white nightshade
	*Solanum elaeagnifolium**	white horse-nettle
Tamaricaceae	*Tamarix* sp.*	tamarisk
Zygophyllaceae	*Tribulus terrestris**	puncture vine
ANGIOSPERMS – MONOCOTS		
Cyperaceae	*Cyperus esculentus*	yellow nutsedge
	Cyperus squarrosus	dwarf sedge
Poaceae	*Avena barbata**	slender oat
	*Avena fatua**	wild oats
	*Bromus diandrus**	common ripgut grass
	*Bromus hordeaceus**	soft brome
	Bromus madritensis ssp. *rubens**	red brome
	*Crypsis schoenoides**	prickle grass
	*Cynodon dactylon**	Bermuda grass
	Distichlis spicata	saltgrass
	*Echinochloa colona**	jungle ricegrass
	*Echinochloa crus-galli**	common barnyard-grass
	*Festuca perennis**	Italian ryegrass
	*Hordeum murinum**	hare barley
	*Hordeum vulgare**	common barley
	Leptochloa fusca ssp. *uninervia*	Mexican sprangle-top
	*Phalaris minor**	Mediterranean canary grass
	*Polypogon monspeliensis**	annual beardgrass
	*Schismus barbatus**	Mediterranean grass
Typhaceae	*Typha* sp.	cattail

* Non-native species

† California Rare Plant Rank (CRPR) 1B.1

Appendix B

Animal Species Observed or Detected

Appendix B
ANIMAL SPECIES OBSERVED OR DETECTED

Order	Family	Scientific Name	Common Name
BIRDS			
Accipitriformes	Accipitridae	*Buteo jamaicensis*	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
	Cathartidae	*Cathartes aura*	turkey vulture
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Branta canadensis	Canada goose
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Streptopelia decaocto	Eurasian collared-dove
		Zenaida macroura	mourning dove
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Alaudidae	*Eremophila alpestris*	horned lark
	Corvidae	*Corvus brachyrhynchos*	American crow
		Corvus corax	common raven
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Hirundo rustica*	barn swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Euphagus cyanocephalus	Brewer's blackbird
		Sturnella neglecta	western meadowlark
	Mimidae	*Mimus polyglottos*	northern mockingbird
	Passerellidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
	Passeridae	*Passer domesticus*	house sparrow
	Sturnidae	*Sturnus vulgaris*	European starling
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
Pelecaniformes	Threskiornithidae	*Plegadis chihi*	white-faced ibis
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
MAMMALS			
Lagomorpha	Leporidae	*Sylvilagus bachmani*	brush rabbit
Rodentia	Sciuridae	*Otospermophilus beecheyi*	California ground squirrel

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Appendix C

Site Photographs

Photograph 1: View of the agricultural field on the project site, facing southwest. The crops had been recently harvested.

Photograph 2: View of the agricultural field on the project site, facing south. The field had been recently plowed.

Photograph 3: View of an irrigation ditch located along the southern project boundary, facing northwest.

Photograph 4: View of the developed area within Leon Road right-of-way, facing northwest.

Note: See Figure 5 for photograph locations.

Source: HELIX 2018

Photograph 5: View of the eucalyptus woodland within the off-site proposed drainage facility, facing south.

Photograph 6: View of the agricultural field within the off-site proposed drainage facility, facing west.

Photograph 7: View of the disturbed area within the Holland Road right-of-way located in the off-site proposed sewer alignment, facing west.

Photograph 8: View of the disturbed area within the off-site proposed sewer alignment, facing west.

Note: See Figure 5 for photograph locations.

Source: HELIX 2018

Appendix D

Jurisdictional Feature Photographs

Photograph 1: View of the agricultural ditch located near the northern project boundary, facing west. The ditch is a CDFW jurisdictional feature.

Photograph 2: View of the agricultural ditch, facing east.

Photograph 3: View of the roadside ditch located within the off-site proposed sewer alignment west of Briggs Road and south of the Wilderness Lakes RV Resort, facing west.

Note: See Figure 6 for photograph locations.

Source: HELIX 2018

Appendix E

Rare Plant Species Potential to Occur

Appendix E
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Narrow Endemic Plant Species Survey Area (NEPSSA) Four				
Allium munzii	Munz's onion	FE/ST CRPR 1B.1 MSHCP Covered Species (b)	Medium perennial herb. Occurs on clay soils in chaparral, cismontane woodland, coastal sage scrub, pine-juniper woodland, and valley and foothill grasslands. Elevation range 300-900 m. Flowering period Apr-May.	**None.** The study area does not support habitat based on the absence of mapped clay soils. This species was not observed during the focused plant surveys.
Ambrosia pumila	San Diego ambrosia	FE CRPR 1B.1 MSHCP Covered Species (b)	Small perennial herb. Occurs on clay, sandy loam, and sometimes alkaline soils. Found in grasslands, valley bottoms, and dry drainages. Can occur on slopes, disturbed places, in coastal sage scrub and chaparral. Elevation range 50-600 m. Flowering period Apr-Jul.	**Presumed Absent.** The study area supports low-quality habitat based on the presence of some mapped sandy and alkaline soils. This species was not observed during the focused plant surveys.
Dudleya multicaulis	many-stemmed dudleya	CRPR 1B.2 MSHCP Covered Species (b)	Medium perennial herb. Occurs in heavy soils (often clay) and sandstone outcrops. Often associated with dry, stony places within coastal sage scrub, valley grasslands, and coastal plains. Elevation range 0-600 m. Flowering period May-Jun.	**None.** The study area does not support habitat based on absence of mapped clay soils and sandstone outcrops. This species was not observed during the focused plant surveys.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Narrow Endemic Plant Species Survey Area (NEPSSA) Four (cont.)				
Navarretia fossalis	spreading navarretia	FT CRPR 1B.1 MSHCP Covered Species (b)	Small annual herb. Occurs in vernal pools, vernal swales, or roadside depressions. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Elevation range 30-1300 m. Flowering period Apr-Jun.	**Presumed Absent.** The study area supports low-quality habitat based on the presence of some ponding associated with the agricultural ditch. Five small populations of this species were recorded in CNDDB in 2015 along Wickerd Road, approximately 1.5 miles southwest of the study area. This species was not observed during the focused plant surveys.
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1 MSHCP Covered Species (b)	Small annual herb. Occurs in or near vernal pools. This species tends to grow in wetter portions of the vernal pool basin but does not show much growth until the basins become somewhat desiccated. Elevation range 0-700 m. Flowering period Apr-Aug.	**None.** The study area does not support habitat based on absence of vernal pools. Two small populations of this species were recorded in CNDDB in 2015 along Wickerd Road, approximately 1.5 miles southwest of the study area. This species was not observed during the focused plant surveys.
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	CRPR 2B.1 MSHCP Covered Species (b)	Medium annual herb. Occurs in moist alkaline soils within mud flats of vernal pools/lakes and drying river beds. Elevation range 0-500 m. Flowering period May-Sep.	**None.** The study area does not support habitat based on absence of vernal pools, lakes, and drying river beds. This species was not observed during the focused plant surveys.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species				
Abronia villosa var. *aurita*	chaparral sand-verbena	CRPR 1B.1	Small annual herb. Occurs on sandy floodplains or flats in generally inland, arid areas of sage scrub and open chaparral. Elevation range 0-1600 m. Flowering period Mar-Aug.	**None.** The study area does not support sandy floodplains or native sage scrub/chaparral habitats.
Allium marvinii	Yucaipa onion	CRPR 1B.2 MSHCP Covered Species (b)	Small perennial herb. Occurs on clay soils in openings in chaparral. Elevation range 850-1070 m. Flowering period Mar-Apr.	**None.** The study area does not support mapped clay soils or chaparral.
Almutaster pauciflorus	alkali marsh aster	CRPR 2B.2	Perennial herb. Occurs in meadows and seeps on alkaline soil. Elevation range 200-700 m. Flowering period Jun-Oct.	**None.** The study area does not support meadows or seeps.
Arctostaphylos rainbowensis	rainbow manzanita	CRPR 1B.1 MSHCP Covered Species (e)	Large conspicuous shrub. Southern mixed chaparral is preferred habitat with a relatively dense canopy from 6 to 8 feet. Elevation range 150-800 m. Flowering period Jan-Feb.	**None.** The study area does not support mixed chaparral habitat.
Astragalus pachypus var. *jaegeri*	Jaeger's bush milkvetch	CRPR 1B.1 MSHCP Covered Species	Small shrub. Occurs in rocky areas or sandy soils within grassland, oak woodland, chaparral, and coastal scrub. Elevation range 450-1200 m. Flowering period Dec-Jun.	**None.** The study area does not support grassland, oak woodland, chaparral, or coastal scrub habitats.
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	FE CRPR 1B.1 MSHCP Covered Species (d)	Small annual herb. Restricted to highly alkaline and silty-clay soils, which are found in certain alkali sink scrub, alkali playa, vernal pool, and annual alkali grassland habitats. Elevation range 400-500 m. Flowering period Apr-Aug.	**None.** The study area supports does not support silty-clay soils, alkali sink scrub, alkali playas, vernal pools, or alkali grassland habitats.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Atriplex pacifica	South Coast saltscale	CRPR 1B.2	Small annual herb. Occurs in xeric, often mildly disturbed locales of coastal bluff scrub. Usually the surrounding habitat is an open coastal sage scrub, although it is found on alkaline flats in areas devoid of taller shrubs. Elevation range 0-300 m. Flowering period Mar-Oct.	**None.** The study area does not support coastal bluff scrub habitat. The study area is above the elevation range of this species.
Atriplex parishii	Parish's brittlescale	CRPR 1B.1 MSHCP Covered Species (d)	Small annual herb. Occurs in chenopod scrub, vernal pools, and playas. Dry alkaline flats with fine soils or on the periphery of salt pannes. Elevation range 0-470 m. Flowering period Jun-Oct.	**Presumed Absent.** The study area supports low-quality habitat based on the presence of some mapped alkaline. This species was not observed during the focused plant surveys.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	CRPR 1B.2 MSHCP Covered Species (d)	Small annual herb. This species is historically associated with the isolated alkaline flats of southern California valley areas that have primarily been drained and converted to residential housing or agriculture. Elevation range 0-200 m. Flowering period Apr-Oct.	**None.** The study area is above the elevation range of this species.
Ayenia compacta	California ayenia	CRPR 2B.3	Small perennial herb. Occurs within rocky and sandy washes in the desert within Mojavean, Sonoran, and creosote bush scrub habitats. Elevation range 150-1095 m. Flowering period Mar-Apr.	**None.** The study area does not support Mojavean, Sonoran, or creosote bush scrub habitats.
Berberis nevinii	Nevin's barberry	SE/FE CRPR 1B.1 MSCHP Covered Species (d)	Shrub. Occurs on steep, north-facing slopes or washes within chaparral, cismontane woodland, coastal scrub, and riparian scrub. Elevation range 70-825 m. Flowering period Mar-May.	**None.** The study area does not support steep slopes or washes.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Brodiaea filifolia	thread-leaved brodiaea	FT/SE CRPR 1B.1 MSHCP Covered Species (d)	Medium perennial herb. Occurs in clay soils within vernally moist grasslands and vernal pool periphery are typical locales. Elevation range 25-860 m. Flowering period Mar-Jun.	**None.** The study area does not support clay soils.
Brodiaea orcuttii	Orcutt's brodiaea	CRPR 1B.1 MSHCP Covered Species	Perennial herb. Occurs in vernally moist grasslands, mima mound topography, and vernal pool periphery are preferred habitat. Occasionally will grow on streamside embankments in clay soils. Elevation range 0-1600 m. Flowering period Apr-Jul.	**None.** The study area is outside of this species' known geographical range (within and adjacent to San Diego County).
Brodiaea santarosae	Santa Rosa Basalt Brodiaea	CRPR 1B.2	Small perennial herb. Occurs in soils derived from Santa Rosa Basalt within grassland habitat. Elevation range 580-1045 m. Flowering period May-Jun.	**None.** The study area does not support Santa Rosa Basalt. The study area is below the elevation range of this species.
Calochortus weedii var. *intermedius*	intermediate mariposa lily	CRPR 1B.2 MSHCP Covered Species	Medium perennial herb. Occurs on dry, rocky slopes within openings in chaparral, coastal scrub, and grassland habitats. 0-680 m. Flowering period Jun-Jul.	**None.** The study area does not support rocky slopes.
Centromadia pungens ssp. *laevis*	smooth tarplant	CRPR 1B.1 MSHCP Covered Species (d)	Medium annual herb. Occurs within valley and foothill grasslands, particularly near alkaline locales. Elevation range 90-500 m. Flowering period Apr-Sep.	**Present.** A total of three individuals were observed within the agricultural ditch during the August 2017 and May 2018 rare plant surveys.
Chorizanthe parryi var. *parryi*	Parry's spineflower	CRPR 1B.1 MSHCP Covered Species (e)	Small annual herb. Occurs in sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral communities. Elevation range 90-800 m. Flowering period May-Jun.	**None.** The study area does not support suitable grassland, coastal sage scrub, or chaparral habitats.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	CRPR 1B.2 MSHCP Covered Species	Small annual herb. Occurs within clay lenses largely devoid of shrubs. Can be occasionally seen on vernal pool and even montane meadows peripheries near vernal seeps. Elevation range 30-1500 m. Flowering period Apr-Jun.	**None.** The study area does not support clay lenses, vernal pools, montane meadows, or seeps.
Clinopodium chandleri	San Miguel savory	CRPR 1B.2 MSHCP Covered Species (b)	Medium perennial herb. Occurs on Gabbro and metavolcanic soils in interior foothills, chaparral, and oak woodland. Elevation range 0-1100 m. Flowering period Mar-Jul.	**None.** The study area does not support suitable Gabbro/ metavolcanic soils or chaparral/oak woodland habitats.
Cryptantha wigginsii	Wiggins' cryptantha	CRPR 1B.2	Small annual herb. Commonly occurs in clay soils within coastal scrub. Elevation range 20-275 m. Flowering period Feb-Jun.	**None.** The study area does not support suitable clay soils or coastal scrub habitat. The study area is below the elevation range of this species.
Deinandra mohavensis	Mojave tarplant	SE CRPR 1B.3	Annual herb. Occurs along drainages, riparian areas, ephemeral grassy areas, and in sand bars in river beds within riparian scrub, coastal scrub and chaparral. Elevation range 640-1600 m. Flowering period May-Jun.	**None.** The study area does not support drainages, riparian areas, ephemeral grassy areas, riparian scrub, coastal scrub, or chaparral. The study area is below the elevation range of this species.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Dodecahema leptoceras	slender-horned spineflower	FE/SE CRPR 1B.1 MSHCP Covered Species (b)	Small annual herb. Associated with alluvial fans, floodplains, stream terraces, washes, and benches. Grows in riverbed alluvium high in silt and low in nutrients and organic matter in silt-filled, shallow depressions on relatively flat surfaces surrounded by scattered, river-rounded, cobble-sized rocks. Elevation range 200-700 m. Flowering period May-Jun.	**None.** The study area does not support suitable alluvial fan, streambed, or floodplain habitats.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE CRPR 1B.1 MSHCP Covered Species	Small annual or perennial herb. Occurs in vernal pools or mima mound areas with vernally moist conditions are preferred habitat. Elevation range 0-705 m. Flowering period May-Jun.	**None.** The study area does not support vernal pools or mima mounds.
Erythranthe purpurea	little purple monkeyflower	CRPR 1B.2	Small annual herb. Occurs in meadows and seeps, pebble plains, and upper montane coniferous forest on dry clay or gravelly soils under Jeffrey pines and along annual steams, springs, and seeps. Elevation range 1900-2300 m. Flowering period Jun-Jul.	**None.** The study area does not support upper montane coniferous forest. The study area is below the elevation range for this species.
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains bedstraw	CRPR 1B.3 MSHCP Covered Species (b)	Annual herb. Occurs in lower montane coniferous forest in open, mixed habitats. Elevation range 1350-2100 m. Flowering period May-Jul.	**None.** The study area does not support montane coniferous forest. The study area is below the elevation range for this species.
Geothallus tuberosus	Campbell's liverwort	CRPR 1B.1	Liverwort. Occurs in mesic soil within coastal scrubs and in vernal pools. Elevation range 10-600 m. Flowering period N/A.	**None.** The study area does not support suitable mesic soil within coastal scrub or vernal pool habitats.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	CRPR 3.1	Annual herb. Occurs on open, grassy places and mesic disturbed areas within chaparral. Elevation range 450-720 m. Flowering period May.	**None.** The study supports low quality habitat based on the presence of mesic disturbed areas, but does not support grasses or chaparral within the mesic areas.
Hordeum intercedens	vernal barley	CRPR 3.2 MSHCP Covered Species	Small annual grass. Saline flats and depressions in grasslands or in vernal pool basins. Elevation range 5-1000 m. Flowering period Mar.-Jun.	**None**. The study area does not support saline flats or depressional areas within grassland habitat, or vernal pool basins.
Horkelia cuneata var. *puberula*	mesa horkelia	CRPR 1B.1	Medium perennial herb. Occurs in sandy or gravelly areas within chaparral, coastal sage scrub, and coastal mesas. Elevation range 70-870. Flowering period Mar-Jul.	**None.** The study area does not support chaparral, coastal sage scrub, or coastal mesas.
Hesperocyparis forbesii	Tecate cypress	CRPR 1B.1	Large shrub or tree. Occurs within clay, gabbroic, or metavolcanic soils within closed-cone coniferous forest and chaparral habitats. Elevation range 80-1500 m. Flowering period N/A.	**None.** The study area does not support closed-cone coniferous forest or chaparral habitats.
Imperata brevifolia	California satintail	CRPR 2B.1	Rhizomatous grass. Occurs on mesic sites, alkali seeps, and riparian areas within coastal scrub, chaparral, mojavean desert scrub, and meadows. Elevation range 0-1215 m. Flowering period Sep-May.	**None.** The study area does not support alkali seeps and riparian areas.
Juncus luciensis	Santa Lucia dwarf rush	CRPR 1B.2	Small annual grass-like herb. Occurs in mesic sandy soils within seeps, meadows, vernal pools, and streams. Elevation 300-1900 m. Flowering period Apr-Jul.	**None.** The study area does not support seeps, meadows, vernal pools, or streams.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	CRPR 1B.1 MSHCP Covered Species (d)	Medium annual herb. Associated with alkaline soils in coastal salt marsh, upper end of tidal inundation areas, and vernal pools. Elevation range 0-1000 m. Flowering period Apr-May.	**None.** The study area does not support coastal habitat or vernal pools.
Lepechinia cardiophylla	heart-leaved pitcher sage	CRPR 1B.2 MSHCP Covered Species (d)	Medium shrub. Occurs in closed-cone coniferous forest, chaparral, cismontane woodland, and metavolcanic soils in the Santa Ana Mountains in Orange and Riverside Counties and near Mt. Woodson in San Diego County. Elevation range 600-1200 m. Flowering period Apr-Jul.	**None.** The study area does not support closed-cone coniferous forest, chaparral, or cismontane woodland habitats and lacks metavolcanics soils. The study area is below the elevation range of this species.
Lilium parryi	lemon lily	CRPR 1B.2 MSHCP Covered Species (f)	Medium perennial herb. Meadows and seeps in lower and upper montane coniferous forest and riparian forest habitats. Elevation range 1220-2745 m. Flowering period Jun-Sep.	**None.** The study area does not support coniferous forest or riparian forest habitats. The study area is below the elevation range of this species.
Limnanthes alba ssp. *parishii*	Parish's meadowfoam	CRPR 1B.2 MSHCP Covered Species	Small annual herb. Occurs in montane meadows largely devoid of shrubs and with concentrations of annuals and herbaceous perennials (not grasses). Elevation range 600-2000 m. Flowering period Apr-May.	**None.** The study area does not support montane meadows. The study area is below the elevation range of this species.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Monardella hypoleuca ssp. *intermedia*	intermediate monardella	CRPR 1B.3	Medium perennial herb. Typically occurs within understory of chaparral and cismontane woodland habitats. Occasionally observed within in lower montane coniferous forest habitat. Elevation range 400-1250 m. Flowering period Jun-Sep.	**None.** The study area does not support chaparral, cismontane woodland, or lower montane coniferous forest habitats.
Myosurus minimus ssp. *apus*	little mousetail	CRPR 3.1 MSHCP Covered Species (d)	Small annual herb. Vernal pools and alkaline marshes. This cryptic species typically grows in the deeper portions of vernal pool basins, sprouting immediately after the surface water has evaporated. Elevation range 20-640 m. Flowering period Mar-Jun.	**None.** The study area does not support vernal pools or marshes.
Nama stenocarpa	mud nama	CRPR 2B.2 MSHCP Covered Species (d)	Medium annual or perennial herb. Occurs in marshes and swamps and along lake margins and riverbanks. Elevation range 5-500 m. Flowering period Mar-Oct.	**None.** The study area does not support marshes, swamps, lake margins, or riverbanks.
Navarretia prostrata	prostrate navarretia	CRPR 1B.1 MSHCP Covered Species (d)	Small annual herb. Restricted to vernal pools. Grows at mid-levels within the deeper pools to the basin bottoms of the shallower pools. Elevation range 0-700 m. Flowering period Apr-Jul.	**None.** The study area does not support any vernal pools.
Penstemon californicus	California beardtongue	CRPR 1B.2	Small perennial herb. Occurs on sand or granitic soils in stony slopes and shrubby openings within chaparral, lower montane coniferous forest, pinyon/juniper woodland. Elevation range 1170-3835 m. Flowering period May-Jun.	**None.** The study area does not support stony slopes, chaparral, or forests. The study area is below the elevation range of this species.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Pseudognaphalium leucocephalum	white rabbit-tobacco	CRPR 2B.2	Large perennial herb. Occurs within sandy or gravelly soils along stream benches, dry streambeds, and canyons. Elevation 0-500 m. Flowering period Jul-Oct.	**None.** The study area does not support sandy or gravelly stream benches or canyons.
Scutellaria bolanderi ssp. *austromontana*	southern mountain skullcap	CRPR 1B.2	Medium perennial herb. Occurs within gravelly soils along streambanks in oak and pine woodlands. Elevation 425-2000 m. Flowering period Jun-Aug.	**None.** The study area does not support oak or pine woodland habitats.
Sibaropsis hammittii	Hammitt's clay-cress	CRPR 1B.2 MSHCP Covered Species (b)	Small annual herb. Occurs within clay and volcanic soils in grassland habitat and grassy openings in chaparral habitat. Elevation 720-1065 m. Flowering period Mar-Apr.	**None.** The study area does not support grassland or chaparral habitats. The study area is below the elevation range of this species.
Sidalcea neomexicana	salt spring checkerbloom	CRPR 2B.2	Medium perennial herb. Occurs within alkaline, mesic soils within springs and marshes. Elevation range 0-1500 m. Flowering period Apr-Jun.	**None.** Although the study area supports alkaline soils, there are no springs or marshes.
Sphaerocarpos drewei	bottle liverwort	CRPR 1B.1	Liverwort. Openings within chaparral and coastal scrub habitats. Elevation range 90-600 m. Flowering period N/A	**None.** The study area does not support chaparral or coastal scrub habitats.
Symphyotrichum defoliatum	San Bernardino aster	CRPR 1B.2	Large perennial herb. Occurs in vernally mesic soils within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, grasslands, streams, springs, and disturbed ditches. Elevation range 0-2050 m. Flowering period Jul-Nov.	**Presumed Absent.** The study area supports low quality habitat based on the presence of roadside ditches.

