

BIOLOGICAL TECHNICAL REPORT

FOR

LEGADO

**LOCATED IN THE CITY OF MENIFEE,
RIVERSIDE COUNTY, CALIFORNIA**

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1.0 INTRODUCTION

1.1 Background and Scope of Work

This document provides the results of general and focused biological surveys and habitat assessments for the approximately 331-acre Legado Project (the Project) located in the City of Menifee, Riverside County, California. This report identifies and evaluates impacts to biological resources associated with the proposed Project in the context of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), the California Environmental Quality Act (CEQA), and State and Federal regulations such as the Endangered Species Act (ESA), Clean Water Act (CWA), and the California Fish and Game Code. The current biological surveys supplement surveys previously conducted for the Project site, as documented in biological reports prepared in 2006 and 2008.

The scope of this report includes a discussion of existing conditions for the approximately 331-acre Project site, all methods employed regarding the general and focused biological surveys, the documentation of botanical and wildlife resources identified (including special-status species), and an analysis of impacts to biological resources. Methods of the study include a review of relevant literature, field surveys, and a Geographical Information System (GIS)-based analysis of vegetation communities. As appropriate, this report is consistent with accepted scientific and technical standards and survey guideline requirements issued by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), the California Native Plant Society (CNPS), and other applicable agencies/organizations.

For this report, the term *Project area* is defined as the 331 acres of land composed of Assessor's Parcel Numbers (APNs): 333-020-009, 333-020-010 (portion), 333-030-012, 333-030-013, 333-030-021, 333-030-022. The term *Study area* includes the Project area and lands proposed for off-site improvements. The term *Project footprint* is defined as the land proposed for direct impact by the Project, either temporary or permanently. For this document we have assumed that all direct impacts would be permanent. The term, *Open Space* is land not proposed for development and thus occurs outside of the Project footprint but within the Project area.

The field study focused on a number of primary objectives that would comply with CEQA requirements, including (1) general biological surveys; (2) vegetation mapping; (3) habitat assessments for special-status plant species (including species with applicable MSHCP survey requirements); (4) habitat assessments for special-status wildlife species (including species with applicable MSHCP survey requirements); (5) assessments for MSHCP riparian/riverine areas and vernal pools; and (6) assessments for areas subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act (CWA), the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and the Porter-Cologne Act, and CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600–1616 of the California Fish and Game Code. Observations of all plant and wildlife species were recorded during the general biological surveys.

1.2 Project Location

The Project site comprises approximately 331 acres in the City of Menifee, Riverside County, California [Exhibit 1 – Regional Map] and is located within Section 22 of Township 5 South, Range 3 West of the U.S. Geological Survey (USGS) 7.5” quadrangle map Romoland, California (dated 1953 and photorevised in 1979) [Exhibit 2 – Vicinity Map]. The Project site is bordered by Rouse Road to the north, Encanto Drive to the west, commercial/residential development and the Hans Christensen Middle School to the south, and undeveloped land to the east.

1.3 Project Description

The proposed Project consists of a master-planned, medium-density residential community with freeway-oriented commercial uses on the approximately 331-acre site. The Project will include up to 1,061 dwelling units on lot sizes ranging from 5,000 square feet (s.f.) to 30,000 s.f., up to 225,000 s.f. of freeway-oriented commercial uses, and a 12.9-acre community park/community center. The Project also includes offsite impacts associated with road improvements, including existing Encanto Road and Rouse Road, and to construct the intersection of Rouse Road and Antelope Road.

1.4 Existing Conditions

The majority of the Project site is disturbed from farming and other land uses. The site mostly contains maintained fields supporting a predominance of non-native, ruderal vegetation. The northeastern portion of the site has not historically been farmed due to the presence of scattered rock outcrops. However, this area still has been subject to disturbance, and is vegetated with a mix of non-native plants and some native forb species associated with grasslands. The northeastern corner of the site consists of a hill vegetated with Riversidean sage scrub.

1.5 Relationship of the Project Site to the MSHCP

1.5.1 MSHCP Background

The Western Riverside County MSHCP is a comprehensive habitat conservation/planning program for Western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. The MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to special-status species and associated native habitats.

Through agreements with the U.S. Fish and Wildlife Service (USFWS) and CDFW, the MSHCP designates 146 special-status animal and plant species as Covered Species, of which the majority have no project-specific survey/conservation requirements. The MSHCP provides mitigation for project-specific impacts to these species for Projects that are compliant/consistent with MSHCP requirements, such that the impacts are reduced to below a level of significance pursuant to CEQA.

The Covered Species that are not yet adequately conserved have additional requirements in order for these species to ultimately be considered “adequately conserved”. A number of these species have survey requirements based on a project’s occurrence within a designated MSHCP survey area and/or based on the presence of suitable habitat. These include Narrow Endemic Plant Species (MSHCP *Volume I, Section 6.1.3*), as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); Criteria Area Plant Species (MSHCP *Volume I, Section 6.3.2*) identified by the Criteria Area Plant Species Survey Areas (CAPSSA); animals species (burrowing owl, mammals, amphibians) identified by survey areas (MSHCP *Volume I, Section 6.3.2*); and species associated with riparian/riverine areas and vernal pool habitats, i.e., least Bell’s vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and three species of listed fairy shrimp (MSHCP *Volume I, Section 6.1.2*). An additional 28 species (MSHCP *Volume I, Table 9.3*) not yet adequately conserved have species-specific objectives in order for the species to become adequately conserved. However, these species do not have project-specific survey requirements.

The goal of the MSHCP is to have a total Conservation Area in excess of 500,000 acres, including approximately 347,000 acres on existing Public/Quasi-Public (PQP) Lands, and approximately 153,000 acres of Additional Reserve Lands targeted within the MSHCP Criteria Area. The MSHCP is divided into 16 separate Area Plans, each with its own conservation goals and objectives. Within each Area Plan, the Criteria Area is divided into Subunits, and further divided into Criteria Cells and Cell Groups (a group of criteria cells). Each Cell Group and ungrouped, independent Cell has designated “criteria” for the purpose of targeting additional conservation lands for acquisition. Projects located within the Criteria Area are subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process to determine if lands are targeted for inclusion in the MSHCP Reserve. In addition, all Projects located within the Criteria Area are subject to the Joint Project Review (JPR) process, where the Project is reviewed by the Regional Conservation Authority (RCA) to determine overall compliance/consistency with the biological requirements of the MSHCP.

1.5.2 Relationship of the Project Site to the MSHCP

The Project site is located within the MSHCP Sun City/Menifee Valley Area Plan, but is not located within the MSHCP Criteria Area. Portions of the Project site are located within the NEPSSA, while the entire Project site is located within the Burrowing Owl Survey Area [Exhibit 3 – MSHCP Overlay Map]. The Project site is not located within the Amphibian Species Survey Area, Mammalian Species Survey Area, CAPSSA Survey Area, or Special Linkage Areas.

Within the designated Survey Areas, the MSHCP requires habitat assessments, and if applicable, focused surveys within areas of suitable habitat. For locations with positive survey results, the MSHCP requires that 90 percent¹ of those portions of the property that provide for long-term conservation value for the identified species shall be avoided until it is demonstrated that conservation goals for the particular species have been met throughout the MSHCP. Findings of

¹ For burrowing owls, application of the 90-percent avoidance requirement depends on whether a project is located within the MSHCP Criteria Area, and how many pairs of owls and amount of suitable habitat is present at a project site. For properties located outside of the MSHCP Criteria Area (as with the Legado Project site), the threshold for 90-percent avoidance is three or more owl pairs and at least 35 acres of suitable habitat.

equivalency shall be made demonstrating that the 90-percent standard has been met, if applicable. If equivalency findings cannot be demonstrated, then “biologically equivalent or superior preservation” must be provided.

2.0 METHODOLOGY

In order to adequately identify biological resources in accordance with the requirements of CEQA and the MSHCP, Glenn Lukos Associates (GLA) assembled biological data consisting of two main components:

- Performance of vegetation mapping for the Project Site; and
- Performance of habitat assessments, and site-specific biological surveys to evaluate the presence/absence of special-status species in accordance with the requirements of CEQA and the MSHCP.

The focus of the biological surveys was determined through initial site reconnaissance, a review of the CNDDDB (CDFW 2017), CNPS 8th edition online inventory (CNPS 2017), Natural Resource Conservation Service (NRCS) soil data, MSHCP species and habitat maps and sensitive soil maps (Dudek 2003), other pertinent literature, and knowledge of the region. Site-specific general surveys within the Project Site were conducted on foot in the proposed development areas for each target plant or animal species identified below.

Vegetation was mapped directly onto a 200-scale (1”=200’) aerial photograph generally following Holland (1986), though since the majority of the site supports disturbed land uses, the mapping mostly reflected those disturbed uses. All flora and fauna identified on site during vegetation mapping were documented.

2.1 Summary of Surveys

GLA conducted biological studies in order to identify and analyze actual or potential impacts to biological resources associated with the Project site. Observations of all plant and wildlife species were recorded during each of the above-mentioned survey efforts. The studies conducted include the following:

- Performance of vegetation mapping;
- Performance of site-specific habitat assessments and biological surveys to evaluate the potential presence/absence of special-status species (or potentially suitable habitat) to the satisfaction of CEQA, federal and state regulations, and MSHCP requirements; and
- Delineation of aquatic resources (including wetlands and riparian habitat) subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and CDFW.

Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of Biological Surveys.

Survey Type	Survey Dates	Biologists
Focused Burrow Survey	2017: 3/31	DM/ZW
Focused Burrowing Owl Surveys	2017: 4/10, 4/19, 5/3, 5/10	DM/DS
Plant Surveys	2017: 3/31, 4/19, 5/3, 5/10	DM/DS
Jurisdictional Delineation	2017: 7/26 2018: 4/16 2019: 6/17	DM
Dry Season Fairy Shrimp Survey	2017: 7/26 2019: 7/2	DM/KL KL
Wet Season Fairy Shrimp Survey	12/7/18 through 6/5/19	KL

DM = David Moskovitz, ZW = Zack West, DS = David Smith, KL = Kevin Livergood

Individual plants and wildlife species are evaluated in this report based on their “special-status.” For the purpose of this report, plants were considered “special-status” based on one or more of the following criteria:

- Listing through the Federal and/or State Endangered Species Act (ESA);
- Occurrence in the CNPS Rare Plant Inventory (Rank 1A/1B, 2A/2B, 3, or 4); and/or
- Occurrence in the CNDDB inventory.

Wildlife species were considered “special-status” based on one or more of the following criteria:

- Listing through the Federal and/or State ESA; and
- Designation by the State as a Species of Special Concern (SSC) or California Fully Protected (CFP) species.

Vegetation communities and habitats were considered “special-status” based on one or more of the following criteria:

- Global (G) and/or State (S) ranking of category 3 or less based on CDFW (see Section 3.2.2 below for further explanation); and
- Riparian habitat.

2.2 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Project site, and consisted of five components: (1) a literature search; (2) preparation of a list of target special-status plant species and sensitive vegetation communities that could

occur within the Project Site; (3) general field reconnaissance surveys; (4) vegetation mapping according to the List of Vegetation Alliances and Associations; and (5) habitat assessments and focused surveys for special-status plants (including those with MSHCP requirements).

2.2.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- CNPS *Inventory of Rare and Endangered Plants of California* (eighth edition). Rare Plant Advisory Committee, David Tibor, Convening Editor, California Native Plant Society. Sacramento, CA x + 388pp; (CNPS 2010); and
- CNDDDB for the USGS 7.5' quadrangles: Romoland, California (CNDDDB 2017).

2.2.2 Vegetation Mapping

Vegetation communities within the Project Site were mapped according to Holland (1986). Where necessary, deviations were made when areas did not fit into exact habitat descriptions. These vegetation communities were named based on the dominant plant species present. Plant communities were mapped in the field directly onto a 200-scale (1"=200') aerial photograph. A vegetation map is included as Exhibit 4. Representative site photographs are included as Exhibit 5.

2.2.3 Special-Status Plant Species and Habitats Evaluated for the Project Site

A literature search was conducted to obtain a list of special-status plants with the potential to occur within the Project site. The CNDDDB was initially consulted to determine well-known occurrences of plants and habitats of special concern in the region. Other sources used to develop a list of target species for the survey program included the CNPS online inventory (2010).

Based on this information, vegetation profiles and a list of target sensitive plant species and habitats that could occur within the Project site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special status plants that may occur within the Project Site; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Project site, if applicable.

The southern portion of the Project site is within the NEPSSA. Pursuant to the MSHCP, the following target species must be evaluated through habitat assessments and focused surveys (if suitable habitat is present): Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), many-stemmed dudleya (*Dudleya multicaulis*), spreading navarretia (*Navarretia fossalis*), California Orcutt grass (*Orcuttia californica*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*). GLA biologists Zach West and David Moskovitz

performed a habitat assessment for the NEPSSA target species on March 31, 2017. The portion of the Project site within the NEPSSA does not contain suitable habitat for the target species. As such, focused plant surveys were not required pursuant to the MSHCP. Regardless, general plant surveys were performed for the Project site.

2.2.5 Botanical Surveys

GLA biologists conducted general plant surveys for the Project site. Surveys were conducted in accordance with accepted botanical survey guidelines (CDFG 2009, CNPS 2001, USFWS 2000). As applicable, surveys were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Project site. Surveys were conducted by following meandering transects within target areas of suitable habitat. All plant species encountered during the field surveys were identified and recorded following the above-referenced guidelines adopted by CNPS (2010) and CDFW by Nelson (1984).

2.3 Wildlife Resources

Wildlife species were evaluated and detected during field surveys by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Project site by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during the visit. Scientific nomenclature and common names for vertebrate species referred to in this report follow the Complete List of Amphibian, Reptile, Bird, and Mammal Species in California (CDFG 2008), Standard Common and Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians 6th Edition, Collins and Taggart (2009) for amphibians and reptiles, and the American Ornithologists' Union Checklist 7th Edition (2009) for birds. The methodology (including any applicable survey protocols) utilized to conduct general surveys, habitat assessments, and/or focused surveys for special-status animals are included below.

2.3.1 General Surveys

Birds

During the general biological and reconnaissance survey within the Project site, birds were identified incidentally within each habitat type. Birds were detected by both direct observation and by vocalizations, and were recorded in field notes.

Mammals

During general biological and reconnaissance survey within the Project site, mammals were identified incidentally within each habitat type. Mammals were detected both by direct observations and by the presence of diagnostic sign (i.e., tracks, burrows, scat, etc.).

Reptiles and Amphibians

During general biological and reconnaissance surveys within the Project site, reptiles and amphibians were identified incidentally during surveys within each habitat type. Habitats were examined for diagnostic reptile sign, which include shed skins, scat, tracks, snake prints, and lizard tail drag marks. All reptiles and amphibian species observed, as well as diagnostic sign, were recorded in field notes.

2.3.2 Special-Status Animal Species Evaluated for the Project Site

A literature search was conducted in order to obtain a list of special-status wildlife species with the potential to occur within the Project site. Species were evaluated based on two factors, including: 1) species identified by the CNDDDB as occurring (either currently or historically) on or in the vicinity of the Project site, and 2) any other special-status animals that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs on the Project site.

2.3.3 Habitat Assessment for Special Status Animal Species

GLA biologists Zack West and David Moskovitz conducted habitat assessments for special-status animal species on March 31, 2017. An aerial photograph, soil map and/or topographic map were used to determine the community types and other physical features that may support special-status and uncommon taxa within the Project site.

2.3.4 Focused Surveys for Special-Status Animals Species

GLA biologists performed focused surveys for the following special-status animal species: burrowing owl (*Athene cunicularia*) and listed fairy shrimp (dry season survey). The methodologies of these surveys are discussed below. The results of focused surveys are discussed in Section 4.0 of this report.

Burrowing Owl

Portions of the Project site are located within the MSHCP survey area for the burrowing owl. GLA biologists (David Moskovitz, Zack West, and David Smith) conducted focused surveys for the burrowing owl for all suitable habitat areas within the Project site. Surveys were conducted in accordance with survey guidelines described in the 2006 MSHCP Burrowing Owl Survey Instructions. The guidelines stipulate that four focused survey visits should be conducted between March 1 and August 31. Within areas of suitable habitat, the MSHCP first requires a focused burrow survey to map all suitable burrows. The focused burrow survey was conducted on March 31, 2017. Focused burrowing owl surveys were conducted on April 10, April 19, May 3, and May 10, 2017. As recommended by the survey guidelines, the survey visits were conducted in the morning hours from around sunrise to two hours after sunrise, though the surveys were extended longer in the case of the Project in order to monitor burrowing owls detected at the site. Weather conditions during the surveys were conducive to a high level of bird activity.

Surveys were conducted by walking meandering transects throughout areas of suitable habitat. Transects were spaced between 7 m and 20 m apart, adjusting for vegetation height and density, in order to provide adequate visual coverage of the survey areas. At the start of each transect, and at least every 100 m along transects, the survey area was scanned for burrowing owls using binoculars. All suitable burrows were inspected for diagnostic owl sign (e.g., pellets, prey remains, whitewash, feathers, bones, and/or decoration) in order to identify potentially occupied burrows.

A 150-meter buffer area around the Project site was evaluated where the buffer area contained potentially suitable habitat for burrowing owls. The majority of lands within the buffer area is developed and not suitable for burrowing owls; however, offsite lands to the northeast, east, and southeast have some potential for use by owls. Since the offsite areas were not accessible, these areas were scanned using binoculars from property boundary.

Table 2-2 summarizes the burrowing owl survey visits. The results of the burrowing owl surveys are documented in Section 4.0 of this report.

Table 2-2. Summary of Burrowing Owl Surveys

Survey Date	Biologist	Start/End Time	Start/End Temperature	Wind Speed (mph)	Cloud Cover
4/10/17	DM	0700/0945	58/63	0-3	Clear
4/19/17	DS	0710/1045	59/65	0-5	Partly Cloudy
5/3/17	DS	0645/0930	54/80	0-2	Clear
5/10/17	DS	0650/0930	55/57	0-3	Overcast

Listed Fairy Shrimp

Volume I, Section 6.1.2 of the MSHCP requires the mapping of all seasonally ponded features (including vernal pools, ephemeral ponds, stock ponds, road ruts, etc.) with the potential to support listed fairy shrimp. Protocol fairy shrimp surveys are required to confirm the presence/absence of listed fairy in all features with suitable ponding. Pursuant to the USFWS *Survey Guidelines for the Listed Large Branchiopods* (May 31, 2015), protocol surveys consist of one wet season survey and one dry season survey conducted within a three-year period. The Project site contains four depression features with the potential to support listed fairy shrimp, including Features 1 (a & b), 2, 3, and 4. In 2005, GLA performed a dry season survey for Features 1 and 2. Soil samples collected from both depression features were found to contain cysts of the genus *Branchinecta*, however no cysts of the genus *Streptocephalus* (i.e., Riverside fairy shrimp) were detected. With the permission of USFWS, GLA subcontracted to D. Christopher Rogers (EcoAnalysts, Inc.) to conduct hydration of the collected *Branchinecta* cysts. The non-listed versatile fairy shrimp (*Branchinecta lindahli*) was reared from cysts collected from both depression features. No other species of *Branchinecta*, including the Vernal Pool fairy

shrimp or the San Diego fairy shrimp were present in the hatched specimens; however, USFWS does not consider cyst hydration to be conclusive to establish the absence of other species. A wet season survey following a dry season survey would be necessary to demonstrate absence of other *Branchinecta* species. A wet season survey was attempted during the 2005/2006-rainfall season; however, the depression features did not adequately pond to allow for sampling. Due to the lapse of time since the 2005 survey, the results of older survey are no longer adequate.

GLA initiated new surveys by first performing a dry season survey in 2017 for Features 1a/1b and 2. The results of the 2017 dry season survey were provided to USFWS in a report dated September 28, 2017 (attached as Appendix C), and the results are also summarized below in Section 4.0 of this report. At the time of the 2005 surveys, Features 1a and 1b consisted of one distinct feature. However, activities disturbing the site along the northern boundary appears to have modified the area containing Feature 1, resulting in two smaller features (1a and 1b). For purposes of this analysis, Features 1a and 1b are treated as one feature. GLA biologists David Moskovitz (TE-084606-3) and Kevin Livergood (TE-172638-2) collected soil samples from Features 1a/1b and 2 on July 26, 2017. Soil sample collection and processing followed the USFWS Survey Guidelines. A total of 25 samples were collected from each feature. Soil sample locations were spaced appropriately within each feature and focused on the lowest topographic areas. Approximately 50 ml of soil/substrate was collected for each sample from the top 1 to 3 cm using a hand spade and placed in an individually labeled bag.

Soil samples collected by GLA were provided to HELIX Environmental Planning, Inc. for processing to determine cyst presence/absence. Soil samples were processed by HELIX biologist Jason Kurnow (TE 778195). Soil samples were prepared for analysis by dissolving the clumps of soil in water and sequentially sieving the material through 710- and 75 μ m pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screens was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope. In the event that cysts are detected, they are identified to genus level based on surface characteristics. More than a single species of the genus *Branchinecta* can occur in Riverside and Orange Counties but cannot be identified past genus level based on cyst characteristics alone.

In order to complete the two-survey protocol for Features 1a/1b and 2, GLA performed a wet season survey for the 2018-2019 rainfall season. The results of the wet season survey were provided to USFWS in a report dated July 30, 2019 (attached as Appendix C), and the results are also summarized below in Section 4.0 of this report. GLA (Kevin Livergood) initiated sampling on December 7, 2018, with surveys continuing through June 5, 2019. Four features were sampled for the wet season survey, which included Features 1a/1b and 2, but which also included two tire track depressions (Features 3 and 4) that were not sampled during the 2017 dry season survey. Per the Survey Guidelines, when suitable conditions are present each feature is sampled once every seven days, beginning within seven days of initial inundation and continuing until the feature is no longer inundated, or until it has experienced 120 days of continuous ponding. In cases where features dry and refill during the same wet season, sampling is reinitiated within seven days of refilling upon meeting the three cm standing water criteria and continues until the feature is no longer inundated. In accordance with the Survey Guidelines site visits were

conducted within 24 hours of initial storm events to determine whether features contained a minimum of three centimeters (cm) of ponding. Once a feature was determined to be sufficiently ponded, follow up surveys were conducted within seven days in order to sample for fairy shrimp. Sampling for the presence of fairy shrimp was performed using a dip net within representative portions of the depression bottom, edges, and vertical water column when there is adequate ponding. In the field, specimens were collected and immediately transferred to a vial containing a 95% ethanol solution. Each sample was labeled according to the depression from which the sample was collected. For species identification, each specimen was inspected in the lab using a dissecting microscope and the “Key to California Fairy Shrimps” found in Eriksen and Belk (1999)². Information pertaining to each pool was recorded on vernal pool data sheets.

Since two depression features (3 and 4) were sampled during the wet season survey but were not included in the 2017 dry season survey, a separate dry season survey was performed in 2019 for Features 3 and 4. The results of the 2019 dry season survey were provided to USFWS in a report dated July 30, 2019 (attached as Appendix C), and the results are also summarized below in Section 4.0 of this report. Soil samples were collected from the features by Kevin Livergood in the same manner as described above for the 2017 survey. The soil samples were again provided to HELIX Environmental Planning, Inc. for processing to determine cyst presence/absence. Soil processing was performed in the same manner as described above for the 2017 survey.

2.4 Jurisdictional Delineation

A jurisdictional delineation was previously performed for the Project site in 2005. GLA performed updated delineations on July 26, 2017, April 16, 2018, and June 17, 2019. Prior to beginning the field delineation a 200-scale color aerial photograph and the previously cited USGS topographic maps were examined to determine the locations of potential areas of Corps/CDFW jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Potential wetland habitats at the subject site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual³ (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement)⁴. The presence of an Ordinary High Water Mark (OHWM) was determined using the 2008 Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States⁵ in conjunction with the Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid

² Eriksen, C. and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Inc. Eureka, California.

³ Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

⁴ U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

⁵ Lichvar, R. W., and S. M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. (<http://www.crrel.usace.army.mil/library/technicalreports/ERDC-CRREL-TR-08-12.pdf>).

West Region of the Western United States.⁶ While in the field the limits of the OHWM, wetlands, and CDFW jurisdiction were recorded using GPS technology and/or on copies of the aerial photography. The results of the jurisdictional delineation are discussed in Section 4.0 of this report.

2.5 MSHCP Riparian/Riverine Areas and Vernal Pools

Volume I, Section 6.1.2 of the MSHCP describes the process through which protection of riparian/riverine areas and vernal pools would occur within the MSHCP Plan Area. The purpose 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. The MSHCP requires that as projects are proposed within the overall Plan Area, the effect of those projects on riparian/riverine areas and vernal pools must be addressed.

The MSHCP defines riparian/riverine areas as *lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.*

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 wetland indicators of hydrology and/or vegetation during the drier portion of the growing season.*

With the exception of wetlands created for the purpose of providing wetlands Habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

GLA surveyed the Project site for riparian/riverine areas and vernal pool/seasonal pool habitat, including features with the potential to support fairy shrimp. The mapping of riparian/riverine areas were initially performed on July 26, 2017 and April 16, 2018. The mapping was updated during a site visit performed with USFWS and CDFW on June 17, 2019.

To assess for vernal/seasonal pools (including fairy shrimp habitat), GLA biologists evaluated the topography of the site, including whether the site contained depressional features/topography with the potential to become inundated; whether the site contained soils associated with vernal/seasonal pools; and whether the site supported plants that suggested areas of localized ponding.

⁶ Curtis, Katherine E. and Robert Lichevar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TN-10-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.

3.0 REGULATORY SETTING

The proposed Project is subject to state and federal regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources, including: state- and federally listed plants and animals; aquatic resources including rivers and creeks, ephemeral streambeds, wetlands, and areas of riparian habitat; other special-status species which are not listed as threatened or endangered by the state or federal governments; and other special-status vegetation communities.

3.1 State and/or Federally Listed Plants or Animals

3.1.1 State of California Endangered Species Act

California's Endangered Species Act (CESA) defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the Federal Endangered Species Act (FESA), CESA does not list invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened, endangered, or candidate species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided." Under the CESA, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require permits or memoranda of understanding and can be authorized for endangered species, threatened species, or candidate species for scientific, educational, or management purposes and for take incidental to otherwise lawful activities. Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

3.1.2 Federal Endangered Species Act

The FESA of 1973 defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any

species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Under provisions of Section 9(a)(1)(B) of the FESA it is unlawful to “take” any listed species. “Take” is defined in Section 3(18) of FESA: “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Further, the USFWS, through regulation, has interpreted the terms “harm” and “harass” to include certain types of habitat modification that result in injury to, or death of species as forms of “take.” These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a Federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

3.1.3 State and Federal Take Authorizations for Listed Species

Federal or state authorizations of impacts to or incidental take of a listed species by a private individual or other private entity would be granted in one of the following ways:

- Section 7 of the FESA stipulates that any federal action that may affect a species listed as threatened or endangered requires a formal consultation with USFWS to ensure that the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. 16 U.S.C. 1536(a)(2).
- In 1982, the FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of the FESA. Upon development of an HCP, the USFWS can issue incidental take permits for listed species where the HCP specifies at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.
- Sections 2090-2097 of the CESA require that the state lead agency consult with CDFW on projects with potential impacts on state-listed species. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed as well as state-listed species. In certain circumstances, Section 2080.1 of the California Fish and Game Code allows CDFW to adopt the federal incidental take statement or the 10(a) permit as its own based on its findings that the federal permit adequately protects the species under state law.

3.1.4 Take Authorizations Pursuant to the MSHCP

The Western Riverside County MSHCP was adopted on June 17, 2003, and an Implementing Agreement (IA) was executed between the Federal and State Wildlife Agencies (USFWS and CDFW) and participating entities. The MSHCP is a comprehensive habitat conservation-planning program for western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. As such, the MSHCP is intended to streamline review of individual projects with respect to the species and habitats addressed in the MSHCP, and to provide for an overall

Conservation Area that would be of greater benefit to biological resources than would result from a piecemeal regulatory approach. The MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to sensitive species.

Through agreements with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW), the MSHCP designates 146 special-status animal and plant species that receive some level of coverage under the plan. Of the 146 “Covered Species” designated under the MSHCP, the majority of these species have no additional survey/conservation requirements. In addition, through project participation with the MSHCP, the MSHCP provides mitigation for project-specific impacts to Covered Species so that the impacts would be reduced to below a level of significance pursuant to CEQA. As noted above, project-specific survey requirements exist for species designated as “Covered Species not yet adequately conserved”. These include Narrow Endemic Plant Species, as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); Criteria Area Plant Species identified by the Criteria Area Species Survey Areas (CASSA); animals species as identified by survey area; and plant and animal species associated with riparian/riverine areas and vernal pool habitats (*Volume I, Section 6.1.2* of the MSHCP document).

3.2 California Environmental Quality Act

3.2.1 CEQA Guidelines Section 15380

CEQA requires evaluation of a project’s impacts on biological resources and provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts. Sections 5.1.1 and 5.2.2 below set forth these thresholds and guidelines. Furthermore, pursuant to the CEQA Guidelines Section 15380, CEQA provides protection for non-listed species that could potentially meet the criteria for state listing. For plants, CDFW recognizes that plants on Lists 1A, 1B, or 2 of the CNPS *Inventory of Rare and Endangered Plants in California* may meet the criteria for listing and should be considered under CEQA. CDFW also recommends protection of plants, which are regionally important, such as locally rare species, disjunct populations of more common plants, or plants CNPS Ranked 3 or 4.

3.2.2 Non-Listed Special-Status Plants, Wildlife and Vegetation Communities Evaluated Under CEQA

Federally Designated Special-Status Species

Within recent years, the USFWS instituted changes in the listing status of candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing) and C3 species (either extinct, no longer a valid taxon or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. This term is employed in this document, but carries no official protections. All references to federally protected species in this report (whether listed, proposed for listing, or candidate) include the

most current published status or candidate category to which each species has been assigned by USFWS.

For this report the following acronyms are used for federal special-status species:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FC Federal Candidate Species (former C1 species)
- FSC Federal Species of Concern (former C2 species)

State-Designated Special-Status Species

Some mammals and birds are protected by the state as Fully Protected (SFP) Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California SSC are designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's CNDDDB project. Informally listed taxa are not protected but warrant consideration in the preparation of biotic assessments. For some species, the CNDDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites.

For this report the following acronyms are used for State special-status species:

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

California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. The CNPS's Eighth Edition of the *California Native Plant Society's Inventory of Rare and Endangered Plants of California* separates plants of interest into five ranks. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California. The list serves as the candidate list for listing as threatened and endangered by CDFW. CNPS has developed five categories of rarity that are summarized in Table 3-1.