Appendix E (cont.)
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Other Plant Species (cont.)				
Texosporium sancti-jacobi	woven-spored lichen	CRPR 3	Moss. Associated with mammal scat, dead twigs, and *Selaginella* spp. within chaparral habitats. Elevation range 60-660 m. Flowering period N/A.	**None.** The study area does not support chaparral habitats.
Tortula californica	California screw-moss	CRPR 1B.2	Moss. Occurs in sandy soils within chenopod scrub and grasslands. Elevation 10-1460 m. Flowering Period N/A	**None.** The study area does not support chenopod scrub or grassland habitats.

[1] Sensitive species reported within a twelve-quadrangle database search on CNDDB and CNPS, which included the following quadrangles: Bachelor Mountain, Hemet, Lake Elsinore, Lakeview, Murrieta, Perris, Romoland, Sage, San Jacinto, Steele Peak, Wildomar, and Winchester.

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

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

Appendix F

Sensitive Animal Species Potential to Occur

Appendix F
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FT MSHCP Covered Species (a)	Most commonly found in swale, earth slump, or basal-flow depression pools in unplowed grasslands. Requires cool-water pools.	**Presumed Absent.** Dry season surveys were conducted within the agricultural ditch in 2015, which were negative for this species.
Euphydryas editha quino	Quino checkerspot butterfly	FE MSHCP Covered Species	Primary larval host plants in San Diego are dwarf plantain (*Plantago erecta*) at lower elevations, woolly plantain (*P. patagonica*) and white snapdragon (*Antirrhinum coulterianum*) at higher elevations. Owl's clover (*Castilleja exserta*) is considered a secondary host plant if primary host plants have senesced. Potential habitat includes vegetation communities with areas of low-growing and sparse vegetation. These habitats include open stands of sage scrub and chaparral, adjacent open meadows, old foot trails and dirt roads.	**None.** The study area does not support this species' host plant.
Linderiella santarosae	Santa Rosa Plateau fairy shrimp	MSHCP Covered Species (a)	Found in southern basalt flow vernal pools on the Santa Rosa Plateau in Riverside County.	**None.** The study area is not located on the Santa Rosa Plateau.
Streptocephalus woottoni	Riverside fairy shrimp	FE MSHCP Covered Species (a)	Typically deep vernal pools and seasonal wetlands at least 30 centimeters deep.	**Presumed Absent.** Dry season surveys were conducted within the agricultural ditch in 2015, which were negative for this species.
Fish				
Gila orcuttii	arroyo chub	SSC MSHCP Covered Species	Prefers slow moving streams or backwaters with sand or mud bottoms. Streams are typically deeper than 40 centimeters (16 inches). Primary food source is aquatic vegetation and invertebrates.	**None.** The study area does not support perennial streams.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC MSHCP Covered Species (c)	Found on banks with open-canopy riparian forest characterized by willows, cottonwoods, or sycamores; breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**None.** The study area does not support perennial streams.
Rana draytonii	California red-legged frog	FT/SSC	Suitable habitat is characterized by dense, shrubby riparian vegetation with deep, slow-moving water. Readily displaced by introduced aquatic predators, including bullfrogs (*Lithobates catesbiana*) or crayfish (*Procambarus* spp.).	**None.** The study area does not support perennial streams.
Spea hammondii	western spadefoot	SSC MSHCP Covered Species	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* spp.)	**Low.** The study area does not support washes, floodplains, and alluvial fans. The agricultural ditch holds water that may provide low-quality habitat for this species
Taricha torosa	Coast Range newt	SSC MSHCP Covered Species	Breeds in ponds, reservoirs, and slow-moving stream pools; often found in riparian forest, woodlands, chaparral, or grassland within one kilometer of breeding habitat.	**None.** The study area does not support suitable breeding or terrestrial habitat.
Reptiles				
Arizona elegans occidentalis	California glossy snake	SSC	Most common in desert habitats, but also occurs in chaparral, sagebrush, valley-foothill hardwood, pine-juniper, and annual grassland. Associated with sandy open areas with sparse shrub cover, but can also occur in rocky habitats.	**None.** The study area does not support chaparral, sagebrush, forest, or grassland habitats.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Reptiles (cont.)				
Aspidoscelis tigris stejnegeri	coastal whiptail	SSC MSHCP Covered Species	Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	**Low.** The study area and surrounding areas do not support coastal scrub, chaparral, or woodland habitat. The eucalyptus woodland that occurs within the study area may support low-quality habitat.
Coleonyx variegatus abbotti	San Diego banded gecko	SSC MSHCP Covered Species	Chaparral and coastal sage scrub in areas with rock outcrops.	**None.** The study area does not support chaparral or coastal scrub habitat.
Crotalus ruber	red diamond rattlesnake	SSC MSHCP Covered Species	Occurs in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**None.** The study area does not support chaparral, coastal scrub, or rock outcrops.
Emys marmorata	western pond turtle	SSC MSHCP Covered Species	Almost entirely aquatic; occurs in freshwater marshes, creeks, ponds, rivers and streams, particularly where basking sites, deep water retreats, and egg laying areas are readily available.	**None.** The study area does not support any aquatic features.
Phrynosoma blainvillii	coast horned lizard	SSC MSHCP Covered Species	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* spp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**None.** The study area and surrounding areas do not support coastal sage scrub, chaparral, oak woodlands, or coniferous forest habitats.
Salvadora hexalepis virgultea	coast patch-nosed snake	SSC	Primarily found in chaparral but also inhabits coastal sage scrub and areas of grassland mixed with scrub.	**None.** The study area does not support chaparral, coastal scrub, or grassland habitats.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Reptiles (cont.)				
Thamnophis hammondii	two-striped gartersnake	SSC	Occurs along perennial and intermittent streams bordered by dense riparian vegetation. Occasionally occurs in artificially created aquatic habitats, such as manmade lakes or stock ponds.	**None.** The study area does not support any perennial or intermittent streams, and there are no artificial aquatic habitats.
Birds				
Agelaius tricolor	tricolored blackbird	SCE/SSC MSHCP Covered Species	Breeds in dense stands of cattails (*Typha* sp.) or bulrushes (*Schoenoplectus* sp./*Scirpus* sp.) located within large freshwater marshes. Forages in adjacent open habitats, such as agricultural fields, pastures, or grasslands.	**None.** Although the study area and surrounding areas supports active agriculture, dry farming practices are used and there is no marsh habitat within or adjacent to the study area.
Aquila chrysaetos	golden eagle	SFP MSHCP Covered Species	Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation.	**Not Expected.** The study area does not support suitable cliff habitat for nesting. Fossorial mammals living in and adjacent to the agricultural field may provide limited feeding opportunities for individuals passing through the area.
Asio otus	long-eared owl	SSC	Nests and roosts in densely canopied trees within oak woodlands, riparian forests, and conifer forests in proximity to open foraging habitat.	**None.** The study area and adjacent areas do not support dense oak woodland, riparian forests, or conifer forests.
Athene cunicularia	burrowing owl	SSC MSHCP Covered Species (c)	Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow.	**Presumed Absent.** Although the project site supports suitable habitat and burrows, no burrowing owls were observed during focused surveys.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Birds (cont.)				
Buteo swainsoni	Swainson's hawk	ST MSHCP Covered Species	Breeds in open grassland with scattered trees or groves within agricultural/ranch lands. Forages for small mammals, reptiles, birds, and insects in adjacent grassland and agricultural fields.	**Not Expected.** Although the study area supports suitable trees for nesting in the eucalyptus woodland, this species is not known to nest in southern California with the exception of populations in the Antelope Valley and Mojave Desert. Fossorial mammals living in and adjacent to the agricultural field may provide limited feeding opportunities for individuals passing through the area. CNDBB has no recorded observations for this species within a 30-mile radius since the 1930s.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	SSC MSHCP Covered Species	Occurs in coastal sage scrub with large cactus for nesting.	**None.** The study area does not support cactus.
Charadrius alexandrinus nivosus	western snowy plover	FT/SSC	Requires sandy, gravelly, or friable soils for nesting at beaches, dunes, salt flats, and large lakes.	**None.** The study area does not support suitable nesting or foraging habitat.
Circus cyaneus	northern harrier	SSC MSHCP Covered Species	Nests on ground amongst dense vegetation within salt and freshwater marshes, meadows, and riparian woodlands. Forage on small mammals and songbirds within open areas with low-growing vegetation, such as deserts, agricultural fields, pastures, grasslands, floodplains, marshes, and estuaries.	**Not Expected.** The study area does not support suitable marsh, meadow, or riparian woodland habitat for nesting. Fossorial mammals living in and adjacent to the agricultural field may provide limited feeding opportunities for individuals passing through the area.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Birds (cont.)				
Elanus leucurus	white-tailed kite	SFP MSHCP Covered Species	Nests in trees with dense canopies within open grasslands, woodlands, and marshes. Forages for small mammals within lightly grazed/ungrazed pastures and grasslands.	**Low.** The study area supports some suitable nesting habitat for this species within the eucalyptus grove mapped within the off-site drainage facility. The potential is considered low since the eucalyptus trees are not dense-canopied and are located adjacent to a well-traveled road. Fossorial mammals living in and adjacent to the agricultural fields may provide feeding opportunities for individuals passing through the area. This species was recorded on CNDDB in 2006 approximately 3.1 miles northeast of the study area near the City of Winchester.
Haliaeetus leucocephalus	bald eagle	SE/SFP MSHCP Covered Species	Typically nests in trees within lower montane coniferous forests, although will occasionally nest on cliff faces or on the ground when trees are not present. Feeds primarily on fish and are usually within close proximity to lakes or other water bodies.	**None.** The study area does not support suitable nesting or foraging habitat.
Icteria virens	yellow-breasted chat	SSC MSHCP Covered Species	Summer resident of mature riparian woodlands. Nests are placed in low, dense vegetation, such as willows (*Salix* sp.), blackberry (*Rubus* sp.), and wild grape (*Vitis californica*).	**None.** The study area does not support suitable riparian woodland habitat.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Birds (cont.)				
Lanius ludovicianus	loggerhead shrike	SSC MSHCP Covered Species	Nests in dense, often thorny shrubs or trees. Will nest within brush piles or tumbleweeds when trees or shrubs are not present. Feeds on a wide variety of animals, including arthropods, amphibians, reptiles, small mammals, and small songbirds within open habitats such as grasslands, agricultural fields, pastures, shrublands, and ruderal areas with adequate perching locations.	**Moderate.** The project site supports some tumbleweeds that may be suitable nesting habitat, although sparse. The agricultural field provides suitable foraging habitat. This species was recorded on CNDDB in 2006, approximately 2.3 miles to the northeast of the study area.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC MSHCP Covered Species	Occurs in coastal sage scrub and very open chaparral.	**None.** The study area does not support suitable coastal sage scrub or chaparral habitat.
Setophaga petechia	yellow warbler	SSC MSHCP Covered Species	Breeds in lowland and foothill riparian woodland, dominated by cottonwoods, alders, or willows.	**None.** The study area does not support riparian woodland habitat.
Toxostoma bendirei	Bendire's thrasher	SSC	Nests in cholla (*Cylindropntia* sp.), yucca (*Yucca* sp.), palo verde (*Parkinsonia* sp.), and other thorny shrubs/small trees. Forages for insects, spiders, seeds, and berries on the ground within Joshua tree woodland and Mojavean desert scrub habitats.	**None.** The study area does not support Joshua tree woodland or Mojavean desert scrub habitats.
Vireo bellii pusillus	least Bell's vireo	FE/SE MSHCP Covered Species (a)	Inhabits riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat with a canopy of tall willows.	**None.** The study area does not support riparian woodland habitat.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Birds (cont.)				
Xanthocephalus xanthocephalus	yellow-headed blackbird	SSC	Nest in cattails, bulrushes, or reeds within freshwater wetlands. Forage within adjacent grasslands, agricultural fields, and ranch lands.	**None.** Although the study area is supports active agricultural fields, dry farming practices are used and there is no wetland habitat within the study area.
Mammals				
Chaetodipus californicus femoralis	Dulzura pocket mouse	SSC	Primarily associated with mature chaparral. It has, however, been trapped in mule fat scrub and is known to occur in coastal sage scrub.	**None.** The study area does not support chaparral, mule fat scrub, or coastal scrub habitats.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC MSHCP Covered Species	Herbaceous openings within coastal sage scrub, chaparral, grasslands, and desert scrub. Often associated with sandy, rocky, or gravelly substrates.	**None.** The study area does not support coastal sage scrub, chaparral, grassland, or desert scrub habitats.
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Occurs in a wide variety of habitats, although more common in mesic habitats. Usually roosts in caves, abandoned mines, and occasionally buildings. Forages for small moths along the edge of vegetation, such as riparian and woodland habitats.	**Not Expected.** The study area does not support suitable roosting habitat or mesic habitats. The eucalyptus woodland may provide limited foraging habitat. This species was recorded on CNDDB in 2000, approximately 15 miles northeast of the study area.
Dipodomys merriami parvus	San Bernardino kangaroo rat	SSC	Typically associated with sandy soils within desert scrub, sagebrush, Joshua tree, and pinyon-juniper habitats. Places burrow systems at the bases of shrubs with sparse to moderate canopy.	**None.** The study area does not support desert scrub, sagebrush, Joshua tree, or pinyon-juniper habitats.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Mammals (cont.)				
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST MSHCP Covered Species	Primarily occurs in sparsely vegetated areas within grassland habitats, but also found in open coastal scrub habitat. Feeds on filaree (*Erodium* sp.) and brome (*Bromus* sp.) seeds. Dig burrows in firm soil or use abandoned pocket gopher burrows.	**None.** The study area does not support grassland or coastal scrub habitats.
Eumops perotis californicus	western mastiff bat	SSC	Roosts under exfoliating rock slabs on cliff faces and occasionally in large boulder crevices and building cracks. Forages in a variety of open areas, including washes, floodplains, chaparral, coastal sage scrub, woodlands, ponderosa pine forests, grassland, and agricultural areas.	**Low.** Although the study area does not support suitable roosting habitat, this species may use the open agricultural area for foraging. This species was recorded on CNDDB in 2001, approximately 5 miles to the northwest of the study area near Canyon Lakes.
Lasiurus xanthinus	western yellow bat	SSC	Roosts in trees, and are commonly found in palms and cottonwoods. Typically forages over water and among trees within riparian, desert riparian, desert wash, and palm oasis habitats.	**None.** The study area does not support any palms or cottonwoods suitable for roosting. Ideal foraging habitat is not present due to lack of aquatic features.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC MSHCP Covered Species	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**Moderate**. The study area supports suitable habitat for this species, although shrub cover is sparse. This species was recorded on CNDDB in 1997, approximately 0.75 miles northeast of the study area.
Neotoma lepida intermedia	San Diego desert woodrat	SSC MSHCP Covered Species	Open chaparral, coastal sage scrub, pinyon-juniper, and Joshua tree habitats. This species builds large, stick nests in rock outcrops or around clumps of cactus or yucca.	**None.** The study area does not support any suitable habitat for this species.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Mammals (cont.)				
Nyctinomops femorasaccus	pocketed free-tailed bat	SSC	Roosts in crevices within high rocky cliffs, caverns, or buildings. Typically forages over water and among trees within arid habitats, such as pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian.	**None.** The study area does not support suitable roosting or foraging habitat.
Onychomys torridus ramona	southern grasshopper mouse	SSC	Sandy valley floors within desert scrub habitat with low to moderate shrub cover and friable soils, but also found in coastal scrub and chaparral habitats.	**None.** The study area does not support desert scrub, coastal scrub, or chaparral habitats.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	SSC MSHCP Covered Species (c)	Sandy, gravelly, or stony soils within coastal scrub, alluvial sage scrub, and grassland habitats.	**None.** The study area does not support coastal sage scrub, alluvial sage scrub, or grassland habitat.
Perognathus longimembris internationalis	Jacumba pocket mouse	SSC	Gravelly soils in desert areas, often in rolling terrain or in areas with ravines or rock outcroppings. Associated with sage scrub plants and yucca.	**None.** The study area does not support suitable rolling terrain, ravine, rock outcrops, or sage scrub habitat. The geographic range of this species is typically further south of the study area.
Taxidea taxus	American badger	SSC	Dry, open shrublands, forest, and grasslands with friable soils.	**None**. The study area does not support dry, open shrublands, forest, and grasslands with friable soils. No burrows of suitable size for this species were observed on the study area.

Appendix F (cont.)
Sensitive Animal Species Potential to Occur[1]

[1] Sensitive species reported within a twelve-quadrangle database search on CNDDB and CNPS, which included the following quadrangles: Bachelor Mountain, Hemet, Lake Elsinore, Lakeview, Murrieta, Perris, Romoland, Sage, San Jacinto, Steele Peak, Wildomar, and Winchester.

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

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

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Appendix G

San Pedro Farms Dry Season Fairy Shrimp Survey Report

ROCKS
BIOLOGICAL CONSULTING

November 17, 2015

U.S. Fish and Wildlife Service
Attn: Ms. Stacey Love
Carlsbad Fish and Wildlife Office
2177 Salk Ave., Ste. 250
Carlsbad, CA 92008

Subject: 90-day Dry Season Results, Vernal Pool Branchiopod Surveys at the San Pedro Farms Project, Riverside County, California

Ms. Love:

This letter presents the results of dry season vernal pool branchiopod surveys at the San Pedro Farms project site in Riverside County, California. Soil was collected from two artificially created areas that have the potential to impound water seasonally. One contained eggs (i.e., cysts) of the genus *Branchinecta*. The eggs were hatched and identified as *B. lindahli*. Dry season survey results were negative for all federally-listed endangered or threatened vernal pool branchiopod species at the San Pedro Farms site.

Introduction

The surveys described in this report were performed on behalf of Environmental Science Associates (ESA). The approximately 156-acre San Pedro Farms site is located in an unincorporated area of Riverside County, California (Figure 1). The United States Geological Survey (USGS) 7.5' Quadrangle (Quad) is Winchester within Section 5 (Figure 2). Two artificially created areas on the site appear to impound water seasonally. The "northern road ditch" appears to have been created to drain water from Leon Road and is approximately 290 square meters (m^2). The "southwestern ditch" appears to have been created during past agricultural activities and is approximately 1,400 m^2 (see site photographs, attached).