Table 3-1. CNPS Ranks 1, 2, 3, & 4, and Threat Code Extensions

CNPS Rank	Comments
Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere	Thought to be extinct in California based on a lack of observation or detection for many years.
Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere	Species, which are generally rare throughout their range that are also judged to be vulnerable to other threats such as declining habitat.
Rank 2A – Plants presumed Extirpated in California, But Common Elsewhere	Species that are presumed extinct in California but more common outside of California
Rank 2B – Plants Rare, Threatened or Endangered in California, But More Common Elsewhere	Species that are rare in California but more common outside of California
Rank 3 – Plants About Which More Information Is Needed (A Review List)	Species that are thought to be rare or in decline but CNPS lacks the information needed to assign to the appropriate list. In most instances, the extent of surveys for these species is not sufficient to allow CNPS to accurately assess whether these species should be assigned to a specific rank. In addition, many of the Rank 3 species have associated taxonomic problems such that the validity of their current taxonomy is unclear.
Rank 4 – Plants of Limited Distribution (A Watch List)	Species that are currently thought to be limited in distribution or range whose vulnerability or susceptibility to threat is currently low. In some cases, as noted above for Rank 3 species, CNPS lacks survey data to accurately determine status in California. Many species have been placed on Rank 4 in previous editions of the “Inventory” and have been removed as survey data has indicated that the species are more common than previously thought. CNPS recommends that species currently included on this list should be monitored to ensure that future substantial declines are minimized.
Extension	Comments
.1 – Seriously endangered in California	Species with over 80% of occurrences threatened and/or have a high degree and immediacy of threat.
.2 – Fairly endangered in California	Species with 20-80% of occurrences threatened.
.3 – Not very endangered in California	Species with <20% of occurrences threatened or with no current threats known.

3.3 Jurisdictional Waters

3.3.1 Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a)⁷ as:

⁷ On October 9, 2015, the U.S. 6th District Circuit Court of Appeals ordered a nationwide stay on the Corps and EPA’s definition of waters of the United States under the Clean Water Rule (“Clean Water Rule: Definition of ‘Waters of the United States’; Final Rule,” 80 Federal Register 124 (29 June, 2015), pp. 37054-37127). As a result, the Corps’ regulations that were in effect prior to the August 28, 2015 Clean Water Rule is again in effect until such

- (1) *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
- (2) *All interstate waters including interstate wetlands;*
- (3) *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
 - (i) *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - (ii) *From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
 - (iii) *Which are used or could be used for industrial purpose by industries in interstate commerce...*
- (4) *All impoundments of waters otherwise defined as waters of the United States under the definition;*
- (5) *Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
- (6) *The territorial seas;*
- (7) *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
- (8) Waters of the United States do not include prior converted cropland.⁸ Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the

a time as the Court order is satisfied, if this occurs. In addition, President Trump signed an Executive Order on February 28, 2017 that instructs the EPA and Corps to formally reconsider the Rule, which could lead to a re-write of the law or a complete repeal.

⁸ The term “prior converted cropland” is defined in the Corps’ Regulatory Guidance Letter 90-7 (dated September 26, 1990) as “wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season....” [Emphasis added.]

presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

1. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, the U.S. Environmental Protection Agency (EPA) asserted that Corps jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of “waters of the United States” in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* (SWANCC). In this case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the Clean Water Act.

The written opinion notes that the court’s previous support of the Corps’ expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc.*) was for a wetland that abutted a navigable water and that the court did not express any opinion on the question of the authority of the Corps to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.

Therefore, we believe that the court’s opinion goes beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, the Corps and EPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

2. Rapanos v. United States and Carabell v. United States

On June 5, 2007, the EPA and Corps issued joint guidance that addresses the scope of jurisdiction pursuant to the Clean Water Act in light of the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (“Rapanos”). The chart below was provided in the joint EPA/Corps guidance.

For project sites that include waters other than Traditional Navigable Waters (TNWs) and/or their adjacent wetlands or Relatively Permanent Waters (RPMs) tributary to TNWs and/or their

adjacent wetlands as set forth in the chart below, the Corps must apply the significant nexus standard.

For “isolated” waters or wetlands, the joint guidance also requires an evaluation by the Corps and EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision are associated with isolated features on project sites for which a jurisdictional determination is being sought from the Corps.

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters 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

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- 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

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional 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

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters
- Significant nexus includes consideration of hydrologic and ecologic factors

3. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be

considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List⁹¹⁰);
- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- Whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with “problematic hydrophytic vegetation”, which require a minimum of 14 days of ponding to be considered a wetland.

3.3.2 Regional Water Quality Control Board

Section 401 of the Clean Water Act requires any applicant for a Section 404 permit to obtain certification from the State that the discharge (and the operation of the facility being constructed) will comply with the applicable effluent limitation and water quality standards. In California this 401 certification is obtained from the Regional Water Quality Control Board. The Corps, by law, cannot issue a Section 404 permit until a 401 certification is issued or waived.

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program.¹¹ The memorandum states:

California’s right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the Corps, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE’s 404 program, for instance, no application for 401 certification will be required...

The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states....

⁹ Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

¹⁰ Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

¹¹ Wilson, Craig M. January 25, 2001. Memorandum addressed to State Board Members and Regional Board Executive Officers.

Water Code section 13260 requires “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements).” (Water Code § 13260(a)(1) (emphasis added).) The term “waters of the state” is defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” (Water Code § 13050(e).) The U.S. Supreme Court’s ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification....

In this memorandum the SWRCB’s Chief Counsel has made the clear assumption that fill material to be discharged into isolated waters of the United States is to be considered equivalent to “waste” and therefore subject to the authority of the Porter Cologne Water Quality Act.¹²

3.3.3 California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” CDFW’s definition of “lake” includes “natural lakes or man-made reservoirs.” CDFW also defines a stream as “a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators.”

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and

¹² On June 17, 2016, the SWRCB issued a draft “Procedures for Discharges of Dredged or Fill Materials to Waters of the State” which provides definitions for wetlands, procedures for jurisdictional delineations, and procedures for obtaining permits for impacts to waters of the State.

Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

4.0 RESULTS

This section provides the results of general biological surveys, vegetation mapping, habitat assessments and focused surveys for special-status plants and animals, an assessment for MSHCP riparian/riverine areas and vernal pools, and a jurisdictional delineation for Waters of the United States (including wetlands) subject to the jurisdiction of the Corps and Regional Board, and streams (including riparian vegetation) and lakes subject to the jurisdiction of CDFW.

4.1 Existing Conditions

The majority of the Project site is disturbed from farming and other land uses. The site mostly contains maintained fields supporting a predominance of non-native, ruderal vegetation. The northeastern portion of the site has not historically been farmed due to the presence of scattered rock outcrops. However, this area still has been subject to disturbance, and is vegetated with a mix of non-native plants and some native forb species associated with grasslands. The northeastern corner of the site consists of a hill vegetated with Riversidean sage scrub.

4.2 Vegetation/Land Use Types

The Project Areas contain six vegetation/land use associations. Table 4.1 provides a summary of the vegetation/land-use associations and includes acreages totals for the Project site. Detailed descriptions of each vegetation/land use follow the table. A vegetation map/land use map is included as Exhibit 4. Site photographs depicting existing conditions and vegetation types are included as Exhibit 5. A complete list of plant species observed on site is presented in the floral compendium and is attached as Appendix A.

Table 4.1. Summary of Vegetation/Land Use Types

Vegetation/Land Use Type	Onsite	Offsite	Total
Agriculture	299.26	0.01	299.27
Cactus Scrub	0.55	0	0.55
Disturbed/Developed	16.39	4.90	21.29
Emergent Wetland	0.11	0	0.11
Riversidean Sage Scrub	1.56	0.26	1.82
Ruderal	12.86	0.86	13.72
Seasonal Pools	0.28	0	0.28
Total	331.01	6.03	337.04

4.2.1 Agricultural Land

Approximately 299.27 acres of the Project site consist of agricultural land, including 0.01 acre of the offsite impact areas. These areas consist of cultivated barley (*Hordeum vulgare*) that are routinely maintained and harvested.

4.2.2 Cactus Scrub

The Project site contains a slightly elevated outcrop area (approximately 0.55 acre) in the eastern portion of the site containing patches of cane cholla (*Cylindropuntia californica* var. *parkeri*). In addition, this area contains a small population of Parry's spineflower (*Chorizanthe parryi* var. *parryi*). Other species include stink net (*Onocnophon piluliferum*), everlasting nest straw (*Stylocline gnaphaloides*), rattlesnake weed (*Daucus pusillus*), Hartweg's milkvine (*Sarcostemma cychanoides* ssp. *hartwegii*), Mediterranean schismus (*Schismus barbatus*), and red brome (*Bromus madritensis* ssp. *rubens*).

4.2.3 Disturbed/Developed Areas

Approximately 21.29 acres of the Project area consist of disturbed/developed lands, including 4.90 acres of the offsite impact areas. These areas consist of improved storm water channels, and existing paved and unpaved roads. The disturbed/developed lands are mainly unvegetated, however vegetation observed in these areas include Russian thistle (*Salsola tragus*), summer mustard (*Hirschfeldia incana*), and telegraph weed (*Heterotheca grandiflora*).

4.2.4 Emergent Wetland

A man-made drainage ditch is located in the southern portion of the property, receiving nuisance and storm flows from a storm-drain outlet at the intersection of Sherman Road and Chambers Avenue. An approximately 500 linear-foot segment of the ditch supports emergent wetlands totaling 0.11 acre, dominated by southern cattail (*Typha domingensis*), Olney's bulrush (*Scirpus americanus*), alkali bulrush (*Scirpus maritimus*), and smooth cocklebur (*Xanthium strumarium*).

4.2.5 Riversidean Sage Scrub

Approximately 1.82 acres of the Project site contains areas of sparse Riversidean Sage Scrub (including 0.26 acre in the offsite impact area), the majority of which is associated with a rocky hill located in the northeastern portion of the Project site. These areas are characterized by sparse brittlebush (*Encelia farinosa*) and California buckwheat (*Eriogonum fasciculatum*) intermixed with rock outcrops and ruderal vegetation. Additional species include California sagebrush (*Artemisia californica*), California aster (*Corethrogyne filaginifolia* var. *californica*), white sage (*Salvia apiana*), and common fiddleneck (*Amsinkia intermedia*). A much smaller patch of buckwheat-dominated scrub located in the northeast portion of the site would be impacted under the proposed project.

4.2.6 Ruderal Areas

Approximately 13.72 acres of the Project site is dominated by ruderal vegetation, including 0.86 acre of the offsite impact areas. This habitat type consists of both native species with an affinity for disturbance as well as non-native species common in disturbed areas. Vegetation within this habitat consists of foxtail chess (*Bromus madritensis* subsp. *rubens*), summer mustard, Russian thistle, red-stemmed filaree (*Erodium cicutarium*), prickly lettuce (*Lactuca serriola*), California aster (*Corethrogyne filaginifolia* var. *californica*), paniculate tarplant (*Deinandra paniculata*), California plantain (*Plantago erecta*), common fiddleneck, telegraph weed, common cryptantha (*Cryptantha intermedia*), cheeseweed (*Malva parviflora*), and field bindweed (*Convolvulus arvensis*).

4.2.7 Seasonal Pools

The Project site contains four features where water has been documented to pond seasonally. Features 1, 2, and 4 are located within the northeastern portion of the site, whereas Feature 3 is located within the northwestern portion of the site. Feature 1 consists of two disturbed areas close in proximity with each other that exhibit very limited ponding (1a and 1b) and are treated as a single feature. During the 2019 wet season, the typical area of surface ponding for each feature was well less than 0.01 acre, with Feature 1a exhibiting a surface area of 1.5 meters by 4.9 meters (0.002 acre), and Feature 1b exhibiting a surface area of 1.5 meters by 2.0 meters (0.0007 acre). Both features exhibit upland vegetation (predominantly non-native), including foxtail chess (*Bromus madritensis* subsp. *rubens*), stinknet (*Oncosiphon piluliferum*), red-stemmed filaree (*Erodium cicutarium*) and common cryptantha (*Cryptantha intermedia*). Feature 2 is located immediately south of Feature 1b, and has similar evidence of disturbance, including off-road vehicle traffic, trash disposal, and pedestrian and pet traffic. However, Feature 2 remained inundated for a much longer time period in 2019 (0.12 acre of surface ponding) than Features 1a and 1b, and in addition to supporting similar plant species as 1a and 1b, Feature 2 also supports a prominent cover of woolly marbles (*Psilocarphus brevissimus*), which is a vernal pool indicator plant. As a result of the prolonged inundation and the presence of the woolly marbles, Feature 2 is classified as a MSHCP vernal pool. Features 3 and 4 both consist of tire track features that are vegetated with non-native upland vegetation, and neither support vernal pool indicator species such as the woolly marbles. As a result of their artificial nature and lack of wetland vegetation, neither feature is classified as a MSHCP vernal pool. Feature 3 exhibited 2.7 meters by 23.5 meters (0.15 acre) of surface ponding, with Feature 4 exhibiting 2.1 meters by 2.7 meters (0.001 acre) of surface ponding.

4.3 Special-Status Habitats

The CNDDDB identifies the four special-status vegetation communities for the Romoland and surrounding quadrangle maps: Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, and Southern Sycamore Alder Riparian Woodland. The Project site does not contain any of the communities identified by the CNDDDB but does support the small amount of disturbed emergent wetland habitat associated with the drainage ditch, and the vernal pool located in the northeastern portion of the site. Riparian/wetland habitats and vernal pools are considered special status.

4.4 Special-Status Plants

Two special-status plants have been detected at the Project site: Parry's spineflower (*Chorizanthe parryi* var. *parryi*) and paniculate tarplant (*Deinandra paniculata*). Table 4-2 provides a list of special-status plants evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors: 1) species identified by the CNDDDB and CNPS as occurring (either currently or historically) on or in the vicinity of the Project site, 2) applicable MSHCP survey areas, and 3) any other special-status plants that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs within the site.

Table 4-2. Special-Status Plants Evaluated for the Project Site

Species	Status	Habitat	Potential For Occurrence
Brand's star phacelia <i>Phacelia stellaris</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Occurs in coastal dunes and coastal scrub below 400 meters (1,310 feet) MSL in Los Angeles, Orange and San Diego Counties. Blooms from March through June.	Does not occur due to a lack of suitable habitat.
California Orcutt grass <i>Orcuttia californica</i>	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered, NEPSSA 3	Well-established vernal pools. Known from 10 to 600 meters (30 to 1,970 feet) MSL.	Does not occur due to a lack of suitable habitat.
Chaparral sand verbena <i>Abronia villosa</i> var. <i>aurita</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Not covered	Annual herb of sandy areas in chaparral and coastal sage scrub. Known from 80 to 1,600 meters (300 to 5,300 feet) MSL. Identifiable January through August.	Does not occur due to a lack of suitable habitat.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Marshes, playas and vernal pools; usually alkaline soils. Known from below 1,500 meters (< 4,900 feet) MSL. Blooms March through June.	Does not occur due to a lack of suitable habitat.
Davidson's saltscale <i>Atriplex serenana</i> var. <i>davidsonii</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Alkaline soils in coastal bluff scrub and coastal scrub. Known from 10 to 200 meters (30 to 700 feet) MSL. Identifiable April through October.	Does not occur due to a lack of suitable habitat.
Fish's milkwort <i>Polygala cornuta</i> var. <i>fishiae</i>	Federal: None State: None CNPS: List 4.3 MSHCP: Covered	Occurs in chaparral, cismontane woodland and riparian woodlands from 100 to 1,000 meters (328 to 3,280 feet) MSL. Known to occur from Santa Barbara, Ventura, Los Angeles, Orange, Riverside and San Diego Counties as well as Baja California. Blooms from May through January.	Does not occur due to a lack of suitable habitat.

Species	Status	Habitat	Potential For Occurrence
Graceful tarplant <i>Holocarpha virgata</i> ssp. <i>elongata</i>	Federal: None State: None CNPS: List 4.2 MSHCP: Covered	Occurs in chaparral, cismontane woodland, coastal scrub, valley and foothill grasslands and vernal pools from 60 to 1,100 meters (197 to 3,609 feet) MSL. Known to occur from Orange, Riverside and San Diego Counties. Blooms from May through November.	Low to moderate potential to occur. Not detected during biological surveys.
Hammitt's clay-cress <i>Sibaropsis hammittii</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Occurs in chaparral and valley and foothill grasslands from 720 to 1,065 meters (2,360 to 3,493 feet) MSL. Known to occur from Riverside and San Diego Counties. Blooms from March through April.	Does not occur due to a lack of suitable habitat.
Heart-leaved pitcher sage <i>Lepechinia cardiophylla</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Occurs in chaparral, closed cone coniferous forest and cismontane woodland from 520 to 1,370 meters (1,705 to 4,494 feet) MSL. Known to occur from Orange, Riverside and San Diego Counties as well as Baja California. Blooms from April through July.	Does not occur due to a lack of suitable habitat.
Intermediate mariposa lily <i>Calochortus weedii</i> var. <i>intermedius</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Chaparral, coastal scrub, and valley and foothill grassland. Known from 180 to 850 meters (600 to 2,800 feet) MSL. Identifiable June through July.	Does not occur due to a lack of suitable habitat.
Jaeger's milk-vetch <i>Astragalus pachypus</i> var. <i>jaegeri</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Occurs in chaparral, cismontane woodland, coastal scrub and valley and foothill grassland from 365 to 915 meters (1,198 to 3,000 feet) MSL. Known to occur from Riverside and San Diego Counties. Blooms from December through June.	Does not occur due to a lack of suitable habitat.
Little mousetail <i>Myosurus minimus</i> ssp. <i>apus</i>	Federal: None State: None CNPS: List 3.1 MSHCP: Covered	Valley and foothill grassland and vernal pools with alkaline soils. Known from 20 to 640 meters (70 to 2,100 feet) MSL. Identifiable March through June.	Does not occur due to a lack of suitable habitat.
Long-spined spineflower <i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Chaparral, coastal scrub, meadows, seeps, and valley and foothill grassland. Known from 30 to 1,450 meters (100 to 4,800 feet) MSL. Active April through July.	Low to moderate potential to occur. Not detected during biological surveys.
Many-stemmed dudleya <i>Dudleya multicaulis</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: NEPSSA 3	Chaparral, coastal scrub and valley and foothill grassland. Often found on clay soils or granitic outcrops. Known from below 800 meters (< 2,600 feet) MSL. Blooms May through July.	Does not occur due to a lack of suitable habitat.

Species	Status	Habitat	Potential For Occurrence
Mesa horkelia <i>Horkelia cuneata</i> ssp. <i>puberula</i>	Federal: None State: None CNPS: 1B.1 MSHCP: Not Covered	Sandy or gravelly soils in chaparral and coastal scrub. Known from 70 to 825 meters (200 to 2,700 feet) MSL. Identifiable February through September.	Does not occur due to a lack of suitable habitat.
Mojave tarplant <i>Deinandra mohavensis</i>	Federal: None State: SE CNPS: List 1B.3 MSHCP: Covered	Occurs in chaparral, coastal scrub and riparian scrub from 640 to 1,600 meters (2,100 to 5,428 feet) MSL. Known to occur from Kern Riverside, San Bernardino and San Diego Counties. Blooms from June through January.	Does not occur due to a lack of suitable habitat.
Moran's navarretia [Spreading navarretia] <i>Navarretia fossalis</i>	Federal: FT State: None CNPS: List 1B.1 MSHCP: NEPSSA 3	Vernal pools, chenopod scrub, marshes ditches and playas. Known to occur from 30 to 1,310 meters (100 to 4,300 feet) MSL. Identifiable April through June.	Does not occur due to a lack of suitable habitat.
Mud nama <i>Nama stenocarpum</i>	Federal: None State: None CNPS: List 2.2 MSHCP: Covered	Occurs in marshes and swamps and sometimes on lake margins and riverbanks. Known to occur from Los Angeles, Orange, Riverside, San Diego and Imperial Counties as well as San Clemente Island and Baja Mexico. Blooms from January through July.	Does not occur due to a lack of suitable habitat.
Munz's onion <i>Allium munzii</i>	Federal: FE State: ST CNPS: List 1B.1 MSHCP: NEPSSA 3	Clay soils supporting chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland and valley and foothill grassland. Known from 300 to 1,070 meters (1,000 to 3,500 feet) MSL. Active March through May.	Does not occur due to a lack of suitable habitat.
Nevin's barberry <i>Berberis nevinii</i>	Federal: FE State: FE CNPS: List 1B.1 MSHCP: Covered	Occurs in chaparral, cismontane woodland, coastal scrub and riparian scrub with gravelly substrates from 275 to 825 meters (900 to 2,705 feet) MSL. Known to occur from Los Angeles, San Bernardino, Riverside and San Diego Counties. Blooms from March through June.	Does not occur due to a lack of suitable habitat.
Palmer's grapplinghook <i>Harpagonella palmeri</i>	Federal: None State: None CNPS: 4.2 MSHCP: Covered	Clay soils within chaparral, coastal scrub and valley and foothill grassland. Known from 20 to 955 meters (65 to 3,132 feet) MSL. Active March through May.	Does not occur due to a lack of suitable habitat.
Paniculate tarplant <i>Deinandra paniculata</i>	Federal: None State: None CNPS: List 4.2 MSHCP: Not Covered	Coastal scrub and valley and foothill grassland usually in vernal mesic areas. Known from 25 to 9540 meters (80 to 3,085 feet) MSL. Identifiable from April through November.	Observed on site.

Species	Status	Habitat	Potential For Occurrence
Parish's brittlescale <i>Atriplex parishii</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Annual herb known to occur in alkaline meadows, vernal pools, chenopod scrub and drying alkaline flats with fine soils. Known from below 100 meters (330 feet) MSL. Identifiable June through October.	Does not occur due to a lack of suitable habitat.
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Dry sometimes-sandy soils in chaparral and coastal scrub. Known from 40 to 1,750 meters (100 to 5,700 feet) MSL. Active April through June.	Observed on site.
Parry's tetracoccus <i>Tetracoccus dioicus</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Not Covered	Occurs in chaparral and coastal scrub from 165 to 1,000 meters (540 to 3,280 feet) MSL. Blooms from April to May, identifiable year-round.	Does not occur due to a lack of suitable habitat.
Payson's jewelflower <i>Caulanthus simulans</i>	Federal: None State: None CNPS: List 4.2 MSHCP: Covered	Occurs in recently burned or disturbed areas within chaparral, coastal sage scrub and grasslands. Known from 60 to 2,200 meters (200 to 7,200 feet) MSL. Identifiable March through June.	Does not occur due to a lack of suitable habitat.
Plummer's mariposa lily <i>Calochortus plummerae</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest and valley and foothill grassland. Known from 100 to 1,700 meters (300 to 5,600 feet) MSL. Blooms May through July.	Does not occur due to a lack of suitable habitat.
Prostrate vernal pool navarretia <i>Navarretia prostrata</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Occurs in coastal scrub, meadows and seeps, alkaline valley and foothill grasslands and vernal pools from 15 to 700 meters (50 to 2,296 feet) MSL. Known to occur from several counties in Southern California including San Luis Obispo, Los Angeles, Orange, Riverside and San Bernardino. Blooms from April through July.	Does not occur due to a lack of suitable habitat.
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	Federal: None State: None CNPS: List 4.3 MSHCP: Not Covered	Dry soils in chaparral and coastal scrub. Known from below 500 meters (< 1,600 feet) MSL. Active January through July.	Does not occur due to a lack of suitable habitat.
Round-leaved filaree <i>California macrophylla</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Clay soils supporting cismontane woodland and valley and foothill grassland. Known from 15 to 1,200 meters (50 to 3,900 feet) MSL. Active March through May.	Does not occur due to a lack of suitable habitat.

Species	Status	Habitat	Potential For Occurrence
Salt spring checkerbloom <i>Sidalcea neomexicana</i>	Federal: None State: None CNPS: List 2.2 MSHCP: Not Covered	Occurs in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub and alkaline playas from 15 to 1,530 meters (50 to 5,020 feet) MSL. Known to occur in Ventura, Los Angeles, Orange, Riverside, San Bernardino and San Diego Counties. Blooms from March through June.	Does not occur due to a lack of suitable habitat.
San Diego ambrosia <i>Ambrosia pumila</i>	Federal: FE State: None CNPS: List 1B.1 MSHCP: NEPSSA 3	Open areas with coarse substrates near drainages or upland clay slopes, or the dry margins of vernal pools. Known from 20 to 420 meters (70 to 1,400 feet) MSL. Identifiable June through September.	Does not occur due to a lack of suitable habitat.
San Diego button celery <i>Eryngium aristulatum</i> var. <i>parishii</i>	Federal: FE State: SE CNPS: 1B.1 MSHCP: Covered	Vernal pools. Known from Riverside and San Diego Counties as well as Baja California. Known from 15 to 620 meters (50 to 2,000 feet) MSL. Active April through June.	Does not occur due to a lack of suitable habitat.
San Jacinto valley crownscale <i>Atriplex coronata</i> var. <i>notatior</i>	Federal: FE State: None CNPS: List 1B.1 MSHCP: Covered	Playas, chenopod scrub, valley and foothill grassland (mesic) and vernal pools in the San Jacinto River Valley. Known from 370 to 520 meters (1,200 to 1,700 feet) MSL. Identifiable April through August.	Does not occur due to a lack of suitable habitat.
San Miguel savory <i>Satureja chandleri</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Covered	Rocky areas in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Known from 110 to 1,210 meters (400 to 4,000 feet) MSL. Identifiable year round.	Does not occur due to a lack of suitable habitat.
Santa Ana River woollystar <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Occurs in alluvial chaparral and coastal sage scrub from 90 to 610 meters (295 to 2,000 feet) MSL. Known to occur from San Bernardino and Riverside Counties. Blooms from May through September.	Does not occur due to a lack of suitable habitat.
Slender-horned spineflower <i>Dodecahema leptoceras</i>	Federal: FE State: SE CNPS: List 1B.1 MSHCP: Covered	Mature undisturbed floodplain terraces and benches with overbank deposits every 50 to 100 years from large washes and rivers. Known from 200 to 770 meters (600 to 2,500 feet) MSL. Blooms April through June.	Does not occur due to a lack of suitable habitat.
Smooth tarplant <i>Centromadia pungens</i> ssp. <i>laevis</i>	Federal: None State: None CNPS: List 1B.1 MSHCP: Covered	Alkaline areas in chenopod scrub, meadows and seeps, ditches, playas, riparian woodland and valley and foothill grassland. Known from below 480 meters (1,600 feet) MSL. Active April through Sept.	Low to moderate potential to occur. Not detected during biological surveys.

Species	Status	Habitat	Potential For Occurrence
South coast saltscale <i>Atriplex pacifica</i>	Federal: None State: None CNPS: List 1B.2 MSHCP: Not Covered	Annual herb of coastal sage scrub, playas, coastal bluff scrub, coastal dunes and chenopod scrub. Known from below 100 meters (330 feet) MSL. Identifiable March through October.	Does not occur due to a lack of suitable habitat.
Thread-leaved brodiaea <i>Brodiaea filifolia</i>	Federal: FT State: SE CNPS: List 1B.1 MSHCP: Covered	Clay, loamy sand or alkaline soils in grasslands at edges of vernal pools or floodplains. Known from below 1,220 meters (< 4,000 feet) MSL. Identifiable April through June.	Does not occur due to a lack of suitable habitat.
Vernal barley <i>Hordeum intercedens</i>	Federal: None State: None CNPS: List 3.2 MSHCP: Covered	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions) and vernal pools. Known from below 1,000 meters (< 3,300 feet) MSL. Active March through June.	Does not occur due to a lack of suitable habitat.
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Federal: None State: None CNPS: List 2B.1 MSHCP: NEPSSA 3	Alkaline soils supporting alkali vernal plains, alkali playa and vernal pool habitats. Known from below 460 meters (1,500 feet) MSL. Blooms May through September.	Does not occur due to a lack of suitable habitat.

Status

Federal

FE – Federally Endangered
FT – Federally Threatened
FC – Federal Candidate

State

SE – State Endangered
ST – State Threatened

CNPS

Rank 1A – Plants presumed extirpated in California and either rare or extinct elsewhere.
Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2A – Plants presumed extirpated in California, but common elsewhere.
Rank 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed (a review list).
Rank 4 – Plants of limited distribution (a watch list).

Threat Code extension

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

4.4.1 Special-Status Plants Detected at the Project Site

Paniculate Tarplant

Paniculate tarplant is designated by the California Native Plant Society (CNPS) as a List 4.2 species, which is a “watch” list of limited distribution species. Paniculate tarplant occurs in a variety of habitats, including coastal scrub, and valley and foothill grasslands. The paniculate

tarplant is not a Covered Species under the MSHCP. However, the paniculate tarplant is a common and widespread species in the French Valley region of western Riverside County. At the Project site, paniculate tarplant was detected throughout the ruderal areas located in the northeastern portion of the site.

Parry's Spineflower

Parry's spineflower is an annual herb designated as a CNPS List 1B.1 species. The species is known from Los Angeles, Riverside and San Bernardino County. Parry's spineflower occurs in a variety of habitats including chaparral and coastal scrub. Parry's spineflower was detected within the cactus scrub area mapped in the eastern portion of the property. Parry's spineflower is designated as a Covered Species by the MSHCP, and does not have any additional conservation requirements. Objective 3 of the MSHCP species-specific conservation objectives for Parry's spineflower states the following: *Within the MSHCP Conservation Area, confirm 10 localities (locality in this sense is not smaller than one quarter section) with at least 1,000 individuals (unless a smaller population has been demonstrated to be self-sustaining).* This objective would not apply to the Project site since the population is smaller than the 1,000-individual threshold (and likely not self-sustaining), the area supporting the spineflower is well below the size indicated as a "locality", and the Project site is not located within the MSHCP Criteria Area, i.e., the site is not targeted for inclusion into to the MSHCP Conservation Area.

4.4.2 Narrow Endemic Plant Species

As noted above, focused surveys were conducted for the Narrow Endemic Plant target species as determined by the corresponding MSHCP survey area. None of the target species were observed on site. A discussion of each species is provided below.

Munz's onion (*Allium munzii*) – Munz's onion is a perennial herb found on mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, valley and foothill grasslands in clay soils (Bittman 1986; CNPS 2001). Associated with a special "clay soil flora" found in southwestern Riverside County that includes herbs such as chocolate lily (*Fritillaria biflora*), Palmer's grappling hook (*Harpagonella palmeri*), knot-weed spine flower (*Chorizanthe polygonoides* var. *longispina*), snakeroot (*Sanicula bipinnatifida*, *S. arguta*), lomatium (*Lomatium utriculatum*, *L. dasycarpum*), shooting stars (*Dodecatheon clevelandii*), goldenstar (*Bloomeria crocea*), soaproot (*Chlorogalum parviflorum*), many-stemmed dudleya (*Dudleya multicaulis*) and red-skinned onion (*Allium haematochiton*) (Boyd 1988; Winter 1992; Roberts 1993; CNDDDB 2000). The species is known only from Riverside County, occurring at elevations ranging from 300 to 1070 meters. The flowering period for species extends from March to May. Munz's onion was not detected on site during focused surveys, and is not expected to occur on site due to a lack of suitable habitat. The site is mapped to contain Porterville clay soils; however the mapping area occurs within flat areas heavily disturbed through agriculture and is not expected to support Munz's onion.

San Diego ambrosia (*Ambrosia pumila*) – San Diego ambrosia occurs in open floodplain terraces or on in the watershed margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse non-native grasslands or ruderal habitat in association

with river terraces, vernal pools, and alkali playas (Munz 1974; Reiser 2001). The extant Riverside County localities are found on Garretson gravelly fine sandy loams when in association with floodplains, and on Las Posas loam in close proximity to silty, alkaline soils of the Willows series at Skunk Hollow. The species was not detected during focused surveys, and is not expected to occur onsite due to a general lack of suitable habitat.

Many-stemmed dudleya (*Dudleya multicaulis*) – Many-stemmed dudleya is a perennial herb often associated with clay soils in barrens, rocky places, and ridgelines as well as thinly vegetated openings in chaparral, coastal sage scrub, and southern needlegrass grasslands on clay soils (Munz 1974; CNDDDB 2001). The majority of populations are associated with coastal sage scrub or open coastal sage scrub. The species is known from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, occurring at elevations ranging from 15 to 790 meters. The flowering period extends from April to July. The site contains a few small areas with low potential to support the species, however the species was not detected during focused surveys. In addition, areas with potential to support the dudleya do not occur within the MSHCP survey area.

Spreading navarretia (*Navarretia fossalis*) – Spreading navarretia is an annual herb associated with vernal pools, and depressions and ditches in areas that once supported vernal pools (Day 1993; Reiser 1996; Tierra Madre Consultants 1992). In western Riverside County, spreading navarretia has been found in relatively undisturbed and moderately disturbed vernal pools, within a larger vernal floodplains dominated by annual alkali grassland or alkali playa (Bramlet 1993). The alkali vernal playa/pool habitat found in the Hemet area is based primarily on silty clay soils in the Willows and Travers series. These soils are usually saline-alkaline in nature and reliably pond water for long durations. This species occurs at elevations ranging from 30 to 1,300 meters and has a flowering period extending from April until June. The Project site contains two seasonal depressions that were evaluated for spreading navarretia, however the species was found to be absent during focused surveys. Also, the depressions do not occur within the MSHCP survey area.

California Orcutt's grass (*Orcuttia californica*) – California Orcutt's grass is an annual herb occurring in southern California vernal pools. The species is known from Los Angeles, Riverside, San Diego, and Ventura Counties, occurring at elevations ranging from 15 to 650 meters. All known Californica Orcutt grass localities are associated with vernal pools. In Riverside County, this species is found in southern basaltic claypan vernal pools at the Santa Rosa Plateau, and alkaline vernal pools as at Skunk Hollow and at Salt Creek west of Hemet. The blooming period for the species extends from April to August. The Project site contains two seasonal depressions that were evaluated for Orcutt grass, however the species was found to be absent during focused surveys. Also, the depressions do not occur within the MSHCP survey area.

Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) – Wright's trichocoronis is an annual herb occurring in meadows and seeps, marshes and swamps, riparian forest, and vernal pools; associated with alkaline soils. In Western Riverside County, Wright's trichocoronis is found in the alkali vernal plains and associated with alkali playa, alkali annual grassland, and alkali vernal pool habitats (Bramlet 1993, Ferren and Fiedler 1993); occupying the more mesic

portions of these habitats. Wright's trichocoronis is frequently associated with other rare species, including San Jacinto Valley crowscale (*A. coronata* var. *notatior*), Davidson's saltscall (*A. serenana* var. *davidsonii*), vernal barley (*Hordeum intercedens*), smooth tarplant (*Hemizonia pungens* ssp. *laevis*), and spreading navarretia (*Navarretia fossalis*) (Bramlet 1993b). The species occurs at elevations ranging from 5 to 435 meters, and has a blooming period extending from May to September. The Project site contains two seasonal depressions that were evaluated for Wright's trichocoronis, as well as other areas on site with potentially alkaline soils, however the species was found to be absent during focused surveys. Also, the areas evaluated do not occur within the MSHCP survey area.

4.5 Special-Status Animals

Two special-status animals were detected at the Project site: coastal California gnatcatcher (*Poliophtila californica californica*) and burrowing owl (*Athene cunicularia*). Table 4-3 provides a list of special-status animals evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors, including: 1) species identified by the CNDDDB as occurring (either currently or historically) on or in the vicinity of the Project site, 2) applicable MSHCP survey areas, and 3) any other special-status animals that are known to occur within the vicinity of the Project site, for which potentially suitable habitat occurs on the site.

Table 4-3. Special Status Animals Evaluated for the Project Site

Species	Status	Habitat Requirements	Potential for Occurrence
Invertebrates			
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	Federal: FE State: None MSHCP: Covered, Section 6.1.2	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Confirmed absent through protocol surveys. Not expected to occur due to a lack of suitable habitat.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Federal: FT State: None MSHCP: Covered, Section 6.1.2	Seasonal vernal pools	Confirmed absent through protocol surveys. Not expected to occur due to a lack of suitable habitat.
Reptiles			
California glossy snake <i>Arizona elegans occidentalis</i>	Federal: None State: SSC MSHCP: Not Covered	Inhabits arid scrub, rocky washes, grasslands, chaparral.	Not expected to occur due to a lack of suitable habitat.
California mountain kingsnake (San Bernardino population) <i>Lampropeltis zonata</i> (<i>parvirubra</i>)	Federal: None State: SSC MSHCP: Covered	Bigcone spruce and chaparral at lower elevations. Black oak, incense cedar, Jeffery pine, and ponderosa pine at higher elevations.	Not expected to occur due to a lack of suitable habitat.
Coastal whiptail <i>Aspidoscelis tigris stejnegeri</i> (<i>multiscutatus</i>)	Federal: None State: SSC MSHCP: Covered	Open, often rocky areas with little vegetation, or sunny microhabitats within shrub or grassland associations.	Moderate to high potential for occurrence.

Species	Status	Habitat Requirements	Potential for Occurrence
Coast horned lizard <i>Phrynosoma blainvillii</i>	Federal: None State: SSC MSHCP: Covered	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Low to moderate potential for occurrence.
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	Federal: None State: SSC MSHCP: Not Covered	Occurs in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas.	Low to moderate potential for occurrence.
Red-diamond rattlesnake <i>Crotalus ruber</i>	Federal: None State: SSC MSHCP: Covered	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Moderate to high potential for occurrence.
Silvery legless lizard <i>Anniella pulchra pulchra</i>	Federal: None State: SSC MSHCP: Not Covered	Occurs primarily in areas with sandy or loose organic soil, or where there is plenty of leaf litter. Associated with coastal sage scrub, chaparral, coastal dunes, valley/foothill grasslands, oak woodlands, and pine forests.	Low potential for occurrence.
Two-striped garter snake <i>Thamnophis hammondi</i>	Federal: None State: SSC MSHCP: Not Covered	Aquatic snake typically associated with wetland habitats such as streams, creeks, and pools.	Not expected to occur due to lack of suitable habitat.
Western pond turtle <i>Emys marmorata</i>	Federal: None State: SSC MSHCP: Covered	Slow-moving permanent or intermittent streams, small ponds and lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and treatment lagoons. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Not expected to occur due to lack of suitable habitat.
Birds			
Burrowing owl (burrow sites & some wintering sites) <i>Athene cunicularia</i>	Federal: BCC State: SSC MSHCP: Covered, Section 6.3.2	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as	Present.

Species	Status	Habitat Requirements	Potential for Occurrence
		artificial structures such as culverts and underpasses.	
Coastal cactus wren (San Diego & Orange County only) <i>Campylorhynchus brunneicapillus sandiegensis</i>	Federal: BCC State: SSC MSHCP: Covered	Occurs almost exclusively in cactus (cholla and prickly pear) dominated coastal sage scrub.	Low potential for occurrence.
Coastal California gnatcatcher <i>Poliophtila californica californica</i>	Federal: FT State: SSC MSHCP: Covered	Low elevation coastal sage scrub and coastal bluff scrub.	Present.
Ferruginous hawk (wintering) <i>Buteo regalis</i>	Federal: BCC State: WL MSHCP: Covered	Open, dry country, perching on trees, posts, and mounds. In California, wintering habitat consists of open terrain and grasslands of the plains and foothills.	Low to moderate potential for winter foraging, but would not nest at the site.
Golden eagle (nesting & wintering) <i>Aquila chrysaetos</i>	Federal: BCC State: WL, FP MSHCP: Covered	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Low potential for winter foraging, but would not nest at the site.
Grasshopper sparrow (nesting) <i>Ammodramus savannarum</i>	Federal: None State: SSC MSHCP: Covered	Open grassland and prairies with patches of bare ground.	Not expected to occur due to lack of suitable habitat.
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	Federal: FE State: SE MSHCP: Covered, Section 6.1.2	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Not expected to occur due to lack of suitable habitat.
Loggerhead shrike (nesting) <i>Lanius ludovicianus</i>	Federal: BCC State: SSC MSHCP: Covered	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Low to moderate potential to occur for foraging, but would not nest at the site.
Long-eared owl (nesting) <i>Asio otus</i>	Federal: None State: SSC MSHCP: Not Covered	Riparian habitats are required by the long-eared owl, but it also uses live-oak thickets and other dense stands of trees.	Not expected to occur due to lack of suitable habitat.

Species	Status	Habitat Requirements	Potential for Occurrence
Short-eared owl (nesting) <i>Asio flammeus</i>	Federal: None State: SSC MSHCP: Not Covered	Open country, including prairie, meadows, tundra, moorlands, marshes, savanna, and open woodland. Nests on the ground.	Not expected to occur due to lack of suitable habitat.
Southwestern willow flycatcher (nesting) <i>Empidonax traillii extimus</i>	Federal: FE State: SE MSHCP: Covered, Section 6.1.2	Riparian woodlands along streams and rivers with mature dense thickets of trees and shrubs.	Not expected to occur due to lack of suitable habitat.
Tricolored blackbird (nesting colony) <i>Agelaius tricolor</i>	Federal: BCC State: Candidate Endangered MSHCP: Covered	Breeding colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Not expected to occur due to lack of suitable habitat.
Western yellow-billed cuckoo (nesting) <i>Coccyzus americanus occidentalis</i>	Federal: FT, BCC State: SE MSHCP: Covered, Section 6.1.2	Dense, wide riparian woodlands with well-developed understories.	Not expected to occur due to lack of suitable habitat.
White-tailed kite (nesting) <i>Elanus leucurus</i>	Federal: None State: FP MSHCP: Covered	Low elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Dense canopies used for nesting and cover.	Low to moderate potential to occur for foraging, but would not nest at the site.
Yellow-breasted chat (nesting) <i>Icteria virens</i>	Federal: None State: SSC MSHCP: Covered	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Not expected to occur due to lack of suitable habitat.
Yellow warbler (nesting) <i>Setophaga petechia</i>	Federal: BCC State: SSC MSHCP: Covered	Breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland. During migration, forages in woodland, forest, and shrub habitats.	Not expected to occur due to lack of suitable habitat.
Mammals			
American badger <i>Taxidea taxus</i>	Federal: None State: SSC MSHCP: Not Covered	Most abundant in drier open stages of most scrub, forest, and herbaceous habitats, with friable soils.	Not expected to occur due to lack of suitable habitat.

Species	Status	Habitat Requirements	Potential for Occurrence
Dulzura pocket mouse <i>Chaetodipus californicus femoralis</i>	Federal: None State: SSC MSHCP: Not Covered.	Coastal scrub, grassland, and chaparral, especially at grass-chaparral edges	Low potential to occur.
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	Federal: None State: SSC MSHCP: Covered, Section 6.1.2	Fine, sandy soils in coastal sage scrub and grasslands.	Low potential to occur.
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	Federal: None State: SSC MSHCP: Covered	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Low potential to occur.
Pallid bat <i>Antrozous pallidus</i>	Federal: None State: SSC MSHCP: Not Covered	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Not expected to occur due to lack of suitable habitat.
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	Federal: None State: SSC MSHCP: Not Covered	Rocky areas with high cliffs in pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian.	Not expected to occur due to lack of suitable habitat.
San Bernardino kangaroo rat <i>Dipodomys merriami parvus</i>	Federal: FE State: SSC MSHCP: Covered, Section 6.3.2	Typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub.	Not expected to occur due to lack of suitable habitat.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	Federal: None State: SSC MSHCP: Covered	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	Low to moderate potential to occur.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	Federal: None State: SSC MSHCP: Covered	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcrops, boulders, cacti, or areas of dense undergrowth.	Not expected to occur due to lack of suitable habitat.
Southern grasshopper mouse <i>Onychomys torridus ramona</i>	Federal: None State: SSC MSHCP: Not Covered	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	Not expected to occur due to lack of suitable habitat.
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	Federal: FE State: ST SKR HCP/MSHCP: Covered	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer.	Low to moderate potential for occurrence.

Species	Status	Habitat Requirements	Potential for Occurrence
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Federal: None State: Candidate Threatened, SSC MSHCP: Not Covered	Coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands.	Not expected to occur due to lack of suitable habitat.
Western mastiff bat <i>Eumops perotis californicus</i>	Federal: None State: SSC MSHCP: Not Covered	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Not expected to occur due to lack of suitable habitat.
Western red bat <i>Lasiurus blossevillii</i>	Federal: None State: SSC MSHCP: Covered	Prefers riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores where they roost in broad-leaved trees.	Not expected to occur due to lack of suitable habitat.
Western yellow bat <i>Lasiurus xanthinus</i>	Federal: None State: SSC MSHCP: Covered	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Not expected to occur due to lack of suitable habitat.

Status

Federal

FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FC – Federal Candidate
BCC – Birds of Conservation Concern

State

SE – State Endangered
ST – State Threatened
CFP – California Fully-Protected Species
SSC – Species of Special Concern

4.5.1 Special-Status Wildlife Species Observed within the Project Site

Burrowing Owl

The western burrowing owl (*Athene cunicularia*) is designated as a Federal Bird of Conservation Concern as well as a California Species of Special Concern. The MSHCP designates the burrowing owl as a Covered Species, with additional survey and conservation requirements for properties occurring within the MSHCP Burrowing Owl Survey Area, pursuant to *Volume I, Section 6.3.2* of the MSHCP.

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrub characterized by low-growing vegetation. Burrows are essential for successful breeding. The burrowing owl will occupy abandoned rodent burrows and man-made structures such as culverts, pipes, and debris piles. The burrowing owl nesting season begins as early as February and continues through August, with peak nesting occurring between April and July. The wintering season extends from September 1 through January 31, with peak wintering occurring from December 1 through January 31.

A family group (breeding pair plus juveniles) of burrowing owls was detected in the northeastern portion of the Project site during focused surveys [Exhibit 6 – Burrowing Owl Location Map]. At least three juvenile owls were noted with the pair. The area where the burrowing owls were detected contains scattered rock outcrops where the property has not been maintained over the years by farming. Due to the relative lack of disturbance, the area support ground squirrels resulting in numerous suitable burrows. At least two occupied burrows were mapped, including what was presumed to be the nest burrow (based on the relative abundance of diagnostic sign), and a second burrow containing owl sign. Additional satellite escape burrows were noted when the owls flushed from their primary burrows. The remainder of the Project site is generally unsuitable to support breeding burrowing owls due to the lack of burrows resulting from regular disking/farming operations, although the site represents general foraging habitat for burrowing owls. No burrowing owls were observed within the 150-meter buffer area around the site.

Coastal California Gnatcatcher

The coastal California gnatcatcher was heard vocalizing within Riversidean sage scrub vegetation located outside of the development footprint, but within the Project's open space. The coastal California gnatcatcher is Federally listed as Threatened and is designated as a California Species of Special Concern. The gnatcatcher typically occurs in or near sage scrub habitat, which is a broad category of vegetation that includes the following plant communities as classified by Holland (1986): Venturan coastal sage scrub, Diegan coastal sage scrub, maritime succulent scrub, Riversidean sage scrub, Riversidean alluvial fan sage scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub.

The gnatcatcher is designated as a Covered Species Adequately Conserved under the MSHCP without additional survey/conservation requirements. The only restrictions on the take of the gnatcatchers are from Condition 5b of the MSHCP Federal Fish and Wildlife take permit. Specifically, Condition 5b states that the "clearing of occupied habitat within PQP lands and the Criteria Area between March 1 and August 15 is prohibited." Since the Project site is not located within existing PQP/Conserved Lands or the MSHCP Criteria Area, Condition 5b of the MSHCP permit will not apply to the Project. As such, impacts to gnatcatcher occupied habitat is covered and mitigated for by the MSHCP, with the only restriction that the Project not impact active gnatcatcher nests pursuant to the Migratory Bird Treaty Act and California Fish and Game Code.

Nearly all the suitable gnatcatcher habitat associated with the Project site is within the Project's open space. A small portion of degraded sage scrub vegetation is within the Project's offsite with the potential to be used by the gnatcatcher. Otherwise, the Project's development footprint

does not contain suitable habitat for the gnatcatcher, and the Project's on-site grading is not expected to impact habitat occupied by the gnatcatcher.

4.5.2 Special-Status Wildlife Species not Observed but with a Potential to Occur at the Project Site

Listed Fairy Shrimp

The MSHCP identifies two species of listed fairy shrimp that occur within the overall MSHCP Plan Area, and that have special survey requirements pursuant to Volume I, Section 6.1.2 of the MSHCP. These include the listed Riverside fairy shrimp (*Streptocephalus woottoni*) and the listed Vernal Pool fairy shrimp (*Branchinecta lynchi*). The Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*) is endemic to western Riverside County, associated with Southern Basalt Flow vernal pools at and near the Santa Rosa Plateau. This species does not occur on site due to a lack of suitable habitat, and because the Project area is well outside of the species distribution range. As such, the species will not be further addressed in this report. Additionally, the listed San Diego fairy shrimp (*Branchinecta sandiegonensis*) is not a Covered Species under the MSHCP, but is recently known to occur in Riverside County, and so may have the potential to occur at the site and in proximity to the site.

The Riverside fairy shrimp, Vernal Pool fairy shrimp, and San Diego fairy shrimp were treated as having a low potential to occur on site, although it is unclear whether Features 1a and 1b (refer to Exhibit 5) at the site would pond long enough to support the life cycle of the Riverside fairy shrimp.

In 2005, GLA performed a dry season survey of the two depression features. Soil samples collected from both depression features were found to contain cysts of the genus *Branchinecta*, however no cysts of the genus *Streptocephalus* (i.e., Riverside fairy shrimp) were detected. With the permission of USFWS, GLA subcontracted to D. Christopher Rogers (EcoAnalysts, Inc.) to conduct hydration of the collected *Branchinecta* cysts. The non-listed versatile fairy shrimp (*Branchinecta lindahli*) was reared from cysts collected from both depression features. No other species of *Branchinecta*, including the Vernal Pool fairy shrimp or the San Diego fairy shrimp were present in the hatched specimens; however, USFWS does not consider cyst hydration to be conclusive to establish the absence of other species. A wet season survey following a dry season survey would be necessary to demonstrate absence of other *Branchinecta* species. A wet season survey was attempted during the 2005/2006-rainfall season; however, the depression features did not adequately pond to allow for sampling. Due to the lapse of time since the 2005 survey, the results of older survey are no longer adequate.

GLA initiated new surveys by first performing a dry season survey in 2017 for Features 1a/1b and 2, with cysts of the genus *Branchinecta* again being detected in Feature 2. Cysts of the genus *Streptocephalus* were not detected in either feature. GLA notified the USFWS in September 2017 of the intent to perform a wet season survey for the 2018 season; however, the site did not receive adequate rainfall to perform valid wet season surveys, and therefore the surveys could not be completed. GLA re-notified the USFWS on December 6, 2018 to perform a wet season survey for 2019. GLA sampled all of the depression features discussed above,

detecting the non-listed *B. lindahli* in Features 2, 3, and 4. No species of listed fairy shrimp were detected in any of the features. Two of the sampled features (3 and 4) were not surveyed during the prior dry season survey; therefore, a dry season survey was recently completed for both features for the current (2019) season. Cysts of the genus *Branchinecta* were detected in both features, which was consistent with the detection of *B. lindahli* during the wet season surveys. Cysts of the genus *Streptocephalus* were not detected in either feature. With the completion of the 2017 dry season survey, and 2019 dry and season surveys, GLA has successfully completed the two-survey protocol for all depression features at the Project site with the potential to support fairy shrimp, and has demonstrated that listed species of fairy shrimp are absent from the site. The detailed results of the fairy shrimp surveys are included as Appendix C.

Special-Status Reptiles

Portions of the Project site have the potential to support special-status reptiles, including the coastal whiptail, coast horned lizard, coast patch-nosed snake, red diamond rattlesnake, and silvery legless lizard. Areas with the potential to support these species include the ruderal/grassland areas in the northeastern portion of the development footprint, and Project's open space, including Riversidean sage scrub and ruderal/grassland areas.

Special-Status Birds

Besides the burrowing owls detected at the site, the Project has the potential to provide foraging habitat for several other special-status birds, including the loggerhead shrike and a few special-status raptors (ferruginous hawk, golden eagle, and white-tailed kite). However, the development footprint does not contain breeding habitat for these species or other special-status birds. Each of these birds are designated as Covered Species Adequately Conserved under the MSHCP without additional survey/conservation requirements.

Special-Status Mammals

The Project site has some potential to support several special-status mammals, including the San Diego black-tailed jackrabbit, Dulzura pocket mouse, Los Angeles pocket mouse (LAPM), northwestern San Diego pocket mouse, and Stephens' kangaroo rat (SKR). Impacts to the SKR are covered pursuant to the SKR Habitat Conservation Plan (SKR HCP). The jackrabbit and pocket mice are designated as Covered Species Adequately Conserved under the MSHCP without additional survey/conservation requirements.

4.5.3 Critical Habitat

The Project site is not located within USFWS-designated Critical Habitat areas.

4.6 Raptor Use

The Project Site provides suitable foraging habitat for a number of raptor species, including special-status raptors, all of which are designated as Covered Species Adequately Conserved under the MSHCP without additional survey/conservation requirements.

4.7 Nesting Birds

The Project site contains trees, shrubs, and ground cover that provide suitable habitat for nesting migratory birds. Impacts to nesting birds are prohibited under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.¹³

4.8 Soil Mapping

The Natural Resource Conservation Service (NRCS) identifies the following soil types (series) as occurring (currently or historically) within the Project site [Exhibit 7]:

- Arbuckle Loam, 8 to 15 Percent Slopes (AkD)
- Buchenau Silt Loam, 2 to 8 Percent Slopes, Eroded (BkC2)
- Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded (CaC2), Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded (CaD2), and Cajalco Rocky Fine Sandy Loam, 5 to 15 Percent Slopes, Eroded (CbD2)
- Cieneba Rocky Sandy Loam, 15 to 20 Percent Slopes, Eroded (CkF2)
- Exeter Sandy Loam, Channeled, 2 to 8 Percent Slopes, Eroded (EnC2)
- Fallbrook Fine Sandy Loam, 2 to 8 Percent Slopes, Eroded (FfC2)
- Las Posas Loam, 2 to 8 Percent Slopes (LaC) and Las Posas Loam, 5 to 8 Percent Slopes, Eroded (LaC2)
- Madera Fine Sandy Loam, 0 to 2 Percent Slopes (MaA) and Madera Fine Sandy Loam, 2 to 5 Percent Slopes (MaB2)
- Placentia Fine Sandy Loam, 0 to 5 Percent Slopes (PIB)
- Porterville Clay, 0 to 8 Percent Slopes (PoC), Porterville Cobbly Clay, 2 to 15 Percent Slopes (PrD), and Porterville Clay, Moderately Deep, 2 to 8 Percent Slopes (PsC)
- Yokohl Loam, 2 to 8 Percent Slopes (YbC)

4.9 Jurisdictional Delineation

The Project site contains four drainage features (A, B, C, and D) that generally extend from east to west across the property. Due to the relatively flat topography and limited watershed, Drainages A, B, and C terminate within the site without a defined connection to offsite waters. Drainage D consists of a relatively short (1,156 linear feet) feature that has developed as the result of runoff from the terminus of Chambers Road to the east, and the extends west to another paved portion of Chambers Road. From this point the flows extend offsite, crossing Encanto Road and entering a roadside ditch that extends north between Encanto Road and I-215. In addition to these natural features, the site contains an artificially-created drainage ditch that originates at the southern site boundary from a storm drain at the northern terminus of Sherman Road, and which extends north for approximately 500 feet north into the property before flows

¹³ The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

diverge to the west where they assume the general direction of historic flows from the ephemeral portion of Drainage A. The artificial ditch is included in the discussion of Drainage A. The drainage ditch contains a drainage easement that was dedicated to the County of Riverside on June 29, 1988 (recorded instrument #180001).

The USGS Romoland quadrangle map show two historic blue-line streams that at one time converged just south of where the flows enter the property through the storm drain outlet. The existing drainage ditch is an apparent diversion of the historic flows, which are now greatly supplemented from storm runoff and nuisance flows from an adjacent residential development and other adjacent developments.

The drainage ditch was recently modified in response to a Notice of Violation (NOV) issued by the City of Menifee Code Enforcement Division (dated October 16, 2017). The NOV addressed two concerns with the drainage ditch, including the need for positive drainage and vector breeding harborage, both caused by the accumulation of dirt and vegetation within the ditch. In accordance with the NOV, the landowner was instructed to mow, trim, and remove all overgrown dead, diseased vegetation, while also removing materials as necessary to maintain positive flow away from the storm drain outlet in accordance with the approved Water Quality Management Plan (WQMP). The jurisdictional delineation includes the current condition of the drainage ditch.

4.9.1 Corps/RWQCB Jurisdiction

The Project site contains approximately 0.68 acre of waters of the United States (Corps/RWQCB jurisdiction), of which approximately 0.11 acre supports jurisdictional wetlands. The jurisdictional areas include four drainage features [Exhibit 8 – Jurisdictional Delineation map]. The drainage features do not have a direct visible connection to another water of the United States. However, the Corps takes the position that isolated drainage features exhibiting sheet flow connections to other jurisdictional waters up to a 100-year event would be considered jurisdictional, although the sheet-flow connections themselves would not be jurisdictional. It is assumed that the drainage features would ultimately connect to the storm drain at Encanto Drive up to a 100-year event that would ultimately connect to the San Jacinto River (a water of the United States). As such the drainage features are considered jurisdictional. Table 4-4 below summarizes Corps/RWQCB jurisdiction for the Project site.

The northeastern portion of the Project site contains a small (0.12 acre) vernal pool, that is not subject to the jurisdiction of the Corps, as it is isolated and therefore not a water of the U.S. However, the vernal pool may be regulated as a water of the State since it exhibits beneficial uses related to wildlife use.

Drainage A

Approximately 0.41 acre of Corps/RWQCB jurisdiction is associated with Drainage A, of which 0.11 acre consists of jurisdictional wetlands. The drainage feature consists of a naturally ephemeral reach, as well as an artificially-created drainage ditch. The ephemeral portion originates in the southeast portion of the property, in part as runoff from Chambers Avenue. The

drainage extends northwest for approximately 1,100 linear feet until the OHWM disappears in the agricultural field. The OHWM of this portion of Drainage A is approximately one-foot wide. The historic extent of this feature presumably carried ordinary flows further west where they would terminate in the west-central portion of the property. However, as noted above a constructed drainage ditch conveys flows that enter the property from a storm drain at the northern terminus of Sherman Road, and which extend north to bisect the historic east-west ephemeral drainage channel. The drainage ditch extends for approximately 500 feet north into the property before flows diverge to the west where they assume the general direction of historic flows from the ephemeral portion of Drainage A. The USGS Romoland quadrangle map show two historic blue-line streams that at one time converged just south of where the flows enter the property through a storm drain outlet. The existing drainage ditch is an apparent diversion of the historic flows, which are now greatly supplemented from storm runoff and nuisance flows from an adjacent residential development and other adjacent developments.

The artificially created ditch consists initially of a concrete portion that originates from the storm drain outlet at Sherman Road. The OHWM of the concrete portion ranges from 8 feet wide at the outlet to 13 feet wide. The concrete portion extends north for approximately 120 linear feet to where it transitions to an artificially created earthen channel. The earthen channel extends north for approximately 500 linear feet and then curves to the northwest where it then follows the historic of flows associated with Drainage A. Approximately 350 linear feet of the earthen channel consists of earthen side slopes, but the bottom is lined with un-grouted riprap. The OHWM associated with this portion ranges from 13 to 17 feet wide. The remaining 150 linear feet of the artificially created portion is entirely earthen and the OHWM ranges from 6 to 8 feet wide. From the point where the channel curves northwest, the drainage feature gradually narrows to the point where there is no longer a discernible OHWM. The drainage ditch is currently unvegetated; however, approximately 0.1 acre of the ditch is intermittently vegetated with southern cattails and other vegetation.

Drainage B

Approximately 0.07 acre of Corps/RWQCB jurisdiction is associated with Drainage B, none of which consists of jurisdictional wetlands. As with Drainage C, this drainage is also an ephemeral feature. Feature B also traverses from the eastern boundary in a westward direction for approximately 3,100 linear feet until an OHWM is no longer visible near the central portion of the Property. Drainage B also exhibits a one-foot-wide OHWM. Vegetation associated with Drainage B is similar to that associated with Drainage C.

Drainage C

Approximately 0.12 acre of Corps/RWQCB jurisdiction is associated with Drainage C, none of which consists of jurisdictional wetlands. Drainage C is an ephemeral feature that only exhibits flows during and immediately after storm events, supporting a limited OHWM for varying distances. The drainage enters the property at the eastern boundary and extends westward for approximately 3,900 linear feet until an OHWM is no longer visible near the northern central portion of the Property. Drainage C exhibits a one-foot-wide OHWM. Vegetation adjacent to Feature C consists of Russian thistle (*Salsola tragus*), rattlesnake weed (*Chamaesyce*

albomarginata), dove weed (*Eremocarpus setigerus*), vinegar weed (*Trichostema lanceolatum*), cultivated barley (*Hordeum vulgare*), field bindweed (*Convolvulus arvensis*), summer mustard (*Hirschfeldia incana*), and fascicled tarweed (*Hemizonia fasciculata*).

Drainage D

Approximately 0.08 acre of Corps/RWQCB jurisdiction is associated with Drainage D. Drainage D consists of an ephemeral feature that is three-feet wide and receives runoff from the western terminus of Chambers Avenue. The drainage only exhibits flows during and immediately after storm events, supporting a limited bed/bank for varying distances before the flows continue along another paved portion of Chambers Avenue before crossing Encanto Road offsite into a ditch that flows north along Encanto Road and I-215.

Table 4-4. Summary of Corps/RWQCB Jurisdiction

Drainage	Non-Wetland Waters	Wetlands	Total Jurisdiction
A	0.30	0.11	0.41
B	0.07	0	0.07
C	0.12	0	0.12
D	0.08	0	0.08
Total	0.57	0.11	0.68

4.9.2 CDFW Jurisdiction

The Project site contains approximately 0.68 acre of CDFW jurisdiction, of which 0.11 acre consists of riparian vegetation [Exhibit 8 – Jurisdictional Delineation Map]. Areas of CDFW jurisdiction at the site are identical to areas of Corps jurisdiction discussed above and warrant no further discussion. The vernal pool discussed above in Section 4.9.1 is not subject to CDFW jurisdiction as it is not a stream or lake. Table 4-5 summarizes CDFW jurisdiction for the Project site.

Table 4-5. Summary of CDFW Jurisdiction

Drainage	Unvegetated Streambed	Riparian Vegetation	Total Jurisdiction
A	0.30	0.11	0.41
B	0.07	0	0.07
C	0.12	0	0.12
D	0.08	0	0.08
Total	0.57	0.11	0.68

4.10 MSHCP Riparian/Riverine Areas and Vernal Pools

The following discussion addresses MSHCP riparian/riverine areas and vernal pools for the Project site.