Methodology

Survey methodology followed the U.S. Fish and Wildlife Service (USFWS) Survey Guidelines for Listed Large Branchiopods (Guidelines) dated May 31, 2015 for dry season surveys. Soil for the dry season survey was collected on September 2, 2015 from the two areas on the site with the potential to impound water. On September 4, 2015 these soil samples were delivered to Alden Environmental, Inc. (Alden) for dry analysis and fairy shrimp egg identification. The first step in the analysis was to hydrate the soils and process them through a series of sieves to separate out fairy shrimp eggs that may be present. The sieves used were of 710-, 355-, and 212-µm pore size screens. The final sieve pore size is smaller than the target fairy shrimp species' (*Branchinecta* sp. and *Streptocephalus* sp.) average egg diameter and therefore would retain eggs. The material on the final sieve was placed in a brine solution to help separate organic from inorganic material. The organic portion was then filtered through a standard coffee filter and allowed to dry. The dried material on the filters was examined under a microscope to determine if eggs were present. Egg surface characteristics were then used to identify eggs to genus, if present. Eggs from the genus *Branchinecta* were cultured in filtered, non-chlorinated drinking water with lighting that emulated spring season environmental conditions. Once nauplii emerged, hatched shrimp were fed daily.

2621 DENVER STREET, SUITE B ● SAN DIEGO, CA 92110-3300
619.508.3803 ● INFO@ROCKSBIO.COM

When they reached maturity, adult fairy shrimp were harvested and identified under a dissecting microscope.

Results

Approximately 420 cysts of the genus *Branchinecta* were collected in the southwestern ditch samples. In total, 70 individuals hatched, 39 males and 31 females. The adults were all identified as *B. lindahli*, a common non-listed species. The attached dry season letter contains the complete results of dry season sample processing. No *Branchinecta* sp. eggs were found in the northern road drain, and no eggs from the genus *Streptocephalus* were found in either of the dry season samples.

Conclusion

The southwester ditch dry season sample contained eggs of the genus *Branchinecta*. Soil culturing revealed all the eggs to be *B. lindahli.* Dry season survey results were negative for all federally-listed endangered or threatened vernal pool branchiopod species at the San Pedro Farms project site.

Please don't hesitate to call me at (619) 508-3803 if you have any questions.

We certify that the information in this survey report and attached exhibit fully and accurately represents our work.

Sincerely,

Lee Ripma
Senior Biologist
Permit Number TE-221290-3.2

Melanie Rocks
Principal Biologist
Permit Number TE-082908-1

Greg Mason
Alden Environmental, Inc
Permit Number
TE-58862A-0

Attachments: Site Photographs
Figure 1 – Regional Vicinity Map
Figure 2 – Project Area Map
Alden Dry Season Results Letter

References

U.S. Fish and Wildlife Service. 2015. Survey Guidelines for Listed Large Branchiopods. May 31, 2015.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). 2003. Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools.

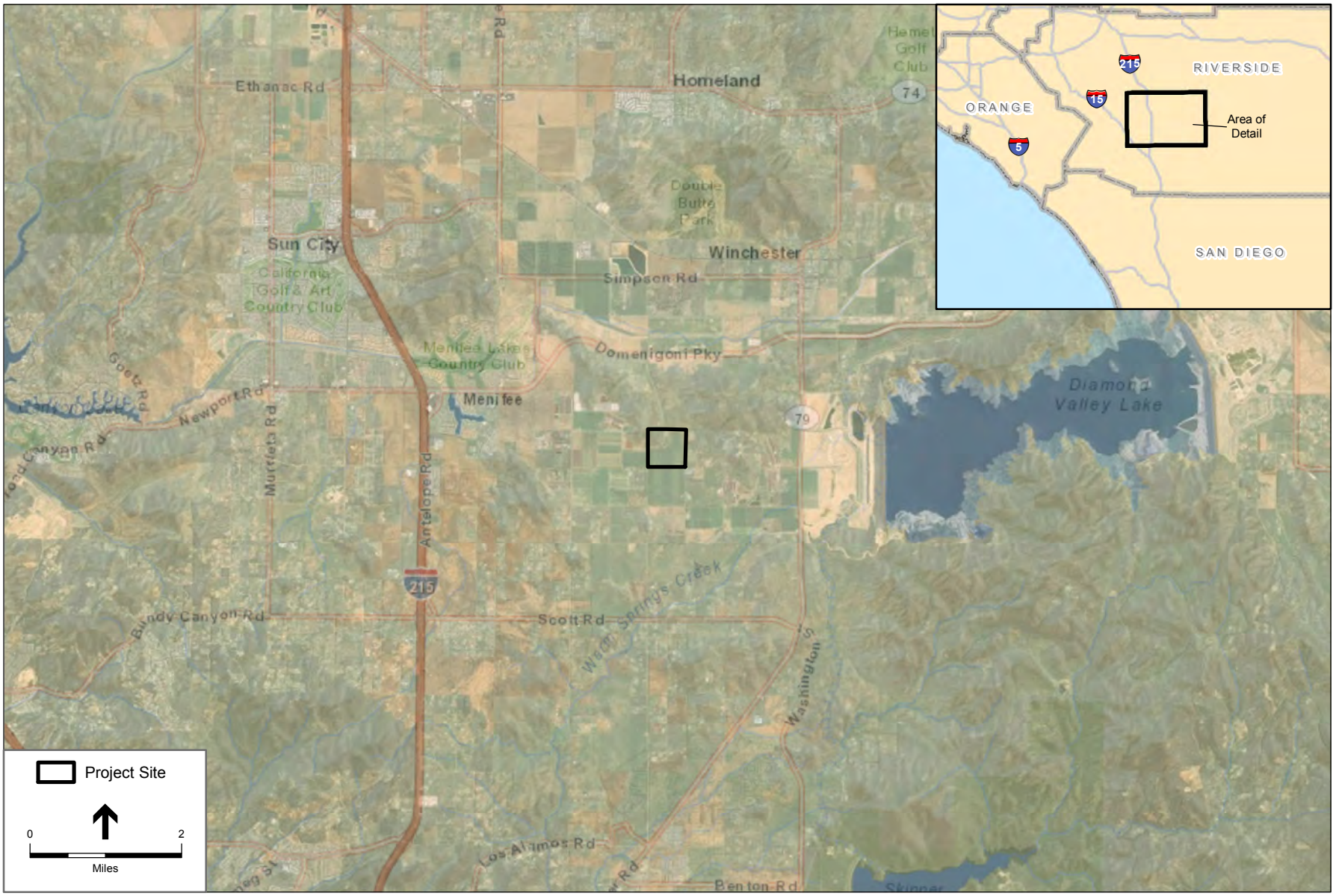
San Pedro Farms
Site Photographs: September 2, 2015

Photo 1. Connection of northern road drain to Leon Road with northern road drain impounded area visible in the background. Survey results were negative for fairy shrimp eggs.

Photo 2. Northern road drain containing hydrophytic vegetation. Survey results were negative for fairy shrimp eggs.

Photo 3. The southwestern ditch facing northwest, hydrophytic vegetation lines the edges but not the bottom of the ditch. Results were positive for *B. lindahli* only.

Photo 4: Southwestern Ditch facing northeast. Results were positive for *B. lindahli* only.

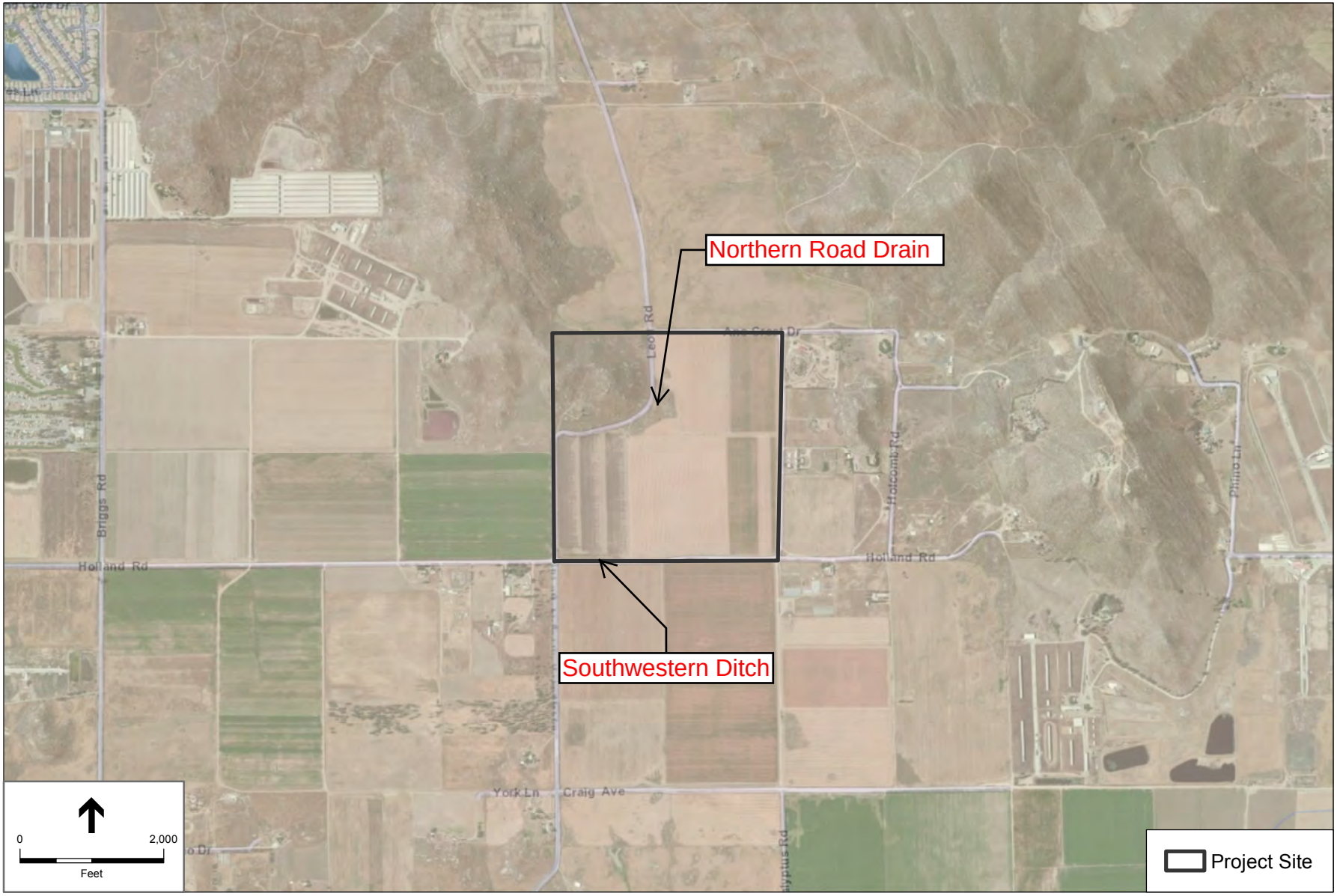


SOURCE: Riverside County GIS, ESRI

Sam Pedro Farms . 210823

Figure 1

Regional Vicinity Map



SOURCE: ESRI

San Pedro Farms . 210823

Figure 2

Project Area Map

ALDEN ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

November 11, 2015

Jim Rocks
Rocks Biological Consulting
2621 Denver Street, Suite B
San Diego, CA 92110-3300

Subject: Dry Sampling Results

Dear Mr. Rocks:

This letter presents the results of fairy shrimp hydration, rearing, hatching, and identification conducted for the San Pedro Farms Site.

Methods

Fairy shrimp cysts collected from the Southwestern Ditch on the San Pedro Farms site were hydrated and reared to maturity to determine the species present. Approximately four-hundred and twenty cysts of the genus *Branchinecta* were found in the Southwestern Ditch samples (Alden 2015). Based on the location and known species distribution, these cysts could be of the federal endangered San Diego fairy shrimp (*B. sandiegonensis*), the federal threatened vernal pool fairy shrimp (*B. lynchi*), or the non-sensitive Lindahl's fairy shrimp (*B. lindahli*). The cyst hydration, hatching, rearing, and subsequent identification were conducted by Greg Mason (TE58862A-0), under the supervision of Dr. Charles Black (TE835549). Dr. Black is on the USFWS list as an approved individual for fairy shrimp hatching and rearing.

Fairy shrimp cysts of the species *Branchinecta* collected during the dry sampling effort were hydrated by placing them into a plastic container, filled with approximately 525 ml of filtered, non-chlorinated drinking water. The coffee filters with the collected cysts were slowly opened over the container and gently shaken to allow the material to fall into the water. The sides of the filter were then rubbed against one another to release any additional material. Finally, a squirt bottle filled with filtered drinking water was used to spray any additional material from the filter into the container. A small handful of surplus soil from the pool also was added to the container to provide a buffer and help improve the chances for a successful hatch.

The container was given a sample id number and placed on a table in a climate controlled room. Lighting in the room was provided by indirect sunlight as well as an overhead light that was kept on approximately 12 hours a day to help emulate spring season lighting conditions. An overhead fan also was kept on at a low level to provide for some air movement across the water surface in the sample container.

The sample was checked daily to see if any fairy shrimp had emerged. Once nauplii were observed feeding began. The hatched shrimp were fed a single drop of prepared food on a daily basis until

they were collected. The food used was a mix of active brewer's yeast, sugar, powdered fish food, and water.

The hatched shrimp were allowed to continue under these conditions until they had reached maturity, as determined by reaching full size, antennal development (males) and brood pouch (females). Once mature, the fairy shrimp were collected for identification by pouring the material in the container through a small strainer. Collected shrimp were then placed into a dish of carbonated (soda) water to slowly asphyxiate the shrimp. Once dead, the collected shrimp were placed in a 27 x 57 mm (5 dram) clear glass vial, filled with 70% ethyl alcohol. The collected shrimp were then identified to the species level with the aid of a stereo dissecting scope.

Results

Two rounds of hydration and rearing were conducted for the Southwest Ditch sample. Following the first round, 2 Lindahl's fairy shrimp (1 male and 1 female) were collected and identified. Following the second round, an additional 68 (38 males and 30 females) Lindahl's fairy shrimp were collected and identified. No listed San Diego or vernal pool fairy shrimp were identified in either rearing round.

If you have any questions or need additional information please call.

Sincerely,

Greg Mason

Appendix H

2017 Burrowing Owl Focused Survey Report

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road, Suite 150
Irvine, CA 92618
949.234.8792 **tel.**
619.462.0552 **fax**
www.**helixepi**.com

September 7, 2017

Mr. William Lo
Sun Holland, Inc.
27127 Calle Arroyo, Suite 1909
San Juan Capistrano, CA 92675

Subject: 2017 Burrowing Owl Survey Report for Canterwood Project located in Unincorporated Riverside County, California.

Dear Mr. Lo:

HELIX Environmental Planning, Inc. (HELIX) conducted focused burrowing owl (*Athene cunicularia*) surveys for the Canterwood Project (project) located in Menifee Valley, unincorporated Riverside County, California. This letter documents the results of the survey, which meets applicable conditions under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) approved in 2003. The MSHCP is a comprehensive planning effort that includes the County of Riverside (County) and multiple cities. As part of the MSHCP implementation, enrolled jurisdictions are required to impose terms of the MSHCP, including appropriate surveys in accordance with Volume 1, Section 6. The project site and associated off-site areas (collectively, the study area) are located within the survey area for burrowing owl; therefore, surveys are required if suitable habitat is present (Dudek and Associates 2003). This report presents the details the results of the survey.

STUDY AREA LOCATION

The approximately 170-acre project site comprises two parcels with Assessor Parcel Numbers (APNs) 466-310-002 and -026 located in the eastern portion of Menifee Valley within unincorporated Riverside County (County), California. The project site is generally located to the east of the City of Menifee and Interstate 215 and to the west of State Route 79 (Figure 1, *Regional Location*). The project site is located in the U.S. Geological Survey (USGS) 7.5-minute Winchester quadrangle maps within Section 8 of Township 6 South and Range 2 West (Figure 2, *USGS Topography*). Specifically, the project site is located north of Craig Avenue, west of Eucalyptus Road, south of Holland Road, and east of Leon Road (Figure 3, *Aerial Vicinity*).

The project also includes off-site areas to accommodate infrastructure for the proposed residential development, which total 52.23 acres. The off-site areas are located within the USGS 7.5-minute Winchester and Romoland quadrangle maps within Section 7 of Township 6 South and Range 2 West, Section 1 of Township 6 South and Range 3 West, and Section 8 of Township 6 South and Range 2 West. The locations of the off-site areas are shown on Figure 3 and are briefly described below:

1. **Sewer Line** – The proposed sewer line alignment follows Holland Drive from Leon Road west to Briggs Road, and then turns north along Briggs Road to Gold Crest Drive.

2. **Drainage Facility** – The proposed earthen drainage facility includes an area that extends from Leon Road at the midpoint between Holland Road and Craig Avenue diagonally to the northwest, ultimately terminating at the corner of Briggs Road and Holland Road. The drainage facility spans across a portion of seven parcels with APNs 466-120-002, -011, -014, -019, and -022 through -023.

3. **Temporary Drainage Channels and Road Improvements** – A total of five temporary drainage channels are proposed along Craig Avenue and Eucalyptus Road. Another temporary drainage channel is located north of Holland Road. Roadway improvements are also proposed along Holland Road from west of Leon Road and east of Briggs Road. These areas are adjacent to the project site and are included within the project site boundary for the purpose of this report.

PROJECT DESCRIPTION

The proposed project is a residential community that would include 574 single-family lots and a park, which includes a baseball field, two soccer fields, a basketball court, tot lot, picnic shelter, restroom, and parkin. The project also comprises four adjacent off-site areas, including a sewer line, drainage facility, road improvements along Holland Road, and five temporary drainage channels. The off-site areas will support utility and roadway infrastructure, which will provide access and use of the property.

STUDY AREA DESCRIPTION

Agriculture dominates the study area and the surrounding area. The project site currently supports dryland farming, which has occurred on the project site since at least the 1930s (Historic Aerials 1938). Although the proposed off-site drainage facility primarily supports agriculture, there is a small patch of eucalyptus woodland in the eastern portion. Disturbed land on the study area comprises existing dirt roads along Craig Avenue, Eucalyptus Avenue, Holland Road, and Briggs Road as well as the area to the north of the RV park. Two developed areas were observed on the study area, which includes the paved portions of Leon Road and Briggs Road. Land uses adjacent to the project site include agriculture to the north, east, and south and rural residential to the east and west. The off-site areas are primarily surrounded by agriculture. A residential development is located to the north and west of the sewer line alignment proposed along Tres Lagos Drive and the RV park is located to the south. The RV park is also located to the west of the sewer alignment proposed along Briggs Road.

Site topography of the study area is flat. Elevations on the study area range from approximately 1,428 feet above mean sea level (AMSL) within the off-site sewer line near the northern boundary to approximately 1,448 feet AMSL along the northern boundary of the project site.

Vegetation Communities

A total of four vegetation communities and land uses were mapped on the study area, including agriculture, developed, disturbed, and eucalyptus woodland (Figure 4, *Vegetation*). The entire study area was surveyed for sign of burrowing owl. A brief description of each vegetation community mapped on the study area is provided below.

Agriculture

Agriculture is defined broadly as land used primarily for production of food and fiber. On satellite imagery, the chief indications of agricultural activity are distinctive geometric field and road patterns on the landscape and the traces produced by livestock or mechanized equipment. However, pasture and other lands where such equipment is used infrequently may not show as well-defined shapes as other areas. The number of building complexes is smaller and the density of the road and highway network is much lower in agriculture than in urban/developed land.

Agriculture dominates the project site, which totaled 149.72 acres. Agriculture was also observed within the off-site areas adjacent to the roads and within the drainage facility, which totaled 31.80 acres. The main crop observed was barley (*Hordeum vulgare*). After crops were harvested, some non-native weedy species were observed within the field, including Bermuda grass (*Cynodon dactylon*), slender oat (*Avena barbata*), and white tumbleweed (*Amaranthus albus*).

Developed

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

One small developed area was observed within the project site, which included a paved portion of Leon Road to the south of Holland Drive and to the north of Craig Avenue. The developed area totaled 5.35 acres on the project site and 2.54 acres within the off-site areas. There was no vegetation observed within the developed area. No developed areas were observed within the off-site areas.

Disturbed

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Disturbed areas comprise dirt roads along the perimeter of the study area, which totaled 16.25 acres on the project site and 16.04 acres within the off-site areas. These areas are mostly unvegetated, although a few species with high tolerance for disturbance were observed, such as cheeseweed (*Malva parviflora*), nettle-leaf goosefoot (*Chenopodium murale*), prickly Russian thistle (*Salsola tragus*), short-pod mustard (*Hirschfeldia incana*), and wild lettuce (*Lactuca serriola*).

Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* spp.), an introduced species that has often been planted purposely for wind blocking, ornamental, and hardwood production purposes. Most groves are monotypic with the most common species being either the blue gum (*Eucalyptus globulus*) or red gum (*Eucalyptus camaldulensis*). The understory within well-established groves is usually very sparse due to the closed canopy and allelopathic nature of the abundant leaf and bark litter. If sufficient moisture is available, this species becomes naturalized and can reproduce and expand its range. The sparse understory offers only limited wildlife habitat; however, these woodlands provide excellent

nesting sites for a variety of raptors. During winter migrations, a large variety of warblers may be found feeding on the insects that are attracted to the eucalyptus flowers.

Eucalyptus woodland was observed within the eastern portion of the off-site drainage facility, which totaled 1.85 acres. Very few plants were observed within the understory, but included non-native, weedy species such as cheeseweed, London rocket (*Sisymbrium irio*), rancher's fiddleneck (*Amsinckia intermedia*), and red brome (*Bromus madritensis* ssp. *rubens*).

METHODS

A Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls were conducted on the study area by HELIX biologists Ezekiel Cooley, Amy Lee, Hannah Lo, and Lauren Singleton between June and August 2017, in accordance with the County's survey protocol (County of Riverside 2006). The surveys were conducted between 5:35 a.m. and 8:00 a.m., temperatures ranged between 55 and 82 degrees Fahrenheit, cloud cover ranged from 0 to 100 percent cloud cover, and winds ranged from zero to three miles per hour. The specific survey information is provided in Table 1, *Survey Information.* Due to access issues, the off-site drainage facility was surveyed separately from the rest of the study area. The habitat assessment and focused burrow and burrowing owl surveys are described in detail below.

Table 1
SURVEY INFORMATION

Date	Time Start-End	Temperature (°F) Start-End	Cloud Cover (%) Start-End	Wind (mph) Start/End	Surveyor	Survey Result
Project Site, Off-Site Sewer Line						
06/28/17[1]	0535-0740	55-73	100-0	0-1/0-1	E. Cooley L. Singleton	Negative
07/11/17	0540-0740	68-78	0-0	0-1/0-1	E. Cooley L. Singleton	Negative
08/10/17	0600-0800	68-70	100-5	0-1/0-1	E. Cooley	Negative
08/22/17	0610-0800	60-74	100-0	0-1/2-3	E. Cooley	Negative
Off-Site Drainage Facility						
08/10/17	0600-0800	68-70	100-5	0-1/0-1	A. Lee H. Lo	Negative
08/15/17	0605-0720	61-63	100-100	0-2/0-2	H. Lo	Negative
08/22/17	0610-0800	60-74	100-0	0-1/2-3	L. Singleton	Negative
08/28/17	0615-0745	71-82	10-50	0-1/0-1	H. Lo	Negative

[1] This survey included the habitat assessment, focused burrow survey, and first focused burrowing owl survey.

Step I – Habitat Assessment

The study area is located within an MSHCP burrowing owl survey area; therefore, a Step I Habitat Assessment was conducted to determine whether the study area supports suitable burrowing owl habitat. The habitat assessment was conducted prior to commencement of the Step II surveys described below. The assessment was conducted on the study area and within a 150-meter (approximately 500-

foot) buffer zone around the periphery of the project site (survey area). The survey area was slowly walked and assessed for suitable burrowing owl habitat, including:

- disturbed low-growing vegetation within grassland and shrublands (less than 30 percent canopy cover);
- gently rolling or level terrain;
- areas with abundant small mammal burrows, especially California ground squirrel burrows (*Otospermophilus beecheyi*);
- fence posts, rocks, or other low perching locations; and
- man-made structures, such as earthen berms, debris piles, and cement culverts.

Inaccessible areas of the survey area were visually assessed using binoculars.

Step II – Locating Burrows and Burrowing Owls

After completing the habitat assessment, Step II surveys were conducted within the survey area. Step II surveys, which consist of a focused burrow survey (Part A) and four focused burrowing owl surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or burrowing owls. The focused burrow survey was conducted concurrently with the first focused burrowing owl survey. Since suitable burrows were observed within the survey area, three additional focused burrowing owl surveys were conducted. The biologists walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologists walked slowly and methodically, closely checking suitable habitat within the survey area for suitable burrows, burrowing owl diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual burrowing owls. Inaccessible areas of the survey area were visually assessed using binoculars.

RESULTS

Suitable burrowing owl habitat was observed within the survey area, including low-growing vegetation within the agriculture and disturbed areas on the study area. Only a portion of the agricultural field was walked since burrows were only observed along the periphery of the field. The agriculture field is comprised hardpacked soils that were not conducive to burrow tunneling. The survey area supports several burrows and rock piles that could potentially be used by burrowing owls. However, no burrowing owls or sign of burrowing owl occupation were observed within the survey area during the four focused surveys. Therefore, burrowing owls do not currently occupy the study area. Observed burrow locations and transects walked are shown on Figure 5, *Suitable Burrow and Transect Locations*. A list of all bird species observed and/or detected is included as Attachment A, *Bird Species Observed or Detected*.

CONCLUSION

No burrowing owls were observed or detected within the survey area during the focused surveys. Since the study area supports suitable burrowing owl habitat, a pre-construction survey is required 30 days prior to ground disturbance pursuant to the County's survey protocol (County of Riverside 2006).

If you have any questions regarding the information presented in this letter report, please contact us at (949) 234-8770.

Sincerely,

Ezekiel Cooley
Biologist

Lauren Singleton
Biologist

Hannah Lo
Biologist

Amy Lee
Biologist

Enclosures:

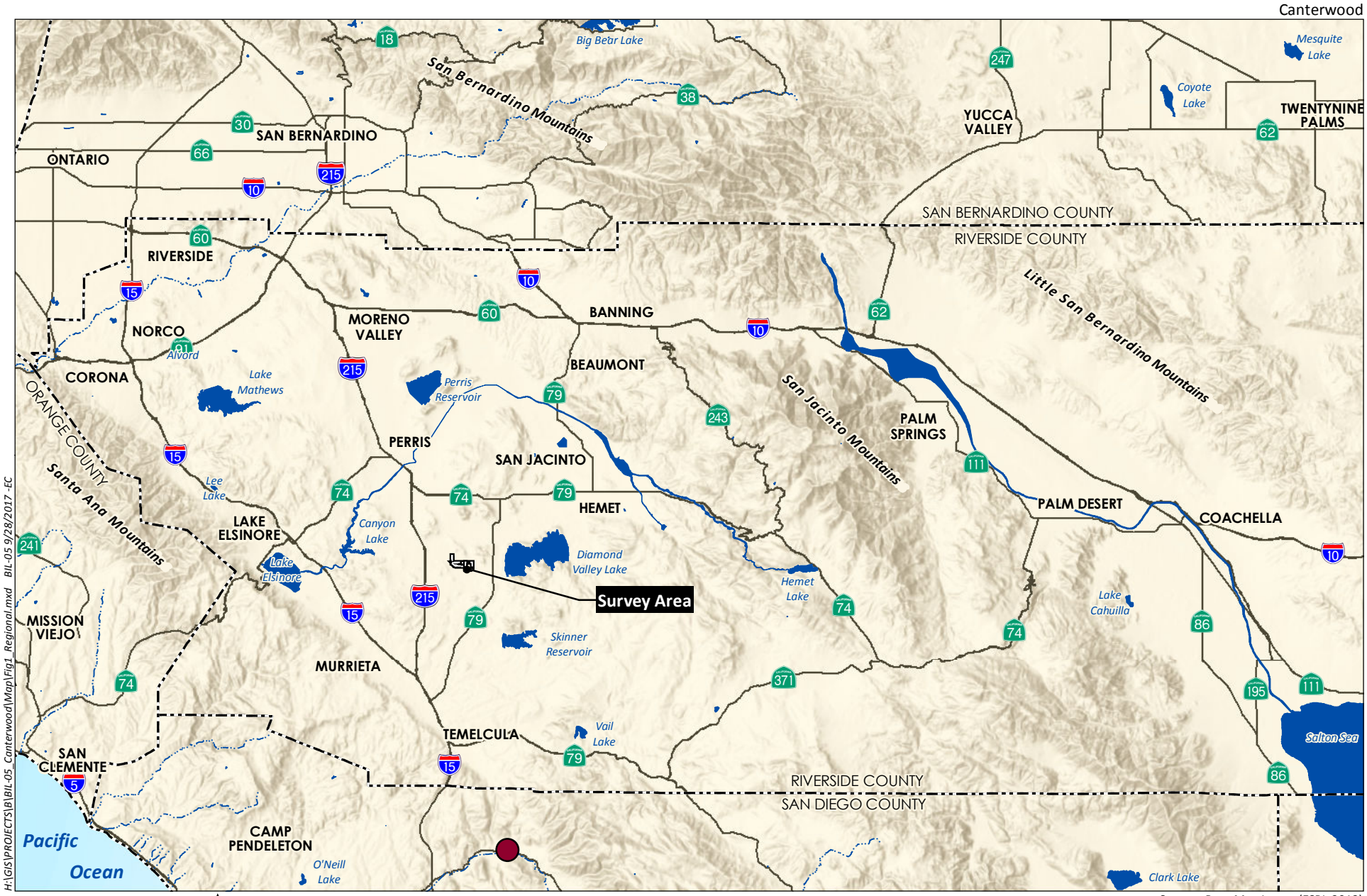
Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: Vegetation
Figure 5: Suitable Burrow and Transect Locations
Attachment A: Birds Species Observed or Detected

REFERENCES

Dudek and Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Final MSHCP Volume I. Prep. for County of Riverside, Transportation and Land Management Agency.

Historic Aerials. 1938. Aerial imagery of Canterwood Project, 33.666902°, -117.115385°. Retrieved from: https://www.historicaerials.com/viewer. Accessed August 8, 2017.

Riverside, County of. 2006. Environmental Programs Department. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Retrieved from: http://www.tlma.co.riverside.ca.us/epd/documents/Burrowing_Owl _Survey_Instructions.pdf. March 29. Accessed August 3, 2017.



Source: Base Map Layers (ESRI, 2013)

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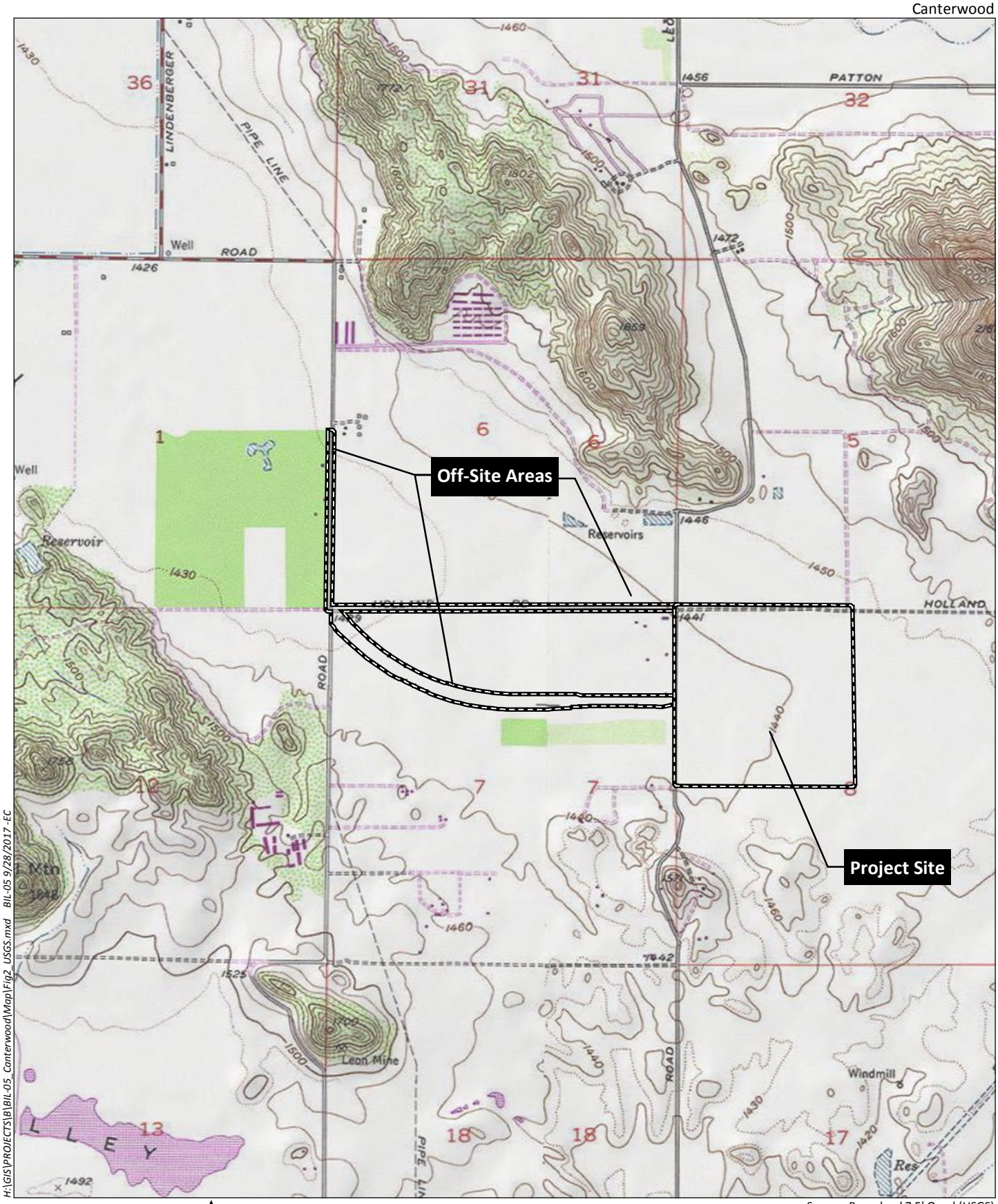
HELIX Environmental Planning

Regional Location

Figure 1



H:\GIS\PROJECTS\B\BIL-05_Canterwood\Map\Fig2_USGS.mxd BIL-05 9/28/2017 -EC

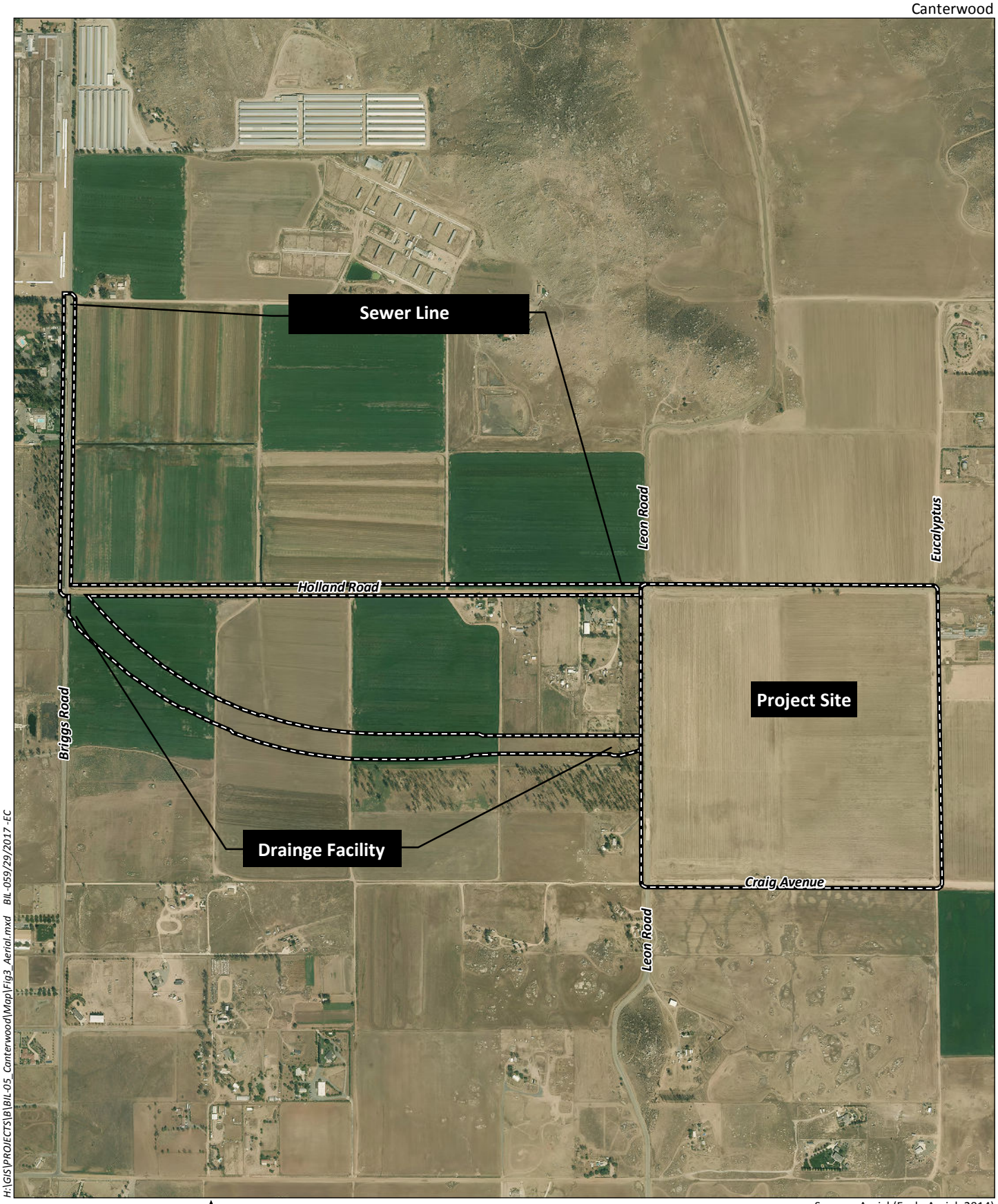
0 2,000 Feet

Source: Romoland 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



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0 1,200 Feet

Source: Aerial (Eagle Aerial, 2014)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Canterwood

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0 650 Feet

N

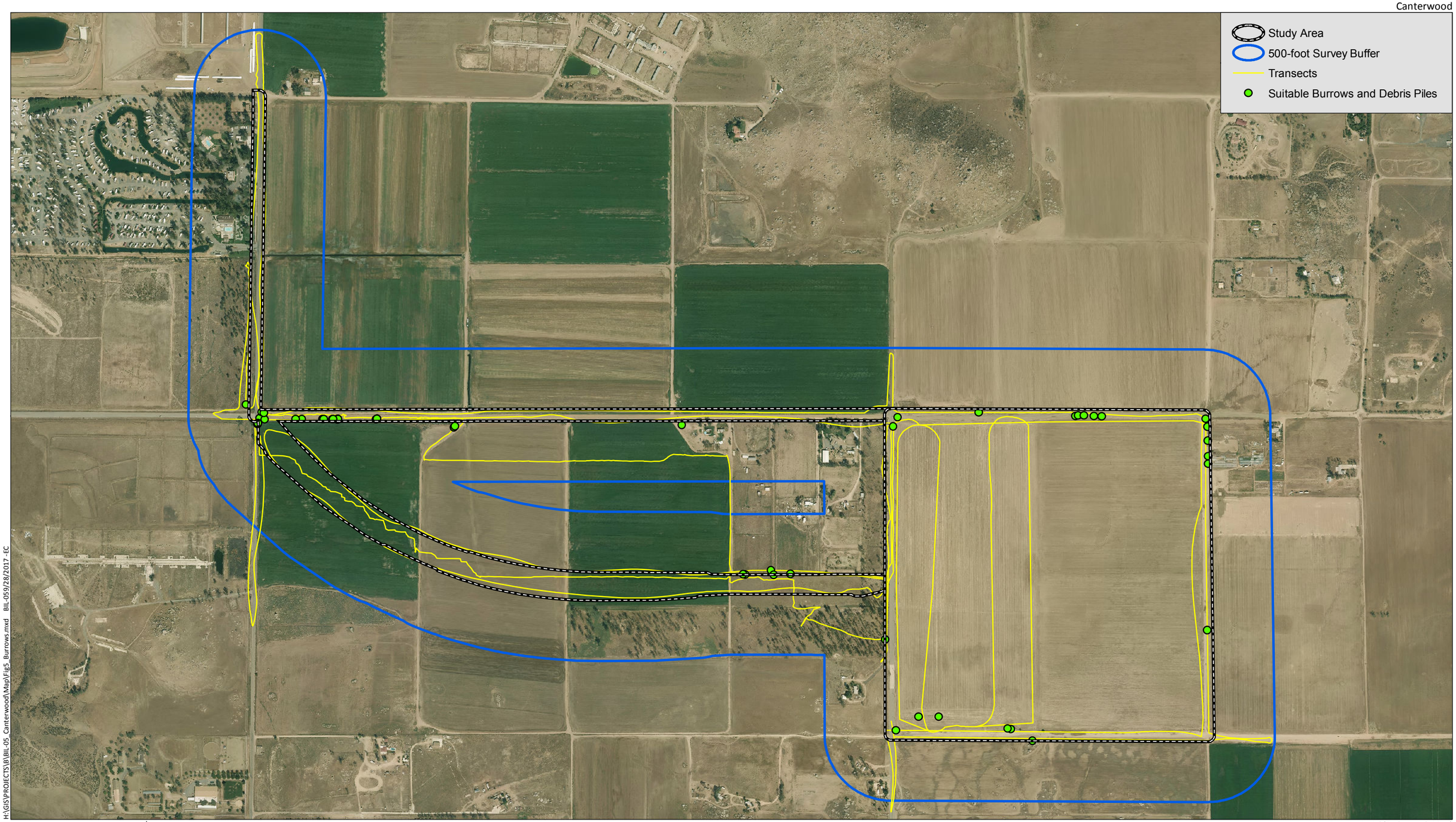
Source: Aerial (Eagle Aerial, 2014)

HELIX
Environmental Planning

Vegetation

Figure 4

Canterwood



H:\GIS\PROJECTS\BIL-05_Canterwood\Map\Fig5_Burrows.mxd BIL-059/28/2017 -EC

0 750 Feet

Source: Aerial (Eagle Aerial, 2014)

HELIX Environmental Planning

Suitable Burrow and Transect Locations

Figure 5

Attachment A
BIRD SPECIES OBSERVED OR DETECTED

Order	Family	Scientific Name	Common Name
Accipitriformes	Accipitridae	*Buteo jamaicensis*	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
	Cathartidae	*Cathartes aura*	turkey vulture
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Branta canadensis	Canada goose
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Streptopelia decaocto	Eurasian collared-dove
		Zenaida macroura	mourning dove
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Alaudidae	*Eremophila alpestris*	horned lark
	Corvidae	*Corvus brachyrhynchos*	American crow
		Corvus corax	common raven
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Hirundo rustica*	barn swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Euphagus cyanocephalus	Brewer's blackbird
		Sturnella neglecta	western meadowlark
	Mimidae	*Mimus polyglottos*	northern mockingbird
	Passerellidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
	Passeridae	*Passer domesticus*	house sparrow
	Sturnidae	*Sturnus vulgaris*	European starling
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
Pelecaniformes	Threskiornithidae	*Plegadis chihi*	white-faced ibis
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker

†Sensitive Species

Appendix I

2018 Burrowing Owl Focused Survey Report

HELIX Environmental Planning, Inc.
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949.234.8792 **tel.**
619.462.0552 **fax**
www.**helixepi**.com

August 31, 2018 BIL-05

Mr. William Lo
Sun Holland, Inc.
27127 Calle Arroyo, Suite 1909
San Juan Capistrano, CA 92675

Subject: 2018 Burrowing Owl (*Athene cunicularia*) Survey Report for an Off-site Area Associated with the Canterwood Project

Dear Mr. Lo:

This letter report presents the results of the 2018 focused burrowing owl (*Athene cunicularia;* BUOW) survey conducted by HELIX Environmental Planning, Inc. (HELIX) for an off-site area associated with the Canterwood Project (project) located in unincorporated Riverside County (County), California. The survey was conducted in accordance with the County's Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP; County of Riverside [County] 2006). This survey was conducted to meet applicable conditions under the MSHCP, which was approved in 2003 (Dudek and Associates [Dudek] 2003). The MSHCP is a comprehensive planning effort that includes the County of Riverside and multiple cities. As part of the MSHCP implementation, enrolled jurisdictions are required to impose terms of the MSHCP, including appropriate surveys in accordance with Volume 1, Section 6. This off-site area is located within the MSHCP BUOW Survey Area; therefore, surveys are required if suitable habitat is present (County 2006). This letter report describes the methods used to perform the survey and the survey results.