4.10.1 Riparian/Riverine Areas

The Project site contains four drainage features that would be considered MSHCP riverine features, totaling approximately 0.68 acre, of which 0.11 consists of riparian vegetation [Exhibit 9 – MSHCP Riparian/Riverine Areas]. The riparian/riverine areas are the same discussed above in Section 4.9 for jurisdictional waters. The riparian vegetation consists of an emergent wetland dominated by southern cattails (*Typha domingensis*) that is supported by runoff from the storm drain at Chambers Avenue. The vegetation is intermittently removed by storm scour and maintenance of the storm drain. Table 4-6 summarizes MSHCP Riparian/Riverine Areas for the Project site.

Table 4-6. Summary of MSHCP Riverine Areas

Drainage	Unvegetated Riverine	MSHCP Riparian	Total MSHCP Riparian/Riverine
A	0.30	0.11	0.41
B	0.07	0	0.07
C	0.12	0	0.12
D	0.08	0	0.08
Total	0.57	0.11	0.68

4.10.2 Vernal Pools

The Project site contains four depression features that exhibit evidence of seasonal ponding. Features 1, 3, and 4 consist of disturbed depression features, two of which are tire track features, that support upland vegetation and that do not support vernal pool indicator plant species, or other wetland plant species. However, Feature 2 supports a moderate cover of woolly marbles, which is a vernal pool indicator plant species. As such, Feature 2 is classified as a MSHCP vernal pool. The vernal pool is depicted on Exhibit 9. Feature 2 was monitored during the 2018-2019 rainy season and exhibited approximately 0.12 acre of surface ponding.

5.0 IMPACT ANALYSIS

The following discussion examines the potential impacts to plant and wildlife resources that would occur as a result of the proposed project. Impacts (or effects) can occur in two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may

also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Indirect impacts pertain to those impacts that result in a change to the physical environment, but which is not immediately related to a project. Indirect (or secondary) impacts are those that are reasonably foreseeable and caused by a project but occur at a different time or place. Indirect impacts can occur at the urban/wildland interface of projects, to biological resources located downstream from projects, and other off-site areas where the effects of the project may be experienced by plants and wildlife. Examples of indirect impacts include the effects of increases in ambient levels of noise or light; predation by domestic pets; competition with exotic plants and animals; introduction of toxics, including pesticides; and other human disturbances such as hiking, off-road vehicle use, unauthorized dumping, etc. Indirect impacts are often attributed to the subsequent day-to-day activities associated with project build-out, such as increased noise, the use of artificial light sources, and invasive ornamental plantings that may encroach into native areas. Indirect effects may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in a slow replacement of native plants by non-native invasives, as well as changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. A cumulative impact can occur from multiple individual effects from the same project, or from several projects. The cumulative impact from several projects is the change in the environment resulting from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

5.1 California Environmental Quality Act (CEQA)

5.1.1 Thresholds of Significance

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

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

Determining whether a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7 (Thresholds of Significance), each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the

effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

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

Therefore, for the purpose of this analysis, impacts to biological resources are considered potentially significant (before considering offsetting mitigation measures) if one or more of the following criteria discussed below would result from implementation of the proposed project.

5.1.2 Criteria for Determining Significance Pursuant to CEQA

Appendix G of the 1998 State CEQA guidelines indicate that a project may be deemed to have a significant effect on the environment if the project is likely to:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

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

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 any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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

5.2 Impacts to Native Vegetation

Table 5-1 provides a summary of vegetation community impacts and avoidance/preservation. The proposed Project will permanently impact approximately 1.07 acres of native vegetation types, including 0.55 acre of cactus scrub, 0.41 acre of Riversidean sage scrub, and 0.11 acre of the disturbed emergent wetland. In addition, the Project will impact a 0.12-acre vernal pool. The impacts to the upland habitats, i.e. cactus scrub and Riversidean sage scrub, area minimal in acreage and are considered less than significant. Furthermore, impacts to the upland habitats are covered through compliance with the biological requirements of the MSHCP and don't require mitigation. The emergent wetland consists predominantly of southern cattails growing in the concrete-lined drainage ditch, and that are intermittently present as a result of regular storm scour and maintenance. Impacts to the emergent vegetation would be less than significant and would not require mitigation as a special-status vegetation community. However, the impacts to the emergent vegetation would require mitigation by the regulatory agencies (Corps, Regional Board, and CDFW) during the permitting process and pursuant to the MSHCP DBESP process (see discussion below). The vernal pool is disturbed and supports a minimal amount of vernal pool flora, but given the sensitivity of vernal pools in general, the loss of the vernal pool may be potentially significant. Furthermore, as with the emergent wetland, the loss of the vernal pool would be subject to the MSHCP DBESP process.

Table 5-1. Summary of Vegetation/Land Use Impacts

Vegetation/Land Use Type	Onsite Impacts	Offsite Impacts	Avoided	Total
Agriculture	299.26	0.01	0	299.27
Cactus Scrub	0.55	0	0	0.55
Disturbed/Developed	16.29	4.90	0.10	21.29
Emergent Wetland	0.11	0	0	0.11
Riversidean Sage Scrub	0.15	0.26	1.41	1.82
Ruderal	8.30	0.86	4.56	13.72
Seasonal Pools	0.28	0	0	0.28
Total	324.94	6.03	6.07	336.94

5.3 Impacts to Special-Status Plants

The proposed Project will impact two special-status plant species, including Parry's spineflower and paniculate tarplant. Impacts to these species would be less than significant due to the small population size at the site.

5.4 Impacts to Special-Status Animals

The proposed Project will result in the loss of habitat supporting a family group of burrowing owls. The loss of habitat for breeding owls would be potentially significant. The burrowing owl is designated as a covered species under the MSHCP. Pursuant to Objective 5 of the MSHCP species-specific objectives for burrowing owls, Projects located outside of the MSHCP Criteria

Area are required to avoid 90 percent of lands with long-term conservation value for burrowing owls if the site supports three or more pairs and contains 35 or more acres of suitable habitat. Since the site supports just the one pair of burrowing owls, the Project is not required to avoid burrowing owl habitat onsite. Pursuant to MSHCP Objective 6, the burrowing owls must be relocated outside of the nesting season. Through compliance with the MSHCP, impacts to burrowing owls would be reduced to below a level of significance.

The Project will result in impacts to habitat with the potential to support Stephens' kangaroo rat (SKR). If present, the loss of SKR habitat would be potentially significant. Impacts to SKR habitat are covered pursuant to the SKR HCP, with the requirement pursuant to County of Riverside Ordinance 663 (and the SKR HCP) that Projects pay the SKR mitigation fee. With payment of the mitigation fee, potential impacts to SKR would be reduced to below a level of significance.

The Project has the potential to impact other special-status animals that are covered under the MSHCP without project-specific mitigation requirements. This includes several special-status reptiles, the loss of foraging habitat for special-status raptors, and the loss of habitat for several other non-listed small mammals. Due to the limited potential habitat to be impacted by the Project, the loss of habitat for these species would be less than significant. Furthermore, impacts to these species would be covered through compliance with the MSHCP.

5.5 Impacts to Nesting Birds

The Project has the potential to impact active bird nests if vegetation is removed during the nesting season (February 1 to August 31). Impacts to nesting birds are prohibited by the MBTA and California Fish and Game Code. A project-specific mitigation measure is identified in Section 6.0 of this report to avoid impacts to nesting birds.

5.6 Impacts to MSHCP Riparian/Riverine Areas and Vernal Pools

The Project will impact approximately 0.68 acre of MSHCP riparian/riverine areas, of which 0.11 consists of emergent wetland associated with the drainage ditch. In addition, the Project will impact one MSHCP vernal pool (0.12 acre). Impacts to these features would be subject to the DBESP process, including mitigation to offset the loss of functions and values. Approval of the impacts and mitigation through the DBESP process is required to ensure that the Project will not conflict with the MSHCP.

5.7 Impacts to Jurisdictional Waters

The Project will impact approximately 0.68 acre of Corps, RWQCB, and CDFW jurisdiction, of which 0.11 acre consists of wetland/riparian habitat. Impacts to jurisdictional waters would be potentially significant prior to mitigation. Furthermore, impacts to Corps/RWQCB jurisdiction will require a Clean Water Act Section 404 permit from the Corps and a Section 401 Water Quality Certification from the RWQCB, and impacts to CDFW jurisdiction will require a Fish and Game Code Section 1602 Streambed Alteration Agreement.

5.8 Indirect Impacts to Biological Resources

In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to native open space. Potential indirect effects associated with development include water quality impacts associated with drainage into adjacent open space/downstream aquatic resources; lighting effects; noise effects; invasive plant species from landscaping; and effects from human access into adjacent open space, such as recreational activities (including off-road vehicles and hiking), pets, dumping, etc. Temporary, indirect effects may also occur as a result of construction-related activities.

Projects located adjacent to the MSHCP Conservation Area are expected to implement measures pursuant to the MSHCP Urban/Wildlands Interface Guidelines (*Volume I, Section 6.1.4* of the MSHCP). The Project is not located adjacent to the Conservation Area, and therefore the guidelines do not apply to the Project.

5.9 Cumulative Impacts to Biological Resources

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered potentially significant. "Related projects" refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

The loss of burrowing owl habitat, potential SKR habitat, the vernal pool, and jurisdictional waters is potentially significant as a cumulative impact. Through compliance with the MSHCP and SKR HCP, cumulative impacts to these species and habitats would be reduced to below a level of significance.

6.0 MITIGATION/AVOIDANCE MEASURES

The following discussion provides project-specific mitigation/avoidance measures for actual or potential impacts to special-status resources.

6.1 Burrowing Owl

Based on the presence of a breeding burrowing owl pair and juvenile owls, the Project will be required to relocate the burrowing owls pursuant to Objective 6 of the MSHCP burrowing owl objectives. Prior to the disturbance of the site, including grading, the following measure will be implemented:

- A qualified biologist will conduct a pre-construction presence/absence survey for burrowing owls within 30 days prior to site disturbance. If burrowing owls are detected onsite, the owls will be relocated/excluded from the site outside of the breeding season following accepted protocols, and subject to the approval of the RCA and wildlife agencies. If relocation/exclusion is required, then a Burrowing Owl Relocation Plan will

first be submitted to the City of Menifee. The Relocation Plan will detail the relocation of burrowing owls from the Project site, whether passively (exclusion) or actively. If active relocation is proposed, then the Relocation Plan will be reviewed by CDFW and the RCA. Furthermore, a Biological Monitoring Work Plan will be submitted to the City of Menifee and approved prior to the issuance of a grading permit. The Work Plan will outline the details of the daily biological monitoring schedule, BMPs, and the timeline for completing the Burrowing Owl Relocation Plan.

6.2 Nesting Birds

The Project site contains vegetation with the potential to support nesting birds. As discussed above, the MBTA and California Fish and Game Code prohibit impacts to nesting birds. The following measure is recommended to avoid impacts to nesting birds:

- As feasible, vegetation clearing should be conducted outside of the nesting season, which is generally identified as February 1 through September 15. If avoidance of the nesting season is not feasible, then a qualified biologist shall conduct a nesting bird survey within three days prior to any disturbance of the site, including disking, demolition activities, and grading. If active nests are identified, the biologist shall establish suitable buffers around the nests, and the buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests.

6.3 Jurisdictional Waters and MSHCP Riparian/Riverine Areas

Impacts to Corps, RWQCB, and CDFW jurisdiction will be mitigated at a 3:1 ratio through off site mitigation, targeting in-lieu fee mitigation with a local Resource Conservation District (RCD), or other approved mitigation bank. The Project intends to mitigate through the Riverpark Mitigation Bank. However, if mitigation credits are not yet available at the Mitigation Bank, then the applicant will pursue alternate mitigation opportunities on conservation lands managed by the RCA. The project will obtain the necessary permits from the Corps, CDFW, and RWQCB prior to any impacts within jurisdictional areas. With mitigation, impacts to wetlands and riparian habitat will be less than significant.

The proposed mitigation will also satisfy MSHCP requirements to offset the loss of MSHCP riparian/riverine areas and vernal pools. With the approval of a DBESP, including the proposed mitigation, the Project will not conflict with the MSHCP pertaining to the DBESP requirements.

6.4 Level of Significance After Mitigation

With coverage afforded by the western Riverside County MSHCP, and with mitigation measures as described above, impacts to biological resources will be less than significant.

7.0 MSHCP CONSISTENCY ANALYSIS

The purpose of this section is to provide an analysis of the proposed Project with respect to compliance with biological aspects of the Western Riverside County MSHCP. Specifically, this analysis evaluates the proposed Project with respect to the Project's consistency with MSHCP Reserve assembly requirements, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guidelines Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Procedures).

7.1 Project Relationship to Reserve Assembly

The proposed Project is not located within the MSHCP Criteria Area, and therefore the Project is not subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process or the Joint Project Review (JPR) process.

7.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

The proposed Project will impact 0.68 acre of MSHCP riparian/riverine areas and a 0.12-acre vernal pool that will require a DBESP analysis pursuant to *Volume I, Section 6.1.2* of the MSHCP. The riverine features do not contain riparian habitat with the potential to support riparian birds, including the least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). The vernal pool does not support listed fairy shrimp. With the approval of a DBESP, the Project will be consistent with *Volume I, Section 6.1.2* of the MSHCP.

7.3 Protection of Narrow Endemic Plants

Volume I, Section 6.1.3 of the MSHCP requires that within identified Narrow Endemic Plant Species Survey Areas (NEPSSA), site-specific focused surveys for Narrow Endemic Plant Species will be required for all public and private projects where appropriate soils and habitat are present. A portion of the Project site is located within the NEPSSA but does not support the NEPSSA target species. The Project will be consistent with *Volume I, Section 6.1.3* of the MSHCP.

7.4 Guidelines Pertaining to the Urban/Wildland Interface

The MSHCP Urban/Wildland Interface Guidelines are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area. As the MSHCP Conservation Area is assembled, development is expected to occur adjacent to the Conservation Area. Future development in proximity to the MSHCP Conservation Area may result in edge effects with the potential to adversely affect biological resources within the Conservation Area. To minimize such edge effects, the guidelines shall be implemented in conjunction with review of individual public and private development projects in proximity to the MSHCP Conservation Area and address the following:

- Drainage;
- Toxics;
- Lighting;
- Noise;
- Invasive species;
- Barriers;
- Grading/Land Development.

As discussed in Section 5.0 of this report, the Project is not located adjacent to the MSHCP Conservation Area, and therefore is not subject to the Urban/Wildland Interface Guidelines. The proposed Project will be consistent with *Section 6.1.4* of the MSHCP.

7.5 Additional Survey Needs and Procedures

The Project site is located within the MSHCP burrowing owl survey area and supports a breeding pair of burrowing owls. However, the site is not located within the MSHCP Criteria Area, and since the site contains only one pair of burrowing owls, the Project is not subject to the DBESP requirements pursuant to Objective 5 of the MSHCP burrowing owl objectives. As noted in Section 6.0 of this report, the burrowing owls must be relocated outside of the breeding season pursuant to Objective 6 of the MSHCP burrowing owl objectives. With the relocation of the burrowing owls, the Project will be consistent with *Volume I, Section 6.3.2* of the MSHCP.

As noted above in Section 6.1, if burrowing owl relocation/exclusion is required, then a Burrowing Owl Relocation Plan will first be submitted to the City of Menifee. The Relocation Plan will detail the relocation of burrowing owls from the Project site, whether passively (exclusion) or actively. If active relocation is proposed, then the Relocation Plan will be reviewed by CDFW and the RCA. Furthermore, a Biological Monitoring Work Plan will be submitted to the City of Menifee and approved prior to the issuance of a grading permit. The Work Plan will outline the details of the daily biological monitoring schedule, BMPs, and the timeline for completing the Burrowing Owl Relocation Plan.

7.6 Conclusion of MSHCP Consistency

As outlined above, the proposed Project will be consistent with the biological requirements of the MSHCP; specifically pertaining to the Project's relationship to reserve assembly, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guidelines Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Procedures).

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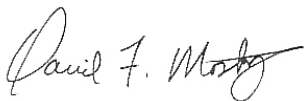
Sawyer, J.O, T. Keeler-Wolf, and J.M. Evens. A Manual of California Vegetation. Second Edition. California Native Plant Society Press. Sacramento, California. 1,300 pp.

Stebbins, R. C. 1954. Amphibians and reptiles of western North America. McGraw-Hill, New York. 536pp.

Stebbins, R.C. 1985. A field guide to western reptiles and amphibians, 2nd ed. Houghton Mifflin Co., Boston, Massachusetts.

9.0 CERTIFICATION

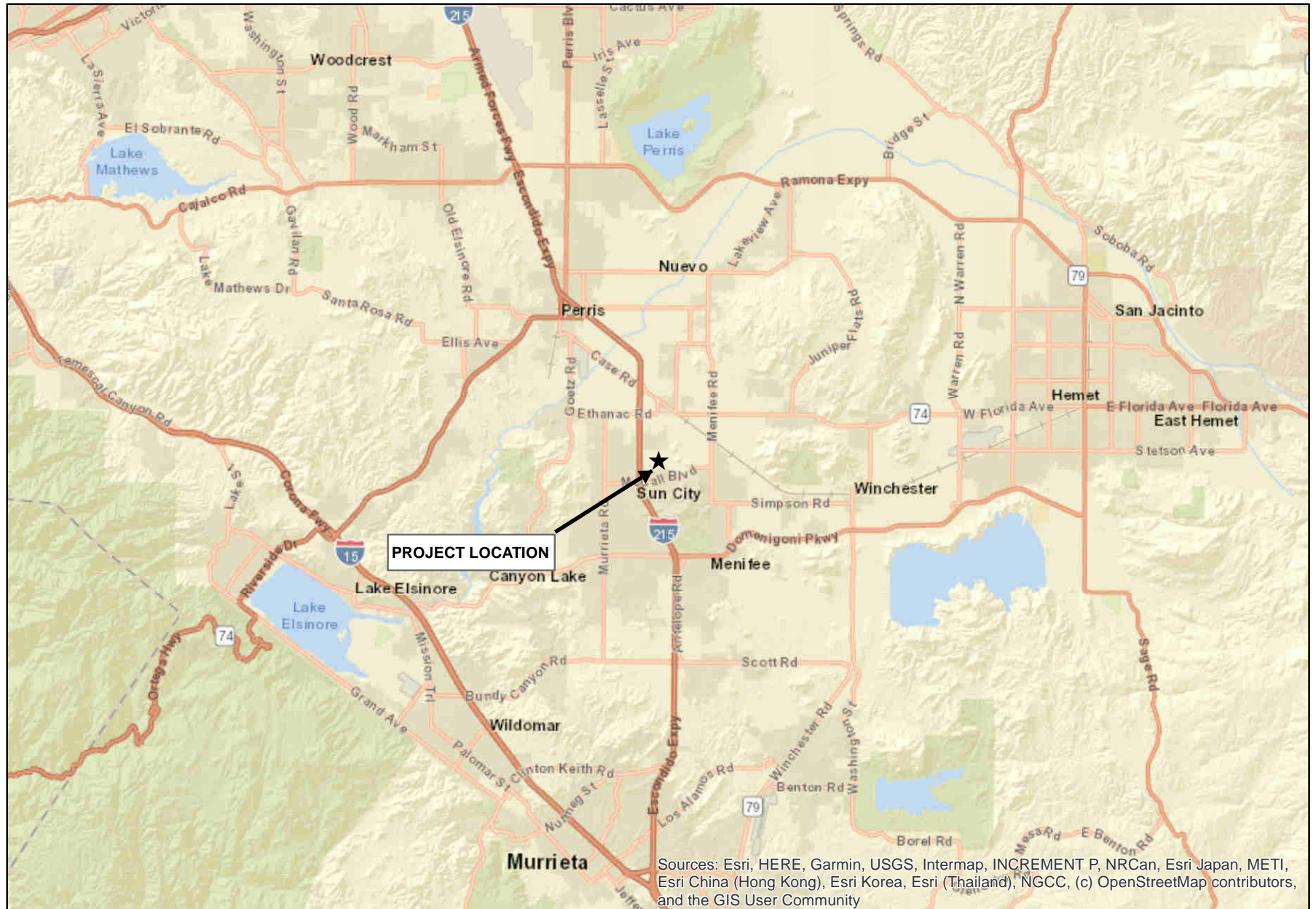
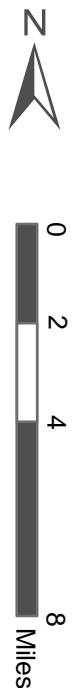
I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Signed: _____

Date: 08/06/19

Source: ESRI World Street Map



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

LEGADO PROJECT

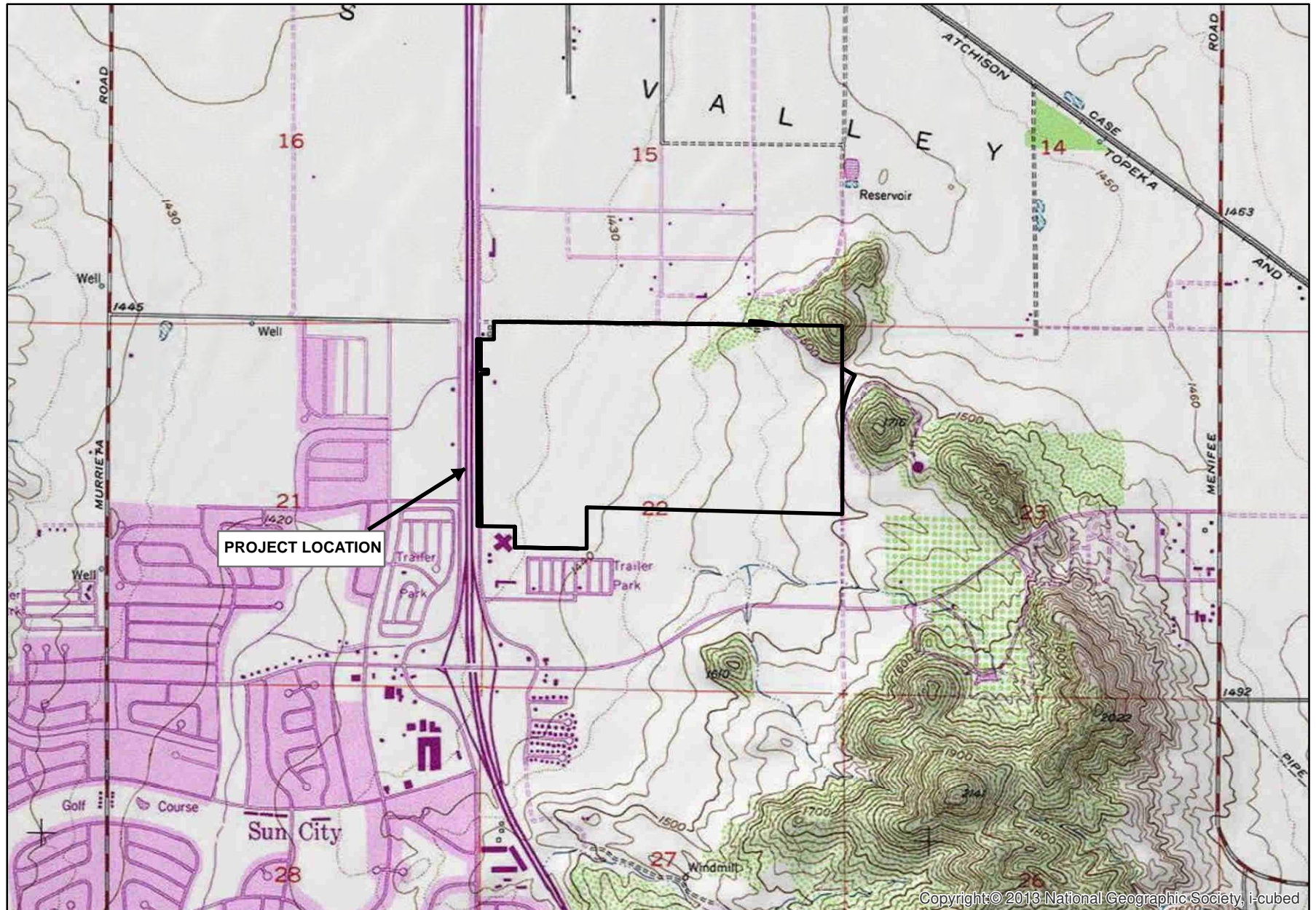
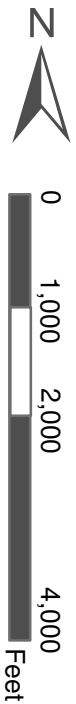
Regional Map

GLENN LUKOS ASSOCIATES



Exhibit 1

Adapted from USGS Romoland, CA quadrangle



LEGADO PROJECT

Vicinity Map

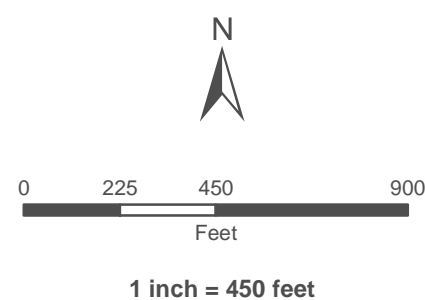
GLENN LUKOS ASSOCIATES

Exhibit 2





- Project Boundary
- Offsite Impact Areas
- Narrow Endemic Plants Survey Area
- Burrowing Owl Survey Area



LEGADO PROJECT

MSHCP Overlay Map


GLENN LUKOS ASSOCIATES

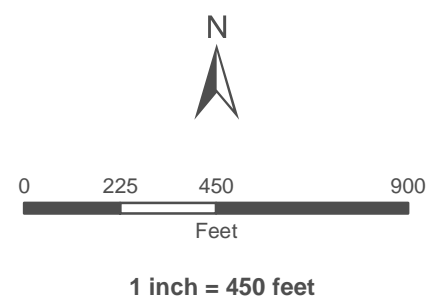


Exhibit 3

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- | | | | |
|--|---------------------------|---|------------------------------|
|  | Project Boundary |  | EW, Emergent Wetland |
|  | Offsite Impact Areas |  | R - Ruderal |
|  | AG - Agriculture |  | RSS - Riversidean Sage Scrub |
|  | CS - Cactus Scrub |  | SP - Seasonal Pool |
|  | D/D - Disturbed/Developed | | |



LEGADO PROJECT

Vegetation Map

GLENN LUKOS ASSOCIATES




Exhibit 4

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Photograph 1: View from the central portion of the Project site looking east. The majority of the site consists of disked agricultural fields.



Photograph 2: View from the eastern boundary looking west.



Photograph 3: View of the outcrop supporting the cholla patch located in the eastern portion of the site.



Photograph 4: View of the ruderal/grassland area located in the northeastern portion of the Project site.



GLENN LUKOS ASSOCIATES

Exhibit 5A

LEGADO

Site Photographs



Photograph 5: View of seasonal pool located in the northeastern portion of the Project site.



Photograph 6: View of the drainage ditch located in the southern portion of the Project site.



Photograph 7: View of the drainage ditch looking north where the ditch transitions from a concrete-lined ditch to an earthen ditch.



Photograph 8: View of three burrowing owls from the family group located in the northeastern portion of the Project site.





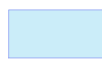


GLENN LUKOS ASSOCIATES

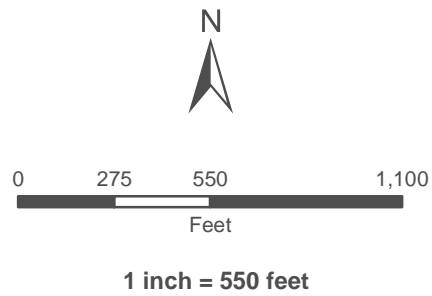
Exhibit 5B

LEGADO

Site Photographs



-  Project Boundary
-  Offsite Impact Areas
-  MSHCP Burrowing Owl Survey Area
-  150-Meter Buffer
-  Active Burrow



LEGADO PROJECT

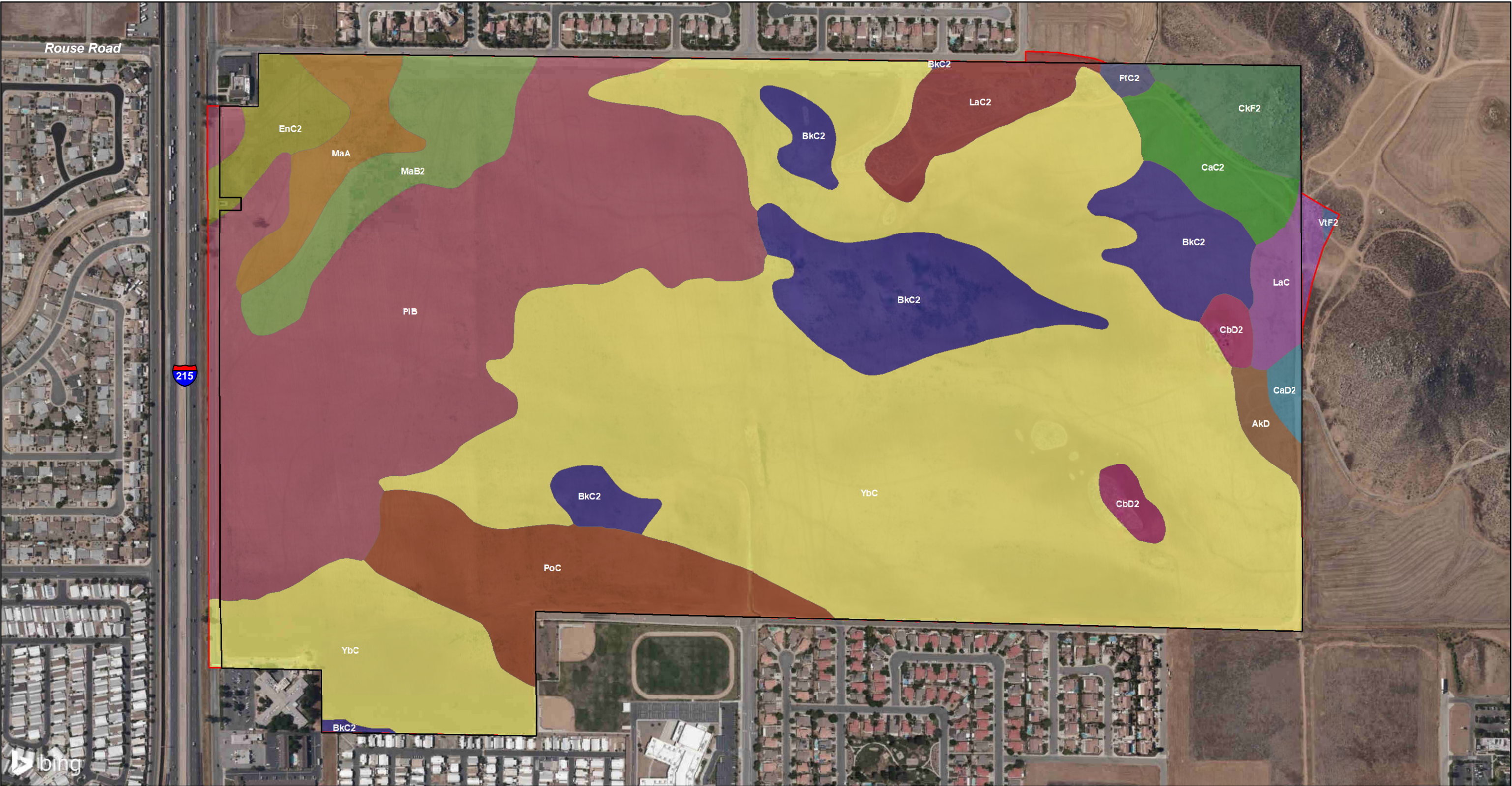
Burrowing Owl Location Map

GLENN LUKOS ASSOCIATES

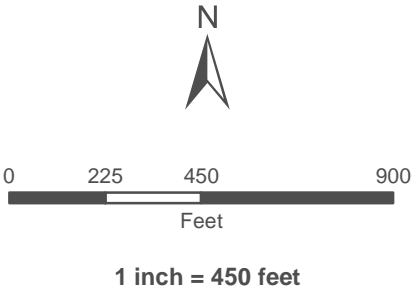


Exhibit 6

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- | | |
|--|--|
| Project Boundary | FfC2 - Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded |
| Offsite Impact Areas | LaC - Las Posas loam, 2 to 8 percent slopes |
| AkD - Arbuckle loam, 8 to 15 percent slopes | LaC2 - Las Posas loam, 5 to 8 percent slopes, eroded |
| BkC2 - Buchenau silt loam, 2 to 8 percent slopes, eroded | MaA - Madera fine sandy loam, 0 to 2 percent slopes |
| CaC2 - Cajalco fine sandy loam, 2 to 8 percent slopes, eroded | MaB2 - Madera fine sandy loam, 2 to 5 percent slopes, eroded |
| CaD2 - Cajalco fine sandy loam, 8 to 15 percent slopes, eroded | PIB - Placentia fine sandy loam, 0 to 5 percent slopes |
| CbD2 - Cajalco rocky fine sandy loam, 5 to 15 percent slopes, eroded | PoC - Porterville clay, 0 to 8 percent slopes |
| CkF2 - Cienega rocky sandy loam, 15 to 50 percent slopes, eroded | VtF2 - Vista rocky coarse sandy loam, 2 to 35 percent slopes, eroded |
| EnC2 - Exeter sandy loam, 2 to 8 percent slopes, eroded | YbC - Yokohl loam, 2 to 8 percent slopes |



LEGADO PROJECT

Soils Map

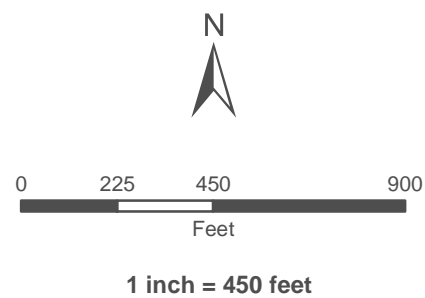
GLENN LUKOS ASSOCIATES

Exhibit 7

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- Project Boundary
- Offsite Impact Areas
- Corps Non-Wetland Waters/CDFW Unvegetated Streambed
- Corps Wetland/CDFW Riparian
- Width of Jurisdiction in Feet



LEGADO PROJECT

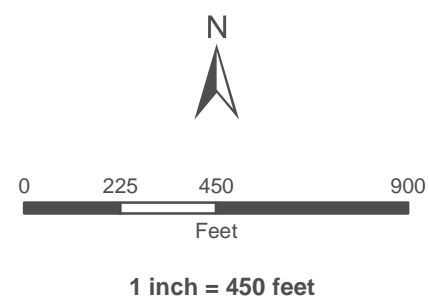
Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 8



- Project Boundary
- Offsite Impact Areas
- MSHCP Riverine
- MSHCP Riparian
- Vernal Pool



LEGADO PROJECT

MSHCP Riparian Riveine Map

GLENN LUKOS ASSOCIATES

Exhibit 9

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APPENDIX A

FLORAL COMPENDIUM

The floral compendium lists species identified on the project site. Taxonomy follows the Jepson Manual (Baldwin et al. 2012) and, for sensitive species, the California Native Plant Society's Rare Plant Inventory (Tibor 2001). Common plant names are taken from Hickman (1993), Munz (1974), and Roberts (1998). An asterisk (*) denotes a non-native species.

DICOTS

AMARANTHACEAE

**Amaranthus albus*

AMARANTH FAMILY

tumbling pigweed

APIACEAE

Daucus pusillus

CARROT FAMILY

rattlesnake weed

ASTERACEAE

Baccharis salicifolia

**Cirsium vulgare*

Deinandra fasciculata

Deinandra paniculata

Encelia farinosa

Ericameria pinifolia

Erigeron canadensis

Helianthus annuus

Holocarpha virgata

**Lactuca serriola*

**Logfia gallica*

Psilocarphus brevissimus

Stylocline gnaphaloides

Xanthium strumarium

SUNFLOWER FAMILY

mule fat

bull thistle

fascicled tarweed

paniculate tarplant

desert brittlebush

pine goldenbush

common horseweed

western sunflower

graceful tarplant

prickly lettuce

narrow leaved-filago

wooly marbles

everlasting nest straw

smooth cocklebur

BORAGINACEAE

Amsinckia intermedia

BORAGE FAMILY

common fiddleneck

BRASSICACEAE

**Brassica nigra*
**Hirschfeldia incana*
**Sisymbrium irio*

CACTACEAE

Cylindropuntia californica

CARYOPHYLLACEAE

**Spergularia bocconeii*

CHENOPODIACEAE

**Bassia hyssopifolia*
**Salsola tragus*

CONVOLVULACEAE

Convolvulus arvensis

EUPHORBIACEAE

Eremocarpus setigerus
Chamaesyce albomarginata

FABACEAE

Lotus hamatus
**Melilotus officinalis*

GERANIACEAE

**Erodium cicutarium*

LAMIACEAE

**Marrubium vulgare*
Trichostema lanceolatum

MUSTARD FAMILY

black mustard
summer mustard
London rocket

CACTUS FAMILY

valley cholla

PINK FAMILY

Boccone's sand spurry

GOOSEFOOT FAMILY

five-hook bassia
Russian thistle

MORNING GLORY FAMILY

field bindweed

SPURGE FAMILY

doveweed
rattlesnake spurge

LEGUME FAMILY

San Diego lotus
yellow sweet clover

GERANIUM FAMILY

red-stemmed storksbill

MINT FAMILY

horehound
vinegar weed

MALVACEAE

**Malva parviflora*

ONAGRACEAE

Epilobium ciliatum

POLYGONACEAE

Calandrinia ciliata

Chorizanthe parryi var. *parryi*

Eriogonum fasciculatum

**Polygonum arenastrum*

Polygonum lapathifolium

**Rumex crispus*

SOLANACEAE

Datura wrightii

Solanum xanti

TAMARICACEAE

**Tamarix ramosissima*

MALLOW FAMILY

cheeseweed

EVENING PRIMROSE FAMILY

willow herb

BUCKWHEAT FAMILY

red maids

Parry's spineflower

California buckwheat

common knotweed

willow smartweed

curly dock

NIGHTSHADE FAMILY

Jimsonweed

chaparral nightshade

TAMARISK FAMILY

Tamarisk

MONOCOTS

CYPERACEAE

Cyperus eragrostis

Schoenoplectus americanus

Schoenoplectus robustus

SEDGE FAMILY

tall umbrella sedge

Olney's bulrush

coastal bulrush

POACEAE

**Avena sp.*
**Bromus diandrus*
**Bromus hordeaceus*
**Bromus madritensis rubens*
**Hordeum murinum*
**Hordeum vulgare*
**Lolium perenne*
**Phalaris sp.*
**Polypogon monspeliensis*
**Schismus barbatus*
**Vulpia myuros var myuros*

TYPHACEAE

Typha domingensis

GRASS FAMILY

wild oats
ripgut brome
soft chess
red brome
barley
cultivated barley
English ryegrass
canary grass
rabbitfoot grass
Mediterranean grass
rattail fescue

CATTAIL FAMILY

southern cattail

APPENDIX B

FAUNAL COMPENDIUM

The faunal compendium lists species that were either observed within or adjacent to the Project Site (denoted by a '*'), or that have some potential to occur within or adjacent to the Project Site (denoted by a '+'). Taxonomy and common names are taken from the California Wildlife Habitat Relationships System (CDFG 2003); AOU (1998) and CDFG (2008) for birds; Stebbins (1985), Collins (1990), Jones et al. (1992), and CDFG (2008) for reptiles and amphibians; and CDFG (2008) for mammals.

AMPHIBIANS

BUFONIDAE – TRUE TOADS

- + *Anaxyrus boreas*
western toad

HYLIDAE – TREE FROGS AND RELATIVES

- + *Pseudacris cadaverina*
California chorus frog
- + *Pseudacris regilla*
Pacific chorus frog

REPTILES

PHRYNOSOMATIDAE – LIZARDS

- + *Phrynosoma coronatum blainvillei*
San Diego horned lizard
- * *Sceloporus occidentalis*
western fence lizard
- * *Sceloporus orcutti*
granite spiny lizard
- * *Uta stansburiana*
side-blotched lizard

SCINCIDAE – SKINKS

- + *Eumeces skiltonianus*
western skink

TEIIDAE – WHIPTAILS

- + *Aspidoscelis hyperythra*
orangethroat whiptail
- + *Aspidoscelis tigris multiscutatus*
coastal western whiptail

ANGUIDAE – ALLIGATOR LIZARDS

- + *Elgaria multicarinata*
southern alligator lizard

BOIDAE - BOAS

- + *Charina trivirgata*
rosy boa

COLUBRIDAE - COLUBRIDS

- + *Coluber constrictor*
racer
- + *Diadophis punctatus*
ringneck snake
- + *Lampropeltis getula*
California kingsnake
- + *Masticophis flagellum*
coachwhip
- + *Pituophis melanoleucus*
gopher snake
- + *Salvadora hexalepis*
western patch-nosed snake

VIPERIDAE – VIPERS

- + *Crotalus ruber*
red diamond rattlesnake
- + *Crotalus viridis*
western rattlesnake

BIRDS

CATHARTIDAE – NEW WORLD VULTURES

- * *Cathartes aura*
turkey vulture

ACCIPITRIDAE – HAWKS AND HARRIERS

- + *Accipiter cooperi*
Cooper's hawk
- + *Accipiter striatus*
sharp-shinned hawk
- + *Aquila chrysaetos*
golden eagle
- * *Buteo jamaicensis*
red-tailed hawk
- + *Buteo lineatus*
red-shouldered hawk
- + *Buteo regalis*
ferruginous hawk
- + *Circus cyaneus*
northern harrier
- + *Elanus leucurus*
white-tailed kite

FALCONIDAE – FALCONS

- + *Falco columbarius*
merlin
- + *Falco mexicanus*
prairie falcon
- * *Falco sparverius*
American kestrel

CHARADRIIDAE – PLOVERS AND RELATIVES

- + *Charadrius vociferus*
killdeer

COLUMBIDAE – PIGEONS AND DOVES

- + *Columbia livia*
rock dove
- + *Columbina passerina*
common ground dove
- * *Zenaida macroura*
mourning dove

CUCULIDAE – TYPICAL CUCKOOS

- + *Geococcyx californianus*

greater roadrunner

APODIDAE – SWIFTS

- + *Aeronautes saxatalis*
white-throated swift

TROCHILIDAE – HUMMINGBIRDS

- + *Archilochus alexandri*
black-chinned hummingbird
- + *Calypte anna*
Anna's hummingbird
- + *Calypte costa*
Costa's hummingbird
- + *Selasphorus sasin*
Allen's hummingbird

TYRANNIDAE – TYRANT FLYCATCHERS

- + *Myiarchus cinerascens*
ash-throated flycatcher
- * *Sayornis nigricans*
black phoebe
- * *Sayornis saya*
Say's phoebe
- * *Tyrannus verticalis*
western kingbird
- + *Tyrannus vociferans*
Cassin's kingbird

LANIIDAE – SHRIKES

- + *Lanius ludovicianus*
loggerhead shrike

CORVIDAE – JAYS, MAGPIES, AND CROWS

- * *Corvus brachyrhynchos*
American crow
- * *Corvus corax*
common raven

ALAUDIDAE – LARKS

- * *Eremophila alpestris actia*
California horned lark

HIRUNDINIDAE – SWALLOWS

- * *Petrochelidon pyrrhonota*
cliff swallow
- * *Stelgidopteryx serripennis*
northern rough-winged swallow
- * *Tachycineta thalassina*
violet-green swallow

AEGITHALIDAE – BUSHTIT

- * *Psaltiriparus minimus*
bushtit

TROGLODYTIDAE – WRENS

- + *Catherpes mexicanus*
canyon wren
- + *Salpinctes obsoletus*
rock wren
- * *Thryomanes bewickii*
Bewick's wren
- + *Troglodytes aedon*
house wren

SYLVIIDAE – OLD WORLD WARBLERS AND GNATCATCHERS

- + *Polioptila caerulea*
blue-gray gnatcatcher
- + *Polioptila californica californica*
coastal California gnatcatcher

TIMALIIDAE – BABBLERS

- + *Chamaea fasciata*
wrentit

MIMIDAE – MOCKINGBIRDS AND TRASHERS

- + *Mimus polyglottos*
northern mockingbird

STURNIDAE – STARLINGS

- + *Sturnus vulgaris*
European starling

PARULIDAE – WOOD WARBLERS AND RELATIVES

- + *Dendroica coronata*
yellow-rumped warbler
- * *Geothlypis trichas*
common yellowthroat

EMBERIZIDAE – EMBERIZINES

- + *Aimophila ruficeps canescens*
Southern California rufous-crowned sparrow
- + *Chondestes grammacus*
lark sparrow
- + *Junco hyemalis*
dark-eyed junco
- + *Melospiza lincolnii*
Lincoln's sparrow
- + *Melospiza melodia*
song sparrow
- * *Passerculus sandwichensis*
savannah sparrow
- + *Pipilo crissalis*
California towhee
- + *Pipilo maculatus*
spotted towhee
- + *Spizella passerina*
chipping sparrow
- + *Zonotrichia atricapilla*
golden-crowned sparrow
- + *Zonotrichia leucophrys*
white-crowned sparrow

CARDINALIDAE – CARDINALS, GROSBEAKS, AND ALLIES

- + *Passerina amoena*
lazuli bunting

ICTERIDAE – BLACKBIRDS, ORIOLES, AND ALLIES

- * *Agelaius phoeniceus*
red-winged blackbird

- + *Euphagus cyanocephalus*
Brewer's blackbird
- + *Icterus bullocki*
Bullock's oriole
- + *Icterus cucullatus*
hooded oriole
- + *Molothrus ater*
brown-headed cowbird
- * *Sturnella neglecta*
western meadowlark

FRINGILLIDAE – FINCHES

- + *Carduelis lawrencei*
Lawrence goldfinch
- + *Carduelis psaltria*
lesser goldfinch
- + *Carduelis tristis*
American goldfinch
- + *Carpodacus mexicanus*
house finch

PASSERIDAE – OLD WORLD SPARROWS

- + *Passer domesticus*
house sparrow

MAMMALS

DIDELPHIDAE – MARSUPIALS

- + *Didelphis virginiana*
Virginia opossum

SORICIDAE – SHREWS

- + *Notiosorex crawfordi*
desert shrew
- + *Sorex ornatus*
ornate shrew

TALPIDAE – MOLES

- + *Scapanus latimanus*
broad-footed mole

LEPORIDAE – RABBITS AND HARES

- + *Lepus californicus bennettii*
San Diego black-tailed jackrabbit
- + *Sylvilagus audubonii*
desert cottontail
- + *Sylvilagus bachmani*
brush rabbit

SCIURIDAE – SQUIRRELS

- * *Spermophilus beecheyi*
California ground squirrel

GEOMYIDAE – POCKET GOPHERS

- + *Thomomys bottae*
Botta's pocket gopher

HETEROMYIDAE – POCKET MICE AND KANGAROO RATS

- + *Chaetodipus fallax fallax*
Northwestern San Diego pocket mouse
- + *Dipodomys simulans*
Dulzura (San Diego) kangaroo rat
- + *Dipodomys stephensii*
Stephens' kangaroo rat

MURIDAE – MICE, RATS, AND VOLES

- + *Mus musculus*
house mouse
- + *Peromyscus boylii*
brush mouse
- + *Peromyscus californicus*
California mouse
- + *Peromyscus eremicus*
cactus mouse
- + *Peromyscus maniculatus*
deer mouse
- + *Rattus norvegicus*
Norway rat
- + *Rattus rattus*
black rat
- + *Reithrodontomys megalotis*

western harvest mouse

CANIDAE – FOXES, WOLVES, AND RELATIVES

+ *Canis familiaris*

feral dog

+ *Canis latrans*

coyote

PROCYONIDAE – RACCOONS

+ *Procyon lotor*

raccoon

MUSTELIDAE – WEASELS AND RELATIVES

+ *Mustela frenata*

long-tailed weasel

MEPHITIDAE – SKUNKS

+ *Mephitis mephitis*

striped skunk

+ *Spilogale gracilis*

western spotted skunk

FELIDAE – CATS

+ *Felis catus*

feral cat

+ *Lynx rufus*

bobcat

GLENN LUKOS ASSOCIATES

Regulatory Services



September 28, 2017

Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

SUBJECT: Submittal Requirements for 2017 Dry Season Survey for Listed Branchiopods
Conducted for the Fleming Ranch Property, Located in the City of Menifee,
County of Riverside, California

Dear Ms. Love:

The following letter report documents the results of a dry season survey conducted by Glenn Lukos Associates, Inc. (GLA) for two seasonally ponded features at the above-referenced property in order to determine the presence/absence of branchiopod cysts. GLA biologists Kevin Livergood (TE-172638-2) and David Moskovitz (TE-084606-3) performed the soil collection from the features and biologist Jason Kurnow (TE-778195) of HELIX Environmental Planning, Inc. (HELIX) processed the soil samples to determine cyst presence/absence. A 15-day notification was submitted to the U.S. Fish and Wildlife Service (USFWS) on June 27, 2017, notifying of the intent to conduct a dry season survey. Authorization to commence surveys was received from USFWS on June 28, 2017 and soil samples were collected from the site on July 26, 2017. A report from HELIX summarizing the results of soil analysis was completed on August 21, 2017 (Appendix A). No cysts of the genus *Branchinecta* or *Streptocephalus* were identified in Feature 1 and medium density of cysts of the genus *Branchinecta* were detected in Feature 2. No cysts of the genus *Streptocephalus* were detected in Feature 2.

I. SITE LOCATION

The Fleming Ranch Property (Project Site) is located in the City of Menifee in the County of Riverside, California [Exhibit 1 – Regional Map]. The dry season survey included two seasonally ponded features located in the northeast quadrant of the Project Site. The Project Site is located east of Interstate 215 and Encanto Road, south of Rouse Road, west of Antelope Road, and north of McCall Boulevard. The Project Site can be found on the U.S. Geological Survey 7.5' Romoland, California Quadrangle [dated 1953 and photorevised in 1979] in Section 22, Township 5 South, Range 3 West [Exhibit 2 – Vicinity Map]. The Universal Transverse Mercator (UTM) coordinates approximately corresponding to the site are 483268 mE and 3731652 mN (Zone 11S).

The location of the features was collected with a handheld GPS device (Trimble Geo7x) at the time of dry season soil collection. Coordinates of the sampled features are as follows:

- Feature 1: 33.728356°, -117.175367°
- Feature 2: 33.728099°, -117.175280°

II. METHODOLOGY

A. Soil Collection

Soil sample collection and processing followed the USFWS *Survey Guidelines for the Listed Large Branchiopods* (May 31, 2015). Soil sample collection was conducted by GLA biologists Kevin Livergood (Permit TE-172638-1) and David Moskovitz (TE-084606-3) on July 26, 2017.

In accordance with the survey protocol, the number of soil/substrate samples and the amount of soil/substrate collected was proportional to the size of the feature. For Feature 1, a total of ten (10) samples were collected and for Feature 2 a total of twenty-five (25) samples were collected. To determine the soil sample collection points, two perpendicular transects that crossed the deepest and widest parts of the feature were established in the field and collection points were identified in a grid ensuring the lowest topographic areas were sampled. Soil samples of approximately 100 milliliters (ml) each were removed at each sub-sample location using a hand trowel and transferred to individually labeled bags for processing. An aerial photograph depicting the location of the sampled features is attached as Exhibit 3, site photographs are provided in Exhibit 4, and a completed datasheet is provided as Appendix B of this report.

B. Soil Analysis

Soil processing and examination was conducted by biologist Jason Kurnow (TE-778195) of HELIX. As stated in the attached HELIX report of findings (Appendix A), samples were prepared for analysis by dissolving the collected soil in water and sequentially sieving the material through 710- and 75 micrometer (µm) pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope. Cysts were identified to genus level based on surface characteristics. Multiple species of the genus *Branchinecta* can occur in Riverside County, but cannot be identified past genus level based on cyst characteristics. All cysts detected during soil analysis are submitted to the collection of the Natural History Museum of Los Angeles by the firm or biologist that conducted the analysis.

III. FEATURE DESCRIPTION

Following are descriptions of each feature including estimated dimensions as determined at the time of dry season soil collection.

FEATURE 1

The feature is in an undeveloped area of open space that is adjacent to a previously graded, but undeveloped space. The feature exhibits a significant amount of disturbance including signs of off-road vehicle traffic as well as pedestrian and pet traffic. The feature is sparsely vegetated with native and non-native species including: hooked pincushionplant (*Navarretia hamata*), vinegarweed (*Trichostema lanceolatum*), doveweed (*Croton setiger*), spotted spurge (*Euphorbia maculata*), stinknet (*Oncosiphon piluliferum*), foxtail brome (*bromus rubens*), and fescue grass (*Vulpia* sp.).

The feature measured approximately 3.6 meters (m) in width by 5.8 m in length for a total area of 0.005 acre.

A completed Dry Season Survey Datasheet is provided in Appendix B.

FEATURE 2

The feature is located approximately 50 to 75 feet south of Feature 1 and exhibits similar characteristics of disturbance including signs of off-road vehicle traffic as well as pedestrian and pet traffic. There is also evidence of dirt and debris dumping in and near the feature. The feature is sparsely vegetated with native and non-native species including: woolly marbles (*Psilocarphus brevissimus*), hooked pincushionplant (*Navarretia hamata*), graceful tarplant (*Holocarpha virgata* ssp. *elongate*), doveweed (*Croton setiger*), rattlesnake spurge (*Euphorbia albomarginata*), and stinknet (*Oncosiphon piluliferum*).

The feature measured approximately 10.7 meters (m) in width by 13.4 m in length for a total area of 0.035 acre.

A completed Dry Season Survey Datasheet is provided in Appendix B.

IV. RESULTS OF DRY SEASON SURVEY

The survey area occurs within the known range of the common versatile fairy shrimp (*Branchinecta lindahli*) and the following listed species: Vernal Pool fairy shrimp (*Branchinecta*

Stacey Love
U.S. Fish and Wildlife Service
September 28, 2017
Page 4

lynchi) and Riverside fairy shrimp (*Streptocephalus woottoni*). San Diego fairy shrimp (*Branchinecta sandiegonensis*), also a listed species, was recently identified in Riverside County. The species is not expected to occur at this location, but a wet season survey will confirm the species of *Branchinecta* detected during dry season sampling.

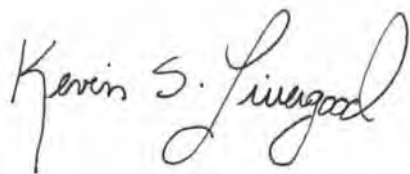
No fairy shrimp cysts were detected in Feature 1. A medium density of cysts of the genus *Branchinecta* were detected in Feature 2. No cysts of the genus *Streptocephalus* were detected in either of the sampled features.

Wet season surveys are expected to be conducted at the Fleming Ranch Property during the 2017-2018 wet season to confirm the species of fairy shrimp present. Completion of the wet season survey will complete the survey protocol, if completed in a three-year period.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. If you have any questions regarding this letter report, please contact me at klivergood@wetlandpermitting.com.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

A handwritten signature in black ink that reads "Kevin S. Livergood". The signature is written in a cursive, flowing style.

Kevin Livergood
Biologist/Regulatory Specialist

s:0849-20a.2017_DrySeason.rpt.docx

Source: ESRI World Street Map



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Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

FLEMING RANCH

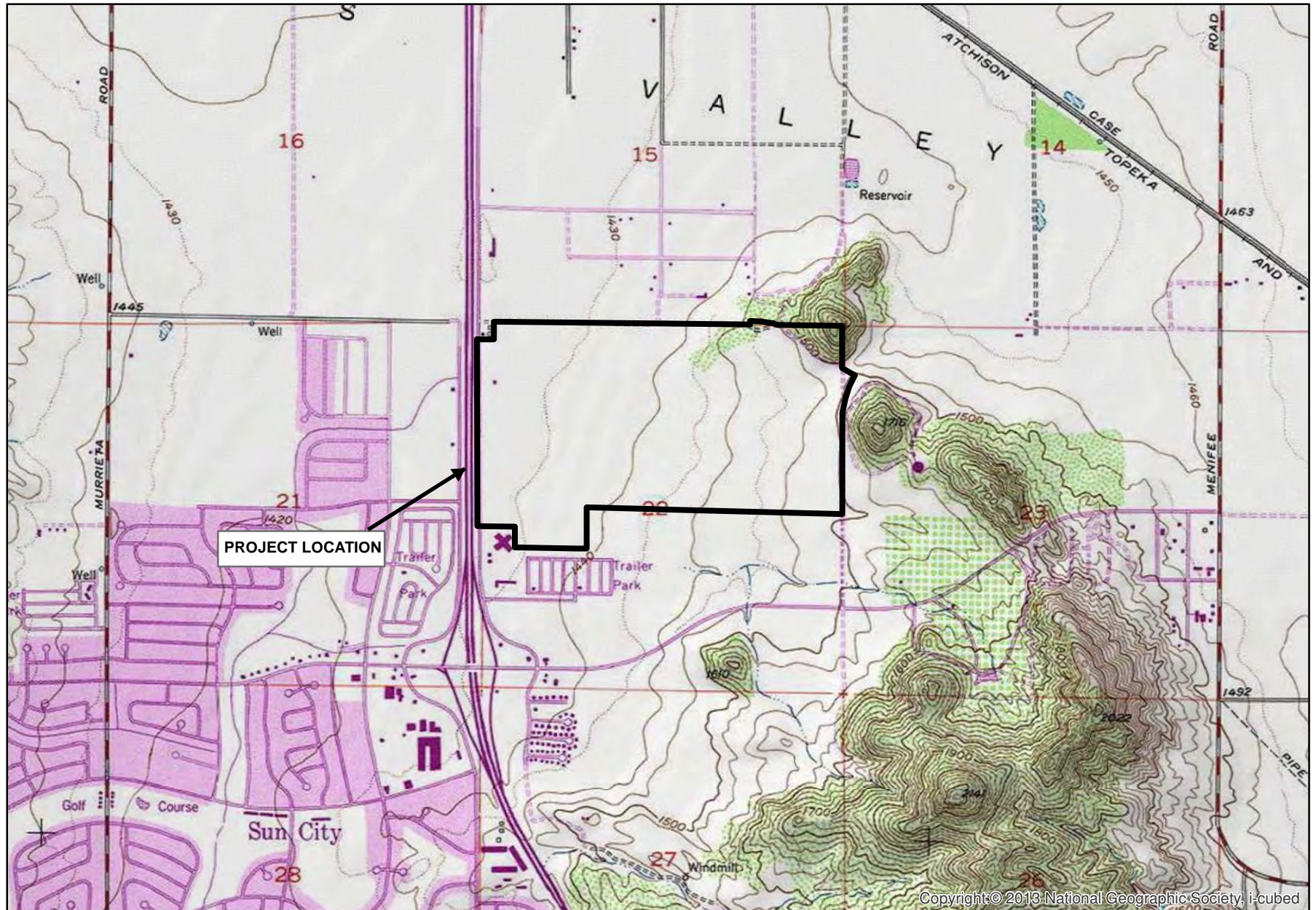
Regional Map

GLENN LUKOS ASSOCIATES



Exhibit 1

Adapted from USGS Romoland, CA quadrangle



Copyright © 2013 National Geographic Society, i-cubed

FLEMING RANCH




Vicinity Map

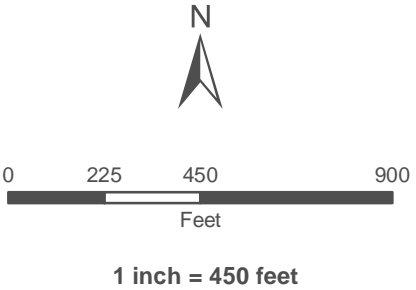
GLENN LUKOS ASSOCIATES

Exhibit 2





-  Project Boundary
-  Offsite Impact Areas
-  Seasonal Pool



FLEMMING RANCH

2017 Dry Season Survey Area Map

GLENN LUKOS ASSOCIATES



Exhibit 3



Photograph 1: Feature 1 (33.728356, -117.175367). View to the south. No fairy shrimp cysts detected. Photo by DM, July 26, 2017.



Photograph 2: Feature 1 (33.728356, -117.175367). View to the southeast. No fairy shrimp cysts detected. Photo by DM, July 26, 2017.



Photograph 3: Feature 1 (33.728356, -117.175367). View to the east. No fairy shrimp cysts detected. Photo by DM, July 26, 2017.



Photograph 4: Feature 1 (33.728356, -117.175367). View to the northwest. No fairy shrimp cysts detected. Photo by DM, July 26, 2017.



GLENN LUKOS ASSOCIATES

Exhibit 4

FLEMING RANCH

Site Photographs



Photograph 5: Feature 2 (33.728099, -117.175280). View to the southwest. Medium densities of fairy shrimp cysts detected (*Branchinecta* sp.). Photo by DM, July 26, 2017.



Photograph 7: Feature 2 (33.728099, -117.175280). View to the west. Medium densities of fairy shrimp cysts detected (*Branchinecta* sp.). Photo by DM, July 26, 2017.



Photograph 6: Feature 2 (33.728099, -117.175280). View to the northwest. Medium densities of fairy shrimp cysts detected (*Branchinecta* sp.). Photo by DM, July 26, 2017.

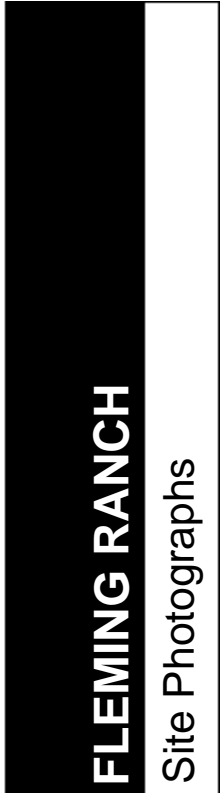


Photograph 8: Feature 2 (33.728099, -117.175280). View to the southwest. Medium densities of fairy shrimp cysts detected (*Branchinecta* sp.). Photo by DM, July 26, 2017.