PROJECT DESCRIPTION AND BACKGROUND

The proposed project is a residential community that would include 574 single-family lots and a park with a baseball field, two soccer fields, a basketball court, tot lot, picnic shelter, restroom, and parking. The project also comprises four adjacent off-site areas, including a sewer line, drainage facility, road improvements along Holland Road, and five temporary drainage channels. The off-site areas will support utility and roadway infrastructure, which will provide access and use of the property. In 2017, HELIX conducted burrowing owl surveys on the project site and within the off-site areas. Due to access restrictions, the most northern portion of the off-site sewer alignment located to the north of the Wilderness Lakes RV Resort (RV park) was surveyed separately from the project site and the rest of the

off-site areas. The northern portion of the off-site sewer alignment (survey area) is the focus of this survey and letter report.

SURVEY AREA LOCATION

The survey area is generally located to the east of the City of Menifee and Interstate 215 and to the west of State Route 79 (Figure 1, *Regional Location*). The survey area is located in the U.S. Geological Survey (USGS) 7.5-minute Winchester quadrangle maps within Section 8 of Township 6 South and Range 2 West (Figure 2, *USGS Topography*). Specifically, the survey area extends along the northern boundary of RV park between Briggs Road and Southshore Drive (Figure 3, *Aerial Vicinity*).

SURVEY AREA DESCRIPTION

The survey area comprises undeveloped land north of the RV park. This area is disturbed and dominated by non-native species. There is also an area of eucalyptus woodland along the boundary of the RV park. The survey area is mostly flat, with elevations ranging from approximately 1,430 feet above mean sea level (AMSL) at the west end of the survey area to approximately 1,434 feet AMSL at the east end of the survey area. Surrounding land uses include residential development to the west and northwest, a former diary farm to the north, agricultural fields to the east, and the RV park to the south.

Vegetation Communities

A total of two vegetation communities and land uses were mapped within the survey area, including disturbed and eucalyptus woodland (Figure 4, *Suitable Burrow and Transect Locations*). A brief description of vegetation communities and land uses that were surveyed for BUOW and sign during the focused surveys is provided below. Representative photographs of the site are shown on Attachment A, *Site Photographs*.

Disturbed

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a number of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Disturbed habitat in the survey area was observed to the east of Tres Lagos Drive and to the north of the RV park boundary. These areas were vegetated with non-native species that have a high tolerance for disturbance, such as prickly Russian thistle (*Salsola tragus*), stinknet (*Oncosiphon piluliferum*), and short-pod mustard (*Hirschfeldia incana*).

METHODS

A Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls were conducted on the survey area by HELIX biologists Daniel Torres and Lauren Singleton between June 29 and August 23, 2018, in accordance with the County's survey protocol (County 2006). The specific survey information is provided in Table 1, *Survey Information.* The habitat assessment and focused burrow and BUOW surveys are described in detail below.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Start/Stop Time	Start/Stop Weather Conditions	Survey Results
1[1]	06/29/18	Daniel Torres Lauren Singleton	0620-0740	57°F, wind 1-2 mph, 95% clouds 59°F, wind 1-2 mph, 80% clouds	Suitable burrows observed; no BUOW detected.
2	07/24/18	Daniel Torres	0605-0725	75°F, wind 1-2 mph, 0% clouds 78°F, wind 0-1 mph, 0% clouds	No BUOW detected.
3	08/07/18	Daniel Torres	0615-0705	75°F, wind 0-1 mph, 0% clouds 78°F, wind 0-1 mph, 0% clouds	No BUOW detected.
4	08/23/18	Daniel Torres	0645-0735	63°F, wind 0-1 mph, 0% clouds 65°F, wind 0-1 mph, 0% clouds	No BUOW detected.

[1] This visit included the habitat assessment, focused burrow survey, and first focused burrowing owl survey.

Step I – Habitat Assessment

The survey area is located within an MSHCP BUOW survey area; therefore, a Step I Habitat Assessment was conducted to determine whether the survey area supports suitable BUOW habitat. The habitat assessment was conducted prior to commencement of the Step II surveys described below. The assessment was conducted on the survey area and within a 150-meter (approximately 500-foot) buffer zone around the periphery survey area. The survey area was slowly walked and assessed for suitable BUOW habitat, including:

- disturbed low-growing vegetation within grassland and shrublands (less than 30 percent canopy cover);
- gently rolling or level terrain;
- areas with abundant small mammal burrows, especially California ground squirrel burrows (*Otospermophilus beecheyi*);
- fence posts, rocks, or other low perching locations; and
- man-made structures, such as earthen berms, debris piles, and cement culverts.

Inaccessible areas of the survey area and buffer zone were visually assessed using binoculars.

Step II – Locating Burrows and Burrowing Owls

Since suitable habitat was observed during the habitat assessment, Step II surveys were conducted within the survey area. Step II surveys, which consist of a focused burrow survey (Part A) and four focused BUOW surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or BUOW. The focused burrow survey was conducted concurrently with the first BUOW survey.

All potential burrows were checked for signs of recent owl occupation. Signs of occupation include:

- pellets/casting (regurgitated fur, bones, and/or insect parts);
- white wash (excrement); and/or
- feathers.

Since suitable burrows were observed within the survey area, three additional BUOW surveys were conducted. The biologists walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologists walked slowly and methodically, closely checking suitable habitat within the survey area for suitable burrows, BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual BUOW. Inaccessible areas of the survey area were visually assessed using binoculars. All suitable burrows, burrow surrogates, BUOW sign, and/or BUOW observations were recorded using a handheld Global Positioning System unit (Figure 4, *Suitable Burrow and Transect Locations*).

RESULTS

Suitable BUOW habitat was observed within the survey area, including disturbed habitat (Attachment A). Suitable burrows that could potentially be used by BUOW were observed within and adjacent to the survey area. No BUOW or sign of BUOW occupation were observed during the four focused surveys. Therefore, BUOW does not currently occupy the survey area. Observed burrow locations and transects walked are shown on Figure 4.

CONCLUSION

No BUOW were observed or detected within the survey area during the focused surveys. Burrows with potential to support BUOW were noted in the survey area, but no sign of BUOW occupation was observed. A pre-construction survey is required 30 days prior to ground disturbance pursuant to the County's survey protocol (County of Riverside 2006). If ground-disturbing activities are delayed more than 30 days after the pre-construction survey has been completed, the survey area must be resurveyed.

Please call us or Amir Morales at (949) 234-8770 if you have any questions about this report.

Sincerely,

Daniel Torres
Biologist

Lauren Singleton
Biologist

Enclosures:

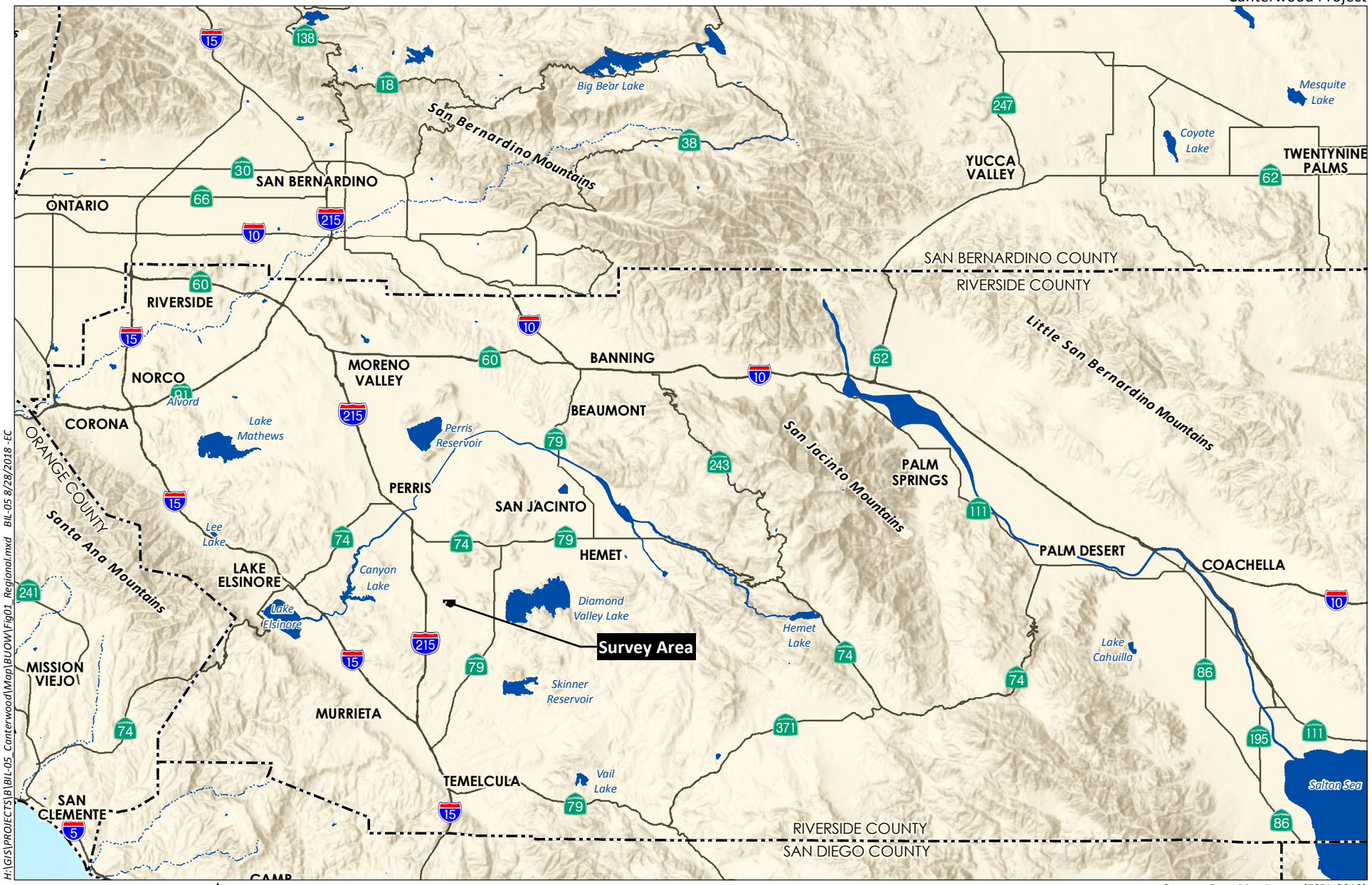
Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: Suitable Burrow and Transect Locations
Attachment A: Site Photographs

REFERENCES

Dudek and Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Final MSHCP Volume I. Prep. for County of Riverside, Transportation and Land Management Agency.

HELIX Environmental Planning, Inc. 2017. 2017 Burrowing Owl Report for the Canterwood Project location in Unincorporated Riverside County, California. Prepared for Sun Holland, Inc. September 7, 2017.

Riverside, County of. 2006. Environmental Programs Department. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Retrieved from: http://www.tlma.co.riverside.ca.us/epd/documents/Burrowing_Owl _Survey_Instructions.pdf. March 29. Accessed August 3, 2017.



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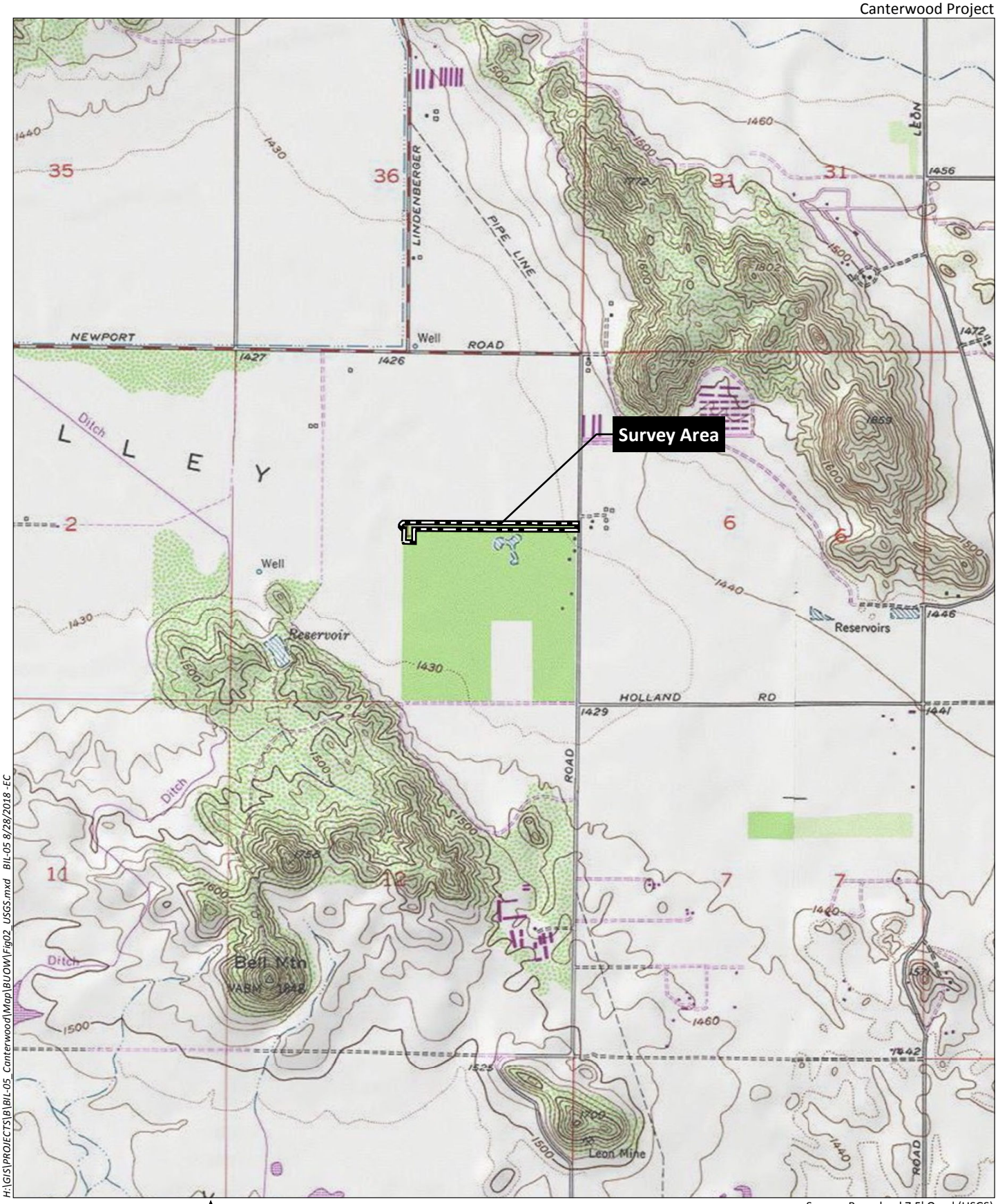
HELIX Environmental Planning

Regional Location

Figure 1



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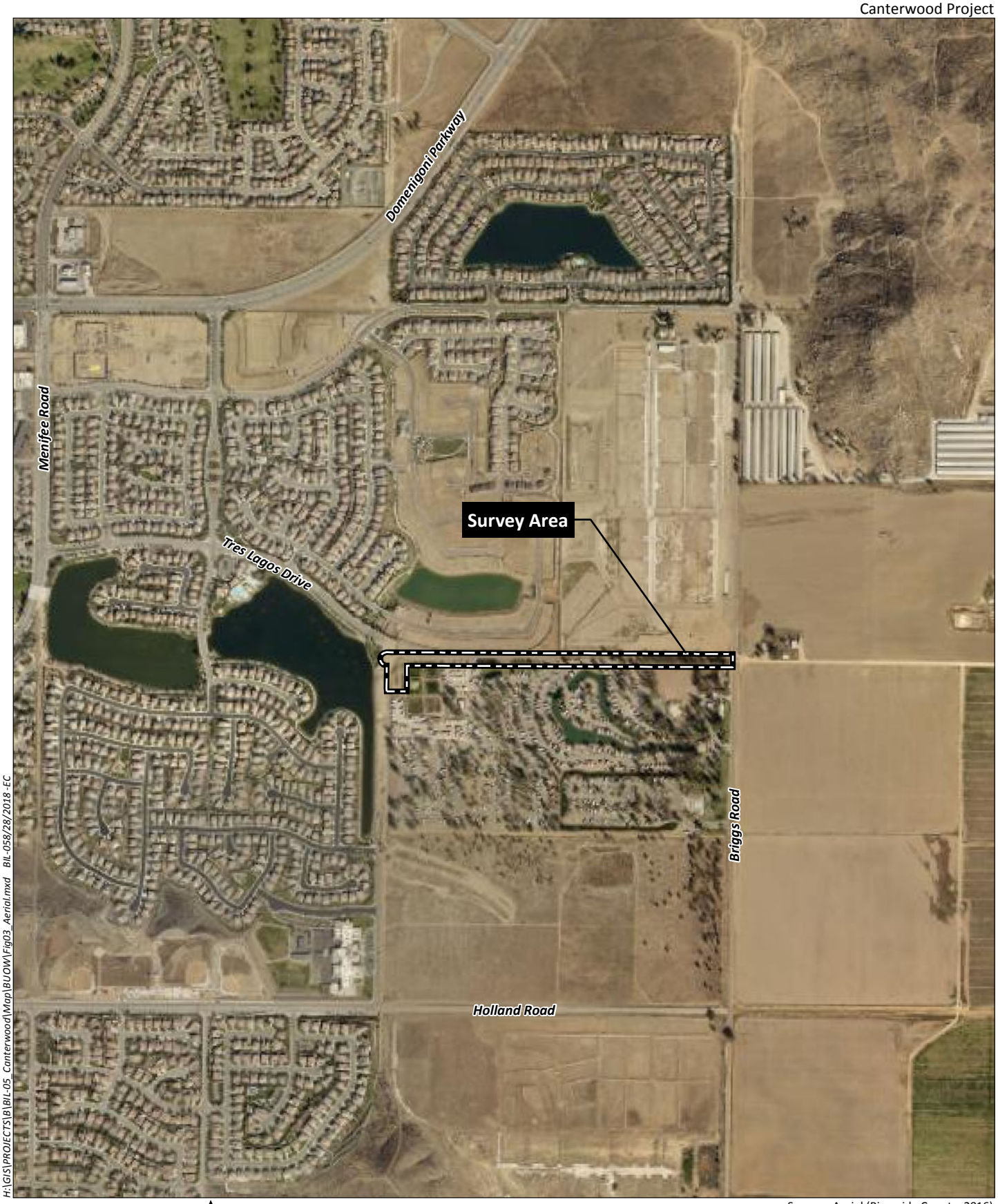
Source: Romoland 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



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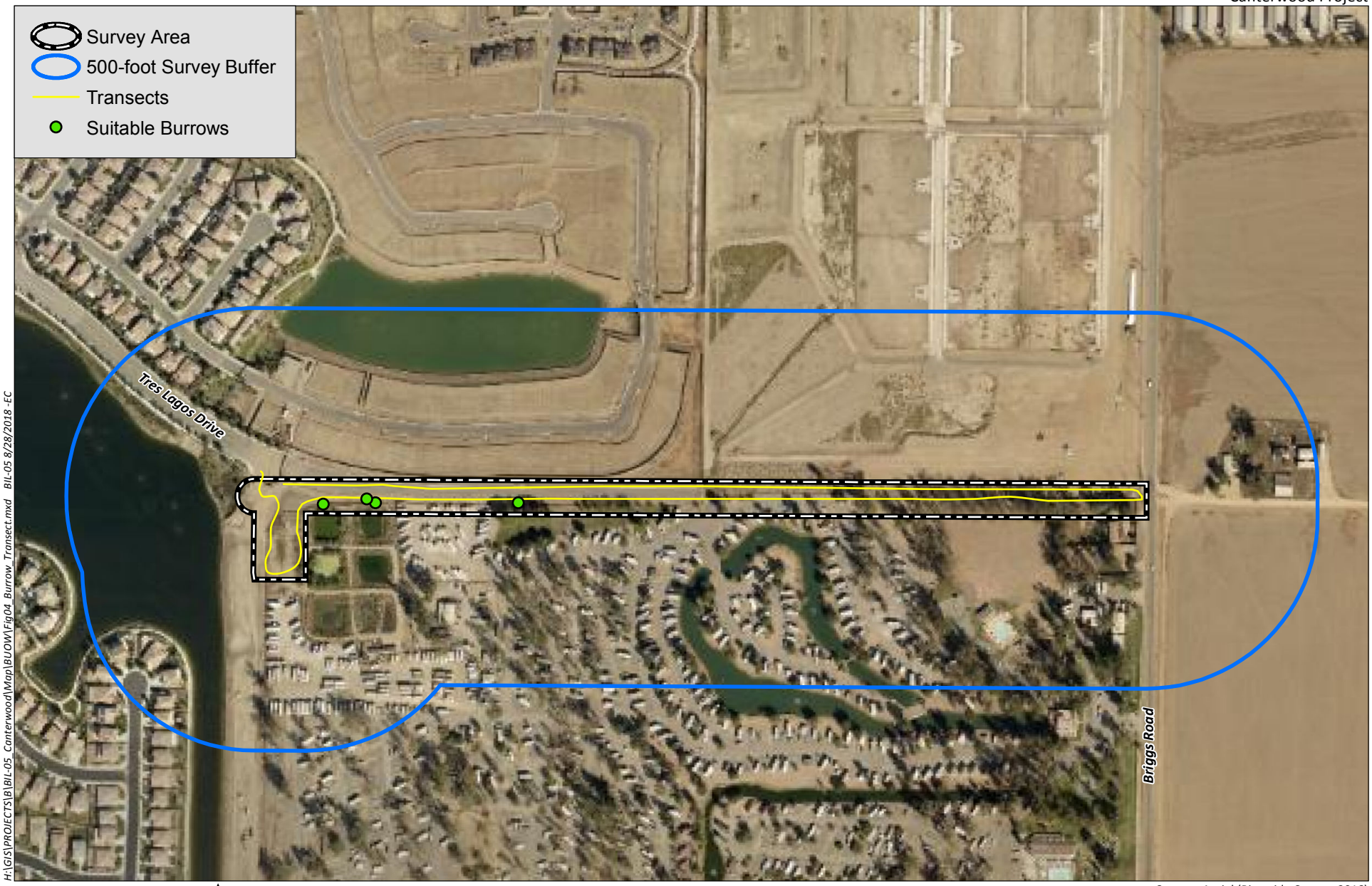
Source: Aerial (Riverside County, 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3



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Source: Aerial (Riverside County, 2016)

HELIX Environmental Planning

Suitable Burrow and Transect Locations

Figure 4

Photograph 1: View of the disturbed habitat (left) and the eucalyptus woodland (right) in the eastern portion of the survey area, facing east towards Briggs Road. The fence on the right is the boundary of the Wilderness Lakes RV Resort.

Photograph 2: View of the disturbed habitat in the center of the survey area, facing west towards Tres Lagos Drive.

Photograph 3: View of the disturbed habitat in the center of the survey area, facing west towards Tres Lagos Drive.

Photograph 4: View of the disturbed habitat in the eastern portion of the survey area, facing southwest towards the intersection of Tres Lagos Drive and Southshore Drive.

Source: HELIX 2018

Appendix J

San Pedro Farms Jurisdictional Delineation Report

SAN PEDRO FARMS PROJECT

Jurisdictional Delineation Report

Prepared for:
Riverside County Planning Department

September 2015

On Behalf Of:
The Rancon Group

ESA

SAN PEDRO FARMS PROJECT

Jurisdictional Delineation Report

Prepared for
Riverside County Planning Department

September 2015

On Behalf Of:
The Rancon Group

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Palm Springs

Petaluma

Portland

Sacramento

San Francisco

Seattle

Tampa

Woodland Hills

TABLE OF CONTENTS

San Pedro Farms Project
Jurisdictional Delineation Report

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Tables

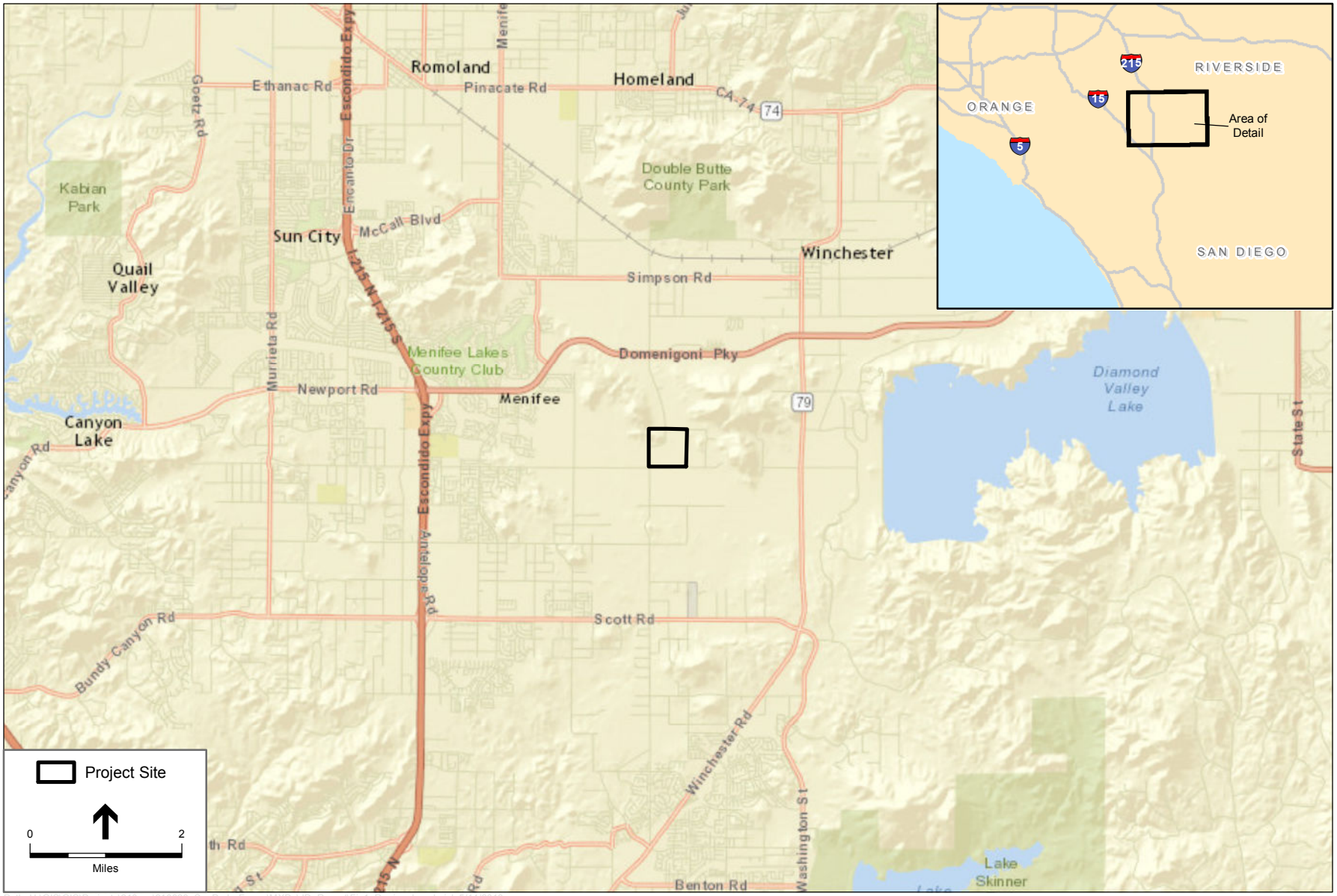
CHAPTER 1
Introduction

On behalf of The Rancon Group (Client), Environmental Science Associates (ESA) conducted a jurisdictional delineation for the San Pedro Farms Project (project), to delineate and document wetland and channel boundaries on the project site. The project involves developing the site for residential development, with associated roads and infrastructure. ESA investigated the extent of potentially jurisdictional wetlands and other waters of the U.S. and State occurring at the project site. The project site consists of approximately 156 acres of land generally located north of Scott Road, south of Domenigoni Parkway, west of State Route (SR) 79, and east of Interstate (I) 215, in Riverside County, California (**Figure 1**). The project site is depicted on the Winchester, California United States Geologic Survey (USGS) 7.5 minute topographic quadrangle map. The project site is located north of Holland Road, west of Eucalyptus Road, and east and west of Leon Road (**Figure 2**).

The site investigation was conducted in August 2015. This report documents wetland and channel boundary delineation using the best professional judgment of qualified biologists. All conclusions presented should be considered preliminary and subject to change pending official review and verification in writing by the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW) and/or the Regional Water Quality Control Board (RWQCB).

The study concludes that there is a total of 0.40 acre of potentially jurisdictional waters of the State on the project site. These include:

- 0.31 acre of ephemeral channel within the agricultural ditch;
- 0.06 acre of ephemeral channel within the roadside ditch;
- 0.03 acre of wetland within the roadside ditch.



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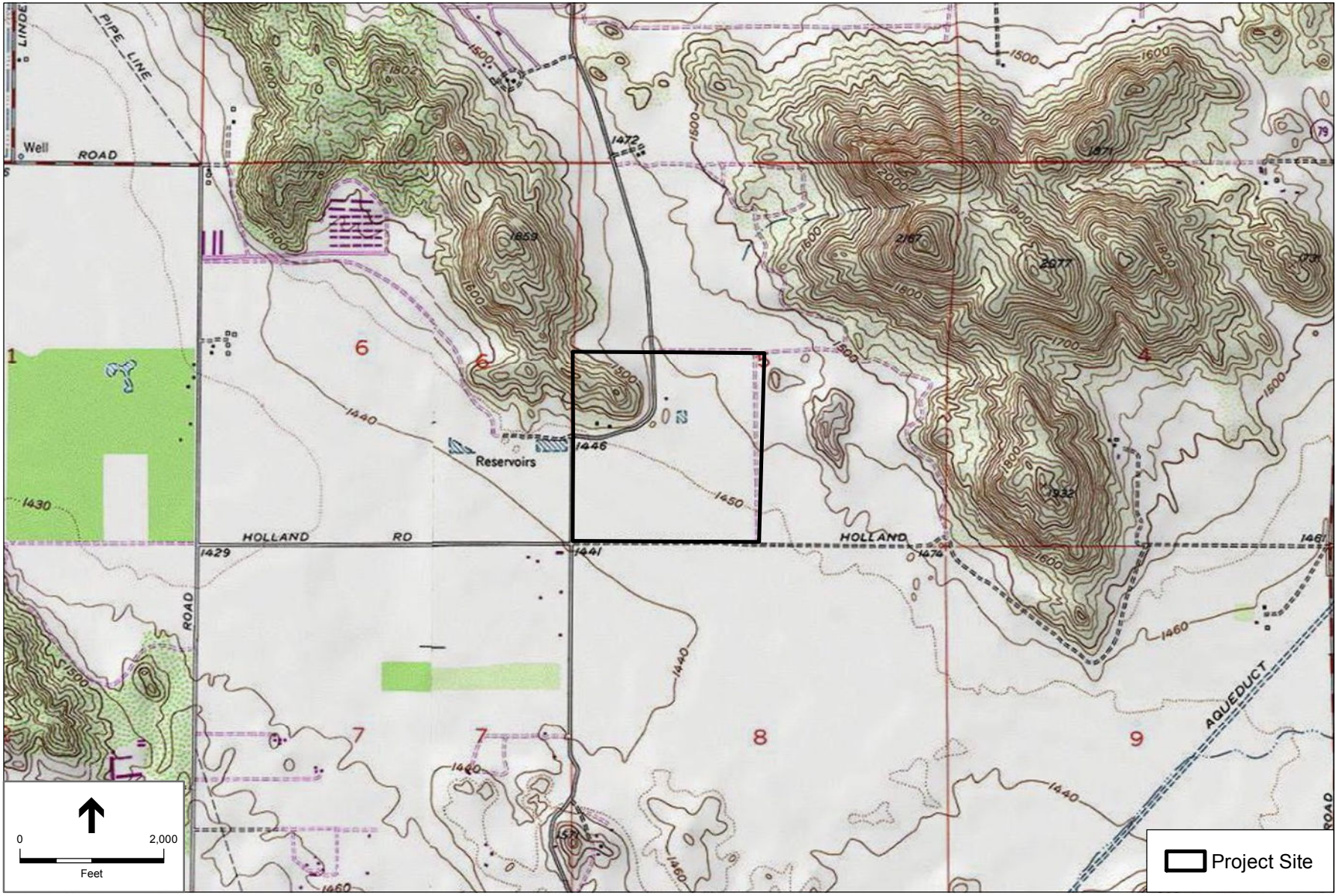
SOURCE: Riverside County GIS, ESRI

Sam Pedro Farms . 210823

Figure 1

Regional Vicinity Map



SOURCE: ESRI; USGS 7.5' Topo Quad WInchester 1976, 1980; Romoland 1976, 1980.

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Figure 2

Project Location Map

1.1 Responsible Parties

The applicant's contact information is:

Jim Lytle
The Rancon Group
41391 Kalmia Street, Ste 200
Murrieta, CA 92562
951-696-0600

The field delineator's contact information is:

Tommy Molioo
Environmental Science Associates
17744 Sky Park Circle, Suite 200
Irvine, CA 92614
(213) 599-4300
tmolioo@esassoc.com

1.2 Directions to Site

Directions to the site:

- From Riverside, take Interstate 215 south;
- Exit Scott Road in the City of Menifee and head east towards Diamond Valley Lake;
- After 3 miles, turn left on Leon Road heading north;
- The project site is at the northeast corner of the intersection of Leon Road and Holland Road;

1.3 Purpose of Assessment

The purpose of this investigation is to describe and delineate all wetlands and waters of the U.S. within the project site that may be subject to Sections 404 and 401 of the Clean Water Act, as well as Section 1600 of the California Fish and Game Code. If necessary, information from this report may be used in preparing permit applications for future actions proposed on the project site. This report will be reviewed by the USACE, CDFW, and/or RWQCB to verify their jurisdiction over wetlands and other waters of the U.S. and State on the project site.

CHAPTER 2
Jurisdictional Authority

2.1 Waters of the U.S.

The U.S. Army Corps of Engineers (USACE) regulates "discharge of dredged or fill material" into "waters" of the United States, which includes tidal waters, interstate waters, and "all other waters, interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide" (33 C.F.R. 328.3(a)), pursuant to provisions of Section 404 of the CWA.

The USACE (Federal Register 1982) and the EPA (Federal Register 1980) jointly define wetlands as: “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Wetlands have the following general diagnostic environmental characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory, 1987).

The USACE takes jurisdiction within rivers and streams to the "ordinary high water mark (OHWM)", determined by erosion, the deposition of vegetation or debris, and changes in vegetation or soil characteristics. However, if there is no federal nexus to navigable waters, these waters are considered "isolated" and thus not subject to their jurisdiction.

The USACE and the Environmental Protection Agency (EPA) have issued a set of guidance documents detailing the process for determining Clean Water Act (CWA) jurisdiction over waters of the U.S. following the Rapanos decision. The EPA and USACE issued a summary memorandum of the guidance for implementing the Supreme Court’s decision in Rapanos that addresses the jurisdiction over waters of the United States under the CWA. The complete set of guidance documents, summarized as key points below, were used to collect relevant data for evaluation by the EPA and the USACE to determine CWA Jurisdiction over the project site and to complete the “significant nexus test” as detailed in the guidelines. On August 28, 2015 the USACE and EPA issued new rules that clarifies the Rapanos decision and further defines the Waters of the U.S.

The significant nexus test includes consideration of hydrologic and ecologic factors. The significant nexus test would take into account physical indicators of flow (OHWM), if a hydrologic connection to a Traditionally Navigable Water (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary

drainage to determine if it significantly affects the chemical, physical and biological integrity of the downstream TNW.

Rapanos Key Points Summary

(A) The USACE and EPA will assert jurisdiction over the following waters:

- TNWs.
- Wetlands adjacent to TNW.
- Non-navigable tributaries of TNWs that are relatively permanent.
- Where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).
- Wetlands that directly abut such tributaries.

(B) The USACE and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

(C) The USACE and EPA generally will not assert jurisdiction over the following features:

- Swales or erosion features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow).
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Clean Water Rule: Definition of Waters of the United States

USACE and EPA published the Clean Water Rule, which went into effect on August 28, 2015. The rule defines the scope of waters and wetlands protected under the CWA:

(A) The USACE and EPA will assert jurisdiction over the following waters:

- TNWs;
- Interstate waters and wetlands (ISW);
- Territorial seas (TS);
- Impoundments of waters;
- Tributaries that contribute flow to a TNW and have a bed, banks, and ordinary high water mark (OHWM)

- Adjacent waters to a TNW, tributary, or shoreline (wetlands, ponds, lakes, oxbows, impoundments, and similar features) including:
    - Waters within 100' of the OHWM of a TNW, ISW, TS, and impoundment of a jurisdictional water or a tributary;
    - Waters within a 100-year floodplain AND within 1,500' of the OHWM of a TNW, ISW, TS, impoundment of a jurisdictional water, or a tributary
    - Waters within 1,500' of a high tide line of a tidal TNW or TS;
- Vernal pools with a significant nexus;
- Waters within the 100-year floodplain of a TNW or territorial sea with a significant nexus;
- Waters within 4,000 feet of the high tide line of OHWM of a TNW, tributary, or territorial sea with a significant nexus.

(B) The USACE and EPA has excluded the following waters from Clean Water Act jurisdiction (not all waters excluded by the Clean Water Rule are identified below):

- Erosional features, gullies, and rills that do not meet the definition of tributaries;
- Ephemeral ditches that are not a relocated tributary or excavated in a tributary;
- Intermittent ditches that are not a relocated tributary, excavated in a tributary, or drain wetlands;
- Ditches that do not flow, either directly or through another water, into a TNW or territorial sea;
- Stormwater control features; and
- Groundwater, including groundwater drained through subsurface drainage systems.

2.2 Waters of the State

Santa Ana Regional Water Quality Control Board

Most projects involving drainages are regulated by the Regional Water Quality Control Board (RWQCB), the principal State agency overseeing water quality of the State at the local/regional level. The State Water Resources Control Board (State Water Board) directly regulates multi-regional projects and supports the Section 401 certification and wetlands program statewide. The RWQCB regulates activities pursuant to Section 401(a)(1) of the federal CWA, which specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA. The project site is located within the jurisdiction of the Santa Ana RWQCB.

In addition, the RWQCB regulates water quality for all Waters of the State, that may also include isolated wetlands as defined under the California Porter-Cologne Water Quality Control Act (Porter Cologne; Ca. Water Code, Div. 7, §13000 et seq.). The RWQCB regulates discharges that can affect water quality, even if there is no significant nexus to a traditional navigable water body required for USACE determination of jurisdiction over waters of the U.S.

California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Section 1602 of the Fish and Game Code, an entity may not 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, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

As further defined by the California Code of Regulations (CCR) Title 14 Section 720, for the purpose of implementing Sections 1601 and 1603 of the California Fish and Game Code (CFG Code), this applies to all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which may have intermittent flows of water. Furthermore, the Lake and Streambed Alteration (LSA) program requires notification for impacts to streams which "includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water" (CDFW 2014).

Stream-dependent riparian habitat is defined in the CFG Code (Section 2785) as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." Removal of stream-dependent riparian vegetation may also require a Streambed Alteration Agreement (SAA) from CDFW. However, CDFW may not regulate isolated wetlands;[1] that is, those that are not associated with a river, stream, or lake.