GLENN LUKOS ASSOCIATES

Exhibit 4



HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com



August 21, 2017

Mr. Kevin Livergood
Glenn Lukos Associates
29 Orchard
Lake Forest, CA 92630

Subject: Dry Season Fairy Shrimp Soil Processing and Examination Report for the Fleming Ranch Project

Dear Mr. Livergood:

This report presents the findings of the 2017 dry season fairy shrimp sampling for the Fleming Ranch Project. Information provided in this report will be incorporated into the dry season fairy shrimp report which will be written and provided to the U.S. Fish and Wildlife Service (USFWS) by Glen Lukos Associates. Soil samples from two features were collected by Glenn Lukos Associates biologist Kevin Livergood and sent to HELIX Environmental Planning, Inc. (HELIX) for processing and examination.

METHODS

HELIX permitted biologist Jason Kurnow (Permit TE778195) oversaw the dry season soil processing and examination according to USFWS 2015 protocol.

Mr. Kurnow received soil samples sent by Glenn Lukos Associates for analysis in the HELIX lab on August 3, 2017. Samples were prepared by dissolving the soil samples in water and sequentially sieving the material through 710- and 75 μ m pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope by Mr. Kurnow. Cysts were identified to genus level based on surface characteristics. Multiple species of the *Branchinecta* genus can occur in Riverside County, but cannot be identified past genus level based on cyst characteristics.

RESULTS

Two features were sampled for the presence of fairy shrimp cysts. *Branchinecta* cysts were present in one feature (Appendix A; Table 1). The following feature contains *Branchinecta* cysts: Feature 2. *Streptocephalus* cysts were not observed in any of the sampled features.

Table 1 DRY SEASON RESULTS				
Feature	<i>Branchinecta</i> sp. Present	Abundance*	<i>Streptocephalus</i> sp. Present	Abundance*
1	No	---	No	---
2	Yes	Medium	No	---

*Based on abundance categories found within the 2015 USFWS Survey Guidelines for the Listed Large Branchiopods

I certify that the information in this survey report and attached exhibit fully and accurately represent my work.

Sincerely,



Jason Kurnow
Senior Scientist

Enclosures:

Attachment A Dry Season Fairy Shrimp Sampling Results

REFERENCES

U.S. Fish and Wildlife Service (USFWS). 2015. Survey Guidelines for the Listed Large Branchiopods. May 31.

Attachment A
DRY SEASON FAIRY SHRIMP SAMPLING RESULTS

DRY SEASON FAIRY SHRIMP SAMPLING RESULTS FLEMING RANCH PROJECT				
SAMPLE	<i>BRANCHINECTA</i>		<i>STREPTOCEPHALUS</i>	
	Feature 1	Feature 2	Feature 1	Feature 2
1	---	30	---	---
2	---	9	---	---
3	---	7	---	---
4	---	26	---	---
5	---	12	---	---
6	---	3	---	---
7	---	9	---	---
8	---	152	---	---
9	---	47	---	---
10	---	41	---	---
11		68		---
12		160		---
13		4		---
14		17		---
15		28		---
16		12		---
17		24		---
18		35		---
19		41		---
20		7		---
21		80		---
22		23		---
23		36		---
24		1		---
25		68		---

Appendix 2. U.S. Fish and Wildlife Service – Data Sheet for Dry Season Sample Analysis for Listed Large Branchiopods

Project Information		Biologist Information	
Project Name: _____	Quad: _____	Name of Person(2) Who Conducted the Following Tasks and Permit Number(s): _____	
USFWS Project Number: _____	Township: _____	Soil Collection: _____	
County: _____	Range: _____	Soil Processing: _____	
Lat: _____	Section: _____	Soil Analysis/Cysts ID: _____	
Long: _____		Soil Collection Date: _____	

Pool/ Habitat/ Basin No.	Invertebrates Present (X)															Comments
	Insect Exo- Skeletons	Micro- Turbellaria Cysts	Cladocera Ephippia	Ostracods Live/Cysts/ Carapaces	Copepods Live/Cysts	Number of Large Branchiopod Cysts						Hydracarina Live	Nematoda	Collembola	Other Species	
						<i>Branchinecta</i> sp.	<i>Lepidurus</i> <i>packardii</i>	<i>Streptocephalus</i> <i>wootoni</i>	<i>Lindieriella</i> <i>occidentalis</i>	<i>Lynceus</i> <i>brachyurus</i>	<i>Cyzicus</i> <i>californicus</i>					

GLENN LUKOS ASSOCIATES

Regulatory Services



July 30, 2019

Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

SUBJECT: Submittal Requirements for 2018-2019 Wet Season Survey for Listed Branchiopods Conducted for the Fleming Ranch Property, Located in the City of Menifee, County of Riverside, California

Dear Ms. Love:

The following letter report documents the results of a wet season survey conducted by Glenn Lukos Associates, Inc. (GLA) for five seasonally ponded features at the above-referenced property in order to determine the presence/absence of listed large branchiopods. GLA biologist Kevin Livergood (TE-172638-2) conducted the wet season surveys. The surveys focused on the determination of presence/absence for the federally-listed Riverside fairy shrimp (*Streptocephalus woottoni*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), and vernal pool fairy shrimp (*Branchinecta lynchi*). No federally-listed fairy shrimp were detected during the wet season survey. The survey conducted in 2018-2019 is the second consecutive year of protocol surveys; however, there was inadequate rainfall during the 2017-2018 wet season to produce ponding suitable for the emergence of large branchiopods. Therefore, results were inconclusive in 2017-2018. Rainfall amounts were above-average during the 2018-2019 wet season and resulted in ponding within the study area. The common versatile fairy shrimp (*Branchinecta lindahli*) was detected in three of the five identified features. Due to a lack of hydrology, exceptionally short hydroperiod, and overall insufficient ponding during a year of above-average rainfall, it is recommended that Features 1a and 1b no longer be classified as seasonally-ponded features.

Hydrology monitoring was initiated on December 7, 2018. On December 13, 2018, common versatile fairy shrimp were detected in one of the study-area features.

I. SITE LOCATION AND DESCRIPTION

The Fleming Ranch Property (Project Site) is located in the City of Menifee in the County of Riverside, California [Exhibit 1 – Regional Map]. The wet season survey included five depressional features located near the northern boundary of the Project Site. The Project Site is

located east of Interstate 215 and Encanto Road, south of Rouse Road, west of Antelope Road, and north of McCall Boulevard. The Project Site can be found on the U.S. Geological Survey 7.5' Romoland, California Quadrangle [dated 1953 and photorevised in 1979]) in Section 22, Township 5 South, Range 3 West [Exhibit 2 – Vicinity Map]. The Universal Transverse Mercator (UTM) coordinates approximately corresponding to the site are 3731652 mN and 483268 mE (Zone 11N).

The location of the features was collected with a handheld GPS device (Trimble Geo7x) during periods of inundation. As specified on the corresponding datasheets (Appendix A), following are the approximate UTM coordinates for the surveyed features:

- Feature 1a: Zone 11 north; 3732061.17 mN and 483728.94 mE
- Feature 1b: Zone 11 north; 3732051.09 mN and 483753.88 mE
- Feature 2: Zone 11 north; 3732022.58 mN and 483761.91 mE
- Feature 3: Zone 11 north; 3732075.64 mN and 482603.14 mE
- Feature 4: Zone 11 north; 3731922.93 mN and 483539.82 mE

II. METHODOLOGY

GLA biologist David Moskovitz (TE-084606-3) submitted a request for authorization to conduct wet season surveys to the United States Fish and Wildlife Service (USFWS) Carlsbad office on December 6, 2018. The notification indicated sampling would be conducted by GLA biologists Kevin Livergood (TE-172638-2) and/or David Moskovitz (TE-084606-3). On December 6, 2018, the USFWS responded with authorization to proceed with sampling utilizing methods prescribed in the USFWS *Survey Guidelines for the Listed Large Branchiopods* (Survey Guidelines) dated November 13, 2017¹. In accordance with the Survey Guidelines site visits were conducted within 24 hours of initial storm events to determine whether features contained a minimum of three centimeters (cm) of ponding. Once a feature was determined to be sufficiently ponded, follow up surveys were conducted within seven days in order to sample for fairy shrimp.

When suitable conditions are present, sampling for the presence of fairy shrimp is performed using a dip net within representative portions of the depression bottom, edges, and vertical water column when there is adequate ponding. In the field, specimens are collected and immediately transferred to a vial containing a 95% ethanol solution. Each sample is labeled according to the depression from which the sample was collected. For species identification, each specimen is inspected in the lab using a dissecting microscope and the “Key to California Fairy Shrimps”

¹ USFWS. *Survey Guidelines for the Listed Large Branchiopods*, Revised: November 13, 2017.

found in Eriksen and Belk (1999)². Information pertaining to each pool is recorded on vernal pool data sheets [Appendix A].

Per the Survey Guidelines, when suitable conditions are present each feature is sampled once every seven days, beginning within seven days of initial inundation and continuing until the feature is no longer inundated, or until it has experienced 120 days of continuous ponding. In cases where features dry and refill during the same wet season, sampling is reinitiated within seven days of refilling upon meeting the three cm standing water criteria and continues until the feature is no longer inundated.

During site visits, ponded features were inspected for level of inundation, surface area of ponding, and level of disturbance. A Trimble Geo7x sub-meter GPS device was used to map and calculate the surface area of ponding. Photographs were taken of ponded areas during site visits [Exhibit 4].

III. DESCRIPTION OF THE DEPRESSIONAL FEATURE

Following are descriptions of each depressional feature including estimated dimensions as determined at the time of sampling.

FEATURE 1a

The feature is in an undeveloped, but disturbed area of open space that is adjacent to a graded parcel. The depressional feature exhibits a significant amount of disturbance including signs of off-road vehicle traffic, trash disposal, as well as pedestrian and pet traffic. The feature is sparsely vegetated but is surrounded by non-native ruderal species. Predominant species observed during the wet season survey included foxtail chess (*Bromus madritensis* subsp. *rubens*), stinknet (*Oncosiphon piluliferum*), red-stemmed filaree (*Erodium cicutarium*) and common cryptantha (*Cryptantha intermedia*).

The surface area of typical ponding measured approximately 1.5 meters in width by 4.9 meters in length for a total area of 0.002 acre. However, the feature did not sustain ponding for longer than seven days, unless a significant rain event occurred within the seven-day period to refill the depression. In the absence of recurring rainfall totaling nearly two inches, the feature did not sustain ponding for more than seven days.

² Eriksen, C. and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Inc. Eureka, California.

FEATURE 1b

The feature exhibits characteristics that are very similar to Feature 1a but is smaller and tends to support two low points as it dries. Based on conditions observed during the 2019 wet season, the feature does not sustain ponding for more than seven days in the absence of extraordinary amounts of continuous rainfall.

Feature 1b is in an undeveloped area of open space that is adjacent to a graded parcel. The depressional feature exhibits a significant amount of disturbance including signs of off-road vehicle traffic, trash disposal, as well as pedestrian and pet traffic. The feature is sparsely vegetated but is surrounded by non-native ruderal species. Predominant species observed during the wet season survey included foxtail chess (*Bromus madritensis* subsp. *rubens*), stinknet (*Oncosiphon piluliferum*), red-stemmed filaree (*Erodium cicutarium*) and common cryptantha (*Cryptantha intermedia*). Observations of a low density of wooly marbles (*Psilocarphus brevissimus*), a plant associated with vernal pools, have been recorded at this location in prior years. However, during the 2018-2019 wet season, wooly marbles were not observed at this feature.

The surface area of typical ponding measured approximately 1.5 meters in width by 2.0 meters in length for a total area of 0.0007 acre. The feature did not sustain ponding for longer than seven days, unless a significant rain event occurred within the seven-day period to refill the depression. In the absence of recurring rainfall totaling nearly two inches, the feature did not sustain ponding for more than seven days.

FEATURE 2

The feature is located south of Feature 1b and exhibits similar characteristics of disturbance including signs of off-road vehicle traffic, trash disposal, and pedestrian and pet traffic. In addition to refuse disposal, dirt and debris disposal also occurs in or near the feature. Based on surrounding topography, the site is believed to have been created as a soil borrow site, but the origin of the current topography is unknown. The feature is sparsely vegetated with native and non-native species. Predominant species include (*Bromus madritensis* subsp. *rubens*), stinknet (*Oncosiphon piluliferum*), red-stemmed filaree (*Erodium cicutarium*). As the feature began to dry, wooly marbles (*Psilocarphus brevissimus*) formed a prominent ring around the formerly ponded area.

The surface area of typical ponding measured approximately 18.9 meters in width by 25.6 meters in length for a total area of approximately 0.12 acre.

FEATURE 3

Feature 3 is adjacent to Rouse Road in the northwest corner of the Property. The depressional feature is the result of street runoff and exhibits significant disturbance from vehicles and trash disposal. Due to the road ruts and microtopography of the area; which contribute to runoff and ponding, the area supports levels of inundation that are suitable for fairy shrimp.

The depressional area is predominantly unvegetated, but surrounding vegetation is composed of ruderal species including cheeseweed (*Malva parviflora*), black mustard (*Brassica nigra*), and foxtail barley (*Hordeum murinum*).

The surface area of typical ponding measured approximately 2.7 meters in width by 23.5 meters in length for a total area of approximately 0.15 acre.

FEATURE 4

Feature 4 is located in the north-central portion of the Property. The road rut feature is the result of off-road vehicle traffic and fills only as a result of vertical rainfall. The feature occurs in compact, unvegetated soils within a dirt road. Directly south of the feature top soil is disced regularly to control the homogenous ruderal vegetation community which was composed of cheeseweed during the 2019 wet season. Stinknet is also dominant in the area and grows along the edges and within the dirt road.

The surface area of typical ponding measured approximately 2.1 meters in width by 2.7 meters in length for a total area of 0.001 acre.

IV. RESULTS OF WET SEASON SURVEY

During the 2018-2019 wet season, ponding was first observed on site on December 7, 2018 following a multi-day storm event that resulted in 1.3 inches of rain. This was the second significant rain event within six days and resulted in the first signs of sustained ponding at the Property for the season. Sampling commenced on December 7, 2018 and continued at seven-day intervals while ponding persisted. During that time, multiple cohorts of the common versatile fairy shrimp (*Branchinecta lindahli*) were observed in three of the sampled features. In May 2019, multiple late-season storms passed through the area which resulted in renewed short-term ponding at Feature 4. Sampling continued at this feature through June 5, 2019, at which time it no longer exhibited ponding. Fairy shrimp were not detected during the late-season ponding. No listed fairy shrimp were detected during the 2018-2019 wet season survey at any of the sampled features.

Table 1 indicates when site visits were conducted during the 2018-2019 wet season survey. Once ponding was observed on December 7, 2018 site visits were conducted weekly for fairy shrimp sampling and hydrology monitoring. During each ponding assessment levels of inundation, surface area of ponding, and level of disturbance were recorded on wet season data sheets [Appendix A]. Representative photographs were taken of the depressional features during the survey [Exhibit 4 – Site Photographs].

Table 1: Wet Season Survey Dates and Results

Survey	Feature Name				
Date	1a	1b	2	3	4
Dec-7	None	None	None	Dry	Dry
Dec-13	Dry	Dry	None	BRLI	None
Dec-20	Dry	Dry	BRLI	BRLI	Dry
Dec-27	Dry	Dry	BRLI	BRLI	Dry
Jan-3	Dry	Dry	Dry	Dry	Dry
Jan-10	Dry	Dry	None	None	None
Jan-17	None	None	BRLI	None	None
Jan-24	Dry	Dry	BRLI	BRLI	None
Jan-31	Dry	Dry	BRLI	BRLI	BRLI
Feb-6	None	None	BRLI	BRLI	None
Feb-14	None	None	BRLI	BRLI	None
Feb-21	None	None	BRLI	BRLI	BRLI
Feb-28	Dry	Dry	BRLI	BRLI	BRLI
Mar-7	None	None	BRLI	BRLI	BRLI
Mar-14	Dry	Dry	BRLI	None	BRLI
Mar-21	None	None	None	None	BRLI
Mar-27	Dry	Dry	None	None	None
Apr-4	Dry	Dry	None	Dry	BRLI
Apr-11	Dry	Dry	Dry	Dry	Dry
May-24	Dry	Dry	Dry	Dry	None
May-30	Dry	Dry	Dry	Dry	None
Jun-5	Dry	Dry	Dry	Dry	Dry

During 2018-2019 wet season protocol surveys, Features 2, 3 and 4 exhibited suitable ponding (3 cm or greater) and supported common versatile fairy shrimp. Features 2 and 3 both supported

Stacey Love
U.S. Fish and Wildlife Service
July 30, 2019
Page 7 of 7

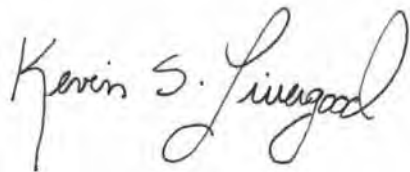
high densities (1,000's) of fairy shrimp at each population's peak. Feature 4 supported a low-density population (<10). Fairy shrimp persisted in Features 2, 3, and 4 for multiple weeks and multiple cohorts were observed while fairy shrimp persisted.

Based on the above-average rainfall during the 2018-2019 wet season and the duration of ponding observed at each of the features, it is determined that no listed large branchiopods occur in the sampled features. These results corroborate the results of dry season surveys conducted in 2017 in which no cysts were detected in Features 1a/1b and cysts of the genus *Branchinecta* were detected in Feature 2. Ponding at Features 3 and 4 had previously not been detected but were included as a result of the extraordinary rainfall of the 2018-2019 season. Dry season sampling of Features 3 and 4 is expected to occur during the 2019 dry season.

I certify that the information in this survey report and the attached exhibits fully and accurately represent my work. If you have any questions regarding this letter report, please contact me at klivergood@wetlandpermitting.com.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

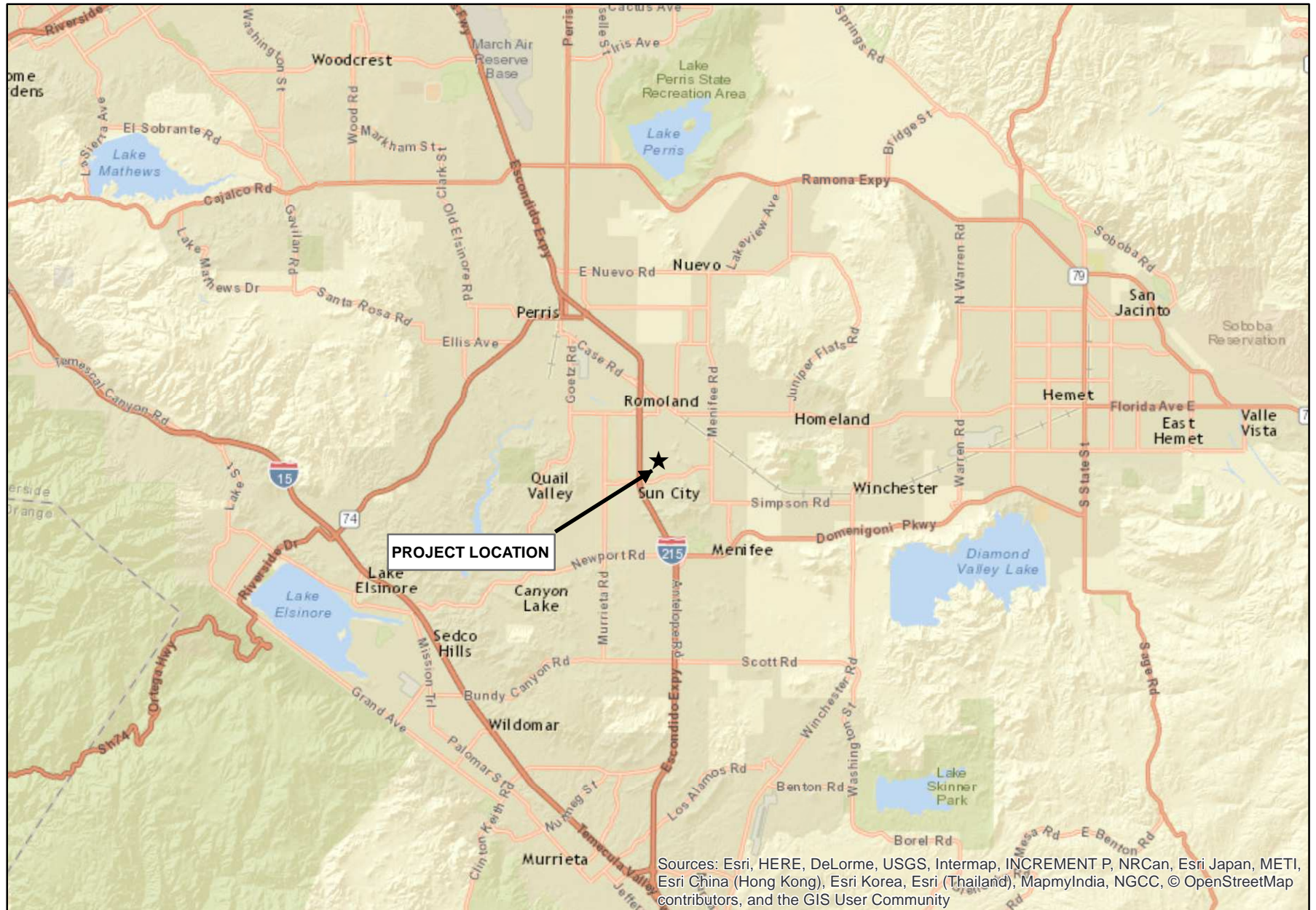
A handwritten signature in black ink that reads "Kevin S. Livergood". The signature is written in a cursive, flowing style.

Kevin Livergood
Biologist/Regulatory Specialist
USFWS Recovery Permit #: TE-172638-2

Source: ESRI World Street Map



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2
4
8
Miles



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

FLEMING RANCH

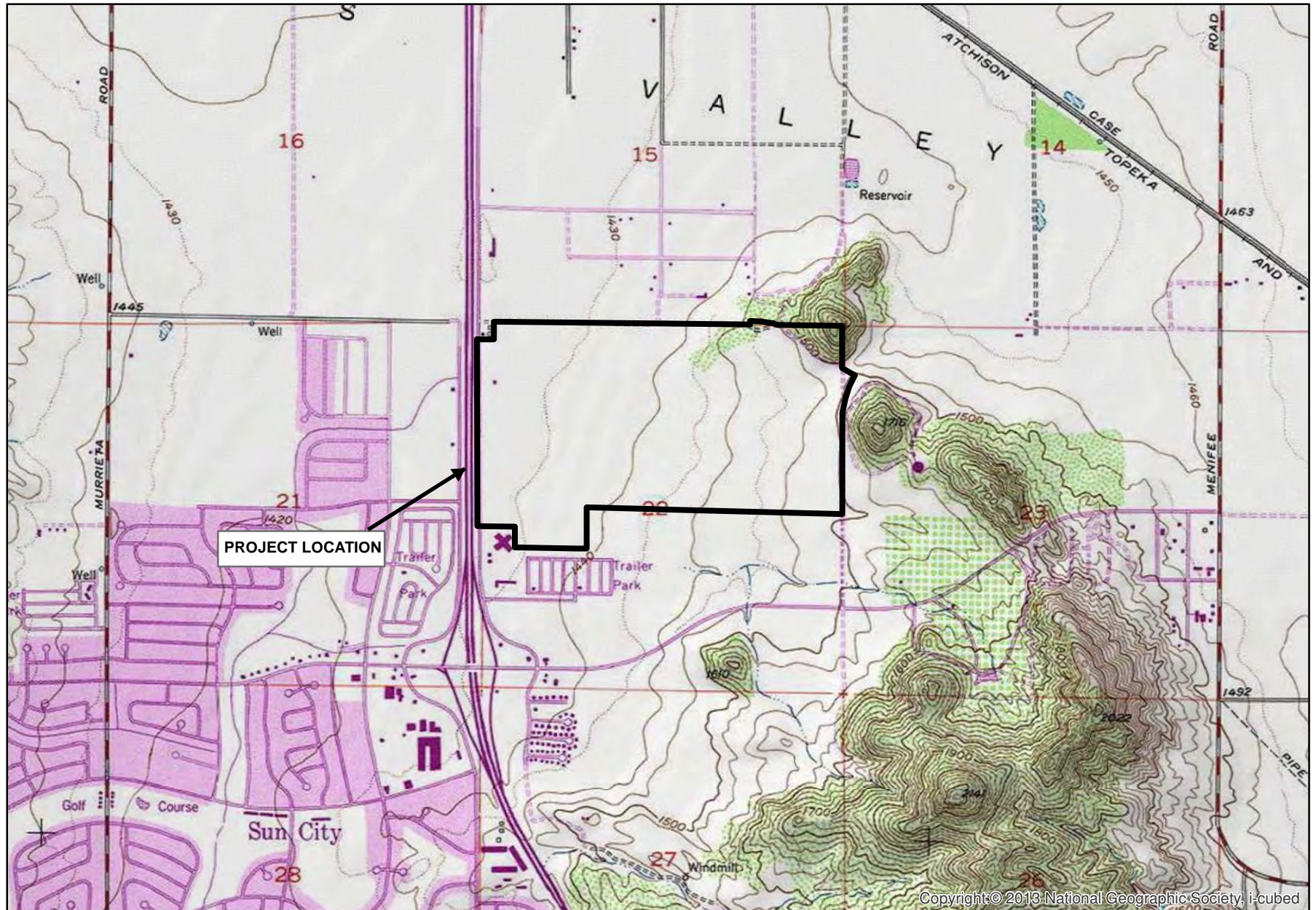
Regional Map

GLENN LUKOS ASSOCIATES



Exhibit 1

Adapted from USGS Romoland, CA quadrangle



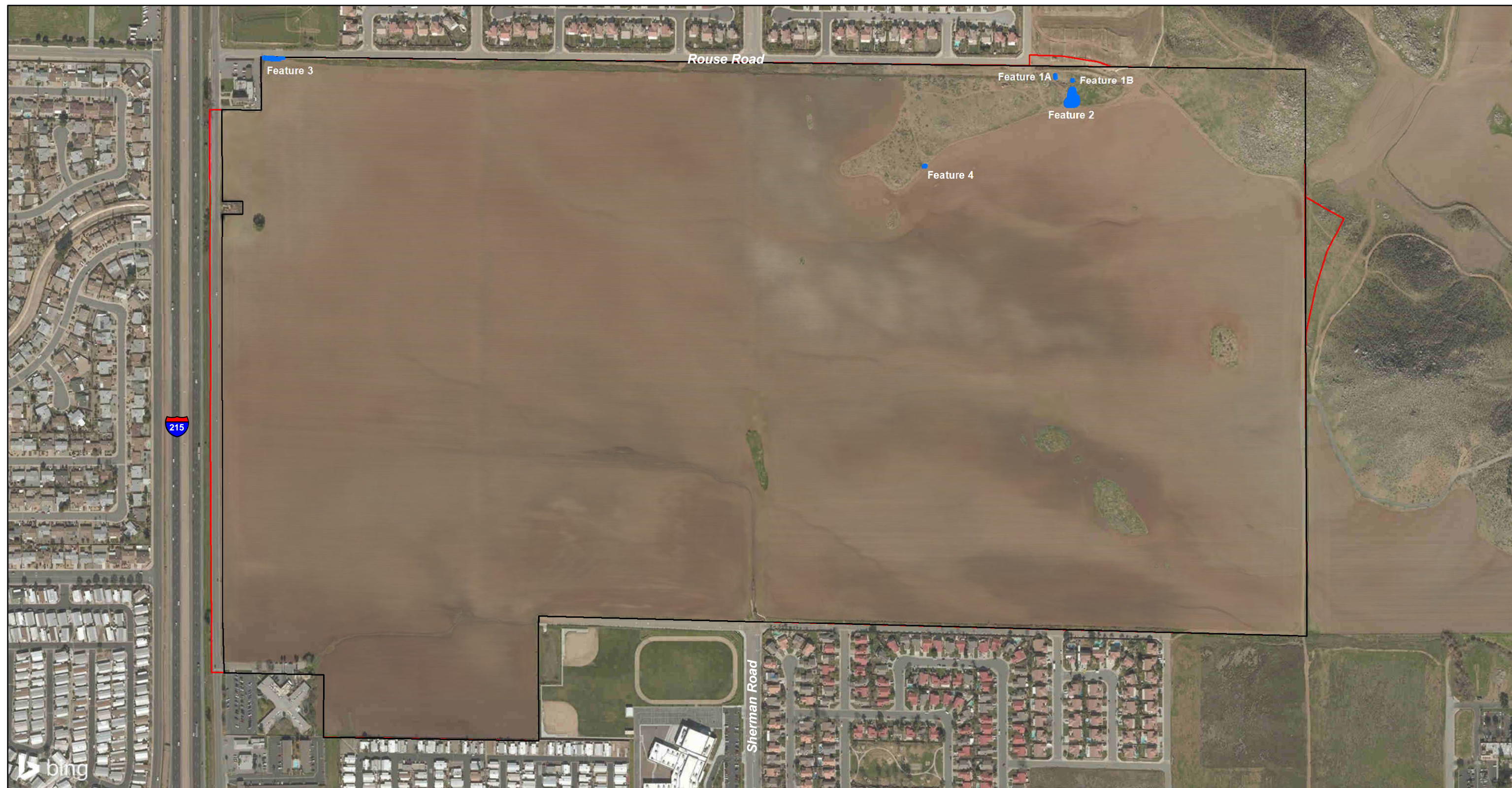
FLEMING RANCH

Vicinity Map

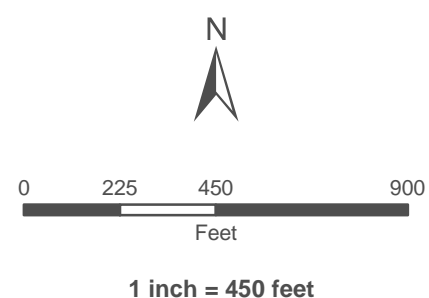
GLENN LUKOS ASSOCIATES

Exhibit 2





- Project Boundary
- Offsite Impact Areas
- Seasonal Pool



FLEMMING RANCH

2018-2019 Wet Season Survey Area Map

GLENN LUKOS ASSOCIATES



Photograph 1: Feature 1a. View to the south. No fairy shrimp detected. (UTM: 3732061.17N, 483728.94E; Date: 12/7/2018; K. Livergood)



Photograph 2: Feature 1a. View to the south. Photo depicts short hydroperiod of the feature. Photo was taken 6 days after Photo 1. No fairy shrimp detected. (Date: 12/13/2018, K. Livergood)



Photograph 3: Feature 1b. View to the southwest. No fairy shrimp detected. (UTM: 3732051.09N, 483753.88E; Date: 2/6/2019, K. Livergood)



Photograph 4: Feature 1b. View to the west. Photo depicts typical ponding. No fairy shrimp detected. (Date: 12/7/2018, K. Livergood)



GLENN LUKOS ASSOCIATES

Exhibit 4

FLEMMING RANCH

Site Photographs



Photograph 5: Feature 2. View to the north. Photo depicts near maximum ponding. Multiple cohorts of versatile fairy shrimp (*Branchinecta lindahli*) detected. (UTM: 3732022.58N, 483761.91E; Date: 2/6/2019, K. Livergood)



Photograph 7: Feature 3. View to the west. Photo depicts near maximum ponding. Multiple cohorts of versatile fairy shrimp (*Branchinecta lindahli*) detected. (UTM: 3732075.64N, 482603.14E; Date: 1/17/2019, K. Livergood)



Photograph 6: Feature 2. View to the north. Photo depicts typical ponding. Multiple cohorts of versatile fairy shrimp (*Branchinecta lindahli*) detected. (Date: 1/24/2019, K. Livergood)



Photograph 8: Feature 4. View to the southwest. Photo depicts typical ponding. Multiple cohorts of versatile fairy shrimp (*Branchinecta lindahli*) detected. (UTM: 3731922.93N, 483539.82E; Date: 1/24/2019, K. Livergood)



GLENN LUKOS ASSOCIATES

Exhibit 4

FLEMMING RANCH

Site Photographs

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods			
Site or Project Name:	County:	Quad:	Section:
	849.20FLEM		

Site or Project Name:	County:	Quad:	Township:	Range:	Section:
849.20 FLEM					

SURVEYOR / Permit Number:

Date: 5/24/19	Time: 0940	Weather Conditions: 61°F, clear, 1-3 mph
---------------	------------	--

[illegible]

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Lindernella occidentalis*, BRIL = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool, UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

1a/1b: Rattlesnake spurge, No windy marbles,
shunknet
2: Woody marbles, shunknet

GLENN LUKOS ASSOCIATES

Regulatory Services



July 30, 2019

Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

SUBJECT: Submittal Requirements for 2019 Dry Season Survey for Listed Branchiopods
Conducted for the Fleming Ranch Property, Located in the City of Menifee,
County of Riverside, California

Dear Ms. Love:

The following letter report documents the results of a dry season survey conducted by Glenn Lukos Associates, Inc. (GLA) for two seasonally ponded features at the above-referenced property in order to determine the presence/absence of branchiopod cysts. GLA biologist Kevin Livergood (TE-172638-2) performed the soil collection from the features and biologist Jason Kurnow (TE-778195) of HELIX Environmental Planning, Inc. (HELIX) processed the soil samples to determine cyst presence/absence. A 15-day notification was submitted to the U.S. Fish and Wildlife Service (USFWS) on June 17, 2019, notifying of the intent to conduct a dry season survey. Soil sampling was conducted on July 2, 2019. A report from HELIX summarizing the results of soil analysis was completed on July 25, 2019 (Appendix A). Cysts of the genus *Branchinecta* were identified in both sampled features, with a high density of cysts detected in Feature 3 and a medium density of cysts detected in Feature 4. No cysts of the genus *Streptocephalus* were detected in either feature. The 2019 dry season survey completes the survey protocol for the Fleming Ranch Property. Dry season surveys were initially conducted at Features 1 and 2 in 2017 followed by wet season surveys of Features 1, 2, 3 and 4. This report addresses dry season survey results for Features 3 and 4 which were identified during the wet 2018-2019 wet season. All survey results corroborate the presence of the versatile fairy shrimp (*Branchinecta lindahli*) in Features 2, 3, and 4.