[1] "Wetlands" means lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (FGC Section 2785).

CHAPTER 3
Methods

3.1 Literature Review

Prior to the field survey, a desk top analysis was conducted to obtain contextual information relevant to the project. ESA conducted a review of available background information pertaining to the project site and survey area geography and topography prior to conducting the jurisdictional delineation. Site maps were generated with available aerial photographs and potentially jurisdictional features were identified and marked with lines and global positioning system (GPS) coordinates to assist in field verification. Soil types mapped within the project site were consulted prior to field efforts to target areas with potentially hydric soils.

3.2 Field Survey

ESA biologist Tommy Molioo conducted a delineation of waters and wetlands on August 20, 2015 from 0900 to 1200 hours, to evaluate potential jurisdictional features within the project site. The potentially jurisdictional features were recorded in the field using aerial maps and a hand-held GPS unit. A desktop analysis was also conducted utilizing Google Earth to accurately map the limits of jurisdiction observed and mapped onsite. Representative photographs of the jurisdictional features were taken during the field visit and are included in Attachment A.

3.3 Federal Wetlands

The presence/absence of federal wetlands was determined through implementation of the methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). The definition of growing season and the basis of determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology was based on the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0)* (USACE, 2008).

A Level 2 Determination (i.e., onsite inspection) was conducted as defined in the 1987 USACE Manual. The onsite inspection evaluated the three parameters that identify and delineate the boundaries of jurisdictional wetlands, including (1) the dominance of wetland vegetation; (2) the presence of hydric soils; and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. The National List of Plant Species That Occur in Wetlands: California (Region 0) was used to determine the wetland indicator status of plants observed in the project site. The 1987 USACE Manual and 2008 Arid West Regional Supplement were used for the analysis and evaluation of any normal circumstances, atypical situations, and problem areas, as needed.

Data on vegetation, soils, and hydrologic characteristics were recorded in the field and data points were taken to identify boundaries between upland and wetland habitats. All sample locations

were examined for the presence of positive hydrologic indicators (i.e., direct evidence of saturated soils, oxidized rhizospheres). Soils were examined to determine composition, matrix color and the presence of redoximorphic features or other hydric soil indicators. The percent dominance by hydrophytic vegetation was also recorded at each sample location. Arid West Data Sheets were prepared for sample sites within drainage features that exhibited potential wetland features, which are located in Appendix B. Representative photographs of the project site, survey area and jurisdictional features are located in Appendix A.

3.4 Non-Wetland Waters of the U.S.

Non-wetland waters of the U.S. were identified if the OHWM was clearly visible and passed the significant nexus test (to the Pacific Ocean). The OHWM was determined based on observations of physical evidence that include direct observations of flow, scour marks, and drift lines of debris, as well as inundation visible on aerial imagery. The limits of non-wetland waters were confined to the ordinary limits of flow within the project site.

3.5 Waters of the State

Santa Ana Regional Water Quality Control Board

It is assumed for the purpose of this report that USACE jurisdictional areas are also under the jurisdiction of the Santa Ana RWQCB, and are subject to Section 401 of the CWA if a connection with navigable waters is determined. The local RWQCB has jurisdiction over all those areas defined as jurisdictional under Section 404 of the CWA. USACE and RWQCB jurisdictional areas have been delineated using the same methodology. Additionally, the RWQCB regulates isolated Waters of the State under the State Porter-Cologne Act that do not demonstrate connectivity with a TNW. In such instances, a Waste Discharge Permit is required to comply with the Porter-Cologne Water Quality Control Act even though the federal Clean Water Act, including Section 401 water quality certifications or Section 404 permits, would not apply.

California Department of Fish and Wildlife

CDFW jurisdictional waters included streams which show evidence of at least intermittent flow including the floodplain and wetland or riparian habitats associated with watercourses in accordance with Section 1600 of CFG Code. These areas were delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever was wider. Under the CFG Code, "wetlands" are defined as lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (CFG Code Section 2785).

CHAPTER 4
Results

4.1 Field Survey Results

The potentially jurisdictional features within the project site were delineated during the field survey, and the results are discussed below. Data forms from the delineation can be found in Appendix B.

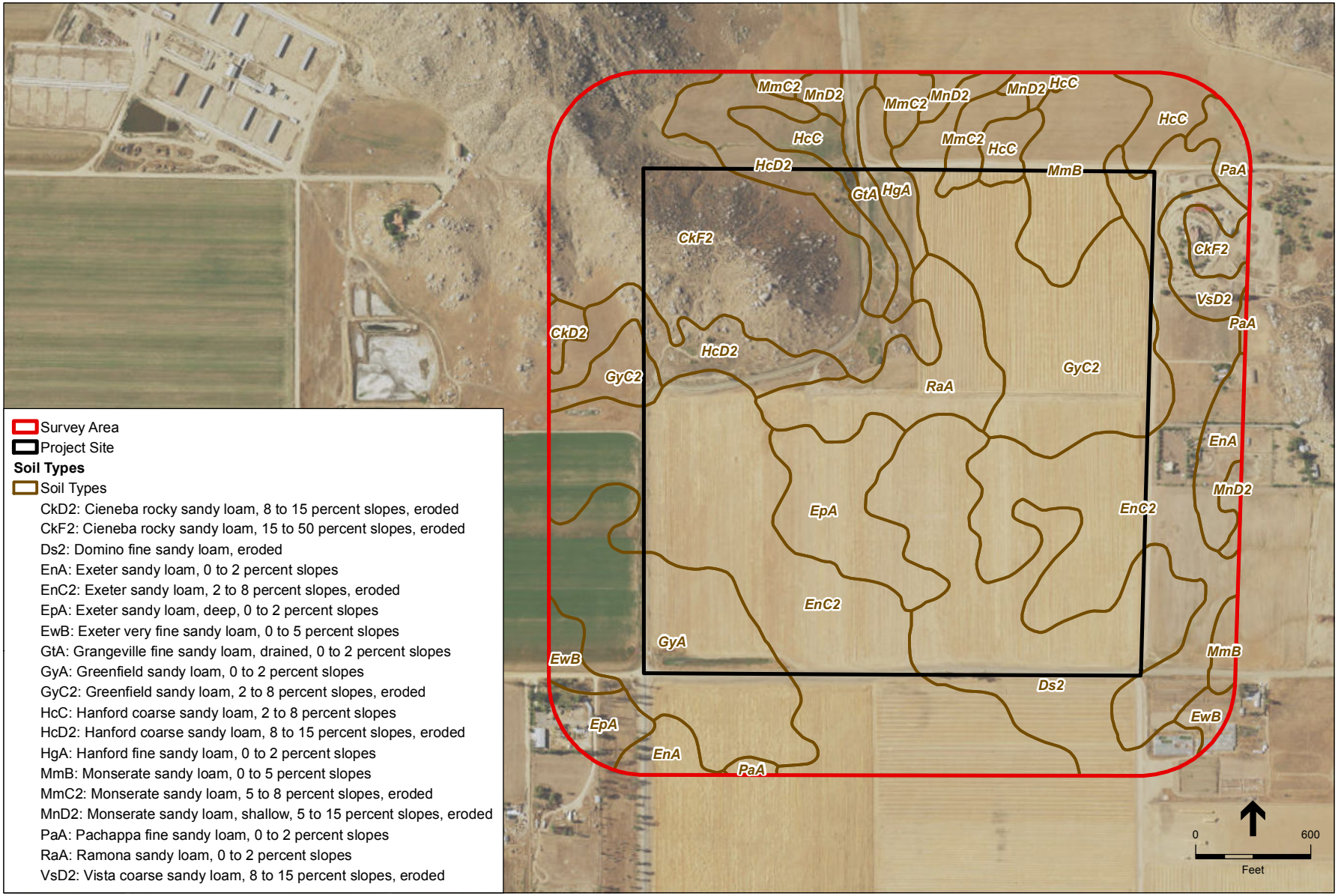
Soils

The Soil Survey of Western Riverside Area identified ten soil series mapped within the project site: Cieneba, Domino, Exeter, Grangeville, Greenfield, Hanford, Monserate, Pachappa, Ramona, and Vista (**Table 1**). The extent and locations of these soils onsite and within the project site can be seen in **Figure 3**. With the exception of the Domino series, these soil types are not typically associated with vernal pool complexes; however the site was assessed for the potential to support vernal pools. The jurisdictional delineation did not reveal the presence of any soils currently on the project site with the potential to support vernal pool complexes onsite. The precipitous topography in the northwest and well drained frequently disked soils present throughout the agricultural fields onsite make the potential for vernal pool resources low. While the Domino soil series can support vernal pools, the observed surface soils on the site have been subject to decades of disturbance which has significantly altered the soil composition and topography on the site, reducing the potential for vernal pools to occur.

Cieneba: This series consists of very shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. Typically found in association with chaparral and chamise with widely spread foothill pine or oak tree. Also found in association with small areas of thin annual grasses and weeds. These soils are also used for incidental grazing.

Domino: This series consists of moderately deep, moderately well drained soils over lime-cemented hardpans. Typically found in association with saltgrass, sedges, annual grasses, and forbs. Also commonly used for dry farming grain and annual pasture. Commonly supports irrigated alfalfa, pasture, and salt-tolerant truck crops. Vernal pools can be associated with this soil series. However, the disturbed nature of the site stems from decades of agricultural activities that have significantly altered the soil composition on the site.

Exeter: This series consists of moderately deep to a duripan, moderately well drained soils that formed in alluvium mainly from granitic sources. This soil is used for irrigated cropland growing oranges, olives and deciduous orchards, vineyards and row crops. It is also used for dairy and cattle production and building site development. Vegetation in uncultivated areas is mainly annual grasses and forbs.



SOURCE: ESRI; SSURGO

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Figure 3

Soils

TABLE 1
SOIL SERIES ONSITE

Series	Code	Description
Cieneba	CkD2	Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded
	CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
Domino	Ds2	Domino fine sandy loam, eroded
Exeter	EnA	Exeter sandy loam, 0 to 2 percent slopes
	EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded
	EpA	Exeter sandy loam, deep, 0 to 2 percent slopes
	EwB	Exeter very fine sandy loam, 0 to 5 percent slopes
Grangeville	GtA	Grangeville fine sandy loam, drained, 0 to 2 percent slopes
Greenfield	GyA	Greenfield sandy loam, 0 to 2 percent slopes
	GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded
Hanford	HcC	Hanford coarse sandy loam, 2 to 8 percent slopes
	HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
	HgA	Hanford fine sandy loam, 0 to 2 percent slopes
Monserate	MmB	Monserate sandy loam, 0 to 5 percent slopes
	MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded
	MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded
Pachappa	PaA	Pachappa fine sandy loam, 0 to 2 percent slopes
Ramona	RaA	Ramona sandy loam, 0 to 2 percent slopes
Vista	VsD2	Vista coarse sandy loam, 8 to 15 percent slopes, eroded

[1] All nomenclature follows standards outlined by the U.S. Department of Agriculture Natural Resources Conservation Service Official Soils Series Descriptions.

Grangeville: This series consists of very deep, somewhat poorly drained soils that formed in moderate coarse-textured alluvium dominantly from granitic rock sources. It is used intensively for growing alfalfa, grapes, cotton, truck crops and irrigated pasture. Some areas are being urbanized. Vegetation in uncultivated areas is annual grasses and forbs with native (sodic) alkali-tolerant plants and a few scattered oak and cottonwood trees.

Greenfield: This series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. It is used for the production of a wide variety of irrigated field, forage and fruit crops and also for growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, some shrubs and scattered oak trees.

Hanford: This series consists of very deep, well drained soils that formed in moderately coarse textured alluvium dominantly from granite. These soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants.

Monserate: This series is a member of the fine-loamy, mixed, thermic family of Typic Durixeralfs. Used principally for growing grain, grain hay or pasture, some citrus, and field and truck crops when irrigation water is available. Naturalized vegetation associated with this series is mainly annual grasses and forbs, widely spaced native canyon oak, and shrubs on eroded slopes.

Pachappa: This series consists of well drained (minimal) Noncalcic Brown soils developed from moderately coarse textured alluvium. These soils are mostly under irrigation for alfalfa, small grains and row crops as well as dry farm small grains. Yields are normally good. Vegetation in uncultivated areas is annual grasses, herbs and shrubs.

Ramona: This series is a member of the fine-loamy, mixed, thermic family of Typic Haploxeralfs. It is used mostly for production of grain, grain-hay, pasture, irrigated citrus, olives, truck crops, and deciduous fruits. Uncultivated areas have a cover of annual grasses, forbs, chamise or chaparral.

Vista: This series consists of moderately deep, well drained soils that formed in material weathered from decomposed granitic rocks. Under irrigation, avocados and citrus are grown in areas of favorable temperature. A few small areas are used for growing winter truck crops. On areas of moderate relief, grain and hay are grown without irrigation. Range is a common use in areas that are not cultivated. The natural vegetation typically found in uncultivated areas includes annual grasses, forbs and shrubs.

The vast majority of the project site is highly disturbed from decades of agricultural activities which have significantly altered the natural vegetation, soils and topography on the Site. With the exception of the Domino series, none of the soils that occur on the project site are capable of supporting wetlands and vernal pools. The Domino soils have been extensively graded and no physical signs of vernal pools were observed. While evidence of previous ponding was observed within the agricultural ditch and roadside ditch on the project site, this is likely due to existing topographical low spots, irrigation runoff, and runoff from the adjacent roads from recent storm

events in the region. No clay soils are present that could hold surface moisture for an extended period of time to support vernal pool species.

Vegetation

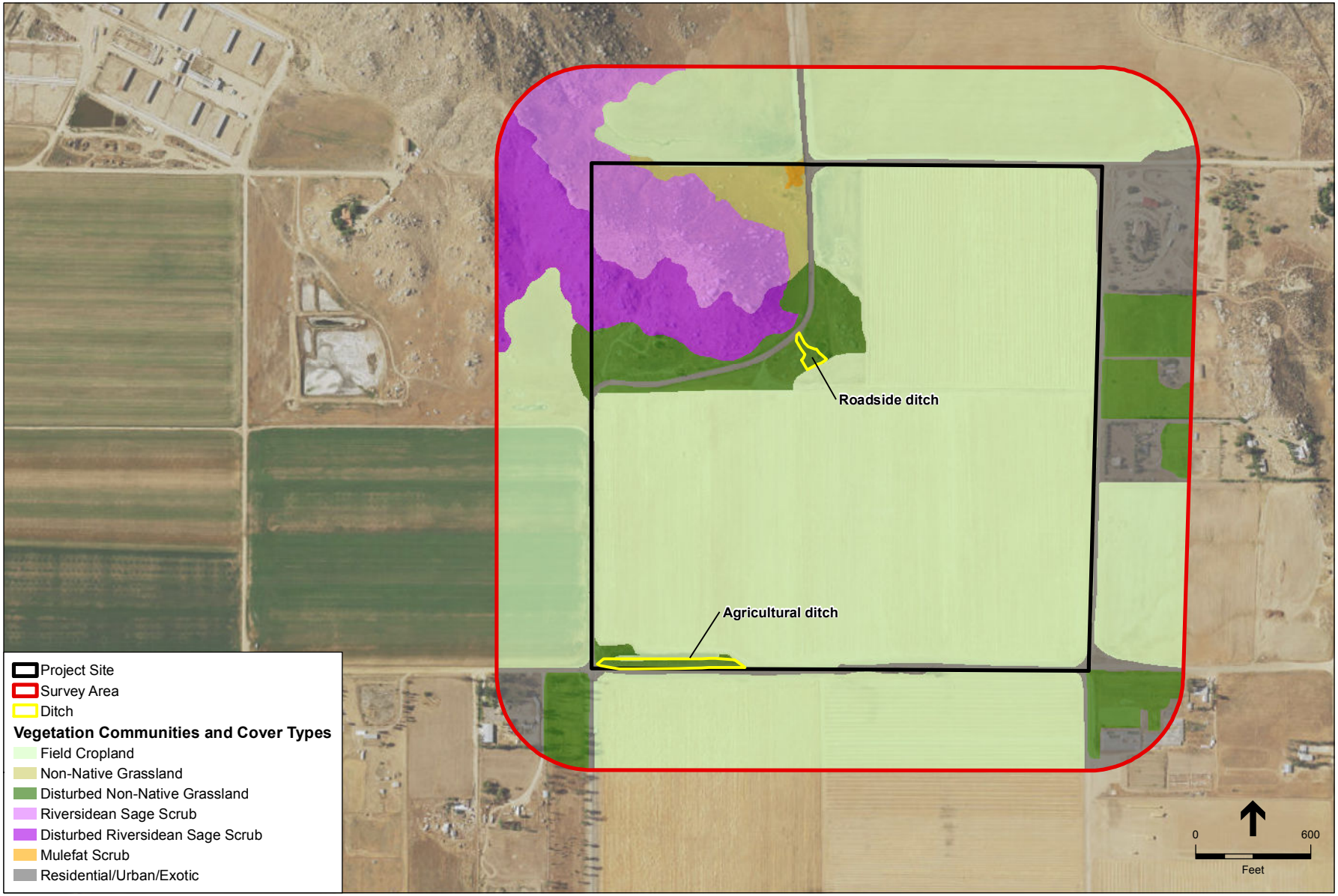
ESA mapped and described onsite vegetation communities as part of the reconnaissance-level field survey conducted in 2013, and verified in the field during the jurisdictional delineation survey in August 2015. **Table 2** below includes disturbed habitat portions that exist within each respective vegetation community polygon. Vegetation communities observed on the project site are depicted on **Figure 4**.

TABLE 2
VEGETATION COMMUNITY ACREAGES WITHIN THE PROJECT SITE

Vegetation Community	Acres
Riversidean Sage Scrub	18.2
Non-Native Grasslands	14.1
Field Cropland	121.3
Mulefat Scrub	0.2
Residential/Urban/Exotic	2.3
Grand Total	**156.1**

Riversidean Sage Scrub

The undeveloped hills within the northwestern quarter of the project site are dominated by Riversidean sage scrub habitat. Dominant species documented within this habitat type include California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), California buckwheat (*Eriogonum fasciculatum*), golden-yarrow (*Eriophyllum confertiflorum*), snapdragon penstemon (*Keckiella antirrhinoides*), monkey flower (*Mimulus aurantiacus*), distant phacelia (*Phacelia distans*) and white sage (*Salvia apiana*). Other less frequent species found within the herbaceous understory include splendid mariposa lily (*Calochortus splendens*), larkspur (*Delphinium* sp.), and woollystar (*Eriastrum* sp.). Where this habitat type integrates with non-native grassland, a scattered understory of non-native grasses including ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*) and compact brome (*Bromus madritensis*) are present. Riversidean sage scrub is known to support coastal California gnatcatcher (*Polioptila californica californica*) within the region; however, none were observed or detected during the biological surveys. A total of 18.2 acres of Riversidean sage scrub are mapped within the project site.



SOURCE: ESRI; ESA

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Figure 4

Vegetation

Non-Native Grassland

Within the project site, non-native grassland often provides the transitional zone between the native Riversidean sage scrub along the hillsides to the northwest and the agricultural fields and croplands to the east and south. Dominant species documented within the non-native grassland habitat include common fiddleneck (*Amsinckia* sp.), cultivated oat, ripgut grass, soft chess, compact brome, shortpod mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), curly dock (*Rumex crispus*), London rocket (*Sisymbrium irio*), and common wheat (*Triticum aestivum*). The grassland habitat provides suitable foraging habitat for raptors and other migratory birds, including turkey vulture (*Cathartes aura*) and red-tailed hawk (*Buteo jamaicensis*); both of which were observed within the project site. Additionally, the two ditches on the project site are mapped within the non-native grassland community since both ditches are dominated by non-native grassland habitat. A total of 14.1 acres of non-native grassland are mapped within the project site.

Field Cropland

As defined by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), the field cropland vegetation community includes both commercially cultivated areas, such as fields, orchards and grazing lands, as well as areas planted for aesthetic purposes, or for firewood and lumber. The majority of the project site is comprised of active agricultural fields and cropland supporting wheat and oats. Historically the agricultural fields onsite and adjacent have also been used for the cultivation of corn. A total of 121.3 acres of field cropland are mapped within the project site.

Mulefat Scrub

A small area along Leon Road near the northwest corner of the project site shows increased, although very minor and potentially fluctuating, groundwater availability relative to nearby non-native grassland and Riversidean sage scrub communities. This area supports a small stand of disturbed mulefat scrub dominated by mulefat (*Baccharis salicifolia*) and blue elderberry (*Sambucus nigra* ssp. *cerulea*) with a dense understory of non-native grasses (see above). There is no evidence of hydrology or hydric soils, and no connectivity to downstream functions and values. Historical aerials as far back as 1967 (NETR Online 2009) were reviewed in order to confirm the absence of hydrology. According to the 1967 aerial, this patch of vegetation did not exist until the introduction of adjacent agriculture and roads. This suggests that irrigated agricultural fields introduced after 1967 contributed to shifting groundwater levels. A fluctuating perched groundwater table would temporarily sustain species such as mulefat and elderberry. Based on the patch size (only 0.2 acre), soils, species composition, level of ongoing disturbance from anthropogenic activities, and lack of historical or current hydrology, it is believed that this is an isolated stand supported by stormwater runoff from Leon Road, agricultural runoff, and/or groundwater seepage from the adjacent hillsides. Furthermore, it was determined that the patch size, level of disturbance, fragmentation, and habitat structure (dense shrubs with no overstory or developed understory) were not conducive for supporting riparian special-status wildlife species such as least Bell's vireo (*Vireo bellii pusillus*). A total of 0.2 acre of mulefat scrub is mapped within the project site.