I. SITE LOCATION

The Fleming Ranch Property (Project Site) is located in the City of Menifee in the County of Riverside, California [Exhibit 1 – Regional Map]. The Project Site is located east of Interstate 215 and Encanto Road, south of Rouse Road, west of Antelope Road, and north of McCall Boulevard. The Project Site can be found on the U.S. Geological Survey 7.5' Romoland, California Quadrangle [dated 1953 and photorevised in 1979] in Section 22, Township 5 South, Range 3 West [Exhibit 2 – Vicinity Map]. The Universal Transverse Mercator (UTM) coordinates approximately corresponding to the site are 483268 mE and 3731652 mN (Zone 11S).

The location of the features was collected with a handheld GPS device and the ArcGIS Collector application at the time of dry season soil collection. UTM coordinates of the sampled features are as follows:

- Feature 3: Zone 11 north; 3732075.64 mN and 482603.14 mE
- Feature 4: Zone 11 north; 3731922.93 mN and 483539.82 mE

II. METHODOLOGY

A. Soil Collection

Soil sample collection and processing followed the USFWS *Survey Guidelines for the Listed Large Branchiopods* (November 13, 2017). Soil sample collection was conducted by GLA biologist Kevin Livergood (Permit TE-172638-2) on July 2, 2019.

In accordance with the survey protocol, the number of soil/substrate samples and the amount of soil/substrate collected was proportional to the size of the feature. For Feature 3 a total of twenty-five (25) samples were collected and for Feature 4 a total of ten (10) samples were collected. To determine the soil sample collection points, two perpendicular transects that crossed the deepest and widest parts of the feature were established in the field and collection points were identified in a grid ensuring the lowest topographic areas were sampled. Soil samples of approximately 100 milliliters (ml) each were removed at each sub-sample location using a hand trowel and transferred to individually labeled bags for processing. An aerial photograph depicting the location of the sampled features is attached as Exhibit 3, site photographs are provided in Exhibit 4, and a completed datasheet is provided as Appendix B of this report.

B. Soil Analysis

Soil processing and examination was conducted by biologist Jason Kurnow (TE-778195) of HELIX. As stated in the attached HELIX report of findings (Appendix A), samples were prepared for analysis by dissolving the collected soil in water and sequentially sieving the material through 710- and 75 micrometer (μm) pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope. Cysts were identified to genus level based on surface characteristics. Multiple species of the genus *Branchinecta* can occur in Riverside County but cannot be identified past genus level based on cyst characteristics alone. All cysts detected during soil analysis are submitted to the collection of the Natural History Museum of Los Angeles by the firm or biologist that conducted the analysis.

III. FEATURE DESCRIPTION

Following are descriptions of each depressional feature including estimated dimensions.

FEATURE 3

Feature 3 is adjacent to Rouse Road in the northwest corner of the Property. The depressional feature is the result of street runoff and exhibits significant disturbance from vehicles and trash disposal. Due to the road ruts and microtopography of the area; which contribute to runoff and ponding, the area supports levels of inundation that are suitable for fairy shrimp.

The depressional area is predominantly unvegetated, but surrounding vegetation is composed of ruderal species including cheeseweed (*Malva parviflora*), black mustard (*Brassica nigra*), and foxtail barley (*Hordeum murinum*).

The surface area of typical ponding measured approximately 2.7 meters in width by 23.5 meters in length for a total area of approximately 63.5 square meters (0.15 acre).

FEATURE 4

Feature 4 is located in the north-central portion of the Property. The road rut feature is the result of off-road vehicle traffic and fills only as a result of vertical rainfall. The feature occurs in compact, unvegetated soils within a dirt road. Directly south of the feature top soil is disced regularly to control the homogenous ruderal vegetation community which was composed of

cheeseweed during the 2019 wet season. Stinknet is also predominant on the site, particularly in and near the dirt road.

The surface area of typical ponding measured approximately 2.1 meters in width by 2.7 meters in length for a total area of 5.7 square meters (0.001 acre).

IV. RESULTS OF DRY SEASON SURVEY

The survey area occurs within the known range of the common versatile fairy shrimp (*Branchinecta lindahli*) and the following listed species: San Diego fairy shrimp (*Branchinecta sandiegonensis*), Vernal Pool fairy shrimp (*Branchinecta lynchi*), and Riverside fairy shrimp (*Streptocephalus woottoni*). Due to morphological similarities among *Branchinecta* cysts, the results of the 2018-2019 wet season survey results are used to confirm the species of *Branchinecta* detected during dry season sampling.

Cysts of the genus *Branchinecta* were identified in both sampled features. A high density of cysts was detected in Feature 3 and a medium density of cysts was detected in Feature 4. No cysts of the genus *Streptocephalus* were detected in either feature. During the 2018-2019 wet season survey, common versatile fairy shrimp were detected in Features 3 and 4.

The 2019 dry season survey completes the survey protocol for the Fleming Ranch Property. Dry season surveys were initially conducted at Features 1 and 2 in 2017, followed by wet season surveys of Features 1, 2, 3 and 4 in 2018-2019. This report addresses dry season survey results for Features 3 and 4, which were identified during the 2018-2019 wet season. All survey results corroborate the presence of the versatile fairy shrimp (*Branchinecta lindahli*) in Features 2, 3, and 4.

Stacey Love
U.S. Fish and Wildlife Service
July 30, 2019
Page 5

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. If you have any questions regarding this letter report, please contact me at klivergood@wetlandpermitting.com.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

A handwritten signature in black ink that reads "Kevin S. Livergood". The signature is written in a cursive style with a large, looping "K" and "L".

Kevin Livergood
Biologist/Regulatory Specialist

p:0849-20a.2019_DrySeason.rpt(FINAL).docx

Source: ESRI World Street Map



0
2
4
8
Miles



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

FLEMING RANCH

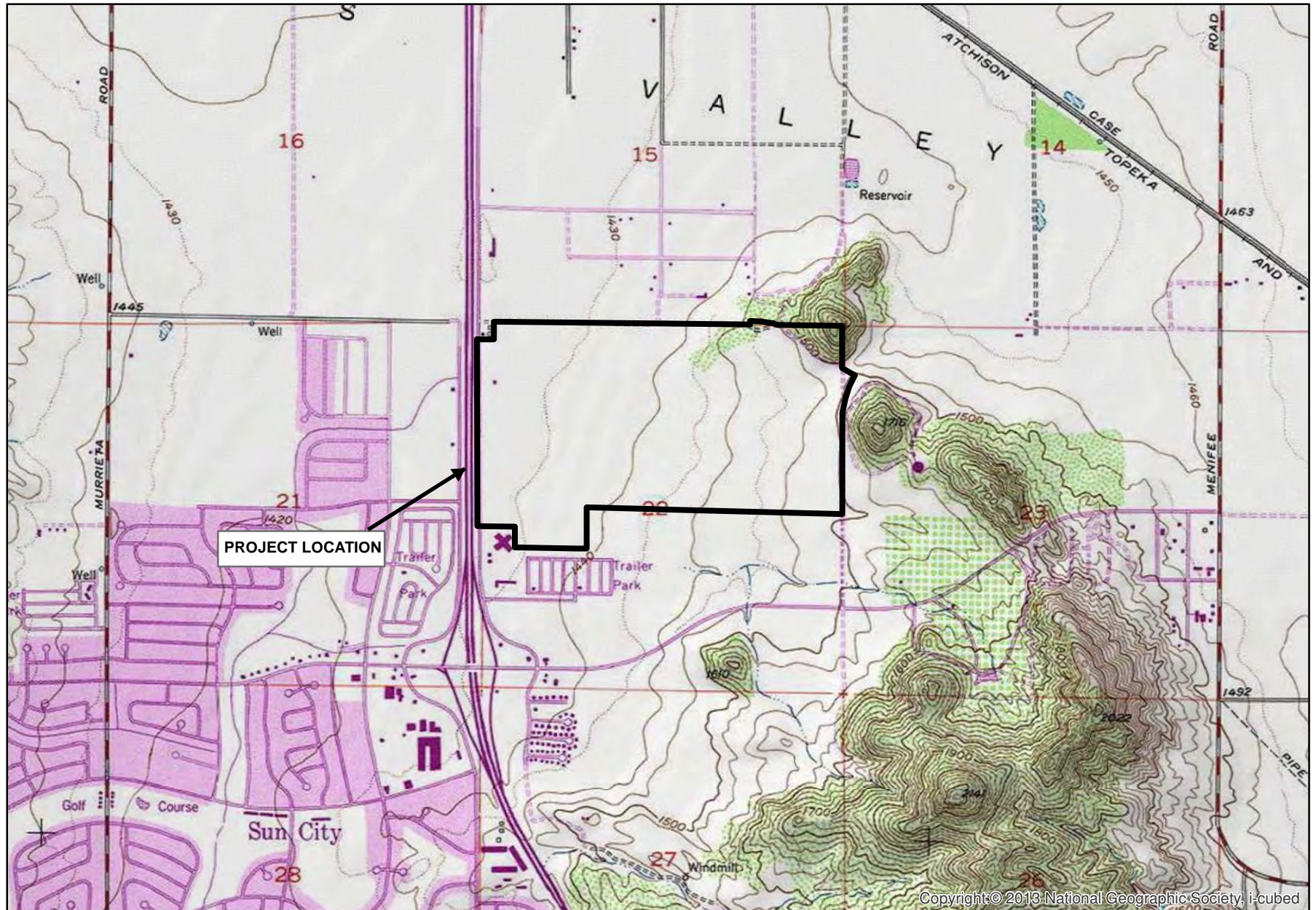
Regional Map

GLENN LUKOS ASSOCIATES



Exhibit 1

Adapted from USGS Romoland, CA quadrangle



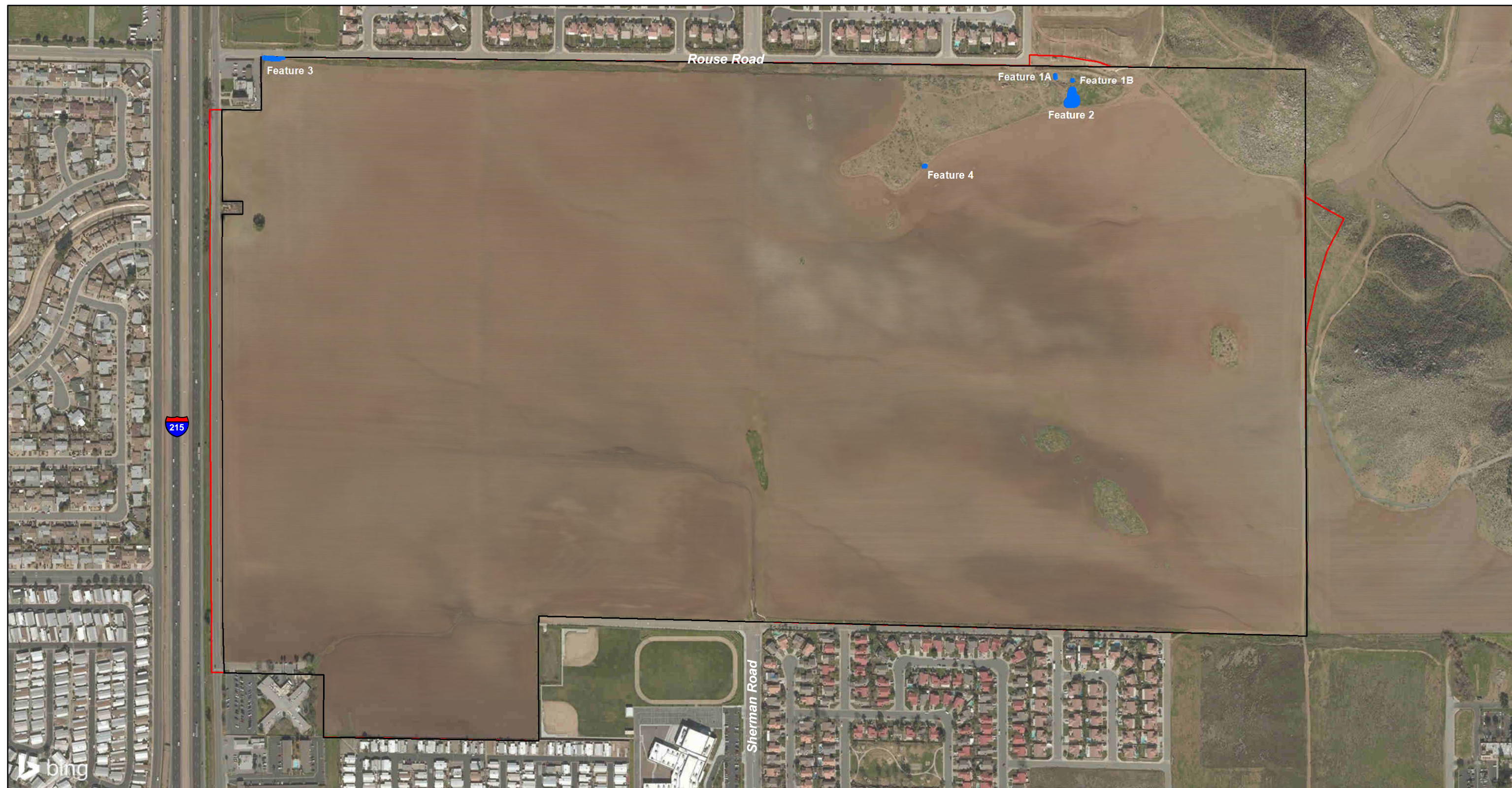
FLEMING RANCH




Vicinity Map

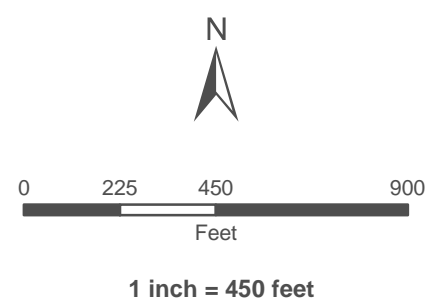
GLENN LUKOS ASSOCIATES

Exhibit 2





-  Project Boundary
-  Offsite Impact Areas
-  Seasonal Pool



FLEMMING RANCH

2018-2019 Survey Area Map

GLENN LUKOS ASSOCIATES

Exhibit 3





Photograph 1: Feature 3. View to the west. Branchinecta cysts detected. (UTM: 3732075.64 mN, 482603.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 2: Feature 3. View to the southwest. Branchinecta cysts detected. (UTM: 3732075.64 mN, 482603.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 3: Feature 3. View to the northwest. Branchinecta cysts detected. (UTM: 3732075.64 mN, 482603.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 4: Feature 3. View to the west. Branchinecta cysts detected. (UTM: 3732075.64 mN, 482603.14 mE; Date: 7/2/2019; K. Livergood)



GLENN LUKOS ASSOCIATES

Exhibit 4

FLEMMING RANCH

Site Photographs



Photograph 5: Feature 4. View to the southwest. Branchinecta cysts detected. (UTM: 3731922.93 mN, 483539.82.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 6: Feature 4. View to the south. Branchinecta cysts detected. (UTM: 3731922.93 mN, 483539.82.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 7: Feature 4. View to the northeast. Branchinecta cysts detected. (UTM: 3731922.93 mN, 483539.82.14 mE; Date: 7/2/2019; K. Livergood)



Photograph 8: Feature 4. View to the southwest. Branchinecta cysts detected. (UTM: 3731922.93 mN, 483539.82.14 mE; Date: 7/2/2019; K. Livergood)



GLENN LUKOS ASSOCIATES

Exhibit 4

FLEMMING RANCH

Site Photographs

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com



July 25, 2019

Mr. Kevin Livergood
Glenn Lukos Associates
29 Orchard
Lake Forest, CA 92630

Subject: Dry Season Fairy Shrimp Soil Processing and Examination Report for the Fleming Ranch Project

Dear Mr. Livergood:

This report presents the findings of the 2019 dry season fairy shrimp sampling for the Fleming Ranch Project. Information provided in this report will be incorporated into the dry season fairy shrimp report which will be written and provided to the U.S. Fish and Wildlife Service (USFWS) by Glenn Lukos Associates. Soil samples from two features were collected by Glenn Lukos Associates biologist Kevin Livergood and sent to HELIX Environmental Planning, Inc. (HELIX) for processing and examination.

METHODS

HELIX permitted biologist Jason Kurnow (Permit TE778195) oversaw the dry season soil processing and examination according to USFWS 2015 protocol.

Mr. Kurnow received soil samples sent by Glenn Lukos Associates for analysis in the HELIX lab on July 3, 2019. Samples were prepared by dissolving the soil samples in water and sequentially sieving the material through 710- and 75 μ m pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope by Mr. Kurnow. Cysts were identified to genus level based on surface characteristics. Multiple species of the *Branchinecta* genus can occur in Riverside County, but cannot be identified past genus level based on cyst characteristics.

RESULTS

Two features were sampled for the presence of fairy shrimp cysts. *Branchinecta* cysts were present in both features (Appendix A; Table 1). *Streptocephalus* cysts were not observed in any of the sampled features.

Table 1 DRY SEASON/HATCHING RESULTS				
Feature	<i>Branchinecta</i> sp. Present	Abundance*	<i>Streptocephalus</i> sp. Present	Abundance*
3	Yes	High	No	---
4	Yes	Medium	No	---

*Based on abundance categories found within the 2015 USFWS Survey Guidelines for the Listed Large Branchiopods

I certify that the information in this survey report and attached exhibit fully and accurately represent my work.

Sincerely,



Jason Kurnow
Senior Scientist

Enclosures:

Attachment A Dry Season Fairy Shrimp Sampling Results

REFERENCES

U.S. Fish and Wildlife Service (USFWS). 2015. Survey Guidelines for the Listed Large Branchiopods. May 31.

Attachment A
 DRY SEASON FAIRY SHRIMP SAMPLING RESULTS

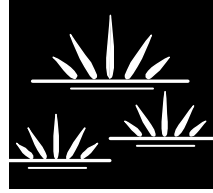
DRY SEASON FAIRY SHRIMP SAMPLING RESULTS FLEMING RANCH PROJECT				
SAMPLE	<i>BRANCHINECTA</i> cysts		<i>STREPTOCEPHALUS</i> cysts	
	Feature 3	Feature 4	Feature 3	Feature 4
1	24	22	---	---
2	9	14	---	---
3	5	31	---	---
4	5	4	---	---
5	7	10	---	---
6	10	9	---	---
7	11	14	---	---
8	106	27	---	---
9	30	18	---	---
10	22	22	---	---
11	21		---	
12	18		---	
13	15		---	
14	18		---	
15	43		---	
16	7		---	
17	205		---	
18	35		---	
19	26		---	
20	50		---	
21	52		---	
22	80		---	
23	64		---	
24	7		---	
25	410		---	

Appendix 2. U.S. Fish and Wildlife Service – Data Sheet for Dry Season Sample Analysis for Listed Large Branchiopods		
Project Information		Biologist Information
Project Name: _____	Quad: _____	Name of Person(2) Who Conducted the Following Tasks and Permit Number(s): _____
USFWS Project Number: _____	Township: _T5S_____	Soil Collection: Kevin Livergood (TE-172638-2) _____
County: _____	Range: _____	Soil Processing: _____
Lat: _____	Section: _____	Soil Analysis/Cysts ID: _____
Long: _____		Soil Collection Date: <u>July 2, 2019</u> _____

[illegible]

GLENN LUKOS ASSOCIATES

Regulatory Services



October 13, 2017

[Revised April 26, 2018 and August 7, 2019]

Jerrica Harding
T&B Planning
17542 17th Street
Suite 100
Tustin, California 92780

SUBJECT: Jurisdictional Delineation of the Legado Project, City of Menifee, Riverside County, California.

Dear Ms. Harding:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) jurisdiction for the above-referenced property.¹

The Legado Project (the Project) located in the City of Menifee, Riverside County [Exhibit 1 – Regional Map], comprises approximately 331 acres and contains one blue-line drainage (as depicted on the U.S. Geological Survey (USGS) topographic map Romoland, California [dated 1953 and photorevised in 1979]) [Exhibit 2 – Vicinity Map]. On July 26, 2017 and April 16, 2018, regulatory specialists with Glenn Lukos Associates, Inc. (GLA) examined the project site to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act, and (2) RWQCB jurisdiction pursuant to Section 401 of the Clean Water Act and the State Porter-Cologne Act, and 3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. Enclosed is a 200-scale map [Exhibit 3] that depicts the areas of Corps and CDFW jurisdiction. Photographs to document the topography, vegetative communities, and general widths of each of the waters are provided as Exhibit 4.

Corps/RWQCB jurisdiction at the site totals approximately 0.68 acre, none of which supports jurisdictional wetlands.

CDFW jurisdiction at the site totals approximately 0.68 acre, none of which supports riparian habitat.

¹ This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries. If a final jurisdictional determination is required, GLA can assist in getting written confirmation of jurisdictional boundaries from the agencies.

I. METHODOLOGY

Prior to beginning the field delineation a color aerial photograph, a topographic base map of the property, and the previously cited USGS topographic map were examined to determine the locations of potential areas of Corps, RWQCB, and CDFW jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual² (Wetland Manual) and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).³ While in the field the limits of CDFW jurisdiction were recorded onto a color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets.

Arbuckle Loam, 2 to 8 Percent Slopes (AkC) and Arbuckle Loam, 8 to 15 Percent Slopes (AkD)

Soils of the Arbuckle series are well drained and have slopes of 2 to 25 percent. They occur on alluvial fans and developed in alluvium from metasedimentary rocks. Vegetation typically associated with the Arbuckle soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 4/2 when moist) gravelly loam and pale-brown (10YR 6/3 when dry, 10YR 4/3 when moist) gravelly very fine sandy loam about 12 inches thick. The subsoil is brown (10YR 5/3 when dry, 10YR 4/3 when moist) gravelly loam and gravelly clay loam, and it extends to a depth of about 45 inches. The substratum is yellowish-brown (10YR 5/4 when dry, 10YR 4/3 when moist) very gravelly sandy loam. The Arbuckle soils are used for dryland grain and for irrigated citrus, alfalfa, melons, and grain.

Buchenau Silt Loam, 2 to 8 Percent Slopes, Eroded (BkC2)

The Buchenau series consists of moderately well drained soils on alluvial fans. Slopes range from 0 to 8 percent. These soils developed in mixed alluvium and are underlain by a platy, calcareous hardpan. Vegetation typically associated with the Buchenau soils includes annual grasses, saltgrass, and forbs. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) loam about 10 inches thick. The subsoil is yellowish-brown (10YR 5/4

² Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

³ U.S. Army Corps of Engineers. 2008. 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. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

when dry, 10YR 4/4 when moist), brown (10YR 5/3 when dry, 10YR 4/3 when moist), and pale-brown (10YR 6/3 when dry, 10YR 4/3 when moist) clay loam and loam about 29 inches thick. The substratum is light brownish-gray (10YR 6/2 when dry, 10YR 4/2 when moist) loam, which overlies a cemented, platy hardpan at a depth of about 52 inches. The Buchenau soils are used for irrigated truck crops, alfalfa, permanent pasture, and grain. They are also used for dryland pasture and range and for nonfarm purposes.

Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded (CaC2), Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded (CaD2), and Cajalco Rocky Fine Sandy Loam, 5 to 15 Percent Slopes, Eroded (CbD2)

The Cajalco series consists of well-drained soils developed in decomposing gabbro and other basic igneous rocks. Rock outcrops occur in some areas. These soils are on uplands and have slopes of 2 to 50 percent. Vegetation typically associated with the Cajalco soils include annual grasses, forbs, and chamise. In a typical profile, the surface layer is yellowish-brown (10YR 5/4 when dry, 10YR 3/4 when moist) fine sandy loam about 10 inches thick. The subsoil is brown (7.5YR 5/4 when dry, 5YR 3/4 when moist) fine sandy loam and loam. It grades to light yellowish-brown (10YR 6/4 when dry, 10YR 4/4 when moist) loam at a depth of about 18 inches. At a depth of about 22 inches is weathered gabbro. The Cajalco soils are used for dryland pasture, grain, and range, for irrigated citrus, and for nonfarm purposes.

Cieneba Sandy Loam, 5 to 8 Percent Slopes (ChC) and Cieneba Rocky Sandy Loam, 15 to 20 Percent Slopes, Eroded (CkF2)

The Cieneba series consists of somewhat excessively drained soils on uplands. These soils formed in coarse-grained igneous rock. Slopes range from 5 to 50 percent. These soils formed in coarse-grained igneous rock. Vegetation typically associated with the Cieneba soils includes annual grasses, chamise, and flat-top buckwheat. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) sandy loam about 14 inches thick. Underlying this is light yellowish-brown (10YR 6/4 when dry, 10YR 5/4 when moist) gravelly coarse sand. At a depth of about 22 inches is slightly acid, weathered granodiorite. The Cieneba soils are used for dryland grain, pasture, and range, for irrigated citrus, and for homesites.

Exeter Sandy Loam, Channeled, 2 to 8 Percent Slopes, Eroded (EnC2)

Soils of the Exeter series have slopes of 0 to 8 percent and they lie in basins and on alluvial fans. These well-drained soils developed in alluvium from moderately coarse granitic materials. Vegetation typically associated with the Exeter soils includes annual grasses and forbs. In a typical, the surface layer is brown (10YR 5/3 when dry, 10Yr 3/3 when moist) sandy loam about

16 inches thick. The subsoil is brown (10YR 4/3 when dry, 10YR 3/3 when moist) heavy loam. At a depth of about 37 inches is an indurated silica hardpan. The cementation of the hardpan decreases with depth. The Exeter soils are used for dryland grain and pasture, for irrigated alfalfa, potatoes, and truck crops, and for homesites.

Fallbrook Fine Sandy Loam, 2 to 8 Percent Slopes, Eroded (FfC2)

The Fallbrook series consists of well-drained soils that lie on uplands and have slopes of 2 to 50 percent. These soils developed on granodiorite and tonalite. Vegetation typically associated with the Fallbrook soils includes annual grasses, oaks, flat-top buckwheat, and chaparral. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) sandy loam about 14 inches thick. The subsoil is reddish-brown (5YR 4/4 when dry, 5YR 3/4 when moist) sandy clay loam. At a depth of about 24 inches is weathered tonalite. The Fallbrook soils are used for dryland pasture and grain, for irrigated citrus, alfalfa, and grain, and for homesites.

Garretson Gravelly Very Fine Sandy Loam, 2 to 8 Percent Slopes (GdC)

The Garretson series consists of well-drained soils on alluvial fans. Slopes range from 0 to 15 percent. These soils developed in alluvium made up chiefly of metasedimentary materials. Vegetation typically associated with the Garretson soils includes annual grasses, forbs, chamise, and sumac. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) and yellowish-brown (10YR 5/4 when dry, 10YR 3/4 when moist), gravelly very fine sandy loam and gravelly loam about 29 inches thick. The underlying material is yellowish-brown (10YR 5/4 when dry, 10YR 3/4 when moist), brown (10YR 5/3 when dry, 10YR 4/3 when moist), and grayish-brown (10YR 5/2 when dry, 10YR 4/2 when moist) gravelly loam and loam, and it extends to a depth of more than 60 inches. The Garretson soils are used for dryland grain and pasture, for irrigated citrus, truck crops, alfalfa, and grain, and for homesites.

Honcut Sandy Loam, 2 to 8 Percent Slopes (HnC) and Honcut Loam, 2 to 8 Percent Slopes Eroded (HuC2)

In the Honcut series are well-drained soils on alluvial fans. These soils developed in alluvium from dominantly basic igneous rocks. Slopes range from 2 to 25 percent. Vegetation typically associated with the Honcut soils includes annual grasses, forbs, and chamise. Also, there are a few scattered oak trees. In a typical profile, the surface layer is dark-brown (10YR 3/3 when dry, 10YR 2/2 when moist) sandy loam about 22 inches thick. The underlying material is brown (7.5YR 4/4 when dry, 7.5YR 3/2 when moist) fine sandy loam or sandy loam and extends to a depth greater than 60 inches. The Honcut soils are used for dryland pasture and grain and for irrigated citrus and truck crops.

Las Posas Loam, 2 to 8 Percent Slopes (LaC) and Las Posas Loam, 5 to 8 Percent Slopes, Eroded (LaC2)

Soils of the Las Posas series are on uplands. Slopes range from 2 to 50 percent. These well-drained soils developed on gabbro and other intrusive basic igneous rocks. Vegetation typically associated with the Las Posas soils includes annual grasses, forbs, chamise, flat-top buckwheat, and black sage. Typically, the surface layer is reddish-brown (5YR 4/4 when dry, 5YR 3/4 when moist) loam and clay loam about 12 inches thick. The subsoil is dark-red (2.5YR 3/6 when dry, 2.5YR 3/6 when moist) clay and red (2.5YR 4/6 when dry, 2.5YR 3/6 when moist) heavy clay loam. At a depth of about 32 inches is yellowish-red (5YR 5/6 when dry, 5YR 4/6 when moist) weathered gabbro. The Las Posas soils are used for dryland pasture and grain and for irrigated citrus and truck crops.

Lodo Rocky Loam, 25 to 50 Percent Slopes, Eroded (LpF2)

The Lodo series consists of somewhat excessively drained upland soils on slopes of 8 to 50 percent. These soils developed on metamorphosed fine-grained sandstone. Vegetation typically associated with the Lodo soils includes annual grasses, forbs, and chaparral. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) gravelly loam about 8 inches thick. Underlying this is brown (7.5YR 5/4 when dry, 10YR 3/4 when moist) shattered and weathered fine-grained metamorphosed sandstone. Depth to the sandstone varies from 8 to 15 inches. The Lodo soils are used for range and dryland pasture.

Madera Fine Sandy Loam, 0 to 2 Percent Slopes (MaA) and Madera Fine Sandy Loam, 2 to 5 Percent Slopes (MaB2)

The Madera series are moderately well drained soils on dissected terraces and old alluvial fans. Slopes are 0 to 15 percent. These soils developed in alluvium consisting mainly of granitic materials. Vegetation typically associated with the Madera soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is pale-brown (10YR 6/3 when dry, 10YR 3/3 when moist) and brown (10YR 5/3 when dry, 10YR 3/3 when moist) fine sandy loam about 19 inches thick. The subsoil is yellowish-brown (10YR 5/4 when dry, 10YR 3/4 when moist) clay. At a depth of about 26 inches is a yellowish-brown (10YR 5/4 when dry, 10YR 4/4 when moist) indurated hardpan. The Madera soils are used for dryland pasture and grain and for irrigated alfalfa, grain, and sugar beets. They are also used for homesites and other nonfarm purposes.

Placentia Fine Sandy Loam, 0 to 5 Percent Slopes (PIB)

The Placentia series consists of moderately well drained soils on alluvial fans and terraces. These soils developed in alluvium consisting mainly of granitic materials. Slopes range from 0 to 25 percent. These soils developed in alluvium consisting mainly of granitic materials. Vegetation typically associated with the Placentia soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) and pale-brown (10YR 6/3 when dry, 10YR 4/3 when moist) fine sandy loam and loam about 18 inches thick. The upper subsoil is brown (7.5YR 4/4 when dry, 7.5YR 3/2 when moist) heavy clay loam about 21 inches thick. The lower subsoil is brown (10YR 5/3 when dry, 5YR 3/2 when moist) sandy clay loam about 18 inches thick. The substratum is stratified sandy, gravelly, or cobbly alluvium of granitic origin. The Placentia soils are used for dryland pasture and grain, for irrigated permanent pasture, and for nonfarm purposes.

Porterville Clay, 0 to 8 Percent Slopes (PoC), Porterville Cobbly Clay, 2 to 15 Percent Slopes (PrD), and Porterville Clay, Moderately Deep, 2 to 8 Percent Slopes (PsC)

In the Porterville series are well-drained soils on alluvial fans. Slopes range from 0 to 15 percent. These soils developed in alluvium consisting mainly of very fine basic igneous materials. Vegetation typically associated with the Porterville soils includes annual grasses, forbs, salvia, and buckwheat. In a typical profile, the surface layer is brown (7.5YR 4/2 when dry, 7.5YR 3/2 when moist) cobbly clay and clay about 15 inches thick. The next layer is reddish-brown (5YR 5/4 when dry, 5YR 3/4 when moist) clay about 10 inches thick. Underlying this, to a depth of several feet, is brown (7.5YR 5/4 when dry, 5YR 4/6 when moist) and yellowish-red (5YR 5/6 when dry, 5YR 4/6 when moist) clay. The Porterville soils are used for dryland grain, pasture, and range and for irrigated citrus, alfalfa, and truck crops. Small areas are used for homesites and other nonfarm purposes.

Ramona Sandy Loam, 2 to 5 Percent Slopes, Eroded (RaB2)

The Ramona series consists of well-drained soils on alluvial fans and terraces. Slopes range from 0 to 25 percent. These soils developed in alluvium consisting mainly of granitic materials. Vegetation typically associated with the Ramona soils includes annual grasses, forbs, chamise, salvia, and flat-top buckwheat. In a typical profile, the surface layer is brown (10YR 5/3 when dry, 10YR 3/3 when moist) sandy loam and fine sandy loam about 23 inches thick. The subsoil extends to a depth of about 68 inches. This layer is brown (7.5YR 5/4 when dry, 5YR 3/4 when moist) loam and reddish-brown (5YR 4/4 when dry, 5YR 3/4 when moist) and yellowish-red (5YR 5/6 when dry, 5YR 4/6 when moist) sandy clay loam. The substratum is strong-brown (7.5YR 5/6 when dry, 7.5YR 4/4 when moist) fine sandy loam. The Ramona soils are used for

dryland grain and pasture and for irrigated peaches, apricots, citrus, alfalfa, truck crops, and grain. They are also used as sites for homes and schools and for other nonfarm purposes.

Vista Coarse Sandy Loam, 2 to 8 Percent Slopes (VsC) and Vista Rocky Coarse Sandy Loam, 2 to 35 Percent Slopes, Eroded (VtF2)

In the Vista series are well-drained soils of the uplands. Slopes range from 2 to 35 percent. These soils developed on weathered granite and granodiorite. Vegetation typically associated with the Vista soils includes annual grasses, forbs, and chaparral. In a few areas the plant cover consists of grasses and oaks. Typically, the surface layer is brown (10YR 5/3 when dry, 10YR 2/2 when moist) and grayish-brown (10YR 5/2 when dry, 10YR 3/2 when moist) coarse sandy loam about 15 inches thick. The subsoil is brown (10YR 5/3 when dry, 10YR 4/2 when moist) gravelly coarse sandy loam about 9 inches thick. Below this is weathered granodiorite containing yellow, white, and black feldspar. The Vista soils are used for dryland pasture and grain and, if irrigated, for citrus, truck crops, and grain. They are used for homesites.

Wyman Loam, 2 to 8 Percent Slopes, Eroded (WyC2)

Soils of the Wyman series are well drained and lie on alluvial fans. Slopes range from 2 to 15 percent. These soils developed in alluvium from predominantly basic igneous materials. Vegetation typically associated with the Wyman soils includes annual grasses, forbs, chamise, and black sage. Typically, the surface layer is brown (7.5YR 5/4 when dry, 7.5YR 3/2 when moist) loam about 10 inches thick. The subsoil is reddish-brown (5YR 4/4 when dry, 5YR 3/3 when moist) loam and clay loam about 40 inches thick. The substratum is yellowish-red (5YR 5/6 when dry, 5YR 3/4 when moist) coarse sandy loam. The Wyman soils are used for dryland pasture and grain and, if irrigated, for citrus, alfalfa, and truck crops.

Yokohl Loam, 2 to 8 Percent Slopes (YbC)

The Yokohl series consists of well-drained soils on old alluvial fans and terraces. Slopes range from 2 to 25 percent. These soils developed in alluvium from predominantly basic igneous materials and are underlain by a hardpan. Vegetation typically associated with the Yokohl soils includes annual grasses, forbs, chamise, and salvia. Typically, the surface layer is reddish-brown (5YR 4/4 when dry, 5YR 3/4 when moist) loam about 10 inches thick. The subsoil is reddish-brown (2.5YR 4/4 when dry, 2.5YR 3/4 when moist) heavy clay about 16 inches thick. At a depth of about 26 inches is a hardpan of reddish-yellow (5YR 6/6 when dry, 5YR 6/4 when moist) coarse sand. The Yokohl soils are used for dryland grain and pasture and, if irrigated, for citrus.

None of these soil units are identified as hydric in the SCS's publication, Hydric Soils of the United States⁴. However the SCS's publication, Hydric Soils Lists for Western Riverside County lists Madera Fine Sandy Loam, 0 to 2 Percent Slopes (MaA), Madera Fine Sandy Loam, 0 to 5 Percent Slopes, Eroded (MaB2), Placentia Fine Sandy Loam, 0 to 5 Percent Slopes (PIB), and Yokohl Loam, 2 to 8 Percent Slopes (YbC) as a hydric soil if it supports the following:

- inclusion of an unnamed ponded depression;
- soils that are frequently ponded for long duration or very long duration during the growing season; and
- soils that are seasonally flooded or ponded.

It is important to note that under the Arid West Region Supplement, the presence of mapped hydric soils is no longer dispositive for the presence of hydric soils. Rather, the presence of hydric soils must now be confirmed in the field.

II. JURISDICTION

A. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a)⁵ as:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
- (2) All interstate waters including interstate wetlands;*

⁴ United States Department of Agriculture, Soil Conservation Service. 1991. Hydric Soils of the United States, 3rd Edition, Miscellaneous Publication Number 1491. (In cooperation with the National Technical Committee for Hydric Soils.)

⁵ On October 9, 2015, the U.S. 6th District Circuit Court of Appeals ordered a nationwide stay on the Corps and EPA's definition of waters of the United States under the Clean Water Rule ("Clean Water Rule: Definition of 'Waters of the United States'; Final Rule," 80 Federal Register 124 (29 June, 2015), pp. 37054-37127). As a result, the Corps' regulations that were in effect prior to the August 28, 2015 Clean Water Rule is again in effect until such a time as the Court order is satisfied, if this occurs. In addition, President Trump signed an Executive Order on February 28, 2017 that instructs the EPA and Corps to formally reconsider the Rule, which could lead to a re-write of the law or a complete repeal.

- (3) *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
- (i) *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - (ii) *From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
 - (iii) *Which are used or could be used for industrial purpose by industries in interstate commerce...*
- (4) *All impoundments of waters otherwise defined as waters of the United States under the definition;*
- (5) *Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
- (6) *The territorial seas;*
- (7) *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
- (8) *Waters of the United States do not include prior converted cropland.⁶ Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.*

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

⁶ The term “prior converted cropland” is defined in the Corps’ Regulatory Guidance Letter 90-7 (dated September 26, 1990) as “wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season....” [Emphasis added.]

1. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, the U.S. Environmental Protection Agency (EPA) asserted that Corps jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of “waters of the United States” in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* (SWANCC). In this case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the Clean Water Act.

The written opinion notes that the court’s previous support of the Corps’ expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc.*) was for a wetland that abutted a navigable water and that the court did not express any opinion on the question of the authority of the Corps to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.

Therefore, we believe that the court’s opinion goes beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, the Corps and EPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

2. Rapanos v. United States and Carabell v. United States

On June 5, 2007, the EPA and Corps issued joint guidance that addresses the scope of jurisdiction pursuant to the Clean Water Act in light of the Supreme Court’s decision in the

consolidated cases *Rapanos v. United States* and *Carabell v. United States* (“Rapanos”). The chart below was provided in the joint EPA/Corps guidance.

For project sites that include waters other than Traditional Navigable Waters (TNWs) and/or their adjacent wetlands or Relatively Permanent Waters (RPMs) tributary to TNWs and/or their adjacent wetlands as set forth in the chart below, the Corps must apply the significant nexus standard.

For “isolated” waters or wetlands, the joint guidance also requires an evaluation by the Corps and EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision are associated with isolated features on project sites for which a jurisdictional determination is being sought from the Corps.

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters 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

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- 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

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional 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

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters

- Significant nexus includes consideration of hydrologic and ecologic factors

3. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List⁷⁸);
- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- Whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with “problematic hydrophytic vegetation”, which require a minimum of 14 days of ponding to be considered a wetland.

⁷ Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

⁸ Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

B. Regional Water Quality Control Board

Section 401 of the Clean Water Act requires any applicant for a Section 404 permit to obtain certification from the State that the discharge (and the operation of the facility being constructed) will comply with the applicable effluent limitation and water quality standards. In California this 401 certification is obtained from the Regional Water Quality Control Board. The Corps, by law, cannot issue a Section 404 permit until a 401 certification is issued or waived.

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program.⁹ The memorandum states:

California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the Corps, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE's 404 program, for instance, no application for 401 certification will be required...

The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states....

Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions

⁹ Wilson, Craig M. January 25, 2001. Memorandum addressed to State Board Members and Regional Board Executive Officers.

from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification....

In this memorandum the SWRCB's Chief Counsel has made the clear assumption that fill material to be discharged into isolated waters of the United States is to be considered equivalent to "waste" and therefore subject to the authority of the Porter Cologne Water Quality Act.¹⁰

C. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as "a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators."

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

¹⁰ On June 17, 2016, the SWRCB issued a draft "Procedures for Discharges of Dredged or Fill Materials to Waters of the State" which provides definitions for wetlands, procedures for jurisdictional delineations, and procedures for obtaining permits for impacts to waters of the State.

III. RESULTS

The Project site contains four drainage features (A, B, C, and D) that generally extend from east to west across the property. Due to the relatively flat topography and limited watershed, Drainages A, B, and C terminate within the site without a defined connection to offsite waters. Drainage D consists of a relatively short (1,156 linear feet) feature that has developed as the result of runoff from the terminus of Chambers Road to the east, and the extends west to another paved portion of Chambers Road. From this point the flows extend offsite, crossing Encanto Road and entering a roadside ditch that extends north between Encanto Road and I-215. In addition to these natural features, the site contains an artificially-created drainage ditch that originates at the southern site boundary from a storm drain at the northern terminus of Sherman Road, and which extends north for approximately 500 feet north into the property before flows diverge to the west where they assume the general direction of historic flows from the ephemeral portion of Drainage A. The artificial ditch is included in the discussion of Drainage A. The drainage ditch contains a drainage easement that was dedicated to the County of Riverside on June 29, 1988 (recorded instrument #180001).

The USGS Romoland quadrangle map show two historic blue-line streams that at one time converged just south of where the flows enter the property through the storm drain outlet. The existing drainage ditch is an apparent diversion of the historic flows, which are now greatly supplemented from storm runoff and nuisance flows from an adjacent residential development and other adjacent developments.

The drainage ditch was recently modified in response to a Notice of Violation (NOV) issued by the City of Menifee Code Enforcement Division (dated October 16, 2017). The NOV addressed two concerns with the drainage ditch, including the need for positive drainage and vector breeding harborage, both caused by the accumulation of dirt and vegetation within the ditch. In accordance with the NOV, the landowner was instructed to mow, trim, and remove all overgrown dead, diseased vegetation, while also removing materials as necessary to maintain positive flow away from the storm drain outlet in accordance with the approved Water Quality Management Plan (WQMP). The jurisdictional delineation includes the current condition of the drainage ditch.

A. Corps Jurisdiction

The Project site contains approximately 0.68 acre of waters of the United States (Corps jurisdiction), of which 0.11 consists of jurisdictional wetlands. The jurisdictional areas include four drainage features [Exhibit 3 – Jurisdictional Delineation map]. The drainage features do not have a direct visible connection to another water of the United States. However, the Corps takes the position that isolated drainage features exhibiting sheet flow connections to other

jurisdictional waters up to a 100-year event would be considered jurisdictional, although the sheet-flow connections themselves would not be jurisdictional. It is assumed that the drainage features would ultimately connect to the storm drain at Encanto Drive up to a 100-year event that would ultimately connect to the San Jacinto River (a water of the United States). As such the drainage features are considered jurisdictional.

Drainage A

Approximately 0.41 acre of Corps jurisdiction is associated with Drainage A, of which 0.11 supports jurisdictional wetlands. The drainage feature consists of a naturally ephemeral reach, as well as an artificially wet reach that supports the emergent wetland vegetation. The ephemeral portion originates in the southwest portion of the property, in part as runoff from Chambers Avenue. The drainage extends west for approximately 1,100 linear feet until the OHWM disappears in the agricultural field. The OHWM of this portion of Drainage A is approximately one-foot wide. The historic extent of this feature presumably carried ordinary flows further west where they would terminate in the west-central portion of the property. However, a constructed drainage ditch now conveys flows that enter the property from a storm drain at the northern terminus of Sherman Road, and which extend north to bisect the historic east-west ephemeral drainage channel. The drainage ditch extends for approximately 500 feet north into the property before flows diverge to the west where they assume the general direction of historic flows from the ephemeral portion of Drainage A. The USGS Romoland quadrangle map show two historic blue-line streams that at one time converged just south of where the flows enter the property through a storm drain outlet. The existing drainage ditch is an apparent diversion of the historic flows, which are now greatly supplemented from storm runoff and nuisance flows from an adjacent residential development and other adjacent developments. The drainage ditch is currently unvegetated.

The artificially-created ditch consists initially of a concrete portion that originates from the storm drain outlet at Sherman Road. The OHWM of the concrete portion ranges from 8 feet wide at the outlet to 13 feet wide. The concrete portion extends north for approximately 120 linear feet to where it transitions to an artificially-created earthen channel. The earthen channel extends north for approximately 500 linear feet and then curves to the northwest where it then follows the historic of flows associated with Drainage A. Approximately 350 linear feet of the earthen channel consists of earthen side slopes, but the bottom is lined with un-grouted riprap. The OHWM associated with this portion ranges from 13 to 17 feet wide. The remaining 150 linear feet of the artificially-created portion is entirely earthen and the OHWM ranges from 6 to 8 feet wide. From the point where the channel curves northwest, the drainage feature gradually narrows to the point where there is no longer a discernible OHWM.

Drainage B

Approximately 0.07 acre of Corps jurisdiction is associated with Drainage B, none of which consists of jurisdictional wetlands. As with Drainage C, this drainage is also an ephemeral feature. Feature B also traverses from the eastern boundary in a westward direction for approximately 3,100 linear feet until an OHWM is no longer visible near the central portion of the Property. Drainage B also exhibits a one-foot-wide OHWM. Vegetation associated with Drainage B is similar to that associated with Drainage C.

Drainage C

Approximately 0.12 acre of Corps jurisdiction is associated with Drainage C, none of which consists of jurisdictional wetlands. Drainage C is an ephemeral feature that only exhibits flows during and immediately after storm events, supporting a limited OHWM for varying distances. The drainage enters the property at the eastern boundary and extends westward for approximately 3,900 linear feet until an OHWM is no longer visible near the northern central portion of the Property. Drainage C exhibits a one-foot-wide OHWM. Vegetation adjacent to Feature C consists of Russian thistle (*Salsola tragus*), rattlesnake weed (*Chamaesyce albomarginata*), dove weed (*Eremocarpus setigerus*), vinegar weed (*Trichostema lanceolatum*), cultivated barley (*Hordeum vulgare*), field bindweed (*Convolvulus arvensis*), summer mustard (*Hirschfeldia incana*), and fascicled tarweed (*Hemizonia fasciculata*).

Drainage D

Approximately 0.08 acre of Corps jurisdiction is associated with Drainage D. Drainage D consists of an ephemeral feature that is three-feet wide and receives runoff from the western terminus of Chambers Avenue. The drainage only exhibits flows during and immediately after storm events, supporting a limited bed/bank for varying distances before the flows continue along another paved portion of Chambers Avenue before crossing Encanto Road offsite into a ditch that flows north along Encanto Road and I-215.

Table 1. Summary of Corps Jurisdiction

Drainage	Non-Wetland Waters	Wetlands	Total Jurisdiction
A	0.30	0.11	0.41
B	0.07	0	0.07
C	0.12	0	0.12
D	0.08	0	0.08
Total	0.57	0.11	0.68

B. Regional Water Quality Control Board Jurisdiction

Drainages A, B, C, and D are not intrastate/isolated waters outside Corps jurisdiction. As such, the drainage features are regulated under RWQCB jurisdiction pursuant to Section 401 of the Clean Water Act. The Project will impact approximately 0.68 acre of RWQCB jurisdiction associated with the drainage features, of which 0.11 acre supports jurisdictional wetlands. In addition, the Project will impact a seasonal pool (0.12 acre) that is not regulated by the Corps as a water of the U.S. due to its isolation from other waters. The pool supports one vernal pool indicator plant species (woolly marbles, *Psilocarphus brevissimus*), and also supports non-listed fairy shrimp (versatile fairy shrimp, *Branchinecta lindahli*) and western spadefoot (*Spea hammondi*). The RWQCB may regulated the seasonal pool since it provides beneficial uses for wildlife.

C. CDFW Jurisdiction

CDFW jurisdiction associated with the Project site totals approximately 0.68 acre of CDFW jurisdiction, of which 0.11 acre supports riparian vegetation. Areas of CDFW jurisdiction at the site are identical to areas of Corps jurisdiction discussed above and warrant no further discussion. Table 2 summarizes CDFW jurisdiction for the Project site.

Table 2. Summary of CDFW Jurisdiction

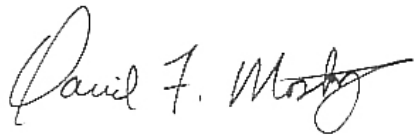
Drainage	Unvegetated Streambed	Riparian Vegetation	Total Jurisdiction
A	0.30	0.11	0.41
B	0.07	0	0.07
C	0.12	0	0.12
D	0.08	0	0.08
Total	0.57	0.11	0.68

Jerrica Harding
T&B Planning
October 13, 2017
[Revised April 26, 2018 and August 7, 2019]
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If you have any questions about this letter report, please contact me at (949) 340-2562, or at dmoskovitz@wetlandpermitting.com.

Sincerely,

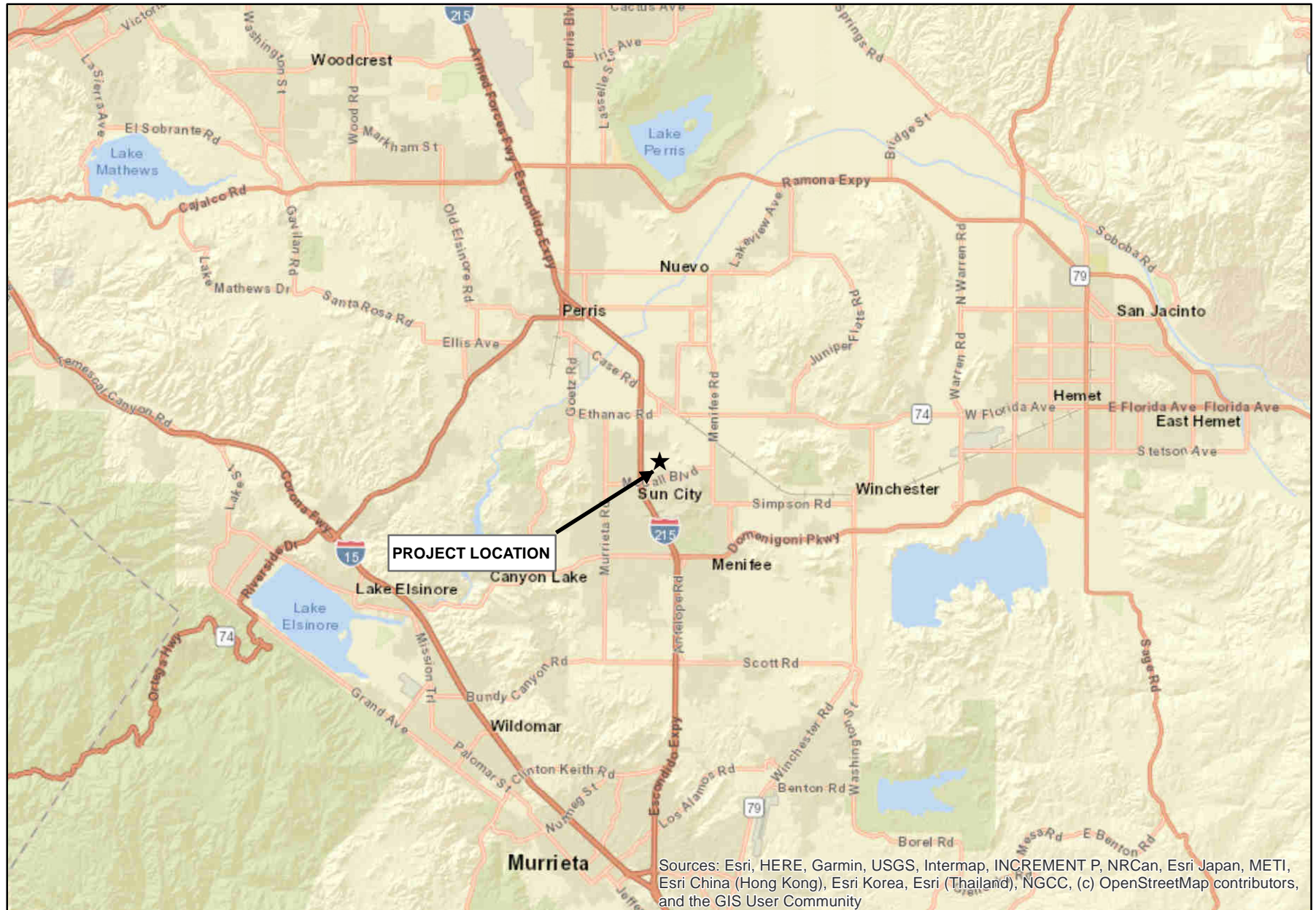
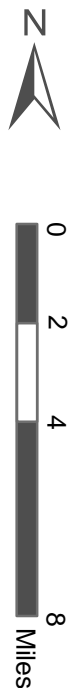
GLENN LUKOS ASSOCIATES, INC.

A handwritten signature in black ink, reading "David F. Moskowitz". The signature is written in a cursive, flowing style with a prominent loop at the end of the last name.

David F. Moskowitz
Senior Biologist/Regulatory Specialist

p:0849-20c.JD report.docx

Source: ESRI World Street Map



LEGADO PROJECT

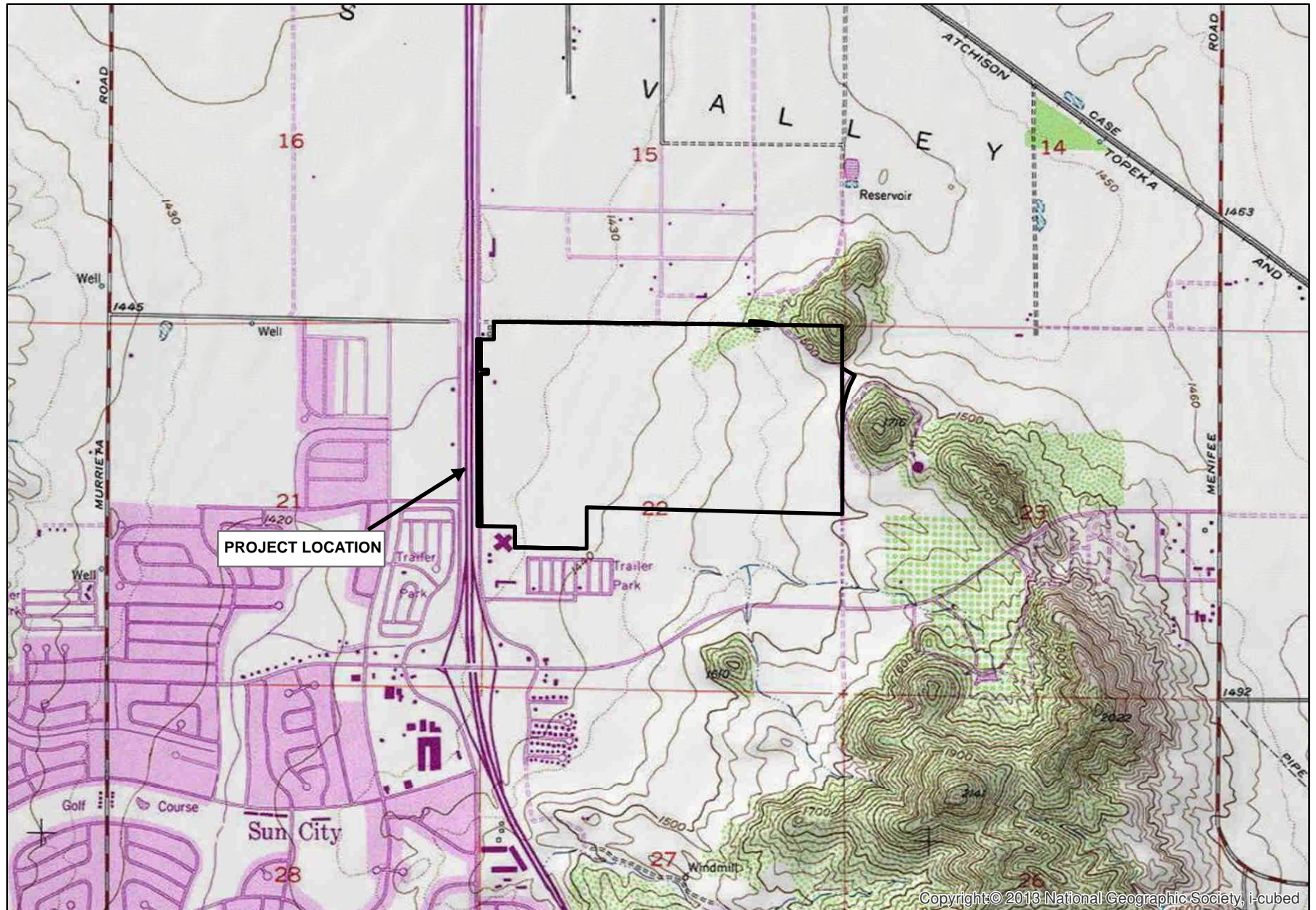
Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1



Adapted from USGS Romoland, CA quadrangle



LEGADO PROJECT

Vicinity Map

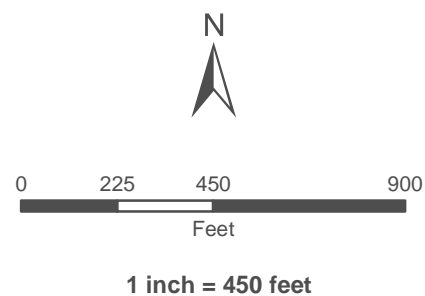
GLENN LUKOS ASSOCIATES

Exhibit 2





- Project Boundary
- Offsite Impact Areas
- Corps Non-Wetland Waters/CDFW Unvegetated Streambed
- Corps Wetland/CDFW Riparian
- Width of Jurisdiction in Feet



LEGADO PROJECT

Jurisdictional Delineation Map

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Exhibit 3



Photograph 1: View of the drainage ditch (Drainage A) looking south towards the storm drain outlet.



Photograph 3: View of the drainage ditch looking south, depicting where the ditch transitions from a deeper earthen channel (with rock lining) to a shallower earthen channel.



Photograph 2: View of the drainage ditch looking north where the ditch transitions from a concrete-lined ditch to an earthen ditch with un-grouted rock.



Photograph 4: View looking west towards the general dissipation area of Drainage A, but where flow indicators are absent due in part to disking.



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Exhibit 4

LEGADO

Site Photographs