Residential/Urban/Exotic

Residential/urban/exotic areas within the project site include paved and dirt roads for vehicles (e.g., Leon Road and Eucalyptus Road), residential buildings, and infrastructure associated with agricultural activities. For the most part, these areas are devoid of vegetation with the exception of the occasional eucalyptus tree or other ornamental plantings. A total of 2.3 acres of residential/urban/exotic land are mapped within the project site.

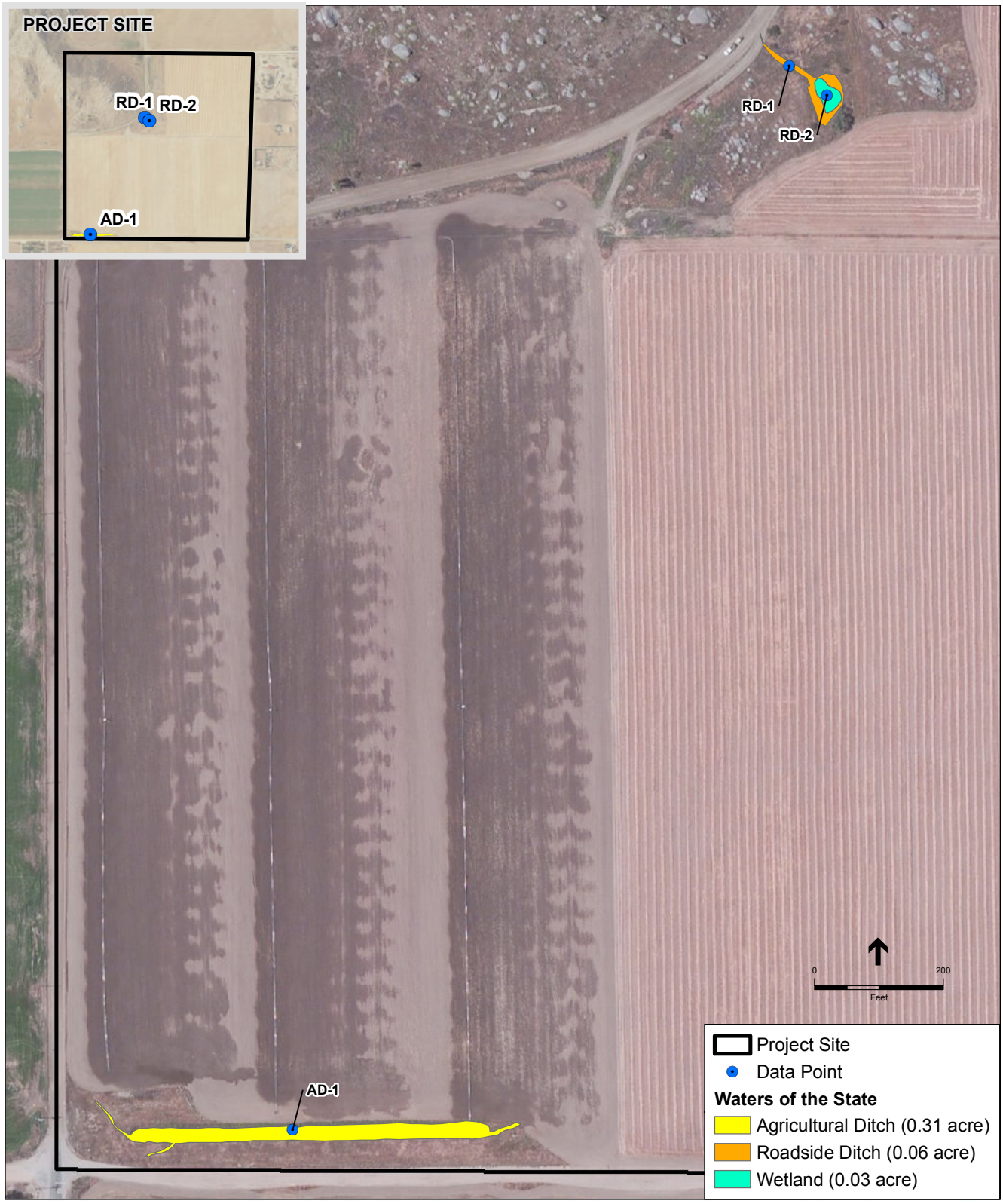
Hydrology

The project site contains two hydrological features that are isolated and convey runoff flows from the agricultural field and adjacent roads. The agricultural ditch and roadside ditch were created due to human-related disturbances and do not connect upstream or downstream to any "traditional navigable water" (TNW) as defined under Section 404 of the Clean Water Act. Water enters both features from runoff from adjacent upland areas and does not drain out from either feature; instead water settles at topographic low spots and recharges into the groundwater. Both features appear to only contain water during local storm events or runoff from irrigation on the agricultural field. Surface water was previously observed in both features after a storm event in May 2015, however, no surface water was observed during the delineation survey in August 2015.

4.2 Jurisdictional Features Summary

The potential jurisdictional features delineated within the project site include an agricultural ditch and a roadside ditch as shown in **Figure 5** and further described below. The USFWS Wetlands Mapper was reviewed for documented wetlands and streams in the vicinity of the project site and no wetlands or streams are mapped on or adjacent to the project site. Additionally a review of the USGS 7.5-minute Winchester, California topographic quadrangle map did not identify any blue-line streams entering or traversing the project site, however a small man-made reservoir was mapped in the central portion of the project site.

During the delineation survey, wetland data pits were dug at three locations within the agricultural ditch and roadside ditch to determine the presence of wetland hydrology indicators (**Figure 5)**. Wetland hydrology indicators were observed and determined at Data Point RD-2, within the topographic low-spot of the roadside ditch. No wetland indicators were observed at Data Point RD-1 within the low-flow channel of the roadside ditch, or at Data Point AD-1 within the low-flow channel of the agricultural ditch. Additionally, the limits of jurisdiction were delineated by determining the presence of an OHWM and defining extent of water flow from bed to bank. A summary of the limits of potential jurisdiction, including wetland and non-wetland waters of the State, is listed in **Table 3** below.



SOURCE: ESRI; ESA

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Figure 5

Potential Jurisdictional Features

TABLE 3
POTENTIAL JURISDICTIONAL FEATURES WITHIN THE PROJECT SITE

Map ID	Type of Feature	Non-Wetland Waters (acres)	Wetland Waters (acres)	Total
Waters of the State				
Channels				
Agricultural Ditch	Ephemeral Channel	0.31	0.0	0.31
Roadside Ditch	Ephemeral Channel	0.06	0.03	0.09
Total Area of Potentially Jurisdictional Features		**0.37**	**0.03**	**0.40**

Waters of the U.S.

Because both features are ephemeral or intermittent ditches that are not a relocated tributary, excavated in a tributary, or drain wetlands and ditches that do not flow, either directly or through another water, into a TNW or territorial sea; these features are not regulated under Section 404 of the Clean Water Act (CWA) and would not be subject to the jurisdiction of the USACE based on the 2015 CWA Ruling (DOD 2015).

Waters of the State

Waters of the State potentially subject to the jurisdiction of the CDFW and RWQCB include the agricultural ditch and the roadside ditch. While these features are not connected to upstream or downstream waters, these features are still considered Waters of the State regulated under Section 1600 of CFG Code and Section 402 of the CWA or the California Porter Cologne Act, and are potentially subject to the jurisdiction of CDFW and the RWQCB, respectively.

Agricultural Ditch

The agricultural ditch located in the southern portion of the project site contains evidence of water flow as a result of runoff from the adjacent agricultural field and roads. Due to the intermittent flow of water within the agricultural ditch, this feature is considered an ephemeral channel. Ephemeral channels are classified as "riverine intermittent" using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al, 1979). An ephemeral channel has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

While evidence of ponding water was observed during a previous field visit in May 2015, no surface water was observed in this feature during the delineation survey in August 2015. Water enters the agricultural ditch from two small erosional channels on the east and west sides of the ditch, flows to the east where water gathers at a topographic low-spot and recharges into the ground. The presence of hydrology was determined from evidence of flow (an observable OHWM) on the banks of the ditch. However, no wetland hydrology indicators were observed within the agricultural ditch during the delineation survey.

A wetland data pit was dug within the low-flow channel of the agricultural ditch (Data Point AD-1) and revealed silty sand soils with a matrix color of 10YR 5/3. Redox concentrations were observed in the lower 8 to 12 inches of the soil sample with a color of 10YR 6/8 in 5 percent of the matrix. Although some redox features were present, no hydric soil indicators were observed or determined to occur within the soil sample or the agricultural ditch. Additionally, the vegetation within the agricultural ditch consists primarily of rabbitsfoot grass (*Polypogon monspiliensis*) a Facultative Wetland (FACW) plant, with scattered curly dock and a small patch of tall flatsedge (*Cyperus eragrostis*) on the eastern bank. The agricultural ditch is dominated by bare ground and sheep were observed grazing on the rabbitsfoot grass in the ditch during the delineation survey. Based on the dominance test and prevalence index, hydrophtyic vegetation is present within the agricultural ditch. However, because this feature lacks hydric soil indicators and hydrology indicators, the agricultural ditch does not contain wetland Waters of the State.

Roadside Ditch

The roadside ditch located in the northern portion of the project site was formed as stormwater flowed along the eastern edge of Leon Road, cutting a low-flow channel at a bend in Leon Road which terminates at a topographic low spot where water ponds and recharges into the groundwater. Since flows within the roadside ditch are dependent upon regional storm events and road runoff, the roadside ditch is considered an ephemeral channel.

Two data pits were dug within the roadside ditch, Data Point RD-1 was dug within the low-flow channel, and Data Point RD-2 was dug within the topographic low spot as depicted on **Figure 5**. Data Point RD-1 contained hydrophytic vegetation dominated by scattered mulefat and wild heliotrope, which occurred on either side of the low-flow channel. Soils within RD-1 are entirely silty sand with a color of 10YR 5/2 from 0 to 8 inches where a rock layer was encountered. No hydric soil indicators were observed within Data Point RD-1. However, Surface Soil Cracks (B6) were observed within the low-flow channel, demonstrating the presence of wetland hydrology. Since RD-1 does not contain hydric soils, the low-flow channel of the roadside ditch is not considered a wetland.

Data Point RD-2 was dug within the topographic low spot within the roadside ditch. Vegetation at this data pit is dominated by curly dock, with wild heliotrope and mulefat, and this hydrophytic vegetation accounts for 90 percent of the ground cover observed. Soils within RD-2 are silty clay with a soil color of 10YR 4/2 in the upper 12 inches, with redox concentrations in pore linings with a color of 10YR 4/6. The hydric soil indicator Depleted Matrix (F3) was observed within the soil data pit, indicating the presence of hydric soils. Additionally, Data Point RD-2 contains Surface Soil Cracks (B6) which is a primary indicator of wetland hydrology. Therefore, Data Point RD-2 is considered wetland Waters of the State, and the limits of the wetland are mapped on **Figure 5**.

CHAPTER 5
Conclusions

Three primary features have been identified as potentially being regulated by the RWQCB and CDFW. The limits of jurisdiction for each regulatory agency are summarized below.

Waters of the U.S. Under the 2015 New Rule, the USACE and EPA has excluded the following waters from Clean Water Act jurisdiction:

- Erosional features, gullies, and rills that do not meet the definition of tributaries;
- Ephemeral ditches that are not a relocated tributary or excavated in a tributary;
- Intermittent ditches that are not a relocated tributary, excavated in a tributary, or drain wetlands;
- Ditches that do not flow, either directly or through another water, into a TNW or territorial sea;
- Stormwater control features.

Therefore, the features on the project site are not considered Waters of the U.S., and as such, are not subject to the jurisdiction of the USACE.

Waters of the State. The features described above contain evidence of water flow, and although isolated, these features are considered Waters of the State subject to regulation under Section 402 of the CWA and/or the Porter Cologne Act, and Section 1600 of CFG Code. Therefore, a total of 0.40 acre of Waters of the State, including 0.37 acre of ephemeral channels and 0.03 acre of wetland waters, are potentially subject to the jurisdiction of the Santa Ana RWQCB and CDFW. Project-related impacts to these features may require regulatory permitting in the form of a Waste Discharge Permit from the Santa Ana RWQCB and a Streambed Alteration Agreement (SAA) from CDFW.

It should be noted that the results and conclusions included in this delineation report are considered preliminary and the regulatory agencies are responsible for the final ruling on jurisdiction and permitting for impacts to waters on the project site.

CHAPTER 6
References

California Department of Fish and Wildlife (CDFW). 2014. Lake and Streambed Alteration Program. http://www.dfg.ca.gov/habcon/1600/

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe, 1979. Classification of wetlands and deepwater habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online, http://www.npwrc.usgs.gov/resource/wetlands/classwet/ (Version 04DEC98).

Department of Defense (DOD). 2015. Clean Water Rule: Definition of "Waters of United States". Federal Register. Vol. 80, No. 124. June 29, 2015.

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers Wetland Delineation Manual.* Prepared for the U.S. Army Corps of Engineers.

Google, Inc. (Google Earth). 2015. Available URL: http://www.google.com/earth/index.html.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento. 1300 pp.

Soil Survey Staff, United States Department of Agriculture (USDA), Natural Resources Conservation Service.

1999. Official Soil Series Descriptions [Online WWW]. Available URL: http://soils.usda.gov/technical/classification/osd/index.html. Accessed August 28, 2015. USDA-NRCS, Lincoln, NE.

2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

2015. Web Soil Survey. Available URL: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 19, 2014.

2014. National Hydric Soils List. Available URL: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. March. Accessed August 26, 2015.

U.S. Army Corps of Engineers (USACE). 2008. *Arid West Supplement to the 1987 Wetlands Delineation Manual.*

USFWS. 2014. National Wetlands Inventory, Wetlands Mapper. Available URL: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 1, 2015.

APPENDIX A: SITE PHOTOGRAPHS

Photograph 1: Taken within the agricultural ditch at Data Point AD-1. Facing east towards the downstream portion of the ditch. Note the low-flow channel is dominated by rabbitsfoot grass with curly dock on the banks.

Photograph 2: Taken within the agricultural ditch at Data Point AD-1. Facing west towards the upstream portion towards Leon Road.

SOURCE: ESA

San Pedro Farms . 210823

Site Photographs

Photograph 3: Taken from Leon Road, facing southeast towards the roadside ditch and Data Point RD-1. Note the low-flow channel that originates from road runoff along Leon Road. Soil cracks and an OHWM are observable in the low-flow channel.

Photograph 4: Taken from the low-flow channel in the roadside ditch. Facing southeast towards the wetland area and Data Point RD-2. Note the limits of the wetland are defined by the change in vegetation.

Photograph 5: Taken during a site visit in May 2015 within the agricultural ditch, during a period following a regional rain event. Facing east (downstream) towards ponded water at a topographic low-spot. No wetland indicators were observed at this location during the delineation survey.

Photograph 6: Taken during a site visit in May 2015 within the roadside ditch, during a period following a regional rain event. Note annual grasses are present surrounding the wetland vegetation.

SOURCE: ESA

APPENDIX B: DATA SHEETS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Pedro Farms City/County: Menifee Sampling Date: AD-1

Applicant/Owner: PANGAEA Land Consultants State: CA Sampling Point: 8/20/15

Investigator(s): T. Molido Section, Township, Range: Sec 5, T 6S, R 2W

Landform (hillslope, terrace, etc.): upland flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Lat: 33° 40' 26.81" Long: 117° 6' 54.40" Datum: NAD 83

Soil Map Unit Name: Greenfield and Exeter NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
agricultural ditch (swale) at southern end of agricultural field

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Curly dock (on slopes)	5	yes	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Polypogon monspiensis	60	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	65 = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 65	x 2 = 130
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 65 (A)	130 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Sheep grazing on grass in swale and ag. field

SOIL

Sampling Point: AD-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/3	95					Silty sand	
8-12	10YR 5/3		10YR 4/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

Same as RD-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No Y Depth (inches): _____

Water Table Present? Yes ___ No Y Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No Y Depth (inches): _____

Wetland Hydrology Present? Yes ___ No Y

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

Remarks:

32' wide - CDFW

16' wide - USACE

completely dry

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Pedro Farms City/County: Menifee / R.V. Sampling Date: 8/20/15

Applicant/Owner: PANGAEA LAND Consultants State: CA Sampling Point: RD-1

Investigator(s): T. Molloo Section, Township, Range: Sec 5, T 6 S, R 2 W

Landform (hillslope, terrace, etc.): Upland flat Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR): Lat: 33° 40' 26.81" Long: 117° 6' 54.40" Datum: NAD 83

Soil Map Unit Name: Cieneba and Ramona NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes Y No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes X No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Baccharis salicifolia	5	yes	FACW
2. ~~Carpobrotus edulis~~			
3. Heliotropum curassavicum	5	yes	OBL
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 5	x 2 = 10
FAC species 0	x 3 = 0
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 10 (A)	15 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

Vegetation recently cleared

SOIL

Sampling Point: RD-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/2	100					Silty sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: rocks

Depth (inches): 8

Hydric Soil Present? Yes _____ No X

Remarks:

- low flow spot from road to basin
- soils consistent with upland habitat surrounding

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

- roadside ditch from road runoff

6 ft 6 in wide

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Pedro Farms City/County: Menifee Sampling Date: 8/20/15

Applicant/Owner: PANGAEA Land Consultants State: CA Sampling Point: RD-2

Investigator(s): T. Moyoo Section, Township, Range: Sec 5, T 6S, R 2W

Landform (hillslope, terrace, etc.): upland flat Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR): ~~Cienega~~ Lat: 33° 40' 26.81" Long: 117° 6' 54.40" Datum: NAD 83

Soil Map Unit Name: Cieneba and Ramona NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Curly dock	75	yes	FACW
2. wild heliotrope	10	no	OBL
3. Baccharis salicifolia	5	no	FACW
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	80	x 2 =	160
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	90 (A)		170 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

vegetation within low-spot, recently cleared

SOIL

Sampling Point: RD-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	100%	10YR 4/6	2	C	PL	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

depressional basin

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Y Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

basin (low spot) at end of roadside channel

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: San Pedro Farms
Project Number: 20823
Stream:
Investigator(s): T. Molloo

Date: 8/20/2015 **Time:** 0900
Town: Menifee **State:** CA
Photo begin file#: **Photo end file#:**

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [x] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:** NAD 83
Coordinates: 33°40'26.81", 117°6'54.40"

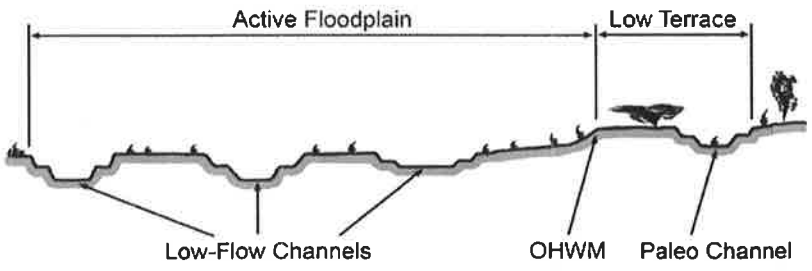
Potential anthropogenic influences on the channel system:
agricultural ditch created for runoff flows

Brief site description:
disturbed agricultural field, surrounded by agriculture, no natural hydrology

Checklist of resources (if available):

- [x] Aerial photography
  Dates: 4/27/2014
- [x] Topographic maps
- [ ] Geologic maps
- [x] Vegetation maps
- [x] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [x] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

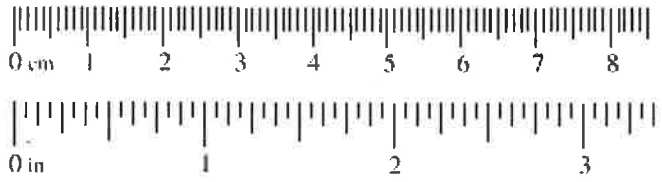


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [x] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

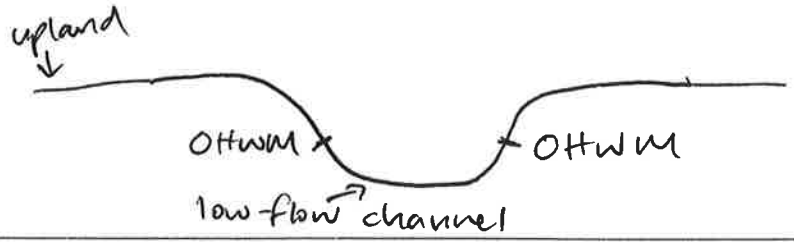
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: change in sediment color
- ☐ Other: _____

Comments:

Floodplain unit:

☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: