Biological Resource Assessment
And
MSHCP Consistency Analysis

For

CUP #22-05023
Perris Industrial Project
Southwest Corner of Mapes Road & Trumble Road
APN 329-020-033, 034, 044, and 046

Prepared for

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1.0 Executive Summary

This Biological Resource Assessment investigates the potential impacts to biological resources that could occur as a result of developing, the Perris Industrial Project in Perris, CA. It evaluates habitat suitability for sensitive, threatened or endangered species. It evaluates the project plans for consistency with the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP).

The project site is located at the southwest corner of Mapes and Trumble Road in Perris, CA on 19.16 acres; APN 329-020-033, 034, 044, and 046 (Figure 1-1 Location and Vicinity and Built Environment Around Perris Industrial Project in Perris, California and Figure 1-2 Site Plans for Perris Industrial Project in Perris, CA). The project site is within the MSHCP "burrowing owl survey area" and supports potential habitat for burrowing owl (Athene cunicularia). It also supports potential habitat for Riverside fairy shrimp (Streptocephalus woottoni) (Figure 1-3 Vegetation Community and MicroHabitat Types within 500-Foot Survey Buffer of Perris Industrial Project in Perris, California).

Figure 1-3 uses a 2003 aerial base map that shows the site after grading altered the site for development by the Riverside County Flood Control and Water Conservation District (RCFC) of a square-shaped storm water detention basin and associated channel in the center of the site in 2002 as part of Line B of the Romoland Master Drainage Plan. The grading caused the current ponding, which was not evident prior to 2003 based on archival aerials from the Phase I Environmental Site Assessment (EMAI, 2021).

Kinsinger Environmental Consulting (KEC) conducted the biological resource assessment that included a field verification of a previous jurisdictional delineation and potential for fairy shrimp (L&L, 2016a) and a focused survey for burrowing owl (L&L, 2016b). LSA conducted a focused fairy shrimp survey that includes wet season surveys and dry season surveys (LSA, 2022). Dry season surveys were not required by regulations at the time of previous fairy shrimp surveys (Cadre, 2011). No threatened, endangered species were detected in the current focused surveys for fairy shrimp, burrowing owl or the general biological resource assessment which has been incorporated with the MSHCP Consistency Analysis.

The resources evaluated are considered in relationship to the site plan to meet the criteria set forth by the City of Perris (City). As a requirement of the California Environmental Quality Act (CEQA), it also assesses the project's potential impacts for consistency within the MSHCP (RCTLMA, 2003a).

Components of the Biological Resource Assessment and MSCHP Consistency Analysis were evaluated by on-the-ground surveys and spatial analysis of species distribution shown in Figures 1-4 and 1-5. These evaluation results show that:

- The project site is not in a Criteria Cell, Conservation Area or Constrained Linkage area (RCA, 2022).
- Sensitive habitats on site include areas of seasonal inundation that do not qualify as "vernal pools" under the MSCHP. On-site drainages do not connect to the Eastern Municipal Water District (EMWD) detention basin or to US Army Corps of Engineers (USACE) or State Water Quality Control Board (WQCB), or California Department of Fish and Wildlife (CDFW) jurisdictional riparian or riverine resources. The drainage channels do not qualify as MSHCP riparian/riverine habitat (
- Figure 1-3).
- Impacts will be less-than-significant; however, these agencies should be notified.

- Surveys for listed species of vernal pool crustaceans and fairy shrimp were negative and no impacts will occur.
- No impacts to amphibians, MSHCP riparian birds, 6.1.2 species, Criteria Area Species (CAS) and Narrow Endemic Plant Species (NEPS) will occur (RCTLMA, 2003a).
- No impacts to MSCHP species associated with riparian/riverine or wetland habitat and listed or sensitive flora and fauna will occur. The potential for sensitive flora and fauna to occur on site or within the 500-foot survey buffer was considered by field surveys within the blooming period or active season and by evaluating the distribution of occurrence records within the California Natural Diversity Data Base (CNDDB) and the MSHCP (CNDDB, 2019) (RCTLMA, 2003b).
- A protocol-level focused survey for burrowing owl shows that there are no suitable ground squirrel burrows for burrowing owls on the project site, yet potentially suitable burrows occur in the survey buffer around the site. No burrowing owls were detected in focused surveys and potential impacts will be less-than-significant with mitigation.
- Impacts to all other species and habitat will be less-than-significant with mitigation
- The project site location is recognized by the Native American Heritage Commission (NAHC) as a location of cultural significance and consultation with the tribes is required. An archaeology and paleontology study did not detect historic or pre-historic resources on the site.
- The project, will be consistent with the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines) (PRC, 2020) and the MSHCP with mitigation.

KEC finds the project to be consistent with the MSHCP and CEQA with impacts that will be less-than-significant with mitigation.

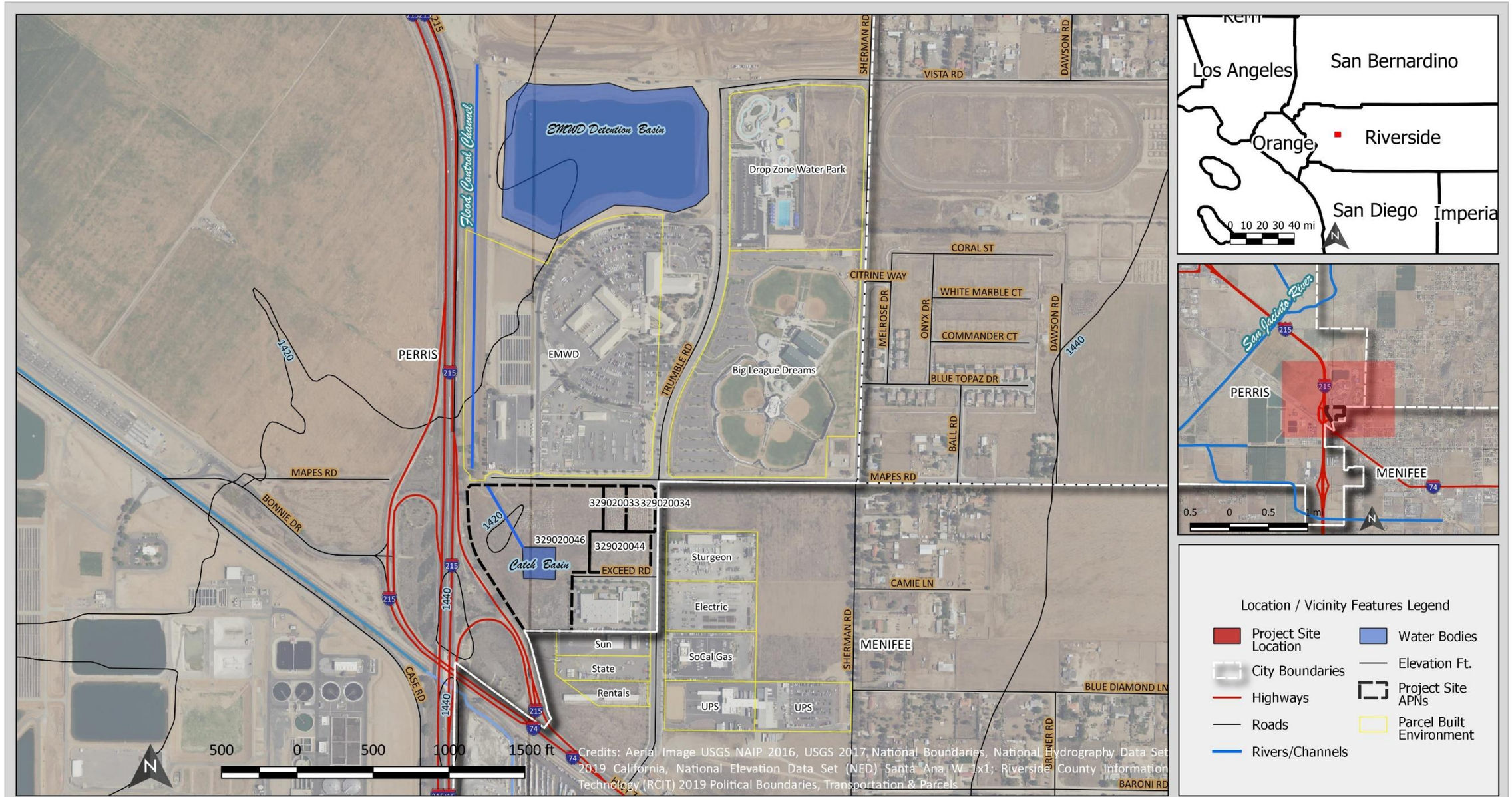

Figure 1-1 Location and Vicinity and Built Environment Around Perris Industrial Project in Perris, California

Map Created on 02/28/2022
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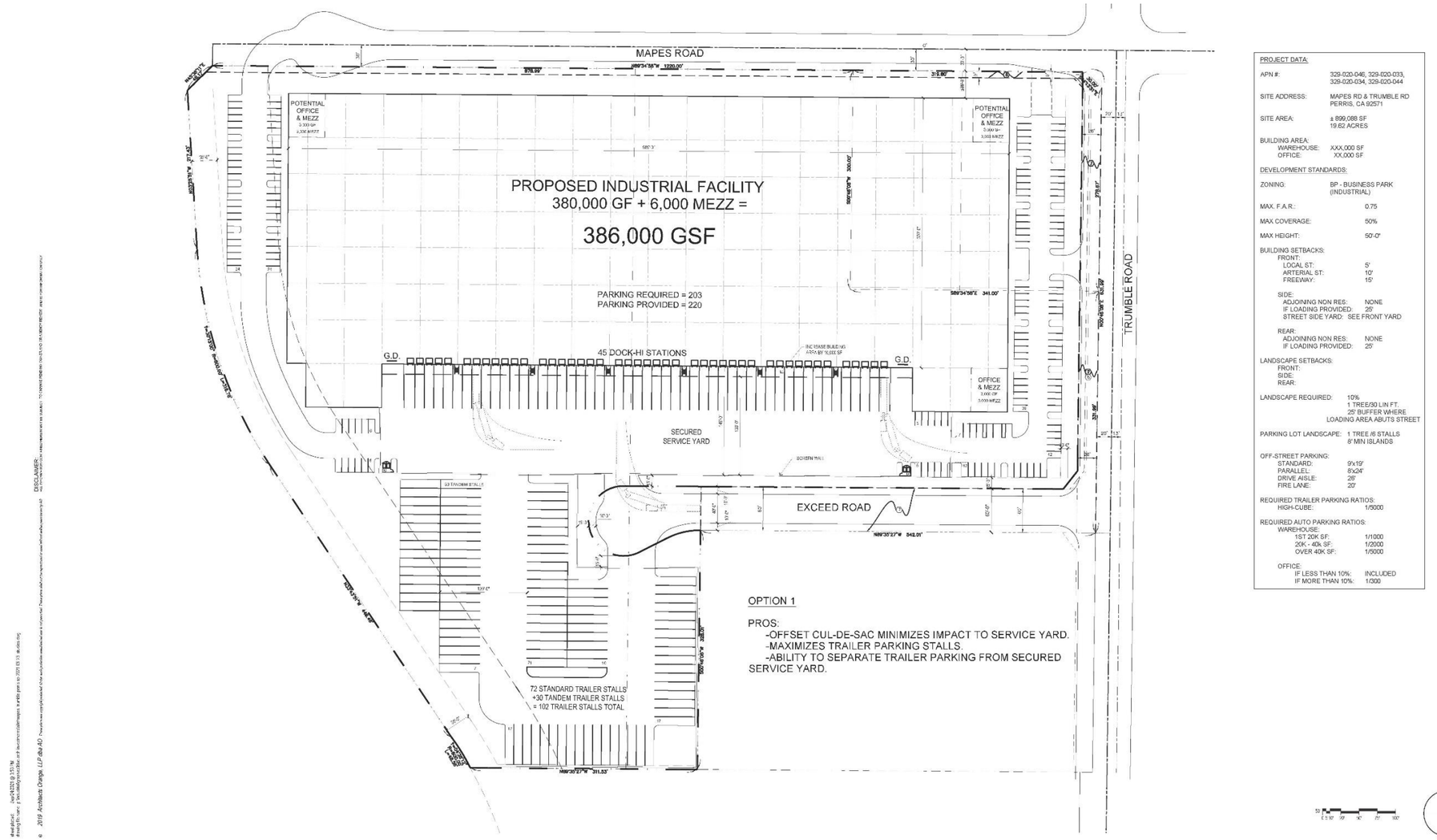

Figure 1-2 Site Plan for Perris Industrial Project in Perris, CA

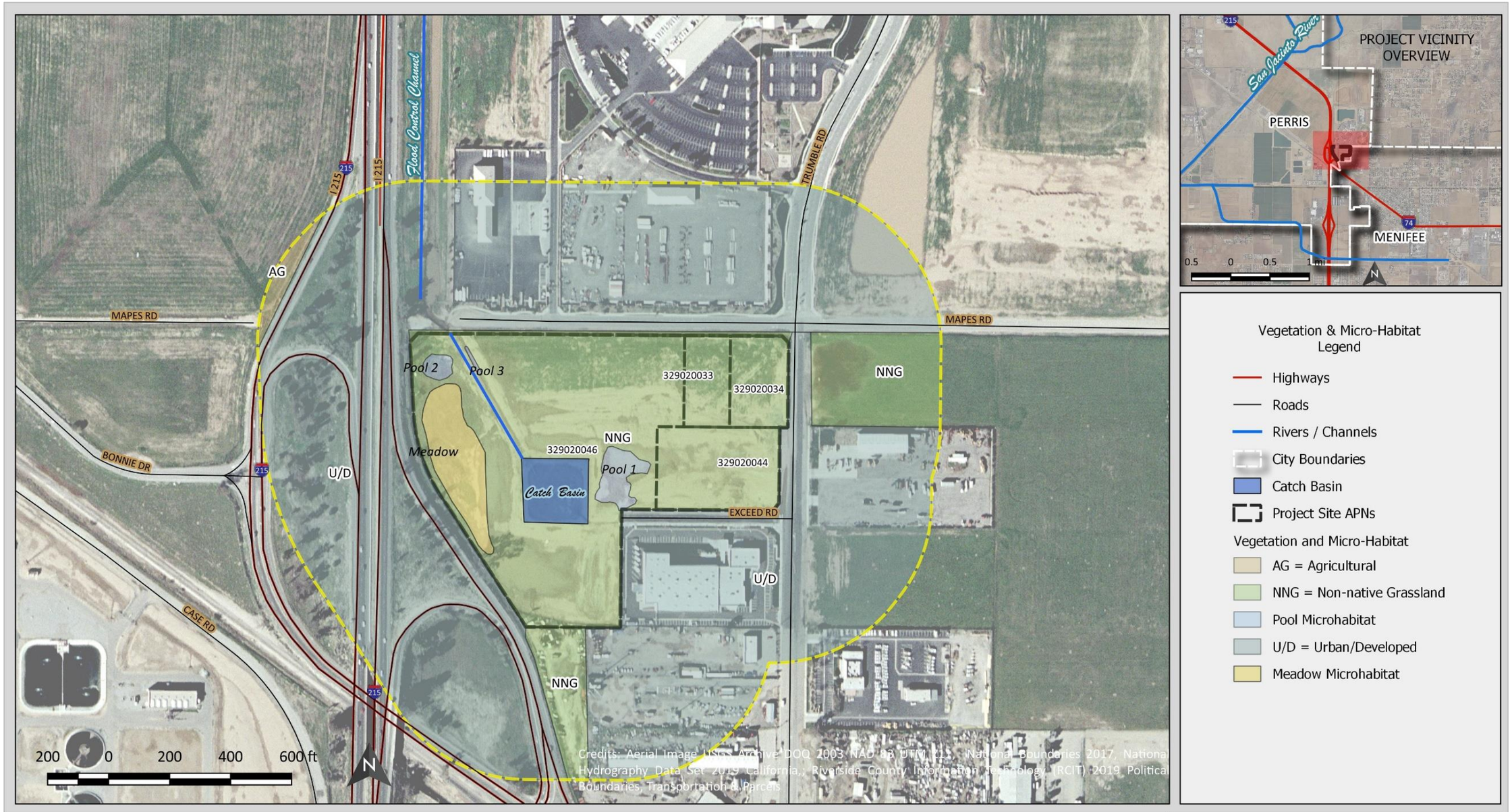

Figure 1-3 Vegetation Community and Micro-Habitat Types within 500-Foot Survey Buffer of Perris Industrial Project in Perris, California.

Map Created on 09/08/2022

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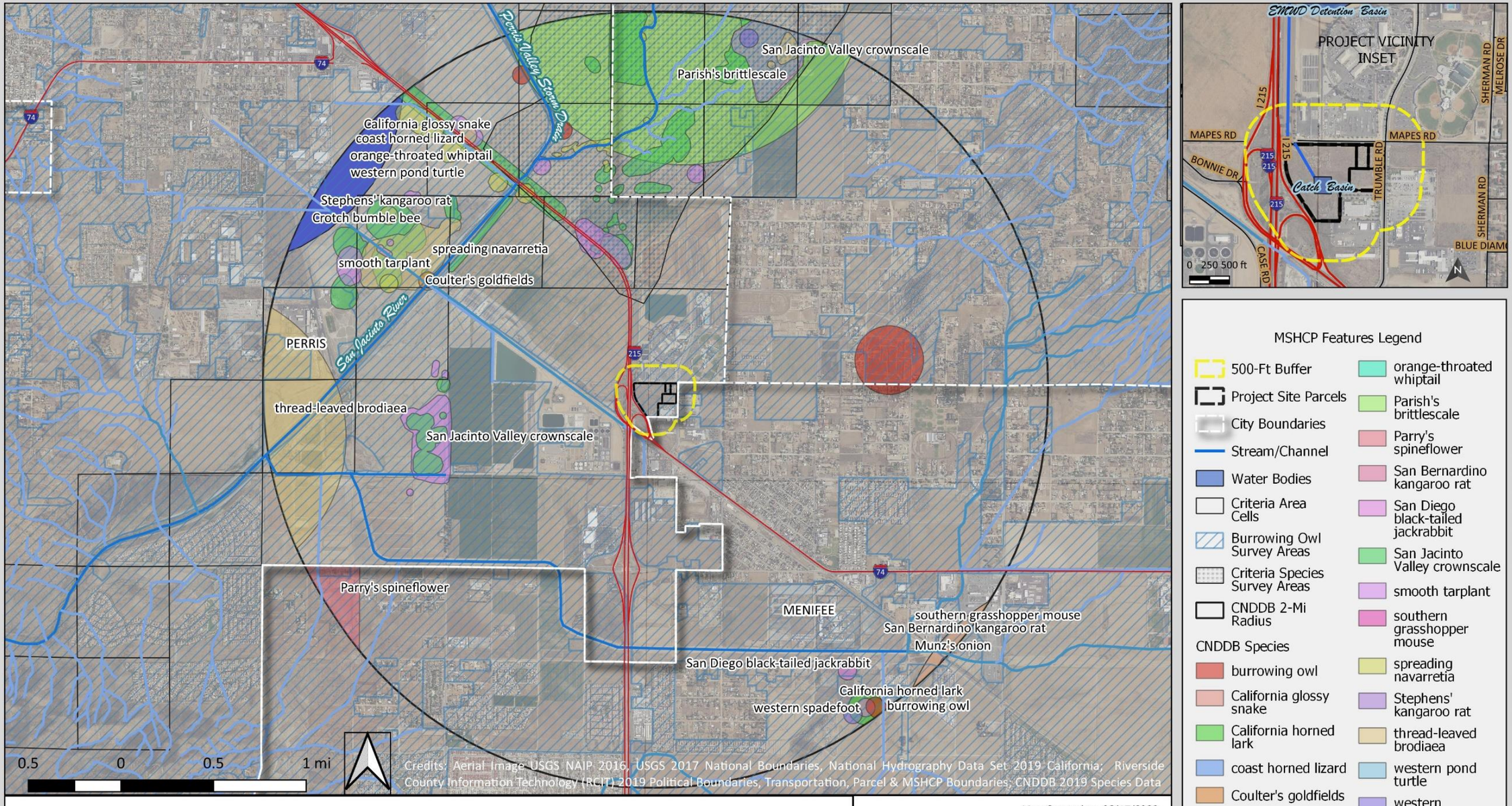
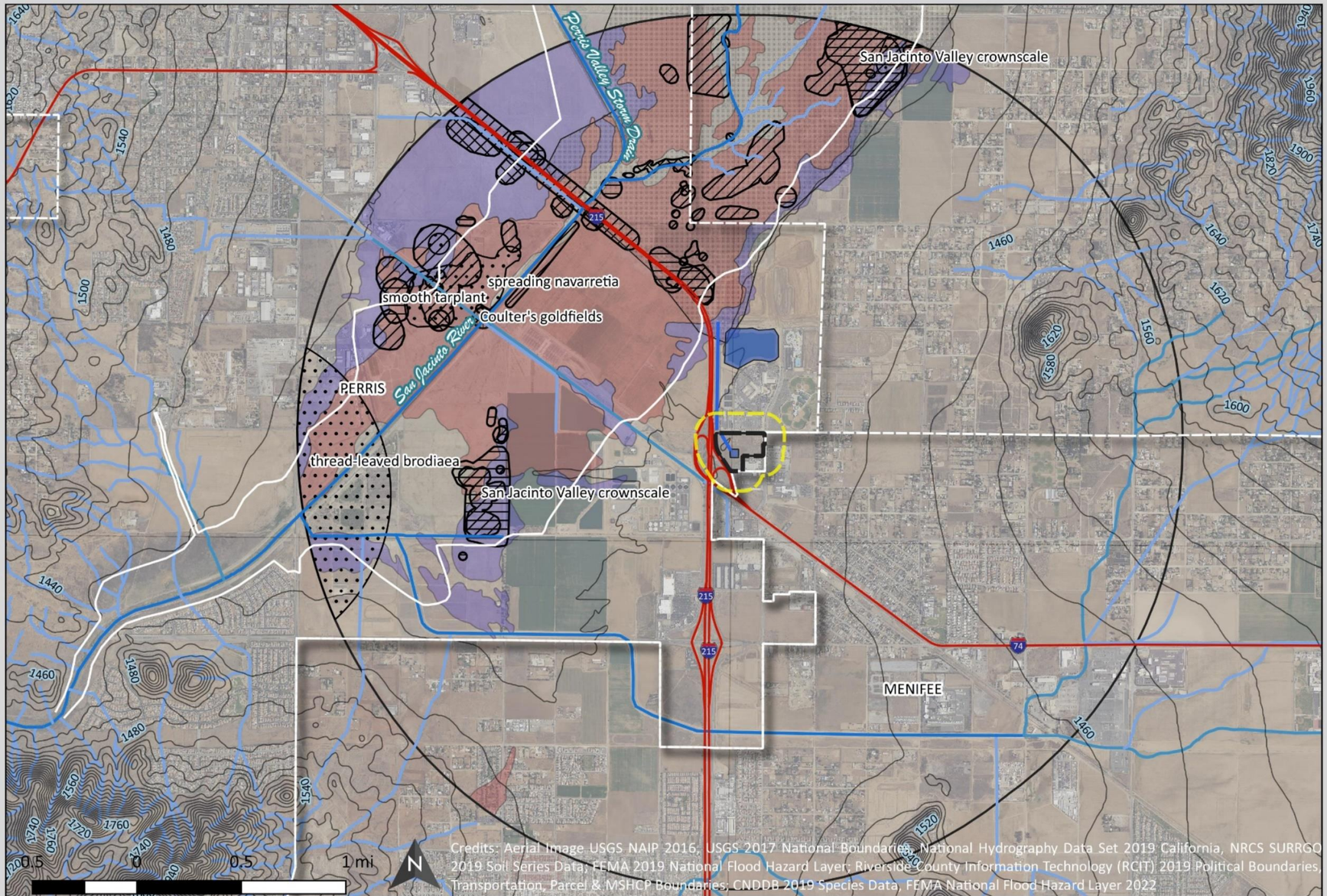
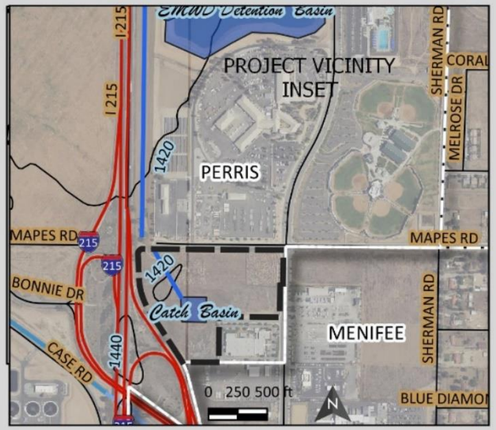


Figure 1-4 California Natural Diversity Data Base (CNDDB) Species Distribution in Relationship to MSHCP Burrowing Owl and Criteria Area Species Survey Areas Within 2 miles of the Perris Industrial Project in Perris CA





Criteria Area Species Features Legend

- 500-Ft Buffer
- Project Site Parcels
- Elevation Ft
- Stream/Channel
- FEMA Regulatory Floodway
- Criteria Species Survey Areas
- CNDDB 2-Mi Radius

Saline-Alkali Soil Series

- Domino
- Willows

CNDDB Criteria Area Species Distribution

- Coulter's goldfields
- San Jacinto Valley crownscale
- smooth tarplant
- spreading navarretia
- thread-leaved brodiaea

Figure 1-5 MSHCP Criteria Area Species Distribution In Relation to Saline/Alkaline Soils and the FEMA Regulatory Floodway in Perris, California

Map Created on 03/17/2022

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2.0 Introduction

This Biological Resources Assessment is being conducted at the request of Blue Marquise Investments Inc. as a part of its applications to build a warehouse facility at the southwest corner of Mapes and Trumble Road in Perris, CA (Figure 1-1 Location and Vicinity and Built Environment Around Perris Industrial Project in Perris, California). The survey area is located at Universal Transverse Mercator (UTM) coordinates 3735200 Northing/482700 Easting within Section 10, Township 5 South, Range 3 West, in the City of Perris, Riverside County, as shown on the U.S. Geological Survey (USGS) 7.5-minute series Perris, California quadrangle.

2.1 Project Area and General Setting

The industrial site will occupy four adjacent parcels, APN 329020046, 329020033, 329020034, and 329020044 at the Southwest corner of Mapes and Trumble Road in Perris, California The 396,000-square-foot industrial project will be built on 19.16 acres of undeveloped land (Figure 1-2 Site Plan for Perris Industrial Project in Perris, CA). It is bordered on the north by Mapes Road, Trumble Road to the east, Exceed Road and a commercial development with undeveloped property to the south, and Interstate 215 (I-215) to the west. Trumble Road forms the boundary of the City limit between Perris and the City of Menifee (Figure 1-1).

The site is zoned as "Business Park" (BP) with industrial facilities including Eastern Municipal Water District (EMWD) to the north, Big League Dreams baseball complex to the northeast, the Exceed Industries Community Employment Services and other industrial complexes to the east and south. There is a vacant field to the east of the project site that borders the southeast corner of Mapes and Trumble Roads and there is a small undeveloped parcel to the south of the project site behind Sun State Rentals and an adjacent microwave transmitter tower (Figure 1-1).

The I-215 embankment and Caltrans right-of-way is adjacent to the parcel boundaries on the east. The 2:1 embankment rises to approximately 15 feet in elevation above the site. Along its slopes there are large roadside debris, buckets, tires, pipes and trash. The slopes are eroded and there are four sets of double culverts that run under the freeway perpendicular to the project site boundary (Figure 1-3).

Along the boundary of the Caltrans right-of-way, there are two large red gum trees (Eucalyptus camaldulensis), three small red gum trees and eight Mexican paloverde trees (Parkinsonia aculeata). Nine street trees, London plane (Platanus x acerifolia), line the eastern walkway on Trumble Road and are less than 15 feet tall. Most are water deficient and two are dead. Mapes Road, on the north side of the project site, has a ditch that leads to a storm drain at the west end of the street with no walkway or curb. The stormdrain at the terminus of Mapes Road discharges to the flood control channel on the west side of the EMWD facility through a stormdrain system from the street. (Appendix A Photos)

The fenced detention or "catchment" basin at the center of the project site is connected to a ditch that flows north toward the terminus of Mapes Road. There it connects to the ditch that runs parallel to Mapes road along the north boundary of the project site. Discharge reaches the storm drain at the end of Mapes Drive when there is overflow. (Kimley Horn, 2022)

Past excavations or grading of the site have removed natural topsoil leaving hard soil that is shallow over a water limiting layer or duripan leaving it too shallow and hard for ground squirrels to build burrows. By comparison, disced fields at the southeast corner of Trumble and Mapes Roads with the same soil series retain their natural soil profile and have abundant burrows.

The project site location is recognized by the Native American Heritage Commission (NAHC) as a location of cultural significance and consultation with the tribes is required. An archaeology and paleontology study did not detect historic or pre-historic resources on the site.

2.1 Project Description

The project proponent is proposing to build a 396,000-gross-square-foot industrial warehouse building. The project Site Plan includes 45 tractor loading docks (Figure 1-2 Site Plan for Perris Industrial Project in Perris, CA).

2.2 Project Schedule

Construction of the Project is anticipated to commence in early 2023 and be completed in the winter/spring of 2024, resulting in a total construction duration of approximately twelve months. Construction equipment anticipated to be used includes rubber-tired dozers, tractors/loaders/backhoes, excavators, graders, scrapers, cranes, forklifts, generators, welders, air compressors, and paving equipment.

2.3 Covered Roads

Under the MSHCP there are certain activities that are covered or "allowed" where existing roads, collector roads or freeways will be improved, lengthened or realigned, and are part of the County's General Plan circulation Element. KEC evaluated planned improvements to Mapes Road and Exceed Road to determine consistency under the MSHCP for "covered roads (Figure 1-3).

The I-215 freeway, adjacent to the western project boundary is a "covered road" under the MSHCP in some local jurisdictions but not within the Sun City, Menifee or Perris boundaries. Private roads that are lengthened to extend into to a commercial footprint such as Exceed Road are considered a "covered activity"; therefore, there is no expectation that improvements to Exceed Road will require the project to undergo review by the Joint Powers Authority (JPA) for Joint Project Review (JPR) according to Leslie Levy of the Riverside Conservation Authority (RCA) (Pers. Comm. 7/15/2022).

2.4 Covered Public Access Activities

The site does not provide adjacency or easements to any public access locations.

3.0 Reserve Assembly Analysis

The Table 1 MSHCP Project Review Checklist (below) guided which investigations are needed to determine consistency with the MSHCP. KEC conducted a jurisdictional delineation validation to respond to the Table 1, question 7 and a determine if areas of inundation on site might support habitat for sensitive species. KEC recommended focused fairy shrimp surveys and LSA conducted those studies. KEC conducted burrowing owl [BUOW, Athene cunicularia] surveys to determine if BUOW are present or active on the site if there is evidence of activity within the last three years.

Table 1 MSHCP Project Review Checklist

MSHCP Project Review Checklist Questions	YES	NO
1. Is the project located in a Criteria Area or Public/Quasi-Public Land?		√
2. Is the project located in a Criteria Area Plant Survey Area?		√
3. Is the project located in a Criteria Area Amphibian Survey Area?		√
4. Is the project located in a Criteria Area Mammal Survey Area?		√
5. Is the project located adjacent to MSHCP Conservation Areas?		√
6. Is the project located in a Narrow Endemic Plant Species Survey Area?		√
7. Are riverine/riparian/wetland habitats or vernal pools present?		?
8. Is the project located in a Burrowing Owl Survey Area?	√	

The project site is located within the Mead Valley Area Plan. The Mead Valley Area Plan does not identify the project site as part of a conservation area, public/quasi-public land, criteria cell, core reserve area or linkage between core areas under Sections: 4 Assembling the MSHCP Conservation Area, 5 Management and Monitoring and 6 MSHCP Implementation Structure (RCTLMA, 2003a).

A core habitat linkage follows the path of the San Jacinto River and an area considered for core area-extension to the north of the project site. That linkage and core area extension is disjunct from the project site. It is bisected by both the I-215 freeway and the large development of the Eastern Municipal Water District (EMWD) directly across Mapes Road from the project site on the north. (RCTLMA, 2003a).

The project site does not intersect MSHCP mapped planning areas or have adjacency and therefore does not meet criteria for acquisition or conservation as part of the MSHCP reserve assembly (Figure 1-4).

3.1.1 Topography and Soils

There is only one soil series mapped at the Perris Industrial site. Maps show the soil series is mapped as Madera fine sandy loam 0 to 2% slope (MaA). The taxonomic classification for Madera is Fine, montmorillonitic, thermic Abruptic Durixeralfs (NRCS, 2013). However, the surface layers of soil at this site have been truncated (removed) by excavation, grading, and discing. (Appendix B Soils)

Existing Conditions

The 19.16-acre project site is nearly level with a barely perceptible downward slope from the southeast of the site at 1426 feet above mean sea level (AMSL) to 1420 AMSL at the northwest (Figure 1-1). The Base Flood Elevation (BFE) is 1,420 AMSL and the project site is partially within the 100-year and 500-year flood plains (See the Flood Insurance Rate Map FIRMette in the Preliminary Drainage Plan (Kimley Horn, 2022).

A field verification of a previous jurisdictional delineation confirmed that the soils in the wettest areas of the site failed to meet the criteria for hydric soils under the US Army Corps of Engineers (USACE) Arid West Supplement for wetland delineation (USACE, 2008). (See Appendix C Soil Field Notes.)

Vegetation on the site is predominantly non-native grass and ruderal species. There are areas of shallow seasonal ponding that support aquatic crustaceans; versatile fairy shrimp (Branchinecta lindahli) (LSA, 2022). Flowering herbs, tidy tips (Layia platyglossa) and coastal goldfields (Lasthenia gracilis) occur in these ponded areas that are typical of moist meadows and openings in sage scrub. They are sometimes indicators of vernal pools and L. platyglossa is a USACE facultative wetland species (USACE, 2016) (Figure 1-3).

Tall red gum eucalyptus trees along the western boundary of the site and Mexican palo verde are a frequent roost for foraging raptors including redtail and Cooper's hawks and typically support large flocks of Cassin's king bird. The prey base includes lizards, mice and pocket gopher. Say's phoebes routinely make use of the detention basin fence posts as a foraging roost to search for insects.

Flocks of lark sparrows and horned larks that are ground nesting birds were present and foraging in the grasslands in the spring but not detected nesting on site. A pair of killdeers, also a ground nesting bird, were observed nesting on site on March 16, in the southeast corner of the 329-020-046 parcel but were not relocated on the next site visit on April 14 after vehicles entered the site and removed a silt fence.

Results

KEC's, wetland delineator and professional soil scientist, Debbie Kinsinger dug three soil sample pits and characterized two soil profiles to the depth of the water-limiting layer, a "duripan". A duripan is a layer of concretions that evolve from illuviated silica. The silica precipitates from solution repeatedly at the same depth as the soil moisture evaporates. Eventually, precipitated concretions of silica aggregate forming a solid impermeable layer. A duripan has a neutral pH as opposed to the water limiting layers that underlie Willows and Domino soils which are formed from carbonate precipitants. Those soils support seasonal ponding in a saline playa habitat and also support narrow endemic plants.

The kind of ponding observed on site is uncharacteristic for Madera soils. Therefore, it was important to confirm the chemistry of the water-impermeable layer to rule out the possibility that Willows and Domino soils occur on site since the Madera series description indicates its mapping units sometimes contain inclusions of Willow and Domino soils (NRCS, 2013).

Although the surface layers of soil were truncated by grading during the building of the catchment basin on site, the water-limiting layer of silica-indurated soil persisted as the diagnostic characteristic of the soils on site (Figure 1-3).

The soil investigations revealed that the excavation for the catchment basin may have removed up to two feet of surface soil in some places, leaving the impermeable duripan within four inches of the surface and as deep as 23 inches in other locations. This uncharacteristically shallow soil causes the observed ponding. Furthermore, the diagnostic effervescence that signals the presence of carbonates in the impermeable layer was absent. Ped faces showed indications of silica and clay illuviation by coated sand grains and white or opalescent silica coatings when observed with a hand lens (Figure 1-3).

These results confirm that the soil is a Madera series soil and characteristics of Willows and Domino series soils are absent in the ponded areas[1].

[1] Although the geotechnical study by AES states that the top two feet of soil are "fill", Fred Jahani, the supervising engineer for the AES study explained that, "We call it fill if it has variable density and is unsuitable for supporting a foundation. That does not necessarily mean that two feet of soil were imported." Therefore, the conclusions of the geotechnical study do not conflict with the jurisdictional delineation validation. (AES, 2022)

3.1.2 Current and Historical Uses

When European settlers arrived in the Perris Basin and Inland Valley, they drained the vast wetlands of the alluvial plains and erosional deltas for agriculture. Eventually, the water table drew down so much that irrigation wells and many remaining springs and lakes began to dry up. The Metropolitan Water District of Southern California (MWD) exacerbated this problem with the development of the San Jacinto tunnel that carried water from the Colorado River under the San Jacinto Mountains from inland desert aqueducts. The tunnel aqueduct delivered the water to Lake Matthews Reservoir and on to member cities on the coastal side of the peninsular ranges of mountains (1933 – 1941). Battles for water rights in the basin ensued when it was discovered that local ground water sources were seeping into the tunnel and being exported to Lake Matthews and MWD's member cities (Water and Power Associates, 2020).

The EMWD was formed in 1950 to reclaim some of that water back to the Inland Valley. Their headquarters are located on the north side of Mapes Road across from the project site. Initially formed to serve agricultural interests, it now serves Inland Valley residential uses with a variety of water supplies including ground water, recycled water and water from desalination (Water and Power Associates, 2020). The basin to the north of the headquarters buildings is a recycled water storage basin for use by irrigation (EMWD, 2022).

From 1938 to the present the project site was used for hay or left fallow. The 2021 Phase I Environmental Site Assessment aerial photos indicate the site was never irrigated for row crop. By 1985 industrial developments appear adjacent to the site along Trumble Road. In 1990 EMWD began grading the site north of Mapes Road for their headquarters (EMAI, 2021). Between 2002 and 2004 the entire site was graded to build the "catchment basin" on site (Figure 1-3). It is part of the Riverside County Flood Control and Water Conservation District (RCFC) Romoland Master Drainage Plan (RCFC, 2021). The eastern portion of the site was graded in 2008 and again in 2020 (See the Aerial Image series in the Phase I ESA (EMAI, 2021)).

In 2013, piles of soil were discharged onto the north portions of the Perris Industrial project site (parcels 329-020-033 & 329-020-034) and gravel was discharged and spread over the southeast portion of parcel 329-020-036 in 2012. The soil discharge piles were graded 2021 (EMAI, 2021).

The surface horizons of the soil on the project site were completely truncated and destroyed at the time of building the "catchment" basin in the center of the project site. Aerial photos from 2003 show ponding on site for the first time. The original soil surface horizons were lost. The change in soil texture and depth can be seen by comparing the soil from the project site with that from the tilled soil on the east side of Trumble Road. That soil, which is also Madera (MaA), has structure and depth that supports California ground squirrel burrows while the soil on the project site does not.

There is no walkway or curb adjacent to Exceed Road on its north side or on the south side of Mapes Rd. Runoff from Exceed Road flows toward the storm drain and then diverts north onto the project parcel where it ponds. The stormdrain at the terminus of Mapes Road discharges into a flood control channel and stormdrain system adjacent to the west side of the EMWD headquarters.

Vegetation present on the site now is mostly ruderal except for areas where water has ponded. Some native meadow vegetation and facultative wetland plant species such as goldfields (Lasthenia gracilis), tidy tips (Layia glabrata), woolly marbles (Psilocarphus brevissimus) and salt-marsh sand spurry (Spergularia marina) occur where water ponds seasonally on the project site.

4.0 Survey Methods

The study area includes the project site and a 500-foot survey buffer north, west, east and south of the project site (Figure 1-3). The Habitat Suitability Assessment (HSA) results indicated that potential habitat for Riverside fairy shrimp (Streptocephalus woottoni) which is federally listed as endangered and habitat for BUOW are present.

Detailed results of the protocol-level focused surveys for Riverside fairy shrimp and BUOW are presented in Appendix E and F, respectively, and summarized in Sections 5.3 and 7.3 of this Biological Resources and MSHCP Consistency Analysis.

The Biological Resource Assessment field studies for this MSHCP Consistency Analysis was conducted in conjunction with HSA mapping for the 2021 – 2022 BUOW focused survey (MSHCP BUOW Protocol, Part A Step I).

KEC conducted the jurisdictional validation at the site in response to recent grading and fill and changes in federal and state laws since the previous jurisdictional delineation that was conducted by L&L Environmental in 2016 (L&L, 2016a). Soil field notes are in Appendix C.

Table 1 below lists the 2021 and 2022 field dates and weather conditions for general biology and jurisdictional delineation and the HSA BUOW, fairy shrimp, focused surveys.

Table 2 Survey Dates and Weather Conditions

Date	Survey Type	Surveyor	Time	Survey Window	Temp ° F	Wind mph	Cloud cover
9/28/2021	BUOW Mapping Part A Step I CAGS burrow mapping	Debbie Kinsinger	15:20 – 16:34	n/a	73°	10-Jul	clear
10/28/2021	Jurisdictional Delineation (JD) Validation	Debbie Kinsinger	12:29 – 14:12	n/a	85°	8 – 10	clear
12/5/2021	Fairy Shrimp (FS) Wet Season Survey	Stanley Spencer	n/a	n/a	13	n/a	5
12/22/2021	FS Wet Season Survey	Stanley Spencer	n/a	n/a	21	n/a	95
12/27/2021	FS Wet Season Survey	Stanley Spencer	n/a	n/a	8	n/a	50
1/4/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	18	n/a	2
1/7/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	20	n/a	2
1/12/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	13	n/a	80
1/18/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	17	n/a	n/a

Date	Survey Type	Surveyor	Time	Survey Window	Temp ° F	Wind mph	Cloud cover
1/26/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	21	n/a	20
2/1/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	16	n/a	95
3/16/2022	BUOW Mapping Part A Step I (new-season repeat)	Debbie Kinsinger	11:36 – 12:11 13:07 – 19:37	16:57 – 19:37	70°	5	clear
4/4/2022	FS Wet Season Survey	Stanley Spencer	n/a	n/a	22	n/a	5
4/14/2022	JD Validation & Plant Survey	Debbie Kinsinger	13:22 – 14:57	n/a	72°	0 - 8.3	clear
5/11/2022	FS Dry Season Collection	Stanley Spencer	n/a	n/a	n/a	n/a	clear
5/16/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:22 – 20:23	17:43 – 20:43	66 - 77°	8 – 10	clear
5/26/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:00 – 19:58	17:51 – 20:51	80°	3 – 8	clear
7/6/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:37 – 20:42	18:03 – 21:03	69°	8 – 10	clear and hazy
7/14/2022	BUOW Focused Survey Step II	Debbie Kinsinger	13:07 – 19:47	17:51 – 19:47	72°	5 – 10	10 % clouds
8/11/2022	JD follow-up soil sampling	Debbie Kinsinger	11:29 – 13:30	18:57 – 20:21	81 - 95°	2 – 5	clear

Biologist Debra Kinsinger conducted a literature review that includes:

- Analysis of the site by a previous owner including a:
    - Biological Resource Analysis (Cadre, 2011)
    - Focused Wet Season Fairy Shrimp Survey (Glen Lukos, 2013)
    - Jurisdictional Delineation (L&L, 2016a)
    - Focused Wet Season & Dry Season Fairy Shrimp Survey (LSA, 2022)
    - Focused Burrowing Owl Survey (L&L, 2016b)
    - Focused Burrowing Owl Survey (KEC, 2022)
- Phase I Environmental Site Assessment (EMAI, 2021)
- The California Burrowing Owl Consortium, Survey Protocol and Mitigation Guidelines (CBOC, 1993)
- The California Fish and Game, Staff Report on Burrowing Owl Mitigation (CDFW, 2012)
- CDFW current species status lists (CDFW, 2022a) (CDFW, 2022b)
- Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Program (MSHCP) (RTLMA-EPD, 2006a)

California Natural Diversity Data Base (CNDDB) geographic and formula-based queries (CNDDB 2019). Details and rationale for the query size and method are presented in:

- California Native Plant Society Inventory of Rare and Endangered Plants (CNPS, 2022)
- Riverside County Authority (RCA) guidelines for biologists and map viewer (RCA, 2019) & (RCA, 2022)

4.1 Flora and Fauna Observed on Site

The vegetation communities in this document follow a Manual of California Vegetation (Sawyer, 2009). Scientific and common names of the flora follow The Vascular Plants of Western Riverside County, California (Roberts et al, 2004) with current updates to nomenclature as found in the Jepson Interchange Index to California Plant Names (Jepson Flora Project (eds.), 2021). Scientific and common names of fauna follow (NatureServe, 2022). All flora and fauna observed at the time of the field surveys are listed in Table 3. The third column in Table 2 includes the Abundance/Sensitivity and wetland status as they appear in the Arid West Regional Wetland Plant List (USACE, 2016).

Table 3 Flora and Fauna Observed on the Project Site

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Plants		
Monocots		
Poaceae		
Avena fatua L*	Wild oat	
*Avena barbata**	Slender wild oat	
*Bromus diandrus **	Ripgut Grass	
*Bromus madritensis ssp. rubens**	Mediterranean (foxtail) brome	
*Festuca myuros**	Rat-tail fescue	
*Hordeum murinum**	Foxtail barley	FAC
*Festuca perenne**	Perennial ryegrass	
Dicots		
Anacardiaceae		
*Schinus terebinthifolius**	Brazilian pepper tree	offsite
Apocynaceae		
*Nerium oleander**	Common oleander	
Asteraceae [Compositae]		
Ambrosia psilostachya	Western Ragweed	FACU
Baccharis salicifolia	Mule fat	FAC
*Cirsium vulgare**	Bull thistle	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
*Centaurea melitensis**	Tocalote	
Erigeron canadensis [*Conyza canadensis*]	Horseweed	
Corethrogyne filaginifolia	Sand aster	
*Glebionis coronaria**	Garland chrysanthemum (crown daisy)	
Helianthus annuus	Western sunflower	FACU
Heterotheca grandiflora	Telegraph weed	
*Hypochaeris glabra**	Smooth cat's ear	
*Lactuca serriola**	Prickly lettuce	
Lasthenia gracilis [*L. coronaria* mis-applied in other studies]	Coastal goldfields	FACU
Layia platyglossa	Common tidy tips	
*Oncosiphon piluliferum** [*Matricaria discoidea* misapplied in other studies]	Stink-net (Globe Chamomile)	FACU
Sonchus asper ssp. *asper**	Prickly sowthistle	
Psilocarphus brevissimus	Woolly marbles / dwarf woollyheads	FACW
Uropappus lindleyi	Silver puffs	
Boraginaceae		
Amsinckia intermedia	Small Flowered fiddleneck	
Amsinckia menziesii	Common (Menzies') fiddleneck	
Cryptantha intermedia	Common cryptantha	
Heliotropium curassavicum var. oculatum	Salt heliotrope	FACU
Plagiobothrys sp. (canescens ?)	Popcorn flower	U
Brassicaceae (Cruciferae)		
Capsella bursa-pastoris	Shepherd's purse	FACU
*Hirschfeldia incana**	Shortpod mustard	
Lepidium nitidum	Shinning peppergrass	FAC
*Raphanus sativus**	Wild radish	
Caryophyllaceae		
*Spergularia bocconi**	Boccone's sand spurry	FACW
Chenopodiaceae		
*Atriplex semibaccata**	Australian saltbush	FAC
*Salsola tragus**	Prickly Russian thistle	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Convolvulaceae		
*Convolvulus arvensis**	Field bindweed	
Crassulaceae		
Crassula connata	Sand Pygmyweed	FAC
Euphorbiaceae		
Croton setiger	Doveweed, turkey-mullein	
Fabaceae		
*Parkinsonia aculeata**	Mexican paloverde (Jerusalem thorn)	onsite along I-215 fence
*Medicago polymorpha**	Bur clover	
Fagaceae		
Quercus agrifolia	Coast live oak	offsite by EMWD
Geraniaceae		
*Erodium botrys**	Long-beak filaree	
*Erodium cicutarium**	Red-stemmed filaree	
*Erodium moschatum**	White-stemmed filaree	
Lamiaceae		
Trichostema lanceolatum	Vinegar weed	FACU
Malvaceae		
*Malva parviflora **	Cheeseweed	
Myrtaceae		
*Eucalyptus camaldulensis**	Red gum	
Nyctaginaceae		
Nicotiana glauca	Tree tobacco	
Oleaceae		
Fraxinus sp. (*uhdei**)	Shamel ash	Questionable ID, no samaras observed on ground or in tree
Pinaceae		
Pinus contorta	Lodgepole pine	Offsite in back of Exceed
Platanaceae		
*Platanus x acerifolia**	Hybrid plane	
Plantaginaceae		
Veronica peregrina ssp. xalapensis	Hairy purslane speedwell	FAC
Polygonaceae		
Eriogonum fasciculatum	California buckwheat	
Polygonum arenastrum [incl. *P. aviculare*] *	Prostrate (Common) knotweed	FAC

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
*Rumex crispus**	Curly doc	FAC
Salicaceae		
Salix laevigata	Red willow	FACW
Zygophyllaceae		
*Tribulus terrestris**	Puncture vine	
Animals		
Mammals		
Geomyidae		
Thomomys bottae	Pocket gopher	
Leporidae		
Sylvilagus audubonii	Desert cottontail	
Lepus californicus bennettii	San Diego black-tailed jackrabbit	MSHCP Group 1 Species†, CDFW SSC, Observed in 2020 survey
Sciuridae		
Otospermophilus beecheyi	California ground squirrel	Infrequent around perimeter abundant offsite
Vespertilionidae		
Parastrellus hesperus	Western canyon bat [Western pipistrelle]	
Birds		
Acciptiridae		
Accipiter cooperii	Cooper's hawk	MSHCP species, Forages site routinely
Buteo jamaicensis	Red-tailed hawk	Nesting in cell tower with successful fledge
Aegithalidae		
Psaltriparus minimus	Bush tit	
Alaudidae		
Eremophila alpestris	Horned lark	MSHCP Group 1 Species†, large flocks
Anatidae		
Anas platyrhynchos	Mallard	Previous survey flyover
Cardinalidae		
Pheucticus melanocephalus	Black-headed grosbeak	Infrequent
Cathartidae		
Cathartes aura	Turkey vulture (fly over)	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Charadridae		
Charadrius vociferus	Killdeer	Ground nesting species; Pair observed actively nesting on site.
Columbidae		
Columba livia	Rock Dove (Feral Pigeon)	
Streptopelia decaocto	Eurasian collared dove	
Zenaida macroura	Mourning dove	
Corvidae		
Corvus brachyrhynchos	American crow	
Corvus corax clarionensis	Common raven	
Emberizidae		
Chondestes grammacus	Lark sparrow	MSHCP Group 2 Species†, CDFW SSC, Large flocks foraging on site, ground nesting species
Melozone crissalis	California towhee	Infrequent
Falconidae		
Falco columbarius	Merlin	Questionable ID, MSHCP Group 1†, CDFW SSC,
Fringillidae		
Carpodacus mexicanus	House finch	
Carduelis psaltria	Lesser goldfinch	
Hirundinidae		
Stelgidopteryx serripennis	Northern rough-winged swallow	Foraging on site
Petrochelidon pyrrhonota	Cliff swallow	Foraging on site
Icteridae		
Euphagus cyanocephalus	Brewer's blackbird	
Molothrus ater	Brown-headed cowbird	
Quiscalus mixicanus	Great-tailed grackle	
Mimidae		
Mimus polyglottos polyglottos	Northern mockingbird	
Parulidae		
Dendroica coronata	Yellow-rumped warbler	
Passerellidae		

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Chondestes grammacus	Lark sparrow	Large flocks, ground nesting species
Passerculus sandwichensis	Savannah sparrow	Previous survey
Passeridae		
Passer domesticus	House sparrow	
Picidae		
Picoides nuttallii	Nuttall's woodpecker	
Scolopacidae		
Tringa flavipes	Lesser yellowlegs	2020 fly over
Sturnidae		
Sturnus vulgaris	European starling	
Threskiornithidae		
Plegadis chihi	White-faced ibis	2020 (flyover)
Trochilidae		
Calypte anna	Anna's hummingbird	
Tyrannidae		
Sayornis nigricans	Black phoebe	
Sayornis saya	Say's phoebe	
Tyrannus vociferans	Cassin's kingbird	
Herptofauna		
Iguanidae		
Sceloporus occidentalis	Western fence lizard	
Uta stansburiana	Side-blotched lizard	
Insects		
Pogonomyrmex occidentalis	Harvester ants	Observed

* = Non-Native Species † = MSHCP Group Rankings are defined in Appendix D Potentially Occurring Species below the table.

4.2 Vegetation Communities

Non-native grassland is the only vegetation community on site. The vegetation community on site; has been altered from its original habitat prior to agricultural into non-native grassland because of disturbance from drainage and agriculture. Some intermixture of sage scrub may have occurred here at one time and a single scrub species was detected on site; California buckwheat. Within the 500-foot survey buffer are urban landscape features that are mapped as Urban/Developed and include horticultural trees, shrubs and bare ground, as well as buildings and paved surfaces.

The Figure 1-3 vegetation map also includes MSHCP features within the 500-foot survey buffer that are "micro-habitats" within the Non-native grassland vegetation communities. These are vernally moist meadows and areas of seasonal inundation, pools, that were considered for their potential to support vernal pool habitat.

4.2.1 Non-native Grassland (NNG) Code 42200

Most annual grasses are non-native grasses in California. Annual grasslands are typically dominated by non-native bromes, wild oat grass and shortpod mustard. They often include native dicots such as rancher's fiddleneck as well as ruderal dicots including filaree and mustard species which are indicators of non-native grass habitats. Annual grasslands by definition do not include any native grass species (Klein & Evens, 2005).

The project site and surrounding areas have many non-natives "ruderal" or weedy species such as: Russian thistle or tumble weed, star thistle and filaree. It is dominated by typical non-native grasses, primarily brome species. (See Table 3 Flora and Fauna Observed on the Project Site).

As a subclass of non-native grasslands, there are moist areas some of which are seasonally inundated micro-habitats. In spring, moist meadows are blanketed with yellow forbs, tidy tips and goldfields. These moist grassland meadows are characterized in section 5.1 Riparian/Riverine Areas. Consideration for the potential of the seasonally inundated areas to be vernal pool habitat is discussed in Section 5.2. Facultative wetland plants occur in the pools 1, 2 and 3. Pool 3 is in the channel that is connected to the catch basin

4.3 Urban / Developed Habitat

Urban/Developed habitat can include formal landscaping in developed sites, urban trees, roofs, and chimneys which are used by urban birds and constitute a habitat mixed in among streets, roads and freeways that imperil wildlife and are barriers to movement. At the project site, urban developed land includes commercial buildings and their parking lots adjacent to the project site on the east and south. Birds and raptors were observed using horticultural trees for roosting and cover and may be used by song birds for nesting.

Additional urban habitat that had potential to support BUOW included freeway debris scattered all along the western boundary of the site along the slopes of the I-215 Right-of-way (ROW). There were four sets of culverts that ran perpendicular under the freeway that had potential for BUOW nesting sites. All of these locations were examined routinely but none of the culverts or debris indicated use by BUOW.

Two redtail hawks were observed using the platform at the top of a wireless transmitter tower for nesting and successfully fledged a chick in 2022. Oleander shrubs along the fence line of the adjacent parcel to the south of 329-020-046 supported nesting for European starlings, Eurasian house sparrow, brewer's blackbird, brown-headed cowbird and house finches. The European starling and Eurasian house sparrow are non-native and brown-headed cowbird is native but is a bird-nest parasite that lays its eggs in the nests of other birds.

5.0 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools – Habitat Associations

Wildlife habitats such as riparian/riverine areas and vernal pools differ from vegetation communities in that a wildlife habitat may contain several plant communities, which will be similar in structure but different in their plant species composition, location, and soil substrate. This distinction becomes an important factor when assessing the sensitivity of a particular wildlife habitat. An example of this would

be a mowed lawn which does not support wildlife versus grassland that supports enough burrowing mammals to form a prey base for raptors and suitable dens for sensitive species like the Western burrowing owl.

5.1 Riparian/Riverine

Riparian habitats occur along the banks of channels and waterbodies as well as marshes and vernal pools. Many of the plant species in a riparian habitat are found only where a consistent supply of water occurs, these are obligate species. Other riparian species may be found in wet or dry areas and these are referred to as facultative species.

5.1.1 Methods

KEC biologists conducted a field reconnaissance-level validation of the previous existing jurisdictional delineation conducted by L&L (L&L, 2016a) on October 28, 2021. The site visit occurred after heavy rains when water would have been expected to saturate the soil sub-horizons throughout the profile and/or perch water at the surface. KEC Biologists used GPS to walk the limits of the soils that were inundated near the surface. They walked the perimeter of areas that were known to have ponded water in past years as well as the channels that were created as part of the Romoland Master Drainage plan while documenting plant species associated with those features (RCFC, 2022a).

Biologists collected soil and site data to classify the site's jurisdictional status using the USACE Arid West Regional Supplement forms and guidance (USACE, 2008) and the Corps of Engineers Wetlands Delineation Manual (USACE, 1987). In addition, KEC considered new guidance arising from the Clean Water Act's Clean Water Rule of 2020 (EPA, 2020) that became effective on August 8, 2022 as it applies to Section 401 Certification by the Water Resources Control Board (SWRCB, 2021).

5.1.1.1 Regulatory Environment for Jurisdictional Delineation

The County of Riverside requires development plans to be consistent with the MSHCP definitions for regulated waters as well as jurisdictional requirements of multiple local, state and federal agencies. The Riverside County Flood Control and Water Conservation District (RCFC) "provides certain non-tax supported functions such as floodplain Management, development review, NPDES compliance…" in floodways and flood zones under the regulatory authority of the Federal Emergency Management Agency (FEMA) (RCFC, 2022b). In California, the USACE, State Water Resources Control Board (SWRCB), and CDFW regulate activities within inland streams, coastal streams, wetlands, and other waters. These agencies administer the many federal and state laws, regulations, and policies that prevent further impacts to jurisdictional wetlands and waters.

5.1.1.1.1 MSHCP

The MSHCP definition for Riverine includes, "any feature that is natural in origin as well as past natural features that have been heavily modified and/or redirected and can include features indirectly created through man-made manipulation of the landscape, including channelization of a historic riverine feature." If these features connect to nearby downstream resources that are either existing or described conservation lands, they would be considered riverine."

According to the MSHCP, riparian habitats include "… lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source, or areas with fresh water that flows during all or a portion of the year." MSCHP Vol. 1, Section 6.1.2 (RCTLMA, 2003a).

5.1.1.1.2 USACE

The Environmental Protection Administration (EPA) and the USACE regulate the discharge of dredged or fill material into Waters of the United States (WoUS). The USACE also regulates Riverine and Riparian resources as defined by the Clean Water Act (CWA) under the Code of Federal Regulations (CFR) 33 § 328.3 and an amendment in 2015 that revises those regulations called the Clean Water Rule of 2020 (EPA, 2020).

The definition of WoUS includes Traditionally Navigable Waters (TNWs), Tributaries of TNWs and Territorial Seas. Wetlands are included when they have a "nexus" or significant connection with TNWs, tributaries or sea. Perennial or intermittent waters with a direct surface connection to a TNW are considered a WoUS but ephemeral features that only flow as a direct result of precipitation and isolated wetlands are excluded from WoUS (USACE, 2020).

The WoUS are delineated by the waterway's bed and bank, up to and including the Ordinary High Water Mark (OHWM) (USACE and EPA, 2019).

The 1987 USACE Wetlands Delineation Manual (USACE, 1987) and the USACE Arid West Regional Supplement (USACE, 2008) provide guidance to determine if a water feature satisfies the three criteria of the wetland definition for vegetation, soil and hydrology:

- A predominance of plant life that is adapted to life in wet conditions hydrophytic vegetation must be present;
- Soils must saturate, flood or pond long enough during the growing season to develop anaerobic conditions in the upper part of hydric soils; and
- Permanent or periodic inundation or soils saturation must occur at least seasonally, establishing wetland hydrology.

5.1.1.1.3 CDFW

The CDFW under §§ 1600-1616 of the California Fish and Game Code (CFGC) requires a Lake and Streambed Alteration (LSA) Agreement for activities that:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake;
- or Deposit or dispose of material into any river, stream, or lake.

The CDFW has interpreted jurisdictional boundaries to be defined by the tops of stream banks (i.e., the limit of stream influence) and/or the limit of the canopy of riparian vegetation (outer drip line) that is hydrologically connected to river, stream, or lake, whichever is greatest. As a result, the area of CDFW jurisdiction includes adjacent wetland and riparian areas of WoUS. The CDFW jurisdictional area is usually greater than the active channel and overlaps and extends beyond the USACE jurisdiction. (CDFW, 2022c)

5.1.1.1.4 SWRCB

The California State Water Resources Control Board (SWRCB) is a "designee" on behalf of the USACE for administration of the federal CWA 401 certification process to permit discharges of dredge or fill into WoUS in California. KEC considered new guidance arising from the Clean Water Act's Clean Water Rule (CWR) of 2020 and administration of the 401 Certification process (EPA, 2020) that became effective on August 8, 2022.

Simply stated, the SWRCB retains jurisdiction over all waters of the state including isolated "wetland" habitats, "dryland washes" and adjacent riparian vegetation. The SWRCB administers the State Wetland Conservation Policy to ensure "no overall net loss and long-term gain in the quantity, quality, and permanence of wetlands acreage and values in California" under Executive Order W-59-93 (no net loss of wetlands). The Porter Cologne Water Quality Act establishes the SWRCB and their authority to regulate discharges into Waters of the State (WOTS) to preserve water quality and beneficial uses of water in California. (SWRCB, 2021).

The definition of wetlands follows the same guidance as the USACE definitions and those definitions are clarified in the California Wetland And Riparian Area Protection Policy Technical Memorandum No. 2: Wetland Definition (SWRCB, 2012).

On April 6, 2021, the SWRCB adopted a resolution to confirm that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" is in effect as a state policy for water quality control independently of the outcome of litigation over the application of the CWR of 2020 and application of its 401 Certification process. The California Office of Administrative Law (OAL) approved the procedures on August 28, 2019 and they became effective on May 28, 2020. (SWRCB, 2021)

5.1.1.1.5 RCFC and FEMA

FEMA provides the Flood Insurance Rate Maps (FIRM) that RCFC and the City of Perris use to regulate actions within flood zones and floodways. When they determine that impacts to those jurisdictional areas may occur, such as fill or excavation within flood zone boundaries, they may require a Conditional Letter of Map Review (CLOMR). The CLOMR defines horizontal elevational accuracy and hydrology changes to downstream and upstream flood zones. They provide comment to FEMA about whether the proposed construction would require an update to the FIRM maps, once completed.

> Because CLOMRs are submitted to FEMA prior to construction, there is an opportunity to identify if threatened and endangered species may be affected by the potential project. If potential adverse impacts could occur, then the Services may require changes to the proposed activity and/or mitigation. FEMA will require documentation of ESA compliance for the proposed project before it will process a CLOMR request…
>
> Documentation that the project is compliant with the ESA may be submitted in the form of a written and signed statement confirming that it has been determined that there are no endangered or threatened species present in the area or that the type of action does not have any potential to cause adverse impacts that would result in a take. (FEMA, 2016)

5.1.2 Existing Conditions and Results

KEC conducted a validation of a jurisdictional delineation conducted previously by L&L Environmental (L&L, 2016a) and concur with their conclusion that there are no state or federal jurisdictional waters on the project site nor MSHCP Riverine/Riparian features.

The project site is located outside of the regulatory floodway of the San Jacinto River which lies to the north and west of the project site (Figure 1-5). Outside the boundaries of the floodway, the FEMA map shows the boundaries of the 100- to 200-year flood "AE" zones. The project site is on the periphery of the 1% (blue) and 0.02% (tan) chance of annual flood (every 100 or 500 years) The FEMA Flood Hazard map is in Preliminary Drainage Plan for this project. (Kimley Horn, 2022).

The RCFC built channels that were intended to collect and convey surface and/or flood water to the catchment basin as part of the Romoland Master Drainage Plan (RCFC, 2006). These drainages support; facultative (FAC), facultative wetland (FACW) and facultative upland (FACU) species.

5.1.2.2 Human-constructed Channels

The channel on the north of the basin supports Boccone's sand spurry (FACW), hairy purslane speedwell (FAC), and prostrate knotweed (FAC). A single mulefat shrub, (FAC), and a red willow, (FACW), grow at the entry to the south channel. No sensitive plant or animal species were detected within any of the habitats with riparian vegetation.

5.1.2.3 Seasonally wet areas

Meadow areas experiencing periodic inundation onsite support facultative wetland forbs. Yellow coastal goldfields (FACU), yellow and white tidy tips and silvery woolly marbles (FACW) blanket these low-lying areas in spring. The bloom is brief and the soil leaves behind characteristic evidence of inundation by a hexagonal network of cracks in the silty loam. Those cracks then fill in with filaree and non-native cool-season grasses that replace the wet meadow vegetation as the soil dries. As the soil dries, it leaves on the surface a very thin dark layer that is from algae that dries. It is called a "biotic crust".

Other FACW and FAC forbs that are generally associated with seasonally wet meadows were detected that included: prostrate knotweed (FAC), hairy purslane speedwell (FAC), spreading alkali weed (FACW), and sand pygmyweed (FAC).

5.1.2.4 Riverine definitions

The human-constructed ditches on site do not qualify as jurisdictional under the USACE definition because they are not connected to an existing jurisdictional drainage network. They are "isolated" from jurisdictional WOUS. The ditches do not connect to offsite drainage networks. The flood channel to the west of the EMWD headquarters connects to the EMWD stormdrain system under the EMWD facility not to the catchment basin on the project site. Because the drainages on site do not connect to a drainage network, the project site would not meet the MSHCP criteria for "riverine" habitat.

Furthermore, these drainages do not fall under CDFW jurisdiction as "riverine" or SWRCB jurisdiction as WOTS because they were not previously natural waterways and they are isolated from streams, rivers and lakes. The channels on site are human-constructed and were not part of a historical natural drainage or flood channel. These channels are isolated from USACE and SWRCB networks of jurisdictional drainages.

Riparian habitat within channel bed and adjacent to the high bank would only remain within the jurisdiction of CDFW if they were connected to TNWs. The human-constructed channels on site do not meet that criterion.

5.1.2.5 Riparian definitions

The ephemeral wet meadows and seasonal pools on site are not covered under SWRCB rules for isolated waters because they are not wetlands under the USACE definition. (The state and federal definitions of wetlands are unified) (RCTLMA, 2003b). The meadows lack qualifying hydric soil characteristics and lack a "dominance" of facultative and/or obligate wetland species. Even though they may meet hydrology criteria by evidence of surface ponding; to qualify as hydric, the soil must satisfy all three criteria. (USACE, 2008).

There are areas of riparian vegetation in the ephemeral wet meadows where the fairy shrimp surveys were conducted. Patches of facultative wetland species also occur in the human-constructed drainage channels (Figure 1-3). These seasonal depressions fail to meet the MSHCP definition of riparian habitat as they are not dominated by "trees, shrubs, persistent emergents, or emergent mosses and lichens". (Appendix B Soils)

5.1.2.6 Jurisdictional Validation

To validate these field observations for the USACE jurisdiction, KEC examined current and historical aerial photos and topographic maps and the National Hydrology Data (NHD) set to determine if any of the onsite drainages were hydrologically connected to jurisdictional flow networks (USGS, 2022). Ditches on site, including the ditch on the south side of Mapes Road, connect to the flood control channel on the west side of the EMWD facility during overflow events when water enters the storm drain at the terminus of Mapes Road (Kimley Horn, 2022).

Furthermore, the groundwater is hydrologically disjunct from jurisdictional waterways. FEMA flood insurance maps indicate that the western portion of the project site is located within the AE base floodplain zone but is not part of a regulatory "floodway".

> "The project site is in a floodplain area that gets wet due to backwater from the main San Jacinto River floodplain but does not have active flow in the main flow direction. This is known as an "ineffective flow area." (River Focus, 2022)

Therefore, neither the channels nor the areas of inundation can be described as "adjacent" or hydrologically connected to TNWs under USACE jurisdictional definitions even though there are culverts under the I-215. (USACE, 1987)

5.1.3 Impacts

There are no regional, state or federal jurisdictional waters on the site and therefore, no impacts.

5.1.4 Mitigation

No mitigation for riparian/riverine or wetland habitats is required as no qualifying habitats occur on the project site.

5.2 Vernal Pools

Saline-alkali meadows with Willows and Domino soils known to support unique vernal pool habitats occur west of the I-215 freeway and north of the project site (CNDDB, 2019). The Madera soils on site are not known to support vernal pools and the survey results from this site concur that they are not saline or alkaline (NRCS, 2013).

5.2.1 Methods

Under SWRCB jurisdiction, wetland habitat needs to exhibit diagnostic characteristics from all three criteria defined by USACE for wetlands; wetland hydrology, wetland vegetation and hydric soils. Riparian vegetation typically occurs at the boundary of the wetlands and outward to some distance or along the upper banks and areas immediately adjacent to riverine habitats.

Vernal pools are a wetland habitat that must meet these USACE wetland criteria to qualify as vernal pools. KEC sampled the soil profile at the pool labeled "feature 1" in the wet season fairy shrimp survey on October 28, 2021 (Pool 1 in Figure 1-3).

It was the only previously mapped area of inundation that was saturated at that time. Other areas where inundation had been described in the previous jurisdictional delineation were completely dry and vegetation was almost completely gone (L&L, 2016a). For that reason, KEC returned to the site to sample feature 2 from the fairy shrimp surveys on August 11, 2022, after fairy shrimp wet and dry surveys were completed and areas of most persistent inundation had been documented and vegetation identified.

5.2.2 Existing Conditions and Results

Soils on the project site are mapped in the Madera series. A water-limiting layer of lime should occur at 26 inches. It is an "indurated" layer or hardened seam of silica (opal) mineral deposits that contribute to the seasonally ponded conditions in a few areas on site. These are (NRCS, 2013).

KEC found the soil sample site, pool 1, was saturated throughout the entire profile to a depth of 23 inches. It failed to meet the diagnostic criteria for "hydrophytic vegetation" by "dominance" or "prevalence" criteria but it met the criteria for "hydric soils" as a "redox depression". It met several primary "wetland hydrology" indicators including: surface water, inundation visible on aerial imagery, and thin, dark biotic crust. (USACE, 2008). A water-limiting layer was encountered at the 23-inch depth that would account for the ponded condition of the soil at this location. Pool 1 was also receiving excess sheet runoff from Exceed Road. The stormdrain at the end of Exceed Road that should have conveyed runoff to the catchment basin was clogged with vegetation. Instead, it diverted the runoff to the site from the side of the road.

KEC sampled the fairy shrimp pool, labeled pool 2 in Figure 1-3, after the surveys were complete to avoid disturbing these pools during the survey period. This area easily met the hydrophytic vegetation criteria by the dominance test even though spreading alkali weed, a FACW species, and sand Pygmyweed, a FAC species observed in April, had dried and decomposed. There were multiple primary indicators of wetland hydrology including: surface soil cracks, inundation visible on aerial imagery, and a biotic crust. The non-sensitive versatile fairy shrimp, an aquatic invertebrate, was also present in pool 2. However, pool 2 failed to meet the hydric soils criteria. (Appendix B Soils)

The best explanation of why pool 2 failed to meet the test is the depth to a water-restricting layer is that the duripan, at only 4 inches, allowed perched water to evaporate too quickly. The duripan is an "indurated layer of silica precipitate" that would not normally develop so close to the surface. According to the Madera series description, this layer is found at 26 inches. We tested it with an acid solution to determine carbonate concentrations and found that that the duripan was not effervescent. This was anticipated since the layer is a silica or opalescent layer not containing carbonates. The surface 4 inches of soil was weakly effervescent when observed with a hand lens.

Hydric soil is defined as, "inundated for a period long enough during the growing season to produce anaerobic conditions in the upper part" (SCS, 1994). Hydric indicators develop when:

> Saturation or inundation, when combined with microbial activity in the soil, causes the depletion of oxygen. This anaerobiosis promotes certain bio-geochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods. (USACE, 2008)

We had anticipated that the surface layer might satisfy conditions for a "redox depression", like pool 1 did, even though it was only 4 inches thick. The pool 2 soil sample had faint diffuse redox (rusty-colored) mottles that were barely perceptible without a hand lens unlike the feature 1 soil that had m 20% distinct redox mottles and 10 % low value, low chroma mottles in a brown matrix that easily met the 5% or more requirement of "distinct or prominent redox concentrations, at least 2 inches thick, within the top 6 inches of soil" (Appendix A Photos & Appendix B).

As described in Section 3.1.2 Current and Historical Uses, the site was graded in 2002 at the time the catchment basin was built. The soil profile evidence indicates that up to two (2) feet of soils was "over-excavated" or removed at that time. The Madera series description indicates it should have been 26 inches to a duripan but was only 4 inches to a duripan. Although we can only speculate on where the soil went

after excavation, we know that it did not go to any of the nearby developments that were already built by 2003.

KEC has concluded that the pools at this site are human-constructed albeit unintentionally, since the stated purpose of the Romoland Master Drainage Plan was to prevent ponding on the east site of I-215 in 100-year floods (RCFC, 2006)

> The flood waters pond behind the AT&SF railroad tracks and, in the 100-year flood, inundates a path one-mile wide around McLaughlin Road. Further, culverts under Interstate 215 are undersized and water ponds behind them even under low intensity storm conditions. These floodwaters then cross Interstate 215 and cause interference to traffic. (RCFC, 2006)

No species that are "endemic" or uniquely associated with vernal pools occur on site and they would not be expected to occur given the disturbed conditions at the site and the lack of a soil types that are known to supported vernal pools and vernal-pool endemic species previous to excavation of the surface soil. While versatile fairy shrimp are present, they are not uniquely associated with vernal pools and as the name implies are more versatile in their habitat association sometimes occupying tire ruts. (LSA, 2022). None of the areas of inundation met the criteria as vernal pools according to the Arid West Regional Supplement to the Corps of Engineers Wetland Delineation Manual (USACE, 2008).

5.2.3 Impacts

There are no impacts to vernal pools as they are not present on the project site.

5.2.4 Mitigation

No mitigation is required for vernal pools as they are not present on the project site.

5.3 Fairy Shrimp

Vernal pools are a riparian/wetland habitat that may support the Riverside fairy shrimp, a species federally-listed as endangered. Other ephemeral pools, swales, tire tracks and ruts that that do not meet the criteria as a vernal pool wetland may also support Riverside fairy shrimp and other branchiopod species. KEC recommended focused fairy shrimp surveys because of on-site ponding even though no fairy shrimp records were returned within KEC's CNDDB 2-mile radius query of the CNDDB. LSA biologists conducted focused wet and dry season surveys according to the USFWS revised protocol from 2017 (LSA, 2022).

5.3.1 Methods

Previous wet season surveys were conducted at this site in 2012–2013 by Glen Lukos Associates prior to revision in the survey guidelines to include dry season surveys. Those earlier surveys observed different areas of ponding (Glen Lukos, 2013). The survey area in 2021 – 2022 includes all of the areas observed to pond water in this season; three ponding features totaling less than 0.4 acre. See the pool sample locations in Figure 1-3 and Appendix C Fairy Shrimp Wet Season Surveys, Figure 2 Features Sampled map.

Dr. Stan Spencer of LSA, holds an Endangered Species Act (ESA) Section 10(a)(1)(A) permit issued by the USFWS, # TE-777965. He conducted 10 site visits to complete the wet season surveys according to protocol between December 5, 2021 and April 4, 2022. He sampled each pool at less than 7-day intervals or until the pool dried according to current USFWS revised guidelines (USFWS, 2017).

"All features filled in December 2021 and were dry by early February 2022. Feature 2 refilled in late March and dried in early April" (LSA, 2022). He also completed the field portion of the dry season survey on May

11, 2022 while David Muth, also of LSA, conducted the lab work. Mr Muth holds a dry season USFWS permit # TE-839213.

5.3.2 Existing Conditions and Results

Two fairy shrimp surveys have been conducted at this project site, one by Glen Lukos in 2013 and the second by LSA in 2021 -2022. (Glen Lukos, 2013) (LSA, 2022)

When a project site has been disturbed, disced or has poorly drained soils known to support fairy shrimp, two seasons of surveys are required in order for the project to be determined consistent with the MSHCP. The 2021 – 2022 surveys fulfill that 2nd season requirement by the MSHCP for consistency.

The survey results were negative for the endangered Riverside fairy shrimp in both the 2013 and 2021 – 2022 surveys. The non-sensitive versatile fairy shrimp was detected by both surveys.

5.3.3 Impacts

No impacts will occur to the endangered Riverside fairy shrimp since they were not detected on site after two seasons of surveys.

5.3.4 Mitigation

No mitigation is required since no impacts will occur.

5.4 Riparian Birds

There was no potential riparian habitat for the three special status MSCHP riparian bird species:

- least Bell's vireo (Vireo bellii pusillus) federal and state listed as endangered
- Southwestern willow flycatcher (Empidonax traillii extimus) federal and state listed as endangered
- Western yellow-billed cuckoo (Coccyzus americanus occidentalis) federally listed as threatened, state listed as endangered.

The CNDDB 2-mile radius query returned no riparian-specific bird records.

5.4.5 Methods

KEC conducted field surveys and prepared a map of vegetation types on site and within the 500-foot survey buffer. KEC surveyed the area of the flood control channel on the west side of the EMWD headquarters facility during all visits partially on foot and the rest by binoculars.

5.4.6 Existing Conditions and Results

There is no forest, woodland or scrub habitat on site and therefore no habitat for riparian birds such as: least Bell's vireo, Southwestern willow flycatcher, or Western yellow-billed cuckoo.

The flood channel on the west side of the EMWD facility temporarily had vegetation including ruderal shrubs growing under a canopy of eucalyptus trees but the vegetation was grubbed in the spring when nesting birds may have occurred there. This vegetation did not have habitat components suitable for the listed riparian bird species, such as riparian/willow scrub or cottonwood/willow riparian woodland. Both the channel banks and habitat on both sides of the banks were plowed so that no understory vegetation remains.

KEC took note of all species on site with each visit and specifically looked for riparian-associated species such as yellow warbler (Setophaga petechia), common yellowthroat (Geothlypis trichas) and song sparrow

(Melospiza melodia) prior to the grubbing of vegetation by EMWD. No riparian-associated common or sensitive species were detected within this potential area of habitat within the 500-foot buffer (See species list Section 4.1.2). The biologist of a previous biological resources study for this site did note a fly over of white-faced Ibis (Plegadis chihi) a riparian-associated species and CDFW watch list species (L&L, 2016b).

5.4.7 Impacts

No impacts will occur to federally and state listed riparian bird species as their specific riparian habitat does not occur on site or within the 500-foot buffer. Other riparian birds will have less-than-significant impacts with mitigation if riparian vegetation grows back in the area where it was removed along the Flood Control Channel west of the EMWD facility.

5.4.8 Mitigation

MM-1 to avoid impacts to nesting and riparian birds and a violation of the Migratory Bird Treaty Act and the California Fish and Game Code:

Site preparation activities (ground disturbance, construction activities, staging equipment, and/or removal of trees and vegetation) for the project shall be avoided, to the greatest extent possible, during the nesting season of potentially occurring native and migratory bird species.

If site-preparation activities are proposed during the nesting/breeding season, the project proponent shall retain a qualified biologist to conduct a pre-activity field survey prior to the issuance of grading permits to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone.

If active nests are not located within the project site and an appropriate buffer of 500 feet of an active listed species or raptor nest, 300 feet of other sensitive or protected bird nests (non-listed), or 100 feet of sensitive or protected songbird nests, construction may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, the biologist shall immediately establish a conservative avoidance buffer surrounding the nest based on their best professional judgement and experience. The biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the biologist determines that such project activities may be causing an adverse reaction, the biologist shall adjust the buffer accordingly or implement alternative avoidance and minimization measures, such as redirecting or rescheduling construction or erecting sound barriers. All work within these buffers will be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite qualified biologist will review and verify compliance with these nesting avoidance buffers and will verify the nesting effort has finished. Work can resume within these avoidance areas when no other active nests are found. Upon completion of the survey and nesting bird monitoring, a report shall be prepared and submitted to City for mitigation monitoring compliance record keeping.

5.5 Other Section 6.1.2 Species

The purpose of MSHCP Volume 1 Section 6.1.2 as it applies to the wet meadow habitats that occur on this project site is to “ensure that the biological functions and values of riparian/riverine areas and vernal pools throughout the MSHCP Plan Area are maintained such that habitat values are maintained for ALL 6.1.2 species” (RCA, 2019).

Although the site was determined not to support protected riparian habitats such as vernal pools, it does support riparian-associated or facultative wetland plants. The focus of Section 6.1.2 for this site is to evaluate whether it has the potential to support sensitive riparian-associated plants under different annual seasonal conditions in the past or future. This requires an understanding of the phenology, ecology and habitat criteria for each of the species on the MSHCP Section 6.1.2 list.

Of the 34 6.1.2-species, only one animal species, Cooper's hawk (Accipiter cooperi), was represented in the CNDDB 2-mile radius query. Of 23 flora species in the 6.1.2 list, records for four (4) species were returned by the CNDDB 2-mile radius query:

- San Jacinto Valley crownscale (Atriplex coronata var. notatior) Federally listed as endangered
- smooth tarplant (Centromadia pungens ssp. laevis)
- spreading navarretia (Navarretia fossalis) federally listed as threatened
- thread-leaved brodiaea (Brodiaea filifolia) federally listed as threatened and state listed as endangered

Species not returned in the CNDDB query are discussed in Section 6.0 Narrow Endemic Plants, Section 7.1 Criteria Areas Plant Species. The potential for the remaining 6.1.2-list fauna species not represented in the CNDDB query are evaluated in Section 5.3 Fairy Shrimp, Section 5.4, Riparian Birds, and Section 7.2 Amphibians and the Potentially Occurring Species Table (Appendix D).

5.5.1 Methods

KEC queried the CNDDB within a two-mile radius of the project site that included habitat types where the 34 species identified as Riparian Associated species are likely or known to occur in the Perris Valley. The 2-mile radius excluded the Santa Ana Mountains to narrow down the list of riparian species to those that occur in the Perris Basin. Surveys were conducted during the appropriate season for each species Figure 1-5

The Potentially Occurring Species Table, Appendix D, identifies the potential for a variety of sensitive flora and fauna to occur on site including those on the Section 6.1.2 list. KEC considered field survey findings and whether habitat components for the species are present on the site.

KEC mapped the spatial relationship of the FEMA regulatory floodway and soil series to recorded locations of 6.1.2 species in Figure 1-5. We identified soil chemistry and ponding patterns. We used that information to predict the potential for those species on site without bias, knowing that ponded habitat on site was artificially created. Finally, we surveyed for habitat components for 6.1.2 fauna and for 6.1.2 flora, during their bloom period, in conjunction with our other surveys throughout the phenological season of plant growth.

5.5.2 Existing Conditions and Results

Of the 6.1.2-list fauna, Cooper's hawk was the only fauna species with potential to occur on site and it does occur on site. KEC biologist, Debbie Kinsinger, observed it routinely roosting in the Eucalyptus trees on site and foraging in the area. Cooper's hawk became broadly adapted to urban habitats from 1980 through 2000. It preys on other birds, mostly in woodlands or wooded urban habitats (Unitt, 2007).

During surveys, none of the 6.1.2-list flora species were detected on site from November 2021 through August of 2022. KEC evaluated the soil chemistry that is associated with the distribution of the four 6.1.2-list species within the 2-mile query area: San Jacinto Valley crownscale, spreading navarretia, and thread-leaved brodiaea are all riparian. The fourth plant, smooth tarplant (Centromadia pungens ssp. laevis), is not riparian. After a total of nine (9) site visits by KEC and nine (9) visits by Dr. Stanley Spencer of LSA, who

was looking specifically at wetland-riparian associated species during fairy shrimp surveys, KEC classified the four as "Not-expected" to occur on site.

All of the recorded 6.1.2-list plant locations in the query area occurred within the FEMA regulatory floodway to the north and west of the project site which includes the main stem of the San Jacinto River. All of them are co-located on soil types that are associated with vernal pools; the Willow and Domino soil series (Figure 1-5).

Both Willow and Domino soils are saline/alkaline while soils at the project site are in the Madera series and have a neutral pH at the surface and throughout the rooting zone from 4 to 19 inches. Madera soils are "moderately alkaline" below 19 inches to a "duripan" (cemented layer of silica or "opal" precipitates) at 26 inches. They do not meet the definitions of "alkaline" soil, pH of 8.5 within the root zone or "saline" with an electroconductivity of 30 deciSiemens per meter (dS/m) or above.

> Electrical conductivity is a measure of the quantity of salts in soil (salinity)… Soils containing excessive salts occur naturally in arid and semiarid climates. Soils that have a restrictive layer, such as a claypan, typically have higher electroconductivity. The salts accumulate on the soil surface because the restrictive layer limits water flow; thus, they cannot be leached from the root zone. (NRCS, 2014)

Willows and Domino soils form under conditions of shallow flooding where precipitated mineral salts have accumulated after the vernal pools and/or wet meadows dry in the summer. Over the evolutionary time required for these soils to develop, only those plants that could tolerate these saline/alkaline environments persisted. They diverged into genetically distinct species that only occur in these highly saline/alkaline environments. That means that they are "endemic" to the habitat. They are so uniquely adapted to vernally wet alkaline environments of the Perris valley that they occur nowhere else.

> The federally-listed as endangered San Jacinto Crownscale is one of those species, "Endemic to the alkaline flats of the San Jacinto River, Hemet, and the wetland northwest of Lake Elsinore. Under heavy pressure from land development".
>
> Smooth tarplant is "nearly endemic to the Perris Basin, with only minor extensions into San Bernardino and San Diego Counties. Fairly common in places on fine or alkaline soils and the San Jacinto River basin. Tolerant of rural and agricultural land use, but declining rapidly with urbanization".
>
> Spreading navarretia is "local but sometimes fairly common, vernal plains west of Hemet, alkali wetlands near Elsinore. Scarce elsewhere in Perris Basin and Santa Rosa Plateau." It is federally-listed as threatened.
>
> Thread-leaved brodiaea is California-listed as endangered and federally-listed as threatened. "Generally uncommon, but locally common in some areas where found: clay soils and vernal pools southern Santa Ana Mtns., Santa Rosa Plateau, and alkali flats, San Jacinto River floodplain and west of Hemet." (Roberts et al, 2004)

These four plants on the 6.1.2 list were considered for their potential to occur on site based on soil chemistry and hydrology requirements until field investigations determined that the soil is not saline/alkaline even though there are seasonally wet meadows that have water restrictive sub-horizons.

The chemistry of Willows and Domino series soils reduce plant nutrient availability and narrow the range of the plants that can thrive. Thus, they develop endemic plant associations that are unique to the strongly saline/alkaline soil characteristics. The distribution of 6.1.2 plants within the CNDDB query is strongly

correlated with these soils; therefore, KEC determined them as not-expected-to-occur and validated that assumption with field surveys that did not result in detections.

It should be noted that two non-living specimens of Western pond turtle (Emys marmorata) were collected in 1933 and recorded within the query area. Western pond turtle is a riparian /riverine species not included in the 6.1.2 MSHCP list but is mentioned in the MSHCP guidance manual (RCA, 2019). Western pond turtle is to be considered within this analysis since its location is outside of criteria species survey areas. Notes in the CNDDB database indicate the population for this record is extirpated. No other animal species from the 6.1.2 list were recorded within the query area. (See the 6.1.2 list in Appendix D)

5.5.3 Impacts

With the exception of the Cooper's hawk, none of the species from the 6.1.2 list are expected to occur on site based on field inventories and data base research. No impacts will occur to 6.1.2 plant species. Indirect impacts the Cooper's hawk foraging habitat will be less-than-significant. The MSHCP species monitoring program report for 2020 finds that the species objective evaluated by the Monitoring Program, to "maintain species presence and continued use at 75% of identified Core Areas is currently met with detections in 100% of core areas" (RCA, 2021).

Direct impacts to any non-game native bird are considered significant. Direct impacts to Cooper's hawk and other native birds, will be less-than-significant with mitigation.

5.5.4 Mitigation

No mitigation is required for 6.1.2 plant species since there will be no impacts. To avoid impacts to Cooper's hawk and or other nesting birds implement mitigation measure (MM) 1 (See Mitigation Monitoring Summary Section 10 Summary Conclusions and Recommendations)

6.0 Protection of Narrow Endemic Plants

This project site is not included as a Narrow Endemic Plant Species (NEPS) survey site. Munz's onion (Allium munzii) federally listed as endangered and state listed as threatened, and spreading navarretia are the only NEPS species that occurred within the CNDDB 2-mile query.

Spreading navarretia is on both the Riparian/Riverine 6.1.2 list and NEPS list and discussed above in section 5.5. Remaining NEPS species are discussed in the Potentially Occurring Species Table since focused surveys were not required.

6.1 Methods

KEC conducted floristic surveys throughout the phenological year at the project site in conjunction with the focused burrowing owl survey and jurisdictional delineation validation.

6.2 Existing Conditions and Results

Munz's onion is state listed as threatened and federally listed as endangered. Munz's onion is, "Endemic to western Riverside County. Uncommon on heavy clay, mostly in native grasslands of the Gavilan Hills, Santa Ana Mtn. (Elsinore Peak), Alberhill, and hills and valleys in the vicinity of Murrieta and Lake Skinner." (Roberts et al, 2004) "The type locality at the mouth of Indian Canyon has been greatly reduced or eliminated by residential development and construction of the I-15 Freeway" (Allen R., F. Roberts, 2013).

Munz's onion is associated with heavy clay soils in these series: Altamont, Auld, Bosanko, and Porterville (USFWS, 2013). These soils are all in the soil order "Vertisols" (NRCS, 2013). Vertisols have a clay

mineralogy that is expansive, meaning that the micro-structure lattice of clay mineralogy includes water. When these soils dry, they shrink leaving deep cracks approximately ¼ inch or wider (5 millimeters) and 10 inches or more deep either at the surface or within the top 20 inches of the surface (NRCS, 2014). Vertisols are known for having a "hummocky" relief that when combined with heavy clay, support vernal pools.

The project site does not support vernal pools or natural riparian areas or soils of the type that support Munz's onion. It has no native grasses. It would not be expected to occur on site and no plants of the genus Allium occur on site.

6.3 Impacts

No NEPS occur on site and no impacts will occur

6.4 Mitigation

No impacts will occur and no mitigation is needed

7.0 Additional Survey Needs and Procedures

7.1 Criteria Area Plant Species

Criteria Area Species (CAS) that occur within the 2-mile CNDDB data query include several wetland or facultative wetland species that were considered for their potential to occur on site. These include: thread-leaved brodiaea, San Jacinto Valley crownscale, prostrate navarretia (Navarretia Prostrata), Parish's brittlescale (Atriplex parishii), mud nama (Nama stenocarpum), Coulter's goldfields, (Lasthenia glabrata ssp. coulteri), Davidson's saltscale, (Atriplex serenana var. davidsonii), little mousetail (Myosurus minimus), and smooth tarplant. Of these, San Jacinto Valley crownscale, Parish's brittlescale, Coulter's goldfields, and smooth tarplant occur within the CNDDB 2-mile query area. Other Criteria Area Species are discussed in Appendix D.

7.1.1 Methods

KEC biologists evaluated the habitat conditions on site and the requirements of CAS species to rule out the species that would not be expected to occur. Once having made that determination, KEC surveyed the site to check if those assumptions were accurate based on the floristic species composition on the site. KEC visited the site on 9 separate occasions making the attempt to identify all species on site. KEC considered the regulatory status of species and classification of species as facultative, wetland facultative, upland facultative, or obligate wetland and how those species may be present in sensitive plant communities like vernal pools but also occur elsewhere.

San Jacinto Valley crownscale and Parish's brittlescale, both in the genus Atriplex, and Coulter's goldfields and smooth tarplant, in the family Asteraceae, share the same endemism associations with alkaline or saline/alkaline soils and/or vernal pools. KEC conducted the validation of the previous jurisdictional delineation as much to confirm that these saline/alkaline soils did not occur on the site as to determine the wetland status of the seasonal depressions.

If Willows and Domino soils occurred on a site with seasonally moist depressions, it would indicate a need for focused Criteria Area floristic surveys even if the project site wasn't within a criteria cell. Although, this year's rainy season occurred during a "severe" drought year, the floristic surveys were conducted during the peak of bloom in April (NDMC, 2022). Soil samples were taken in October of 2021 after the first rain and in August of 2022 after fairy shrimp surveys were complete.

7.1.2 Existing Conditions and Results

KEC's jurisdictional validation affirmed that the project site does not contain inclusions of saline/alkaline soils and/or vernal pools. Smooth tarplant is endemic to those soils and it is a CAS species that is also a 6.1.2 species discussed in section 5.5. No other tarplant-like species were detected on site.

KEC surveyed to disambiguate the sensitive Coulter's goldfields from Coastal goldfields. Older biology studies for this site listed Royal goldfields (Lasthenia coronaria) as occurring on site. Coulter's goldfields have fused phyllaries that are not sticky and not hairy and have linear leaves. Coastal goldfields have hairy phyllaries that are not fused and have linear leaves. Royal goldfields have sticky-tipped hairs on the phyllaries that are not fused and royal goldfields "is our only goldfields that may have pinnate leaves" (Allen R., F. Roberts, 2013). All bloom during an overlapping time period.

Phyllaries of goldfields on site were hairy, not sticky, not fused and they had linear leaves. They keyed out as Coastal goldfields. Coulter's goldfields are not expected to occur on a site that does not have saline or saline/alkali playas or vernal pools. "Most Riverside County populations are associated with the Willows soil series" (RCTLMA, 2003a) (See Figure 1-5). For these reasons, focused surveys for Coulter's goldfields are not recommended.

San Jacinto crownscale, Davidson's saltscale and Parish's brittlescale are annuals and distinguished from the Atriplex that occurs on site, Australian saltbush, which is a perennial. The project site lacks saline/alkaline soils that the CAS Atriplex species require. Australian saltbush is a low-lying but robust, shrub with large oblanceolate leaves that is much larger than the CAS Atriplex.

The CAS Atriplex sometimes occur in disturbed or even agricultural fields but always in saline/alkaline soils. Within the CNDDB query area they occur directly adjacent to the San Jacinto River on the dike. KEC has observed that those occurring in disturbed areas are generally present in a community dominated by other Atriplex species. Focused surveys for San Jacinto crownscale are not recommended because the site lacks saline/alkaline habitat and they are annuals while the of Atriplex that occurs on site is perennial.

For these reasons, CAS plants associated with vernal pools and saline playas are not expected to occur on the project site and focused surveys for these species are not recommended (See Appendix C Field Notes).

7.1.3 Impacts

No CAS occur on site and no impacts will occur

7.1.4 Mitigation

No mitigation is required since no impacts will occur.

7.2 Amphibians

Four amphibian species are covered under the MSHCP. California red-legged frog (Rana draytonii) is federally listed as threatened. Southern mountain yellow-legged frog (Rana muscosa) is both federally and state listed as endangered. The coast range newt (Taricha tarosa tarosa) and western spadefoot (Scaphiopus hammondii) are California Species of Special Concern (SSC) (RCTLMA, 2003a).

7.2.5 Methods

There are four records for Western spadefoot within the CNDDB 2-mile query. It occurs in vernal pools and human constructed pools surrounded by development. California red-legged frog occurs on the Santa Rosa Plateau and southern mountain yellow-legged frog occurs in mountain environments. Both require pristine streams that do not have bullfrogs. Arroyo toad occurs along the sandy banks of perennial rivers and streams where there is at least only limited competition with bull frogs. Coast range newt inhabits a

variety of upland habitats but relies on bodies of water for breeding purposes. It occurs on "lands adjacent to Forest Service southeast of Lake Elsinore, and along Highway 74, and southwest of Corona. Southeast of Lake Norconian and west of Highway 15. Several known citations of Forest Service lands, and at the Santa Rosa Plateau." Of the four MSHCP amphibians, coast range newt occurs within the query area. (RCTLMA, 2003b)

7.2.6 Existing Conditions and Results

These sensitive species require natural wetlands and pools or riparian/riverine habitats that do not occur on site. No common or non-sensitive amphibians were detected on site. No focused surveys are recommended. There is no potential for any of the amphibian species other than western spadefoot to occur on site because of their sensitivity to disturbance and the lack of perennial streams. The potential for western spadefoot to occur is low because of the lack of a connectivity corridor to inhabit the human-constructed habitats on site from another suitable occupied habitat. They were not detected during the fairy shrimp surveys (LSA, 2022).

7.2.7 Impacts

These species do not occur on site and no impacts will occur

7.2.8 Mitigation

No impacts will occur and no mitigation is required.

7.3 Burrowing Owl

The project site is located with the MSHCP's burrowing owl survey area Figure 1-4. Focused surveys are required in these areas. Burrowing owl is a California Species of Special Concern (SSC) and USFWS Bird of Conservation Concern (BCC). There are four records of BUOW within the CNDDB 2-mile query area mostly near channelized tributaries of the San Jacinto River to the north and south.

7.3.9 Methods

The transect paths and Survey dates for the focused BUOW survey are illustrated in the Appendix F. KEC conducted a new focused BUOW rather than a 30-day Take Analysis because it had been more than one year since the previous survey and there was both seasonal water on site and in a flood control channel offsite that make the area suitable for BUOW. In addition, there were suitable burrow locations within the 500-foot survey buffer.

Ms. Kinsinger, of KEC, conducted the habitat assessment for Western burrowing owl according to the Western Riverside MSHCP BUOW Survey Protocol (RTLMA-EPD, 2006a). Suitably sized burrows (3 inches or greater) were documented within the non-native grassland habitat, disced & mowed fields, and drainage channels. Suitably sized cavities, debris piles and culverts were recorded with GPS and photographed.

7.3.10 Existing Conditions and Results

Non-native grasslands are important habitats for raptors because they support small burrowing animals that forage on herbs and seeds. Fences and utility poles serve as perches for raptors such as burrowing owls and hawks, which prey on ground squirrels, snakes, mice, lizards and in the case of BUOW, insects.

The BUOW, is attracted to agricultural fields near irrigation canals that have water that support an insect prey base. An important component to burrowing owl success is the presence of California ground squirrels which create burrows that the BUOW modifies and uses as a natal den as well as for roosting. (CDFW, 2012)

There are two CNDDB BUOW localities on the "Perris Storm Drain" to the north that is also a channelized tributary of the San Jacinto River. The channelized tributary of the San Jacinto River to the south of SR-74 has the most recent BUOW occurrence from 2015 near the intersection of McLaughlin and Matthews Road. There is development in the area but some open fields are still present there with potential habitat.

One CNDDB BUOW locality is approximately one mile east of the project site on Mapes Road within a ruderal non-native grassland community with similar species composition to that on site. The record is from 1987 for "two burrows and two owls" but no indication if the two were breeding. Aerial photos of the site show that it is still undeveloped as of February 2022.

The project site has a water source in the EMWD flood channel to the north of the project site. The project site has suitable perches and potentially suitable artificial burrows in the form of culverts, tires and debris piles. The soil is too hard and shallow for ground squirrels to create burrows on site. Ground squirrels do occupy the vacant parcel on the southeast site of the Mapes and Trumble Road intersection within the 500-foot survey buffer.

One manmade cavity, a pile of lumber debris near the north western boundary of parcel 329-020-046, was lying horizontally on the site. It had no evidence of use by California ground squirrels or by BUOW. A couple of tires and four sets of double culverts along the base of the I-215 freeway slope provide artificial cavities as potential habitat. BUOW could use these for dens with the EMWD channel as a source of water and insect prey nearby.

KEC conducted a BUOW den mapping survey and three focused BUOW transect surveys and failed to detect evidence of BUOW activity at any of the potentially suitable den sites on the project site. (Appendix F)

The vacant parcel on the east side of Trumble, within the jurisdiction of the City of Menifee, supported several California ground squirrel burrow complexes in the softer and regularly disced soil. There were many burrows with openings between three and six inches wide or wider and burrow complexes that would be suitable habitat for BUOW. None of the burrows had evidence of BUOW pellets, den-apron decoration, feathers, white wash or tracks.

This field was mowed and used as an event parking lot for trailered horses sometime close to the July 4th holiday (based on tire/hoof tracks and manure). Afterwards, vegetation on site was nearly absent, most of the burrows were collapsed and ground squirrel activity was diminished. If BUOW were to occupy the site, this might have been a time to take over an abandoned ground squirrel den but there still was no evidence of BUOW use in the August survey.

7.3.11 Impacts

There is a moderate potential for burrowing owl to occur within the 500-foot buffer area because of its isolation from pedestrian traffic, proximity to the EMWD flood channel as a water source, and vegetation that is grassland or open. There is potentially suitable artificial habitat in freeway culverts in the I-215 right-of-way on the western boundary of the project site. There is potential for BUOW to occur within the 500-foot buffer in the field on the southeast side of the Mapes and Trumble Road intersection where there are abundant ground squirrel colonies and suitable den habitat.

There is low potential for BUOW to occur on the project site because there are no burrows on site that meet the criteria for BUOW to occupy and only one pile of discarded lumber as potential artificial burrow.

Direct impacts to potentially occurring burrowing owl within the 500-foot buffer caused by activity and noise on the project site can be avoided by mitigation.

Indirect impacts to BUOW from loss of habitat are less-than-significant because loss of the potential habitat does not fragment existing habitat and there is no evidence that the project site or suitable habitat within the 500-foot survey buffer was occupied by BUOW within the last three years (CDFW, 2012).

7.3.12 Mitigation

MM-2: The project proponent shall retain a qualified biologist to conduct a pre-construction survey for resident burrowing owls within 30 days prior to commencement of grading and construction activities at the project site. The survey shall include the project site and all suitable burrowing owl habitat within a 500-foot buffer. The results of the survey shall be submitted to the City prior to obtaining a grading permit. In addition, if burrowing owls are observed during the Migratory Bird Treaty Act nesting bird survey required by mitigation measure MM-1, to be conducted within three days of ground disturbance or vegetation clearance, the observation shall be reported to the CDFW. If ground disturbing activities in these areas are delayed or suspended for more than 30 days after the pre-construction survey, the area shall be resurveyed for owls. The pre-construction survey and any relocation activity shall be conducted in accordance with the current Burrowing Owl Instruction for the Western Riverside MSHCP.

If burrowing owl are detected, the CDFW shall be sent written notification within three days of detection of burrowing owls. If active nests are identified during the pre-construction survey, the nests shall be avoided, and the qualified biologist and project proponent shall coordinate with the City of Perris Planning Division, the USFWS, and the CDFW to develop a Burrowing Owl Plan to be approved by the City in consultation with the CDFW and the USFWS prior to commencing project activities. The Burrowing Owl Plan shall be prepared in accordance with guidelines in the CDFW Staff Report on Burrowing Owl (March 2012) and MSHCP. The Burrowing Owl Plan shall describe proposed avoidance, minimization, relocation, and monitoring as applicable. The Burrowing Owl Plan shall include the number and location of occupied burrow sites and details on proposed buffers if avoiding the burrowing owls and/or information on the adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls may also be required in the Burrowing Owl Plan. The permittee shall implement the Burrowing Owl Plan following CDFW and USFWS review and concurrence. A final letter report shall be prepared by the qualified biologist documenting the results of the Burrowing Owl Plan. The letter shall be submitted to the CDFW prior to the start of project activities. When the qualified biologist determines that burrowing owls are no longer occupying the Project site per the criteria in the Burrowing Owl Plan, project activities may begin.

If burrowing owls occupy the project site after project activities have started, then construction activities shall be halted immediately. The project proponent shall notify CDFW and USFWS within 48 hours of detection. A Burrowing Owl Plan, as detailed above, shall be implemented.

8.0 Mammals

The project site is not within a criteria area for focused mammal surveys. Three mammal species that are covered under the MSHCP occurred within the CNDDB 2-mile query area; Stephens' kangaroo rat (Dipodomys stephensi) is federally and state listed as threatened. It was "reclassified" from endangered to "threatened" in February of 2022 by the USFWS along with a concurrent Endangered Species Act "4(d) rule" for management activities in approved management plans (RCHCA, 2022). It also has its own Habitat Conservation Plan independent from the MSHCP (RCHCA, 1996). San Bernardino kangaroo rat (Dipodomys merriami parvus) is both federally and state listed as endangered. San Diego black-tailed jackrabbit (Lepus californicus bennettii) and Southern grasshopper mouse (Onychomys torridus ramona) and are both

California Species of Special Concern but the San Diego black-tailed jackrabbit is also a MSHCP-covered species.

8.1 Methods

The 2-mile CNDDB query had one instance of the federally-listed as endangered San Bernardino kangaroo rat. While this species is "presumed extant", the CNDDB record is from 1932 and there are no recent updates. San Bernardino kangaroo rat (SBKR) is largely extirpated from Riverside County. A new cooperative translocation program between the San Diego Zoo and the RCA is re-introducing SBKR along the San Jacinto and Santa Ana River (RCA, 2021).

The CNDDB query returned two instances of Southern grasshopper mouse, one Stephens' kangaroo rat, one San Bernardino Kangaroo rat and one San Diego Black-tailed jackrabbit. All were located south of SR-74 in grasslands and open fields near the intersection of Matthews and McLaughlin Roads in Menifee (Figure 1-4). The location is near a channelized tributary of the San Jacinto River. There are also BUOW records there as recently as 2015.

8.2 Existing Conditions and Results

There was no suitable habitat for burrowing mammals on site other than Botta's pocket gopher. The soil was too hard and dense. Pocket gophers occurred around fence areas where soil had been disturbed and on the west side of the catchment basin where a berm to retain the water inside created a small area of disturbed soil deep enough to support pocket gophers. The habitat is not suitable for any of the four species of kangaroo rat or two pocket mouse species that are covered by the MSHCP. All require loose loamy or sandy soil for burrowing and generally occur close to riparian features. (RCTLMA, 2003b)

San Diego black-tailed jackrabbit are primarily nocturnal. "They typically are non-burrowers and take refuge under shrubs in depressions during the day." The species has a large range of habitats and dispersal area and depends on large tracts of unfragmented habitat. One San Diego black-tailed jackrabbit was observed on site by Cadre biologists in their 2011 Habitat Assessment of the site (Cadre, 2011)

8.3 Impacts

There are no sensitive mammals on site and there are no direct impacts.

The MSHCP protects large expanses of conserved habitat for that benefit mammals with large territorial ranges. Therefore, the loss of potential habitat from this site will be less-than-significant.

8.4 Mitigation

No mitigation is required because there will be no impacts.

9.0 Information on Other Species

9.1 Delhi Sands Flower Loving Fly

The project site does not occur within the MSHCP survey area for Delhi Sands Flower Loving Fly (Rhaphiomidas terminatus abdominalis) federally listed as endangered. Its range is extremely restricted to northwestern corner of the plan area, also the Jurupa Hills and Agua Mansa Industrial Center in Riverside County. It occurs in a narrow range of habitat exclusive to the Delhi Sands soil series. (RCTLMA, 2003b)

It is not expected to occur within the project area.

No Impacts will occur and no mitigation is required.

9.2 Species Not Adequately Conserved

Of the 28 MSHCP species that are not adequately conserved, nine (9) have met the conservation criterion as of the Resource Conservation Authority 2020 Report (RCA, 2021) including Parry's spineflower (Chorizanthe parryi var. parryi) and peninsular spineflower (Chorizanthe leptotheca).

The remaining 26 species are mostly associated with sage scrub, chaparral or mountain habitats outside the query area in the Santa Rosa Plateau or mountains surrounding the basin on U.S. Forest Service or State Managed Lands. Those that also occur within the Perris basin are discussed in the Appendix D Table. (RCTLMA, 2003a) Section 9.0.

9.2.1 Methods

Parry's spineflower occurs within the CNDDB 2-mile query area and peninsular spineflower does not. Because Parry's spineflower was within the query area, KEC surveyed during the blooming season to ensure that all the small-statured native forbs like Parry's spineflower and Peninsular spineflower were identified.

9.2.2 Existing Conditions and Results

Parry's spineflower was considered to have a low potential to occur on site since it was within the CNDDB 2-mile query. It "occurs within the alluvial chaparral and scrub of the San Gabriel, San Bernardino and San Jacinto Mountains, at elevations of 330 to 4,300 feet (100 to 1,300 meters) AMSL.

Peninsular spineflower is associated with granitic-derived or "old formation alluvial benches" in its lower elevations. Madera soils, are alluvial and granitic-derived, so Peninsular spineflower was considered to have a low potential to occur (RCTLMA, 2003b).

None of the similar-appearing spineflower genus, Chorizanthe, Dodecahema, Lastarriaea or Sidotheca were detected on site. KEC considered the habitat associations for all the MSHCP-covered spineflower species.

Long-spined spineflower (Chorizanthe polygonoides var. longispina) is a MSHCP-covered species that occurs just outside the query area but is not one of the 28 species "not adequately conserved". It occurs on "heavy, often rocky, clay soils in southern needlegrass grassland" (RCTLMA, 2003b). The site is a non-native grassland and doesn't have heavy clay soils so the species is not expected to occur.

Prostrate spine flower (Chorizanthe procumbens) occurs in sandy soils in Temecula and Santa Rosa Plateau (Roberts et al, 2004) and (Allen & Roberts, 2013). It is known to tolerate minimal disturbance and is found "along the margins of dirt roads or brushed chaparral and considered to have a low potential to occur" (RCTLMA, 2003b).

9.2.3 Impacts

Species on the "Not Adequately Covered" list were not detected and not expected to occur on site and there will be no impacts.

9.2.4 Mitigation

There are no potential impacts and no mitigation is required.

10.0 Guidelines Pertaining to the Urban/Wildlands Interface

This project site is not located adjacent to existing conservation land or land described for conservation. It is not next to riparian habitat. It is surrounded by industrial uses. There are no impacts or required mitigation. The best management avoidance practices for Urban/Wildlands Interface do not apply to this project site.

11.0 Summary Conclusions and Recommendations

The MSHCP is approved by the State of California and the U.S. Fish and Wildlife Service (USFWS) to cover threatened or endangered species listed under the California Endangered Species Act (CESA) (California, State of, 2014) and the federal Endangered Species Act (ESA) (U.S.C., 1973). The City may permit development without additional consultation for potentially occurring listed species, because listed species are determined to be adequately covered under their respective plans.

The MSHCP Consistency Analysis also considered the potential for impacts to jurisdictional waters as defined by the State of California the U.S. federal jurisdictional agencies, the County definitions under the MSHCP.

11.1 California Environmental Quality Act (CEQA)

CEQA requires determination of consistency with the MSHCP as well as local regulations and a significance analysis for impacts to biological and natural resources not adequately conserved under those regulations and fully protected species (PRC, 2020). This MSHCP Consistency Analysis achieves those objectives and finds the project to be consistent with CEQA including species not adequately covered by the MSHCP and fully protected species because impacts to those species and listed species are less-than-significant with mitigation as described in the recommendations below and no impacts to fully protected species will occur. No further discussion of federally or state listed or MSHCP-covered species is required because the project site is not in a criteria area species survey area.

11.1.1 Mandatory Findings of Significance

CEQA "Mandatory Findings of Significance" require evaluation of actions that may "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 animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species" (PRC, 2020) CCR 15065 (a) (1)). While threatened and endangered species and many other non-listed species are covered for take and conserved within existing Habitat Conservation Plans and Mitigation Banks within Riverside County, CEQA requires that any species or population, whether covered by an HCP or not, be considered for the potential to experience "significant impacts" according to this definition.

11.1.1.1 Sensitive and Common Fauna

The list of potentially occurring listed species in Appendix D gives the rational for each species' likelihood to occur in the last column. None of the potentially occurring federal or state-listed species is expected to occur within the project survey area because there is no suitable habitat.

Several sensitive animal species do occur on the site: MSHCP covered Cooper's hawk and horned lark. Cooper's hawk forages on site but this species is not threatened by loss of habitat since it has naturalized in urban environments (Unitt, 2007). Three species of ground nesting birds were routinely active on site:

horned lark, killdeer, and lark sparrow. A pair of Killdeers were observed nesting on site. All three have a NatureServe status of "G4" "apparently secure" but horned lark is covered by the MSHCP and considered sensitive.

The habitat of horned lark and other ground nesting birds is declining due to the expansion of urbanization. Birds that are common to open spaces and not adapted to urban environments such as Say's phoebe are also experiencing reductions in habitat but the MSHCP protects large expanses of conserved habitat for foraging and nesting and these species benefit even though they are not directly covered by the MSHCP. Therefore, indirect impacts from the loss of their habitat from this site will be less-than-significant to the species as a whole.

11.1.1.2 Sensitive and Common Flora

None of the potentially occurring federal or state-listed species is expected to occur within the project survey area because there is no suitable habitat. Of those potentially occurring sensitive species already discussed in this document and those discussed in Appendix D, none were detected on site. Among the species that do occur on site, none are sensitive, rare, or populations whose loss might substantially reduce the number or restrict the range of an endangered, rare or threatened species.

Of the more common species, coastal goldfields and tidy tips are the pride of Southern California's meadows and foothills. Their habitat is declining due to the expansion of urbanization but suitable habitats for these common species are protected under the MSHCP through large expanses of conserved habitat, therefore their loss from this site will be less-than-significant.

11.1.2 Impacts

Direct impacts to common flora species in meadow habitats and indirect impacts to these species from loss of habitat range is less-than-significant as a result of conservation planning through the MSHCP.

Direct impacts to sensitive and common avian species are less-than-significant with mitigation to avoid direct impacts. Indirect impacts from loss of habitat are less-than-significant as a result of conservation planning through the MSHCP.

Based on these results, KEC finds that none of the indirect, direct or cumulative incremental impacts to species and habitat are above the threshold definition for "Mandatory Findings of Significance" and impacts are substantially below this threshold for both flora and fauna.

11.1.3 Mitigation Measures

Mitigation Measures

MM-1 to avoid impacts to nesting and riparian birds and a violation of the Migratory Bird Treaty Act and the California Fish and Game Code:

Site preparation activities (ground disturbance, construction activities, staging equipment, and/or removal of trees and vegetation) for the project shall be avoided, to the greatest extent possible, during the nesting season of potentially occurring native and migratory bird species.

If site-preparation activities are proposed during the nesting/breeding season, the project proponent shall retain a qualified biologist to conduct a pre-activity field survey prior to the issuance of grading permits to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone.

If active nests are not located within the project site and an appropriate buffer of 500 feet of an active listed species or raptor nest, 300 feet of other sensitive or protected bird nests (non-listed), or 100 feet

of sensitive or protected songbird nests, construction may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, the biologist shall immediately establish a conservative avoidance buffer surrounding the nest based on their best professional judgement and experience. The biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the biologist determines that such project activities may be causing an adverse reaction, the biologist shall adjust the buffer accordingly or implement alternative avoidance and minimization measures, such as redirecting or rescheduling construction or erecting sound barriers. All work within these buffers will be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite qualified biologist will review and verify compliance with these nesting avoidance buffers and will verify the nesting effort has finished. Work can resume within these avoidance areas when no other active nests are found. Upon completion of the survey and nesting bird monitoring, a report shall be prepared and submitted to City for mitigation monitoring compliance record keeping.

MM-2: The project proponent shall retain a qualified biologist to conduct a pre-construction survey for resident burrowing owls within 30 days prior to commencement of grading and construction activities at the project site. The survey shall include the project site and all suitable burrowing owl habitat within a 500-foot buffer. The results of the survey shall be submitted to the City prior to obtaining a grading permit. In addition, if burrowing owls are observed during the Migratory Bird Treaty Act nesting bird survey required by mitigation measure MM-1, to be conducted within three days of ground disturbance or vegetation clearance, the observation shall be reported to the CDFW. If ground disturbing activities in these areas are delayed or suspended for more than 30 days after the pre-construction survey, the area shall be resurveyed for owls. The pre-construction survey and any relocation activity shall be conducted in accordance with the current Burrowing Owl Instruction for the Western Riverside MSHCP.

If burrowing owl are detected, the CDFW shall be sent written notification within three days of detection of burrowing owls. If active nests are identified during the pre-construction survey, the nests shall be avoided, and the qualified biologist and project proponent shall coordinate with the City of Perris Planning Division, the USFWS, and the CDFW to develop a Burrowing Owl Plan to be approved by the City in consultation with the CDFW and the USFWS prior to commencing project activities. The Burrowing Owl Plan shall be prepared in accordance with guidelines in the CDFW Staff Report on Burrowing Owl (March 2012) and MSHCP. The Burrowing Owl Plan shall describe proposed avoidance, minimization, relocation, and monitoring as applicable. The Burrowing Owl Plan shall include the number and location of occupied burrow sites and details on proposed buffers if avoiding the burrowing owls and/or information on the adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls may also be required in the Burrowing Owl Plan. The permittee shall implement the Burrowing Owl Plan following CDFW and USFWS review and concurrence. A final letter report shall be prepared by the qualified biologist documenting the results of the Burrowing Owl Plan. The letter shall be submitted to the CDFW prior to the start of project activities. When the qualified biologist determines that burrowing owls are no longer occupying the Project site per the criteria in the Burrowing Owl Plan, project activities may begin.

If burrowing owls occupy the project site after project activities have started, then construction activities shall be halted immediately. The project proponent shall notify CDFW and USFWS within 48 hours of detection. A Burrowing Owl Plan, as detailed above, shall be implemented.

Certification

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

Date: 09/12/2022

If you have any question regarding this biological technical report, please contact Debra Kinsinger at (877)-593-6275.

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Appendix A Photos

Fig 1. 03/16/2022 Looking north from center/west of project site over goldfields meadow adjacent to fence parallel to I-215 on west end of project site.

Fig 2. 03/16/2022 Looking northeast from center/west from goldfields meadow. See Location of meadow on Main document map Figure 1-3.

Fig. 3. 03/16/2022 Looking south from center/west from goldfields meadow. Note cell transmitter tower near southern boundary of project site where a pair of red-tailed hawks feldged a chick this season. Raptors perch in Eucalyptus along west perimeter of site to forage for prey in meadow. Eucalyptus support flocks of Cassin's kingbird that harass the hawks.

Fig 4. Lasthenia gracilis (Coastal goldfields) FACU left & right. Phyllaries not fused, hairy; leaves linear. L. glabrata ssp. coulteri (Coulter's goldfields) has fused phyllaries. L. coronaria (Royal goldfields) phyllaries not fused, leaves pinnate.

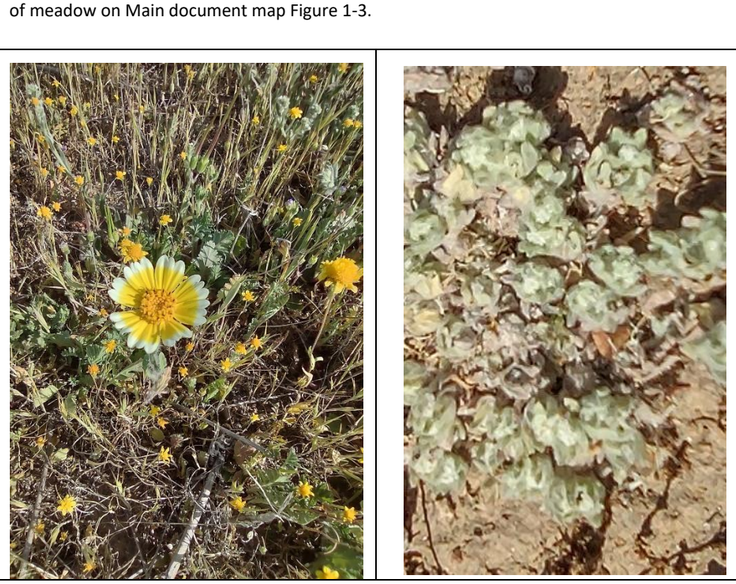


Fig 5. 03/16/2022 Tidy tips (Layia platyglossa) left, Woolly marbles (Psilocarphus brevisimus) FACW right

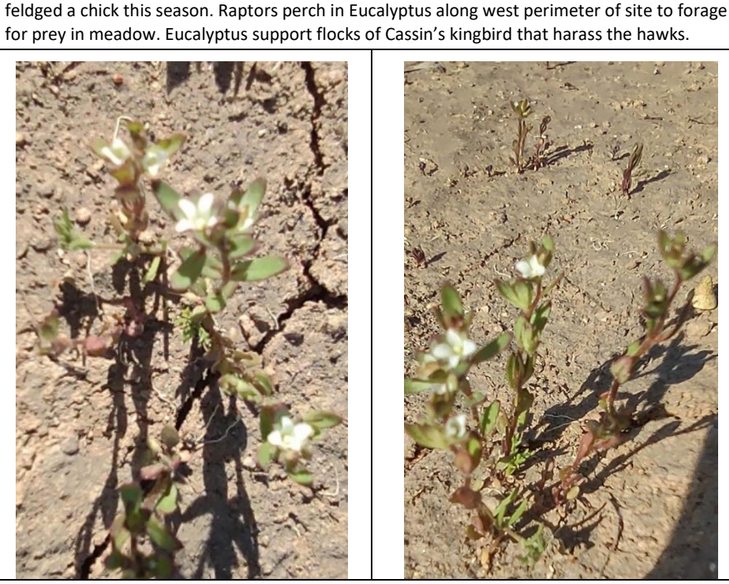
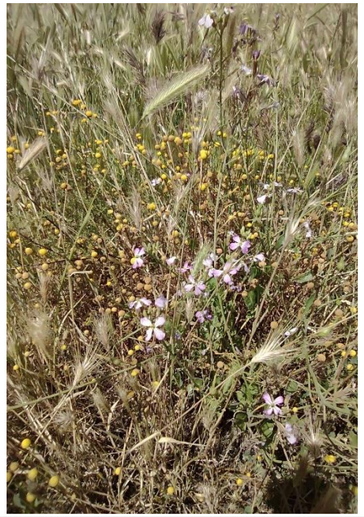
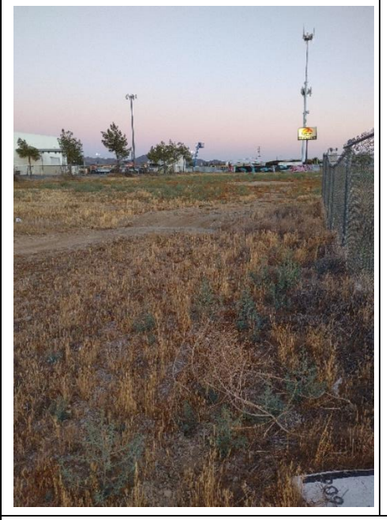


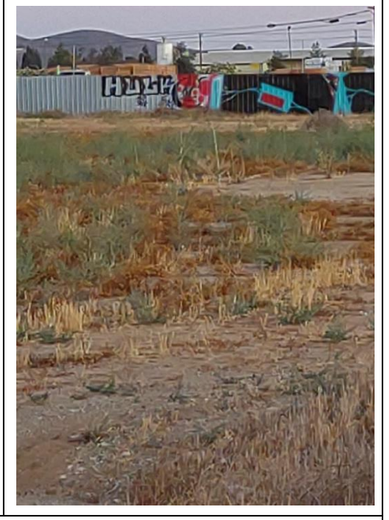
Fig 6 03/16/2022 Hairy purselane speedwell (Veronica peregrina ssp. xalapensis) FAC left & right. Emerging from cracks in areas that have already dried.



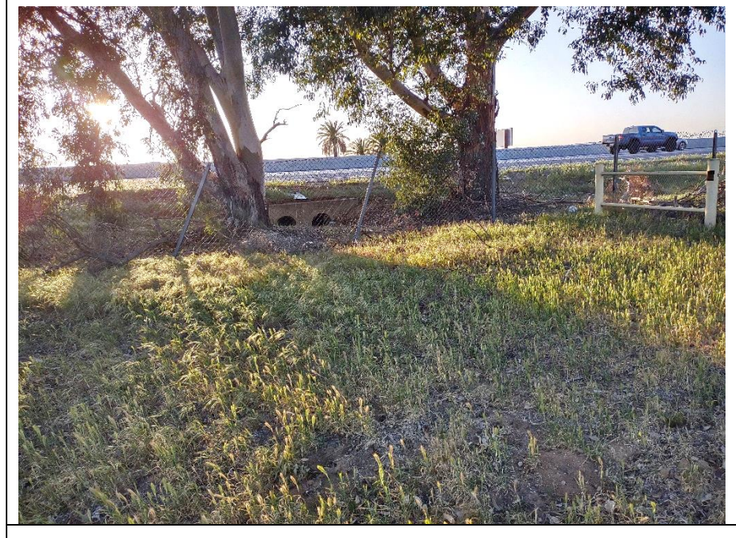
7. 04/14/2022 (left) North side of project barren soil is shallow, hexagonal cracks fill in with filaree (Erodium sp.) and rat-tail fescue (festuca myuros). Seeds support harvester ant colonies. (right) Pool 1 on south side of project supports tall grass: perennial ryegrass (festuca perenne) foxtail barley (hordeum murinum) and Mediterranean brome (bromus madritensis).

8. 07/06/2022 (Left) Looking northwest at interior of catchment basin is disced and mowed. Vegetation is grass. (Right) Looking southeast toward Exceed building from inside catchment basin.

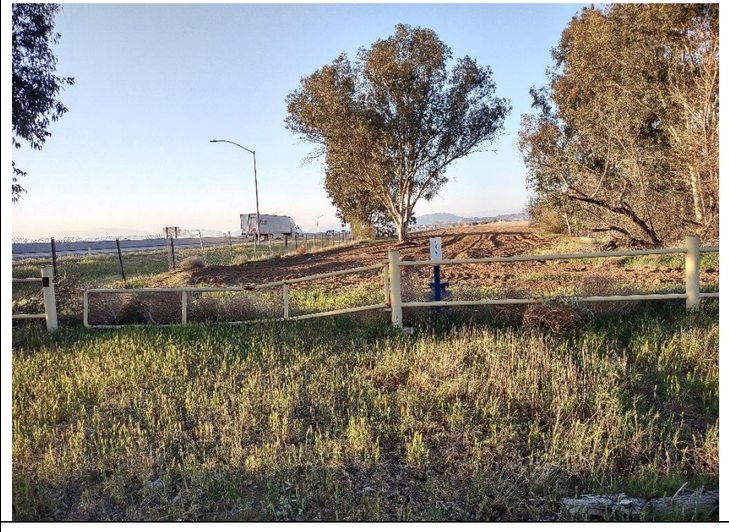




9. 07/06/2022 (Left) Looking south from outside catchment along its eastern fence toward microwave tower. (Right) Looking south from south portion of project site toward Sun State Rentals fence. This is where the killdeer pair were nesting in a barren soil area in April. Microwave tower is to right but out of frame where redtails are nesting.



10. 3/16/2022 Looking northwest toward I-215 from outside the project boundary's northwest corner. These two culverts that go under the freeway are not connected by a drainage leading to the flood control channel. They are potential habitat for BUOW.



11. 3/16/2022 Looking north from same location as 10. All vegetation has been disced since the March survey around the EMWD flood control channel, out of frame to the right. Den habitat, perching posts, short grass, barren soil and nearly permanent water make suitable BUOW habitat.

12. 3/16/2022 Looking north toward flood control channel. Water is visible far center. 50 feet west of end of Mapes Road and higher in elevation than the channel. It was disced for the whole length preventing the longterm establishment of riparian vegetation. The channel banks are suitable BUOW habitat In this barren condition with water present in the channel.

Fig 13. 3/16/2022 Pocket gopher burrows along north boundary of catchment basin fence. The soil is too shallow and/or too hard throughout most of the site for ground squirrels. The base of the catchment on the north side creates a very low berm with slightly deeper soil suitable for pocket gopher. There were some ground squirrel burrows in the ditch parallel to Mapes Road.

Fig 14. 3/16/2022 BUOW will use artificial cavaties as dens like this tire at the end of Mapes Road near the location of photos 10 – 12.

Fig 15. 3/16/2022 You can see the water in the EMWD flood channel through the brush here.

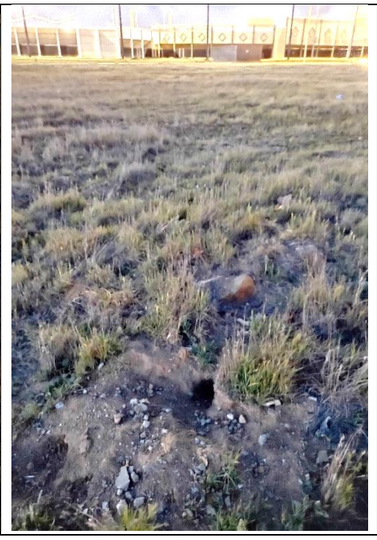
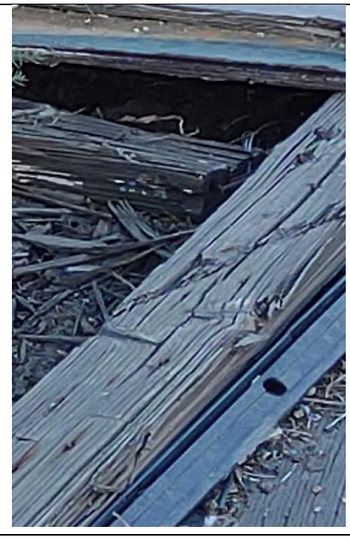


Fig 10. 3/16/2022 (left and right) Looking northeast toward Big League Dreams from vacant field at southeast corner of the intersection of Trumble Rd. and Mapes Rd. There several active California ground squirrel colonies here. The soil supports grass but is kept mowed.

Fig 11. 3/16/2022 Close up of ground squirrel burrow from Fig 10. The opening is about 3.5 inches wide. There is an apron of soil around the opening. Such burrows in a short grass habitat are suitable for BUOW.



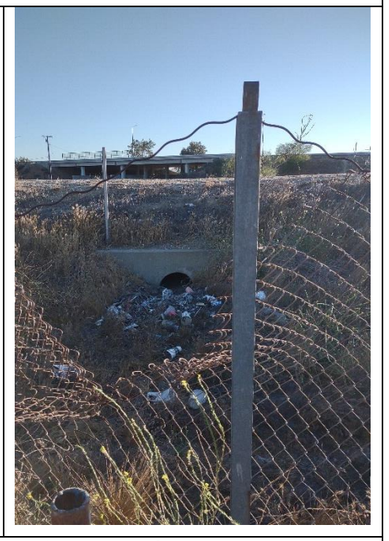


Fig 12 . 3/16/2022 (Left) Discarded pile of lumber at the west end of the project site provides potential artificial den habitat for BUOW. (Right) This culvert one of several along I-215 on the west side of the project site. This one is in the vacant lot behind Sun State Rentals.

Fig 13. 11/28/2021 Soil from pool 1 on shovel blade after the first rain of the season. Note the thin dark surface coating which is a "biotic crust" of algea and silt that forms as a result of inundation. The 0-4 inch horizon has "distinct" oxidized mottles easily meeting the 5% or more requirement of "distinct or prominent redox concentrations, at least 2 inches thick, within the top 6 inches of soil"

Fig 14. 08/11/2022 Pool 2 Soil profile with whitish top of silica-indurated layer of exposed and cleaned. The top 4 inches of the profile has a consistent matrix color without "redox" mottles. This soil failed the hydric soil test because it is not saturated long enough to develop the redox mottles. The water impermeable layer did not effervese in acid. The soil is not alkaline.

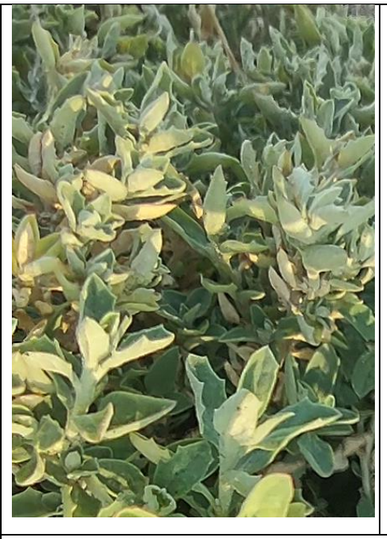


Fig 15 . The Atriplex genus on site is a perennial bush, Australian saltbush. The endangered species of Atriplex are all annuals, somewhat diminuative but do occur in disturbed or disced soils that are also alkaline.

Fig 16 . 11/28/2021 (left) Pool 1 full pedon profile, 0-4, 4-12, 12-23 boundary of impermeable layer, duripan. (right) Pool one first spade of soil shows surface black/greenish, biotic crust. This profile failed the hydric vegetation prominence test.

Fig 17. 08/11/2022 (Left) Pool 2. The soil was very hard and dry and had to be wetted to dig. Infiltration was very slow. By continuing to add water, I was able to dig a hole four inches deep to the boundary of the water impermeable layer. (Right) Scooping out the mud and breaking through the duripan to 6 inches it is evident that water perches at 4 inches.

Fig 18. 11/28/2021 Looking east from the end of Exceed Road. Water sheets from the road onto the site instead of entering the storm drain at the end of the road.

19. 11/28/2021 Looking northeast from 100 feet east of the end of Exceed Road. Pool 1 can be seen in the green area. The bush to the right of the pool is a red willow growing in the ditch behind the storm drain.

20. 11/28/2021 Looking northeast past pool1 across barren field toward Big League Dreams in the distance.

21. 11/28/2021 Looking east from 100 feet east of the end of Exceed Road from inside ditch that leads from the stormdrain to the catchment basin.

22. 11/28/2021 Looking southwest past the end of Exceed Road

23. 11/28/2021 Looking east from end of Exceed Road along the length of the south boundary of the project site.

24. 11/28/2021 Looking east from center east boundary of project site toward Sturgeon Electric. Filaree grows in soil cracks.

Appendix B Soils


Soil Map—Western Riverside Area, California
(Perris Industrial Site Soil)
Wn
EyB
PaA
Dv
Wg
GyA
RaA
GyA
RaA
EwB
RaA
EnA
Trumble
Bonnie
MaA
GyA
Goetz Rd
Trumble Rd
EnA
GyC2
Map Scale: 1:8,910 if printed on A portrait (8.5" x 11") sheet.
Meters
0 100 200 400 600
Feet
0 400 800 1600 2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84
N

Report—Taxonomic Classification of the Soils

[An asterisk by the soil name indicates a taxadjunct to the series]

Taxonomic Classification of the Soils–Western Riverside Area, California	
Soil name	**Family or higher taxonomic classification**
Domino	Fine-loamy, mixed, thermic Xerollic Paleorthids
Exeter	Fine-loamy, mixed, thermic Typic Durixeralfs
Greenfield	Coarse-loamy, mixed, thermic Typic Haploxeralfs
Madera	Fine, montmorillonitic, thermic Abruptic Durixeralfs
Pachappa	Coarse-loamy, mixed, thermic Mollic Haploxeralfs
Ramona	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Willows	Fine, montmorillonitic, thermic Typic Pelloxererts

Data Source Information

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 14, Sep 13, 2021

References:
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. (The soils in a given survey area may have been classified according to earlier editions of this publication.)

MaA—Madera fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcwt
Elevation: 20 to 250 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Madera and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Madera

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 19 inches: fine sandy loam
H2 - 19 to 26 inches: clay
H3 - 26 to 37 inches: indurated
H4 - 37 to 62 inches: stratified coarse sandy loam to clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R019XD061CA - CLAYPAN (1975)
Hydric soil rating: No

Minor Components

Chino

Percent of map unit: 3 percent
Hydric soil rating: No

Monserate

Percent of map unit: 3 percent
Hydric soil rating: No

Willows
Percent of map unit: 3 percent
Hydric soil rating: No

Exeter
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, ponded
Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Appendix C Soil Field Notes

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Perris Industrial Prj City/County: Perris, Riverside Co Sampling Date: 10/28/21
Applicant/Owner: Blue Marquise State: CA Sampling Point: 1
Investigator(s): DebbieKinsinger Section, Township, Range: APN 329-020-046
Landform (hillslope, terrace, etc.): micro-depression Local relief (concave, convex, none): flat Slope (%): 1%
Subregion (LRR): C Lat: 33.756155 Long: -117.196605 Datum: NAD83
Soil Map Unit Name: Madera NWI classification: UB 3 ABCOn
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks – This sample location receives runoff from the street additional location should be sampled to see if they meet all 3 criteria

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 0.49Ac)			
1.			
2. N/A			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 0.49Ac)			
1.			
2. N/A			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 0.49Ac)			
1. Hordeum murinum	20%	Y	FAC
2. Oncosiphon pilulifernm	20%	Y	FACU
3. Festuca perennae	15%	Y	U
4. Burrclover Medicagopolymorpha	5%	N	U
5. Erodium cicutarium	5%	Y	U
6. Lactuca serriola	1%	N	U
7. Raphanus sativus	1%	N	U
8. Bromus madratensis rubens	10%	N	U
Convolvulus arvensis	5%	N	U
Woody Vine Stratum (Plot size: Salsola tragus)	89%	N	U
1. Malva NA parviflora	3%	N	U
2.	93%		
	= Total Cover		

50%

% Bare Ground in Herb Stratum: 7% % Cover of Biotic Crust: 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 20	x 3 =	60
FACU species 20	x 4 =	80
UPL species 53	x 5 =	265
Column Totals 93	(A)	405 (B)

Prevalence Index = B/A = 4.36

Hydrophytic Vegetation Indicators:
N Dominance Test is >50%
N Prevalence Index is ≤3.0
N Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ____ No N

Remarks:
Vegetation was conducted on April 14 2022 not the date of soils sample which was done less than the 1st rain that saturated the profile to the water limiting layer @ 8cm. There was not enough growth at that time to do the vegetation dom/prev test.

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SOIL 10/28/21 Sampling Point 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
rsbk 0-4.0	7.5YR3/2	100	no mottles	–			scl	med fine root 10-15% c.f.
sbk 4-12.5	10YR3/3	80	5YR4/4 d	20%	10YR2/2 10% d	M	scl	" " " 15% c.f.
assive 12.5-21	10YR4/3	100	no mottles				scl	no roots
21-23	10YR4/3	100	" "				sl	" "
Indurated or Parent Material below 23"								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: indurated C or PM?) very very hard
Depth (inches): 23"

Hydric Soil Present? Yes ✓ No ____

Remarks:
A9 Mineral muck on sfc. is <2mm = N
F8 Z5% "d or "p" mottles ≥2" thick must begin above 6" may extend below 6" as long as there are 2" thickness above 6" see photo
4-12.5 = 20% d mottles

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1) (Nonriverine)
- N Sediment Deposits (B2) (Nonriverine)
- N Drift Deposits (B3) (Nonriverine)
- – Surface Soil Cracks (B6)
- Y Inundation Visible on Aerial Imagery (B7)
- — Water-Stained Leaves (B9)
- N Salt Crust (B11)
- N Biotic Crust (B12)
- N Aquatic Invertebrates (B13)
- N Hydrogen Sulfide Odor (C1)
- – Oxidized Rhizospheres along Living Roots (C3)
- — Presence of Reduced Iron (C4)
- — Recent Iron Reduction in Tilled Soils (C6)
- Y Thin Muck Surface (C7)
- — Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches) ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 21

Wetland Hydrology Present? Yes Y No ____

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

US Army Corps of Engineers — Arid West – Version 2.0

11:29 AM 93° 0% clouds clear 2-5 mph

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Perris Industrial Site City/County: Perris, Riverside (City) Sampling Date: 08/11/22
Applicant/Owner: Blue Marguis Investments State: CA Sampling Point: SS2
Investigator(s): Debbie Kinsinger Section, Township, Range:
Landform (hillslope, terrace, etc.): flat alluvial plain Local relief (concave, convex, (none)) Slope (%): 1%
Subregion (LRR): C Lat: 33.75741 Long: -117.18874 Datum: NAD83
Soil Map Unit Name: Madera (MaW) NWI classification: UBCDn
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 25' D)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 25' D)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 25')			
1. Polygonum arenastrum [P. aviculare]	18.4%	Y	FAC
2. Spergularia bocconi	9.7%	Y	FACW
3. Psilocarphus brevissimus	7.6%	N	FACW
4. Convolulus arvensis	6.5%	N	U
5. Bromus madritensis ssp rubens	<1%	N	U
6. Trichostema lanceolatum	<1%	N	FACU
7. Erodium cicutarium (not present)	8.5%		
8. Crassula connata	40.5%		
	44.2% Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 56% % Cover of Biotic Crust 25%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
Late in the season many species have dried up & blown away notably CRCO, ERCI, LAPL, LAGR even grasses are diminished. But I feel confident this seasonal pool met vegetation criteria when it was inundated as well.

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SOIL Biotic crust ~~7.5YR~~ 7.5YR 2.5/1 mr Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
sbk 0-4	dry 10YR 5/3 7.5YR 4/2						SCl SS SP	ffr fp coated grains
4-6	10YR 3/3 M	no crv. faint	mottles/diffuse				1 sand	tubular pores
6= indurated	below 4"		oxidition on roots & pore linings					illuvial coated grains
								white seams
								opal concretions?
								very very slightly
								effervescent in Vinegar
								(bubbles seen w/ hand lens)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Copper 6" value Z3

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: duripan
Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1) **(Nonriverine)**
- N Sediment Deposits (B2) **(Nonriverine)**
- N Drift Deposits (B3) **(Nonriverine)**
- Y Surface Soil Cracks (B6)
- Y Inundation Visible on Aerial Imagery (B7)
- N Water-Stained Leaves (B9)
- N Salt Crust (B11)
- Y Biotic Crust (B12) – By surveyor BRZ ONLY
- Y Aquatic Invertebrates (B13)
- N Hydrogen Sulfide Odor (C1)
- N Oxidized Rhizospheres along Living Roots (C3)
- = Presence of Reduced Iron (C4)
- = Recent Iron Reduction in Tilled Soils (C6)
- N Thin Muck Surface (C7)
- _ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____
Water Table Present? Yes _____ No ✓ Depth (inches): prob. 7" in spring
Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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SS 2 pt ct transect
Total cover absolute ~

0 Polygonum knotsmartweed 0-2
Pslio corphus brevissima 0-2 & 7-8
BRMAR 1

1 Poly 3
BRMA 1
PsBR 2"

2 Poly 3
PsBR 2
SPerg 2

3 SP 2
PsBR 4
Poly 5

4 Poly 3

5 Poly 4
Sperg 3
CoAr 1

6 Poly 3
Sperg 1
PSBR 1

7 sperg 2
poly 3

8 poly 3
sperg 1
PSB2 2

9 ~~poly 3~~
~~Sperg 2~~
Sperg 1

10 Sperg 1
poly 2

11 poly 7
sperg 1

12 poly 3
BRMA 1
speg 1

13 sperg 2
poly 5

14 poly 5
coar 1
PSBR 4

15 poly 2
COAR 7

16 Sperg 2

17 sperg 1
PSBR 3
COAR 4

18 COAR 2
sperg 3

19 sperg 1
PSBR 1

20 PSBR 1
sperg 1

21 COAR 1
PSBR 1
Sperg 2

22 PSBR 1
sperg 1
COAR 3

23 ~~Sperg~~ 3
Poly

24 bare

1 tricostema @ 25*

18.1% Poly 53/(12×24) $\frac{98}{24}$ = 288
BRMA 2
7.6% PsBR 22/(12×24)
~~PSB~~
6.5% COAr 19
9.7% SPerg 28

Total
44.2%
50% 22.1
POAR 18.4
SPBO 9.7
7½ 28.1
of abs total

Appendix D Potentially Occurring Species

The CNDDB query used to develop this list of potentially occurring sensitive species within a 2-mile radius that resulted in 20 species: 8 plants, 1 amphibian, 4 reptiles, 2 birds, 4 mammals and 1 insect. It includes spatial data extracted from a 2-mile radius around the project site in the Perris Valley on either side of the I-215 from the north portion of Menifee just beyond the north of SR-74 highway west and slightly south of SR-74 east.

The rationale for excluding the species in the Santa Ana Mountains to the west and San Jacinto to the east in the query radius is that the ecological biome changes to one that is not representative of habitats in the valley due to elevation, temperature and precipitation differences. Although species that occur within the Santa Ana Mountains also occur in the valley, many of the sensitive species that occur are unique to the mountains have little potential to occur in the valley. Sensitive species that do occur in both biomes are likely to be represented in the query within the 2-mile radius of the project site.

A broader radius of species considerations, 9 quads, would have been used if the area was designated for Criteria Area Species surveys by the MSHCP. Although this site is not within a MSHCP Criteria Area cell, we conducted in-season surveys for Criteria Area plant species due to the presence of seasonally ponded depressions on site.

Bats are not well represented within the CNDDB data base although we typically consider the potential for Southern California species to occur. In this case there are no structures or vegetative habitat that would serve as breeding or roosting habitat on site. For this reason, we excluded bats from consideration.

Column 1, labeled “Special Status Species” identifies the potentially occurring species common name and currently accepted species name. Column 2, “Habitat and Distribution”, lists appropriate habitat types and/or vegetation types for the indicated species and for plants and animals. Column 3, “Status Designation”, gives the sensitivity status designated at the federal level and California level as well as the state ranking and status within the MSHCP. Plants also include a California Native Plant Society (CNPS) status (CNPS, 2022). The code descriptions for status designations and rankings are listed below the table.

The last column, “Potential for Occurrence”, ranks the probability of occurrence on-site.

Present:	Observed onsite during surveys or recorded onsite by other qualified biologists.
High:	Observed in similar habitat in region by qualified biologists or often occurs in habitat similar to that onsite and within the known range of the species.
Moderate:	Reported sightings in surrounding region or site and is within the known range of the species and often occurs in habitat similar to that onsite.
Low:	Site is within the known range of the species but habitat onsite is rarely used by the species.
Absent:	A focused study failed to detect the species, no suitable habitat is present
Not Expected:	Habitat for these species does not occur on site or within the 500-foot survey buffer area and/or beyond the known extent of the species range.
Unknown:	Focused surveys have been performed in the region and the species' distribution and habitat are poorly known.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Plants				
Allium munzii **Munz's onion**	FE, ST, 1B.1, MSHCP Group 3, NEPS	Mesic clay soils, coastal scrub, chaparral, cismontane woodland, pinyon-juniper, valley & foothill grassland	Blooms Mar – May Elev. 975 – 3510 ft.	**Low –** No native grasslands, coastal scrub or chaparral. Occurs within 2 mi.
Atriplex coronata var. notatior **San Jacinto Valley crownscale**	FE, 1B.1, MSHCP Group 3, 6.1.2-list riparian/riverine, CAS, additional survey needs.	Highly alkaline, saline/alkaline, silty clay soils. Traver-Domino-Willows soil association 80% in Willows soil. Floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, alkali grasslands.	Annual herb Blooms Apr - Aug Elev. 455 – 1,640 ft.	**Low** – No alkaline soils, Traver-Domino-Willows soils not detected, seasonal pools are artificial. Distinguished from A. semibaccata, a perennial of the same genus. Occurs within 2 mi along San Jacinto River
Atriplex serenana var. *davidsonii* **Davidson's saltscale**	1B.2, MSHCP, Group 3, CAS, additional survey needs	Alkali floodplains of the San Jacinto River, Mystic Lake and Salt Creek in association with Willows, Domino and Traver soils. Coastal scrub	Annual herb Blooms Apr -Oct Elev. 33-655 ft.	**Not Expected** – Out of elevation range. No alkali soils or vernal pools, playas or native grasslands on site Local records
Atriplex parishii **Parish's brittlescale**	1B.1, MSHCP Group 3, CAS, additional survey needs	Alkali vernal pools, scrub, playa and non-native grassland of vernal plains. In flood plains and Traver, Domino, Willows soil association.	Blooms Jun - Oct Elev. 80 – 6,235 ft.	**Low** – Alkaline soils, Traver-Domino-Willows soils not detected, seasonal pools are artificial. Distinguished from A. semibaccata, a perennial of the same genus. Occurs within 2 mi along San Jacinto River
Brodiaea filifolia **Thread-leaved brodiaea**	FT, SE, 1B.1, MSHCP Group 3, 6.1.2-list riparian/riverine NEPS, additional survey needs,	Endemic to deep clay soils. Restricted to open cismontane woodland, & valley and foothill grassland. Temescal Valley near Lake Mathews, near Lake Skinner and Oak Mtn. near Vail Lake.	Blooms Mar-May Elev. 50 – 3,937 ft.	**Low** – No native grasslands (valley and foothill grasslands have natives) or woodland, clay soils are shallow
Calochortus weedii var. intermedius **Intermediate mariposa-lily**	1B.2 MSHCP Group 2	Dry, rocky open slopes and rock outcrops in coastal scrub, chaparral, valley and foothill grassland. Hills and valleys west of Lake Skinner and Vail Lake in the MSHCP plan area.	Blooms May-Jul Elev. 344 – 2,805 ft.	**Low –** No native grasslands, coastal scrub or chaparral.
Centromadia pungens **Smooth tarplant**	1B.1, MSHCP Group 3, 6.1.2-list riparian/riverine, CAS, additional survey needs	Alkali meadow - playa, alkali scrub; also in disturbed places, grassland, chenopod scrub, meadow, especially San Jacinto River basin.	Blooms Apr-Sep Elev. 0 - 2,100 ft.	**Low** – No alkaline soils, Traver-Domino-Willows soils not detected, seasonal pools are artificial, no chenopod scrub, occurs along San Jacinto River within 2 mi.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Chorizanthe leptotheca **Peninsular spineflower**	4.2, MSHCP Group 2,	Uncommon plant of sandy or gravelly soils. Coastal scrub, chaparral, lower montane coniferous forest, on alluvial benches at the base of the Santa Ana and Agua Tibia Mountains, granitic soils	Blooms May – Aug Elev. 985 - 6235	**Not Expected –** No sandy gravelly soil, coastal scrub, chaparral or forest.
Chorizanthe parryi var. parryi **Parry's spineflower**	1B.1, MSHCP Group 2, adequately-covered requirement met	Dry slopes and flats; sometimes at interface of two vegetation types such as chaparral and oak woodland; dry, sandy soils. Open sites often on gravelly soils	Blooms Apr-Jun Elev. 33 – 5,594 ft.	**Low –** No chaparral, oak woodland or sandy soil. Occurs within along San Jacinto River within 2 mi.
Chorizanthe polygonoides var. longispina **Long-spined spineflower**	1B.2 MSHCP Group 2	Gabbroic clay in chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Temecula, Lake Skinner, and foothills of the Agua Tibia.	Blooms Mar – Jun Elev. 98 – 5,020 ft.	**Not Expected** – No native grassland, coastal scrub, chaparral, vernal pools, no gabbro.
Chorizanthe procumbens **Prostrate spineflower**	CBR MSHCP Group 2	Sandy or gravelly soils found mostly in Santa Ana Mtns., Santa Rosa Plateau, and foothills of the Agua Tibia Mtns.	Blooms Apr – Jun Elev. 33 – 4300 ft.	**Not Expected –** No gabbro, not in mountains or foothills.
Cryptantha wigginsii **Wiggins' cryptantha**	1B.2	Often on clay soils. Coastal scrub.	Elev. 66 – 902 ft.	**Not Expected –** Not in elevation range, No coastal scrub
Erodium macrophyllum **Round-leaved filaree**	1B.1, MSHCP Group 3, CAS, additional survey needs,	Endemic to deep clay soils. Restricted to open cismontane woodland, & valley and foothill grassland. Temescal Valley near Lake Mathews, near Lake Skinner and Oak Mtn. near Vail Lake.	Blooms Mar-May Elev. 50 – 3,937 ft.	**Low** – No native grasslands (valley and foothill grasslands have natives) or woodland, clay soils are shallow. Similar species on site are E. botrys, E. moshatum, E. cicutarium
Lasthenia glabrata ssp. coulteri **Coulter's goldfields**	1B.1, MSHCP Group 3, CAS, additional survey needs	Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Seasonally flooded plains of the San Jacinto River and Alberhill Creek in MSHCP plan area.	Blooms Mar-May Elev. < 4593 ft.	**Low –** No alkali habitats, no native grasslands. Occurs along San Jacinto River within 2 mi. similar species on site were distinguished from *L. g. coulteri.*
Lepidium virginicum var. robinsonii **Robinson's pepper-grass**	4.3	Dry soils, shrubland Chaparral, coastal scrub. Low-growing vegetation, on Rocky slopes, among shrubs, often in fissures of boulders or relatively sterile sites. Perris basin, Santa Ana Mtns. Foothills of the Agua Tibia in MSHCP plan area.	Present Jan-Jul Bloom Jan-Apr (annual herb) Elev. < 2,904 ft.	**Not Expected –** Identification of similar species is *Lepidium nitidum.* No coastal scrub, chaparral or rocky slopes or boulders

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Myosurus minimus ssp. apus **Little mousetail**	1B.1, MSHCP, Group 3, 6.1.2-list riparian-riverine-vernal pool, CAS, additional survey needs	Alkali vernal pools near Hemet.	Blooms Apr – May Elev. 66 – 2,100 ft.	**Not Expected** – No alkali habitats, no vernal pools.
Nama stenocarpum **Mud nama**	2B.2, MSHCP Group 3, 6.1.2-list riparian-riverine-vernal pool, CAS, additional survey needs	Muddy embankments of marshes and swamps, San Jacinto River, Mystic Lake	Blooms Jan – Jul Elev. 15 – 1,640 ft.	**Not Expected** – No marshes or swamps.
Navarretia fossalis **Spreading navarretia**	FT, 1B.1, MSHCP Group 3, 6.1.2-list riparian/riverine, NEPS, additional survey needs	Endemic to deep clay soils. Restricted to open cismontane woodland, & valley and foothill grassland. Temescal Valley near Lake Mathews, near Lake Skinner and Oak Mtn. near Vail Lake.	Blooms Mar-May Elev. 50 – 3,937 ft.	**Low** – No native grasslands (valley and foothill grasslands have natives) or woodland, clay soils are shallow. Occurs within 2 mi.
Crustaceans				
Branchinecta lynchi **Vernal pool fairy shrimp**	FE, MSHCP Group 3, 6.1.2-list riparian-riverine-vernal pool, CAS	Santa Rosa Plateau Ecological Reserve, Skunk Hollow, and Salt Creek in west Hemet and Pechanga Indian Reservation – vicinity. Cool-water vernal pools and one alkali pool, clay soils, Willows, Traver, and Domino soils.	Elev. Less than 3,800 ft. Active during seasonal inundation, cysts (eggs) survive throughout the dry period of the year.	**Low –** No vernal pools, seasonal pools are artificially created and support versatile fairy shrimp, *Branchinecta lindahli*. *B. Lynchi* not detected in focused surveys.
Linderiella santarosae **Santa Rosa Plateau fairy shrimp**	MSHCP Group 3, 6.1.2-list riparian-riverine-vernal pool, CAS	Cool-water vernal pool on southern basalt flow on the Santa Rosa Plateau.	Elev. 2,050 ft. Active during seasonal inundation, cysts (eggs) survive throughout the dry period of the year.	**Not Expected –** Out of elevation range. No vernal pools, seasonal pools are artificially created and support versatile fairy shrimp, *Branchinecta lindahli*. L. santarosae not detected.
Streptocephalus woottoni **Riverside fairy shrimp**	FE, MSHCP Group 3, 6.1.2-list riparian-riverine-vernal pool, CAS	All known sites are within annual grasslands. Deep vernal pools, playas, basalt flows and clay soils (Murrieta stony clay loam, Las Posas, Wyman clay loam and Willows soils. Santa Rosa Plateau Ecological Reserve, and alkali vernal pools i.e., Skunk Hollow, and Salt Creek in west Hemet.	Elev. 98 -1,362 f t. Active during seasonal inundation, cysts (eggs) survive throughout the dry period of the year.	**Low** – Within known range but not in grassland or alkaline habitats, not on MSHCP-identified soils, above elevation range. seasonal pools are artificially created and support versatile fairy shrimp, *Branchinecta lindahli*. S. woottoni not detected in focused surveys.
Insects				

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Bombus crotchii **Crotch bumble bee**	CSE	Coastal scrub and grasslands, soft soils, using abandoned burrows of rodents for overwintering, non-migratory.	Mar - Sep	**Not Expected** – No coastal scrub or native grassland habitat, lack of loose soil for burrows, low abundance of nectaring food plants.
Euphydryas editha quino **Quino checkerspot butterfly**	FE, MSHCP Group 3, riparian-riverine-vernal pool	Key component open-canopied habitats which may include chaparral, coastal sage scrub, desert scrubs, grasslands, peninsular juniper woodland and scrub, playas and vernal pools, and Riversidean alluvial fan sage scrub habitats with larval host species Plantago erecta, Collinsia concolor and other members of the Plantaginaceae family.	Diapause ends with fall/winter rain. Larvae feed on host plants until pupal stage Adult flight Feb – May depending on weather and elevation.	**Not Expected** – Habitat is not an open scrub.
Amphibians				
Spea hammondii (Scaphiopus hammondii) **Western spadefoot**	SSC, MSHCP Group 2	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood or scrub with vernal pools. Vernal pools are essential for breeding and egg-laying.	Estivates in summer. Active Oct-Apr if rain has fallen. Elev. < 4,472 ft.	**Low** – Although the extant locations are in ecologically functional vernal pools or along perennial streams. Seasonal pools on site are artificially created. Not detected in fairy shrimp surveys.
Taricha tarosa **Coast range newt**	SSC, MSHCP Group 3	"Pools and runs" stream courses (i.e., playa and vernal pools, riparian scrub, woodland and forest, and water), and secondary upland habitat, chaparral, coastal sage scrub, grasslands, Riversidean alluvial sage scrub, oak woodlands and forests. Known populations southeast of Lake Elsinore, along Hwy. 74, southwest of Corona. west of I-15, Santa Rosa Plateau.	Peak breeding in Jan-May. Elev. < 6000 ft.	**Not Expected –** Seasonal pools are artificially created. Known locations are west of I-15.
Reptiles				
Actinemys (Clemmys) marmorata **Western pond turtle**	SSC MSHCP Group 3, riparian-riverine-vernal pool,	Lon-term waters, ponds, marshes, rivers, permanent or intermittent streams and irrigation ditches, usually with aquatic vegetation and upland habitat up to 1.5 Km from water for egg-laying	Active Feb – Nov, nesting May – Jul. Elev. < 5,016 ft.	**Not Expected –** No permanent or long term water on or near site.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Arizona elegans occidentalis **Coastal glossy snake**	SSC	Western Riverside County in microhabitats of open areas with loose soil for burrowing. Coastal scrub, chaparral, grasslands, rocky washes.	Adults most active in May, Feb – Nov, oviparous Jun – Jul, nocturnal	**Not Expected –** Soil too hard to burrow, no cover.
Aspidoscelis (Cnemidophorus hyperythrus) hyperythra beldingi **Belding's orange-throated whiptail**	SSC, MSHCP Group 1	Coastal sage and chaparral adjacent to flood plains or terraces along streams occurring in western Riverside County, perennial vegetation.	Adults most active Apr – May, diurnal, warm parts of the day, Elev. < 3,412 ft.	**Not Expected** – Not adjacent to flood plains or stream terraces.
Aspidoscelis tigris stejnegeri (Cnemidophorus tigris multiscutatus) **Coastal western** whiptail	MSHCP Group 1	Shrub or grassland associations in open, rocky areas with little vegetation.	Reproduction begins May. All elevations within the plan area.	**Low** – No shrub grassland associations or rocky areas.
Crotalus ruber (C. ruber ruber) **Red-diamond rattlesnake**	SSC, MSHCP Group 2	Occurs in rocky areas and dense vegetation, needs rodent burrows, cracks in rocks or surface cover objects. Chaparral, woodland, grassland, & desert areas from coastal San Diego county to the eastern slopes of the mountains	Year round, breeding in Apr – May. Elev. < 4000 ft.	**Not Expected** – No suitable den habitat, rocky outcrops, rodent burrows, or vegetative cover. Low volume prey base.
Phrynosoma blainvillii (P. coronatum blainvillii) **Coast horned lizard**	SSC, MSHCP Group 1	Most MSHCP plan area habitats, lowlands along sandy washes and open scrub with patches of loose soil for burial, and abundant supply of ants and other insects.	Breeding and reproduction Mar-Jul, Elev. < 6,890 ft.	**Not Expected** – No sandy or loose soil although harvester ants are on site.
Thamnophis hammondii **Two-stripped garter snake**	SSC	Perennial and intermittent streams with rocky beds bordered by willow thickets or dense vegetation, occupies adjacent uplands in winter, Coastal sage or grassland.	Juveniles and adults emerge from hibernation in spring. Elev. < 7,848 ft.	**Not Expected –** Due to ephemeral nature of offsite flood channel and removal of understory vegetation.
Birds				
Accipiter cooperi **Cooper's hawk**	MSHCP Group 3, achieved status as adequately covered.	Nests in open woodlands, oak woodlands and urban forests.	Breeds Feb – Aug	**Present –** Occurs in 100% of criteria cells. Common throughout plan area.
Athene cunicularia **burrowing owl**	SSC, MSHCP Group 3, additional survey needs	Nests in ground squirrel burrows for dens. Open, dry annual or perennial grasslands deserts and scrublands characterized by low-growing vegetation.	Breeds Mar – Aug peak in Apr – May.	**Low** – Based on 2022 focused surveys. Not detected during focused surveys. No evidence of past or present occupation.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Artemisiospiza (Amphispiza) belli belli **Bell's sage sparrow**	WL, MSHCP Group 2	Rocky outcrops on Gabbro based soil. Nests on the ground beneath a shrub in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Breeds Mar – Jun Elev. < 5,600 ft. (San Diego County)	**Not Expected –** No chaparral or sage scrub. No Gabbro-based rocky outcrops.
Buteo regalis **Ferruginous hawk**	WL, MSHCP Group 1	Open grasslands, sagebrush flats, desert scrub, low foothills and pinyon-juniper habitats. Primary diet rabbits, ground squirrels and mice. Population trends may follow rabbits.	Winter migrant Oct – Mar	**Moderate** – Low population of diurnal mammals as prey base. Other raptors forage on this site. Not detected.
Elanus leucurus **White-tailed kite**	FP, MSHCP Group 2	Rolling foothills and valley margins, open grasslands, meadows with scattered oaks and river bottomlands or marshes next to deciduous woodland for breeding.	Resident species. Breeds Feb – Oct peak May – Aug.	**Moderate** – Other raptors forage on this site. Suitable open grassland. Bodies of open water within CNDDB 2-mi query area. Not detected.
Eremophila alpestris actia **California horned lark**	WL, MSHCP Group 2	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats. Suitable foraging habitat includes freshly tilled soil and bare ground.	Resident species. Ground nester. Breeds Mar – Jul, peak in May.	**Present** – High Potential due to open disturbed non-native grasses on site. May follow bulldozer during vegetation clearing to forage for insects.
Falco columbarius **Merlin**	WL, MSHCP Group 1	Agriculture, grassland, meadows and marshes, alkali marsh, freshwater marsh, playas.	Uncommon winter migrant. Sep - May	**Present (Questionable ID)** Low potential due to rarity, suitable open short grass habitat onsite, open water within territorial range. Questionable ID, observed on site briefly.
Polioptila californica californica **Coastal California gnatcatcher**	FT SSC, MSHCP Group 2	Lowland and foothill bioregions of western Riverside county in coastal sage scrub. Core Areas between Lake Mathews and Lake Elsinore also Murrieta Hot Spring/Lake Skinner west to I-215.	Resident. Breeds Feb – Aug, peak mid Mar – May.	**Not Expected** – No coastal sage scrub habitat. Occurs in adjacent Criteria Area cell to west.
Vireo bellii pusillus **Least Bell's vireo**	FE SE, MSHCP Group 2 riparian-riverine-vernal pool	Well-developed willow riparian scrub, woodlands, and forest.	Migrant. Breeds Apr - Jul	**Not Expected –** No dense multi-story willow riparian habitat. No willow riparian scrub along flood channel. Vegetation is routinely removed.
Mammals				

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Canis latrans **Coyote**	MSHCP Group 1	Scrub and chaparral habitats, All upland and riparian habitat types within the MSHCP plan area.	Mates in late winter, young born Mar-May. Young leave den in fall.	**High –** This species has a wide home territory and is willing to travel into urbanized habitats in search of prey including domestic animals. Has adapted to forage in urban settings with open areas.
Chaetodipus californicus femoralis **Dulzura pocket mouse**	SSC	Found in a variety of habitats including coastal sage scrub, chaparral, and grassland in northern Baja California, San Diego, and extreme southwestern and western Riverside Counties.	Active year-round, torpor during cold periods. Reproduction coincides with peak vegetation production.	**Not Expected –** No sage scrub or chaparral, no suitable burrowing habitat.
Chaetodipus fallax fallax **Northwestern San Diego pocket mouse**	SSC, MSHCP Group 1	Confined to contiguous habitat in Coastal scrub–grassland ecotones, chaparral, grasslands, sagebrush, with rocks and coarse gravel. Within the MSHCP plan area they occur occupy mountain foothills and valley hills.	Active year-round, torpor during cold periods. Reproduction coincides with peak vegetation production. Elev. < 6,000 ft.	**Not Expected –** No sage scrub or chaparral, no suitable burrowing habitat.
Dipodomys simulans **Dulzura kangaroo rat**	MSHCP	Attracted to grass-chaparral edges, open micro-habitats in mesic to xeric shrub communities throughout their range, in Western Riverside they occur in mountain foothills and valley hills.	Breeding any time of year especially after rainfall, Elev. < 2,600 ft.	**Not Expected –** No sage scrub or chaparral, no suitable burrowing habitat.
Dipodomys stephensi **Stephens' kangaroo rat**	FE ST MSHCP Group 1, SKRHCP	Open grasslands and sparse coastal scrub, chaparral, sandy and sandy loam soils, with gentle slopes. Mostly in foothill and valley scrub habitats in Western Riverside County.	Active year-round with peak breeding in winter and spring. Multiple litters per year depending on rainfall. Elev. 180 – 4,100 ft.	**Not Expected** – No native grasslands, sage scrub or chaparral, no suitable burrowing habitat.
Eumops perotis californicus **Western mastiff bat**	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels, and travels widely when foraging.	Year- round; nocturnal	**Not Expected.** No roosting habitat in study area. No scrub or chaparral foraging habitat.
Lasiurus xanthinus **Western yellow bat**	SSC	Found in desert and riparian areas of the southwest U.S. Individuals roost in the dead fronds of palm trees, and have also been documented roosting in cottonwood trees.	Year- round; nocturnal	**Not Expected.** No roosting habitat in study area. Forages over open water.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Lepus californicus bennettii **San Diego black-tailed jackrabbit**	SSC, MSHCP Group 1	Open shrub and short grass herbaceous habitats, edges of coastal sage and chaparral scrub with open areas allowing predator escape with fast – or long distance sprints. Occurs throughout the MSHCP plan area.	Active year-round with primary productivity during peak vegetative growth. Elev. Low mountains and valleys.	**Present** –The habitat is fragmented from larger blocks in Criteria cells and but was observed in earlier surveys at this site.
Lynx rufus **Bobcat**	MSHCP Group 2	Rocky and brushy areas near springs or perennial water, foothills, chaparral habitats. Use rock cavities, snags, stumps and dense brush or undisturbed scrub habitat for cover.	Peak breeding season Dec-Jul Peak births Apr-Jun	**Low** – Site lacks cover and suitable connected habitat.
Neotoma lepida intermedia **San Diego desert woodrat**	LC, SSC, MSHCP Group 1	Occurs in desert scrublands and coastal sage scrub habitats. with Opuntia and Yucca, as a source of water. Nests in these plants or in crevices of nearby rock outcroppings.	Active year-round with breeding in fall and winter.	**Not Expected** – No sage scrub or chaparral, no cactus or rocky outcrops.
Nyctinomops femorosaccus **Pocketed free-tailed bat**	SSC	Usually associated with significant high cliffs, rock outcrops, or slopes. May roost in tall buildings (including roof tiles) or caves. Southwestern United States to central Mexico.	Year- round; nocturnal	**Not Expected** – No potential roosting habitat on site.
Perognathus longimembris brevinasus **Los Angeles pocket mouse**	SSC, MSHCP Group 3, additional survey needs	Open ground, loose sandy soil, alluvial fan sage scrub that is in the pioneer phase of vegetative succession in active alluvial fan habitats, mostly on alluvial slopes of mountain range foothills.	Nocturnal - Torpor during fall and summer. Most active Apr-Aug Elev. < 6,000 ft.	**Not Expected** – Site lacks the loose sandy soil typical of the species or alluvial fan sage scrub.

Federal designations: (federal Endangered Species Act, U. S. Fish and Wildlife Service)

FE: Federally listed, endangered.
FT: Federally listed, threatened.

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

SE: State listed, endangered.
ST: State listed, threatened.
CSE: Candidate for State list endangered.
CBR: Considered But Removed from state sensitivity rankings
R: State listed as rare. (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
SSC: Species of Special Concern (DFG).
WL: Watch List
FP: Fully protected

CNPS: California Rare Plant Ranking System

List 1A Plants presumed extirpated in California and either rare or extinct elsewhere
List 1B Plants rare, threatened, or endangered in California and elsewhere
List 2A Plants presumed extirpated in California but common elsewhere
List 2B Plants rare, threatened, or endangered in California but more common elsewhere
List 3 Review List: Plants about which more information is needed
List 4 Watch List: Plants of limited distribution
CBR Considered But Removed from rarity list

California Rare Plant threat ranking extension

0.1 – Seriously threatened in California (over 80%) of occurrences threatened / high degree and immediacy of threat)
0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

MSHCP Ranking

Group 1 -- Take coverage is warranted based upon regional or landscape level considerations, such as healthy population levels, widespread distribution throughout the MSHCP Plan Area, and life history characteristics that respond to habitat-scale conservation and management actions.
Group 2 -- Take coverage is warranted based on regional or landscape level considerations with the addition of site-specific conservation and management requirements that are clearly identified in the MSHCP for species that are generally well-distributed, but that have Core Areas that require Conservation.
Group 3 -- Take coverage is warranted based upon site specific considerations and the identification of specific conservation and management conditions for species within a narrowly defined Habitat or limited geographic area within the MSHCP Plan Area.

MSHCP 6.1.2 Riparian /Riverine Species

MSHCP NES – For plants only, Narrow Endemic Species, requires additional focused surveys before disturbing potential habitat
MSHCP CAS – Criteria Area Species, requires additional focused surveys before disturbing habitat within Criteria Cell Blocks.

Appendix E Focused Fairy Shrimp Surveys

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

June 22, 2022

Ms. Stacey Love, Recovery Permit Coordinator
United States Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: Results of the 2020–2021 Wet Season Fairy Shrimp Survey for the Mapes and Trumble Industrial Facility Project (Trumble and Mapes Warehouse Project; LSA Project No. BAV2101)

Dear Ms. Love:

This letter provides the results of a 2021–2022 wet season presence/absence survey for vernal pool branchiopods, conducted by LSA for the Mapes and Trumble Industrial Facility Project site. The survey area is located at Universal Transverse Mercator (UTM) coordinates 3735200 Northing/ 482700 Easting within Section 10, Township 5 South, Range 3 West, in the City of Perris, Riverside County, as shown on the U.S. Geological Survey (USGS) 7.5 minute series *Perris, California* quadrangle (attached Figure 1). The survey area includes three ponding features totaling less than 0.4 acre (attached Figures 2 and 3). A wet season survey was conducted at this site in 2012–2013 by Glenn Lukos Associates. Both the 2012–2013 and the 2021–2022 survey results were negative for listed species.

METHODS

The fairy shrimp survey was conducted for Riverside fairy shrimp (*Streptocephalus woottoni*) and vernal pool fairy shrimp (*Branchinecta lynchi*) by LSA Senior Biologist Stanley Spencer under LSA Federal 10(a)(1)(A) Permit TE 777965 and in accordance with the November 13, 2017, *Survey Guidelines for the Listed Vernal Pool Branchiopods*. Site checks were conducted on December 15, 22, and 27, 2021, and on January 4, 6, 7, 12, 18, and 26, February 1, 9, and 25, and April 4 and 12, 2022, to determine if water was present in ponding features following storm events. Ponded features were sampled at required intervals until they had dried and remained dry.

Features were sampled by drawing a handheld net through the water column, occasionally bumping the bottom to stir up any benthic organisms. The net was periodically removed from the water to check for aquatic species.

Table A provides the dates and weather conditions for each site visit during which features were sampled. Wet season data sheets are attached.

Table A: Survey Dates, Weather Conditions, and Features Sampled

Date	Air Temperature (°C)	Water Temperature (°C)	Cloud Cover	Feature Sampled
12/5/21	13	16	5	1, 2, 3
12/22/21	21	18	95	2
12/27/21	8	12	50	1, 2, 3
1/4/22	18	17	2	1, 2, 3
1/7/22	20	21	2	1, 2, 3
1/12/22	13	7	80	2
1/18/22	17	18	N/A	2
1/26/22	21	21	20	2
2/1/22	16	18	95	2
4/4/22	22	32	5	2

All features filled in December 2021 and were dry by early February 2022. Feature 2 refilled in late March and dried in early April.

RESULTS AND CONCLUSIONS

Table B provides characteristics of the sampled features. Features 1 and 2 are broad, low areas. Feature 3 is a ditch. All three features appear to be artificial and associated with construction on the site in 2002 or later. Water enters the features as direct rainfall and as sheet flow from adjacent compacted areas. The features all have mixtures of native and non-native, upland and hydrophytic plant species.

Table B: Characteristics of Features Sampled

Feature	Estimated Maximum Depth (centimeters)	Estimated Maximum Length × Width (meters)	Origin	Vegetation	Fairy Shrimp Species Observed
1	10	30 × 20	scrape or borrow area with tire tracks	*Bromus rubens* *Erodium cicutarium* *Festuca perennis* *Hordeum murinum* *Medicago polymorpha* *Oncosiphon pilulifer* *Spergularia bocconi*	None
2	15	30 × 30	scrape or borrow area	*Polygonum aviculare* *Psilocarphus brevissimus* *Trichostema lanceolatum* *Veronica peregrina*	*Branchinecta lindahli*
3	15	30 × 6	ditch	*Erodium cicutarium* *Polygonum aviculare* *Spergularia bocconi*	*Branchinecta lindahli*

Versatile fairy shrimp (*Branchinecta lindahli*) was observed in Features 2 and 3.

Please contact me if you require any additional information.

Sincerely,

LSA ASSOCIATES, INC.

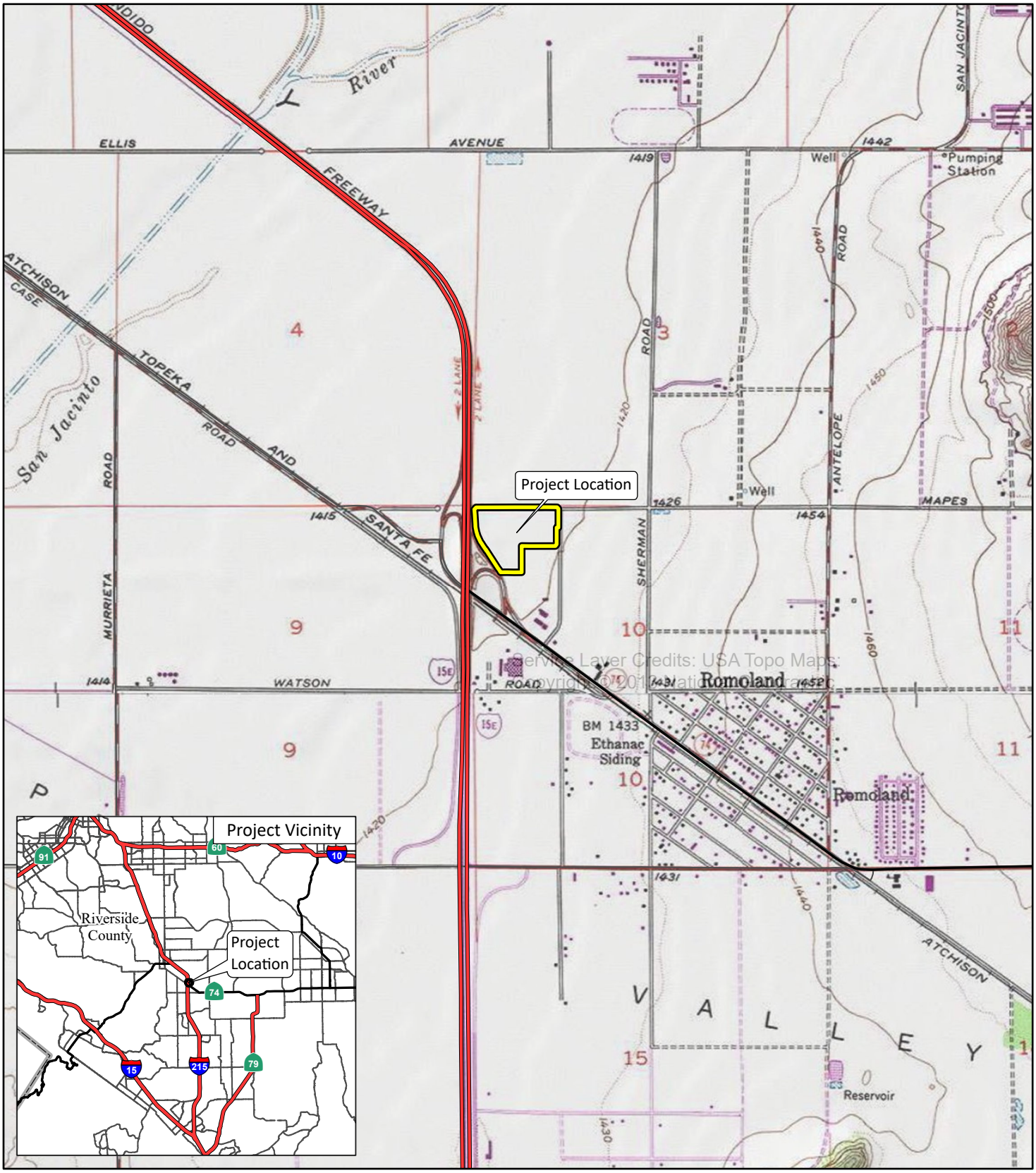
Stanley C. Spencer, Ph.D.
Associate/Senior Botanist

Attachments: Figure 1: Regional and Project Location
Figure 2: Features Sampled
Figure 3: Site Photographs
Data Sheets

cc: Melody Aimar, Western Riverside County MSHCP Biological Monitoring Program

I CERTIFY THAT THE INFORMATION IN THIS SURVEY REPORT AND ATTACHED EXHIBITS FULLY AND ACCURATELY REPRESENTS MY WORK:

SURVEYOR:	PERMIT NUMBER	DATE:
Stanley Spencer	TE-777965	June 22, 2022



LSA

FIGURE 1

N

0 1000 2000
FEET

Mapes and Trumble Industrial Facility Project

SOURCE: USGS 7.5' Quad - *Perris* (1979), CA

Regional and Project Location

I:\BAV2101\GIS\Pro\Mapes and Trumble Industrial Facility Project.aprx (12/15/2021)

LSA

LEGEND

Project Location

Feature

FIGURE 2

N

0 100 200

FEET

SOURCE: Google Imagery (2021)

I:\BAV2101\GIS\MXD\FeaturesSampled.mxd (6/8/2022)

Mapes and Trumble Industrial Facility Project

Features Sampled

Photo 1. View of west portion of site, facing north (1/7/22).

Photo 2. View of northeast portion of site, facing east (1/7/22).

Photo 3. View of southeast portion of site and Feature 1, facing east (1/7/22).

Photo 4. View of Feature 2, facing east (1/7/22).

LSA

FIGURE 3

Mapes and Trumble Industrial Facility Project

Site Photographs

Photo 5. View of Feature 3, facing southeast (1/7/22).

LSA

FIGURE 3

Mapes and Trumble Industrial Facility Project
Site Photographs

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	12/15/21	Time:	1418	Weather Conditions:	5 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482710 E, 3735120 N, WGS84	13	14	2	10	30 x 20	30 x 20											D, T, TT	
2	482530 E, 3735260 N, WGS84	13	18	8	15	20 x 20	30 x 30											D, TT	
3	482570 E, 3735260 N, WGS84	13	17 `	6	15	10 x 2	30 x 6											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	12/22/21	Time:	1420	Weather Conditions:	95 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	21	18	5	15	11 x 7	30 x 30											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	12/27/21	Time:	1037	Weather Conditions:	50 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482710 E, 3735120 N, WGS84	8	11	6	10	30 x 20	30 x 20											D, T, TT	
2	482530 E, 3735260 N, WGS84	8	12	15	15	30 x 30	30 x 30											D, TT	
3	482570 E, 3735260 N, WGS84	8	13	10	15	30 x 6	30 x 6											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	1/4/22	Time:	1450	Weather Conditions:	2 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482710 E, 3735120 N, WGS84	18	14	6	10	30 x 20	30 x 20											D, T, TT	
2	482530 E, 3735260 N, WGS84	18	18	10	15	30 x 30	30 x 30	BRLI										D, TT	collect 3 M, 3F for voucher
3	482570 E, 3735260 N, WGS84	18	18	4	15	10 x 2	30 x 6	BRLI										D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	1/7/22	Time:	1240	Weather Conditions:	2 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
1	482710 E, 3735120 N, WGS84	20	18	3	10	20 x 2	30 x 20											D, T, TT	
2	482530 E, 3735260 N, WGS84	20	23	10	15	30 x 30	30 x 30	BRLI										D, TT	
3	482570 E, 3735260 N, WGS84	20	21	2	15	3 x 1	30 x 6	BRLI										D, TT	collect 3 M, 3 F for voucher

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	1/12/22	Time:	0900	Weather Conditions:	80 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	13	7	10	15	20 x 18	30 x 30	BRLI										D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	1/18/22	Time:	1210	Weather Conditions:	N/A % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	17	18	8	15	20 x 20	30 x 30											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	1/26/22	Time:	1155	Weather Conditions:	20 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	21	21	4	15	13 x 9	30 x 30											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	2/1/22	Time:	1315	Weather Conditions:	95 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	16	18	2	15	4 x 2	30 x 30											D, TT	

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 = Linderiella occidentalis, BRLI = 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.

U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods

Site or Project Name	County	Quad	Township	Range	Section
Mapes and Trumble Industrial Facility Project	Riverside	Perris	5S	3W	10

SURVEYOR / Permit Number:	Stan Spencer / TE-777965

Date:	4/4/22	Time:	1300	Weather Conditions:	5 % cloud cover

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m × m)		Crustaceans					Insects				Platyhelminths	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomida			
2	482530 E, 3735260 N, WGS84	22	32	3	15	3 x 2	30 x 30	BRLI										D, TT	

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 = Linderiella occidentalis, BRLI = 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.

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

June 22, 2022

Ms. Stacey Love, Recovery Permit Coordinator
United State Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: Results of the 2022 Dry Season Fairy Shrimp Survey for the Mapes and Trumble Industrial Facility Project (Trumble and Mapes Warehouse Project; LSA Project No. BAV2101)

Dear Stacey:

This letter provides the results of a 2022 dry season presence/absence survey for vernal pool branchiopods conducted by LSA for the Mapes and Trumble Industrial Facility Project site. The survey area is located at Universal Transverse Mercator (UTM) coordinates 3735200 Northing/482700 Easting within projected Section 10, Township 5 South, Range 3 West, in the City of Perris, Riverside County, as shown on the U.S. Geological Survey (USGS) 7.5 minute series *Perris, California* quadrangle (attached Figure 1). The survey area includes 3 ponding features totaling less than 0.5 acres (attached Figure 2). Wet season surveys were conducted at this site in 2012–2013 by Glenn Lukos Associates and in 2021–2022 by LSA. The results of both surveys were negative for listed species.

METHODS

The 2022 dry season survey was conducted in accordance with the terms of Federal 10(a)(1)(A) Permits TE-777965 issued to LSA biologist Stan Spencer and TE-839213-3 issued to LSA biologist David Muth, and the May 31, 2015, *Survey Guidelines for the Listed Large Branchiopods*.

Soil samples were collected by Dr. Spencer (TE-777965) on May 11, 2022. Dr. Spencer collected series of 50 0.05-liter samples of soil from two of the three ponding features and a series of 25 0.05-liter samples from the remaining feature. The soil was dry at the time of collection. The samples from each feature were combined and stored in plastic zip-lock bags marked to indicate the site and date of collection.

The samples were processed by Mr. Muth (TE-839213) on May 23, 2022. The collected material from each feature was placed into a 5-gallon bucket filled with 1 to 2 gallons of 5 percent brine solution to hydrate soils. During the approximately 10- to 15-minute hydration period, the bucket was occasionally stirred to ensure all biological material was released and floated to the surface. In small aliquots, the biological material was poured through a series of four sieves with mesh sizes of 710, 355, 212, and 150 microns. The sieves were stacked with the largest mesh size at the top and the smallest mesh size on the bottom. Material was washed through the set with water. Particles trapped in the three smallest sieve sizes were saved for analysis by washing them onto blotter paper to dry.

The sieved material was examined by Mr. Muth on May 25, 2022, using a 10- to 40-power Olympus stereo microscope. A reference cyst collection was available for comparison of any cysts found in the samples. Soil material will be stored with LSA until final deposition can be arranged.

RESULTS AND CONCLUSIONS

Egg produced by the genus *Branchinecta* were detected in two (Features 2 and 3) of the three features sampled.

A total of about 390 *Branchinecta* eggs were found in the sampled features. *Branchinecta* eggs are not considered differentiated enough to make a species determination. Based on habitat conditions and the results of the wet season survey, the eggs most likely belong to versatile fairy shrimp (*Branchinecta lindahli*). No eggs of *Streptocephalus* were found. No other invertebrates were detected.

Table A: Characteristics of Features Sampled

Estimated Maximum Depth (centimeters)	Estimated Maximum Length × Width (meters)	Origin	Vegetation	Soil Sample Volume	Fairy Shrimp Egg Abundance (number)
Feature 1					
10	30 × 20	scrape or borrow area with tire tracks	*Bromus rubens* *Erodium cicutarium* *Festuca perennis* *Hordeum murinum* *Medicago polymorpha* *Oncosiphon pilulifer* *Spergularia bocconi*	2.5 L	No species
Feature 2					
15	30 × 30	scrape or borrow area	*Polygonum aviculare* *Psilocarphus brevissimus* *Trichostema lanceolatum* *Veronica peregrina*	2.5 L	*Branchinecta* – Moderate (140)
Feature 3					
15	30 × 6	ditch	*Erodium cicutarium* *Polygonum aviculare* *Spergularia bocconi*	1.25 L	*Branchinecta* – High (250)

Please contact me if you require any additional information.

Sincerely,

LSA ASSOCIATES, INC.

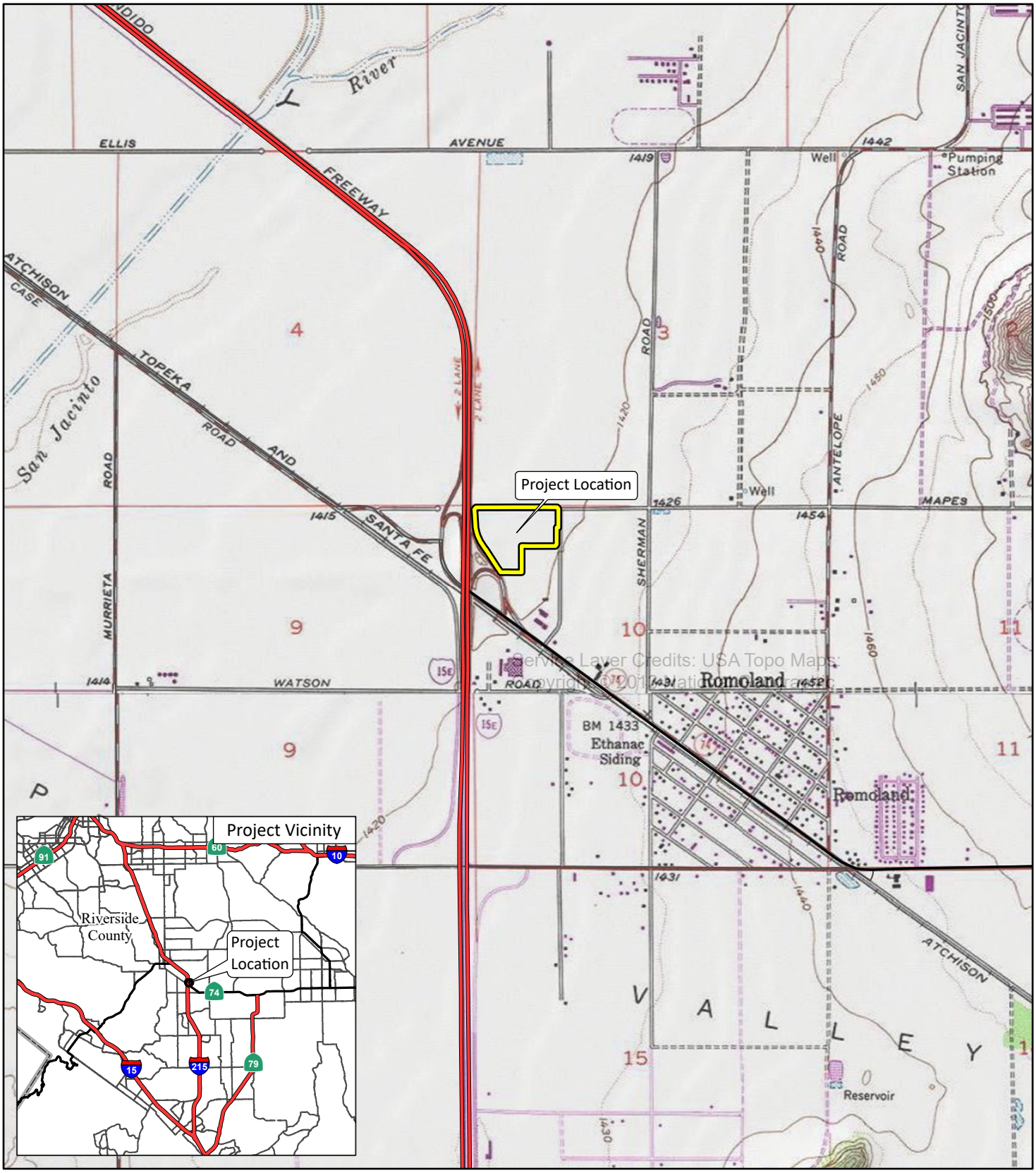
Stanley C. Spencer, Ph.D.
Associate/Senior Botanist

Attachments: Figure 1: Regional and Project Location
Figure 2: Features Sampled
Data Sheet

cc: Melody Aimar, Western Riverside County MSHCP Biological Monitoring Program

WE CERTIFY THAT THE INFORMATION IN THIS SURVEY REPORT AND ATTACHED EXHIBITS FULLY AND ACCURATELY REPRESENTS OUR WORK:

SURVEYOR:	PERMIT NUMBER	DATE:
Stanley Spencer	TE-777965	June 22, 2022
David Muth	TE-839213	June 22, 2022



LSA

FIGURE 1

N

0 1000 2000
FEET

Mapes and Trumble Industrial Facility Project

SOURCE: USGS 7.5' Quad - *Perris* (1979), CA

Regional and Project Location

I:\BAV2101\GIS\Pro\Mapes and Trumble Industrial Facility Project.aprx (12/15/2021)

LSA

LEGEND

Project Location

Feature

FIGURE 2

N

0 100 200

FEET

SOURCE: Google Imagery (2021)

I:\BAV2101\GIS\MXD\FeaturesSampled.mxd (6/8/2022)

Mapes and Trumble Industrial Facility Project

Features Sampled

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

Project Information		Biologist Information
Project Name: **Mapes and Trumble Industrial Facility Project**	Quad: **Perris**	Name and Permit Numbers of Person Who Conducted the Following Tasks:
USFWS Project Number**: None issued**	Township: **5S**	Soil Collection: **Dr. Stanley Spencer TE-777965**
County: **Riverside**	Range: **3W**	Soil Processing: **David Muth TE-839213 and TE-797234**
UTMs for center of site: **482700E/3735200N**	Section: **10**	Soil Analysis/Cysts ID: **David Muth TE-839213 and TE-797234**
LSA #: BAV2101		Soil Collection Date: **May 11, 2022** Soil Process Date: **May 23, 2022**

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	
						Branchinecta sp.	*Lepidurus pack ardi*	*Streptocephalus wootoni*	*Linderiella occidentalis*	*Lynceus brachyurus*	*Cyzicus californicus*					
1																No inverts
2						~140										No other inverts
3						~250										No other inverts

Appendix F Focused Burrowing Owl Surveys

MSHCP Focused Burrowing Owl Survey

For

CUP #22-05023
Perris Industrial Project
Southwest Corner of Mapes Road & Trumble Road
APN 329-020-033, 034, 044, and 046

Prepared for

Kamran Benji
Blue Marquise Investments Inc.
6300 Wilshire Blvd. #1420
Los Angeles, CA 90021

Prepared by

Kinsinger Environmental Consulting
8885 Rio San Diego Dr. Ste. 237
San Diego, CA 92108
KE-20210918-HSA

September 2022

Contents

Table of Figures

Appendices

1.0 Introduction

Kinsinger Environmental Consulting conducted a focused burrowing owl (BUOW, Athene cunicularia) survey at the request of the City of Perris on behalf of the Blue Marquise Investments. The survey area is located at Universal Transverse Mercator (UTM) coordinates 3735200 Northing/482700 Easting within Section 10, Township 5 South, Range 3 West, in the City of Perris, Riverside County, as shown on the U.S. Geological Survey (USGS) 7.5-minute series Perris, California quadrangle. (Figure 1)

1.1 Project Area and General Setting

The proposed project is an industrial site that will occupy four adjacent parcels, APN 329020046, 329020033, 329020034, and 329020044 at the Southwest corner of Mapes and Trumble Road in Perris, California The 396,000-square-foot industrial project will be built on 19.16 acres of undeveloped land. It is bordered on the north by Mapes Road, Trumble Road to the East and State Route 79 (SR-79) to the South via Interstate 215 (I-215) in the City of Perris. It is directly adjacent to the northbound lanes of I-215. Trumble Road forms the boundary of the City limit between Perris and the City of Menifee.

The site is zoned as "Business Park" (BP) with industrial facilities including Eastern Municipal Water District (EMWD) to the north, Big League Dreams baseball complex to the northeast, the Exceed Industries Community Employment Services and other industrial complexes to the east and south. There is a vacant field to the east of the project site that borders the southeast corner of Mapes and Trumble Roads and there is a small undeveloped parcel to the south of the project site behind Sun State Rentals and an adjacent microwave transmitter tower.

The Interstate 215 Freeway (I-215) embankment and Caltrans right-of-way is adjacent to the parcel boundaries on the east. The 2:1 embankment rises to approximately 15 feet in elevation above the site. Along its slopes there are large roadside debris, buckets, tires, pipes and trash. The slopes are eroded and there are four sets of double culverts that run under the freeway perpendicular to the project site boundary (Figure 1).

Along the boundary of the Caltrans right-of-way, there are two large red gum trees (Eucalyptus camaldulensis), three small red gum trees and eight Mexican paloverde trees (Parkinsonia aculeata). Nine street trees, London plane (Platanus x acerifolia), line the eastern walkway on Trumble Road and are less than 15 feet tall. Most are water deficient and two are dead. Mapes Road, on the north side of the project site, has a ditch that leads to a storm drain at the west end of the street with no walkway or curb. The stormdrain at the terminus of Mapes Road discharges to the flood control channel on the west side of the EMWD facility through a stormdrain system from the street. (Appendix A Photos)

The fenced detention or "catchment" basin at the center of the project site is connected to a ditch that flows north toward the terminus of Mapes Road. There it connects to the ditch that runs parallel to Mapes road along the north boundary of the project site. Discharge reaches the storm drain at the end of Mapes Drive when there is overflow. (Kimley Horn, 2022)

Past excavations or grading of the site have removed natural topsoil leaving hard soil that is shallow over a water limiting layer or duripan leaving it too shallow and hard for ground squirrels to build burrows. By comparison, disced fields at the southeast corner of Trumble and Mapes Roads with the same soil series retain their natural soil profile and have abundant burrows.

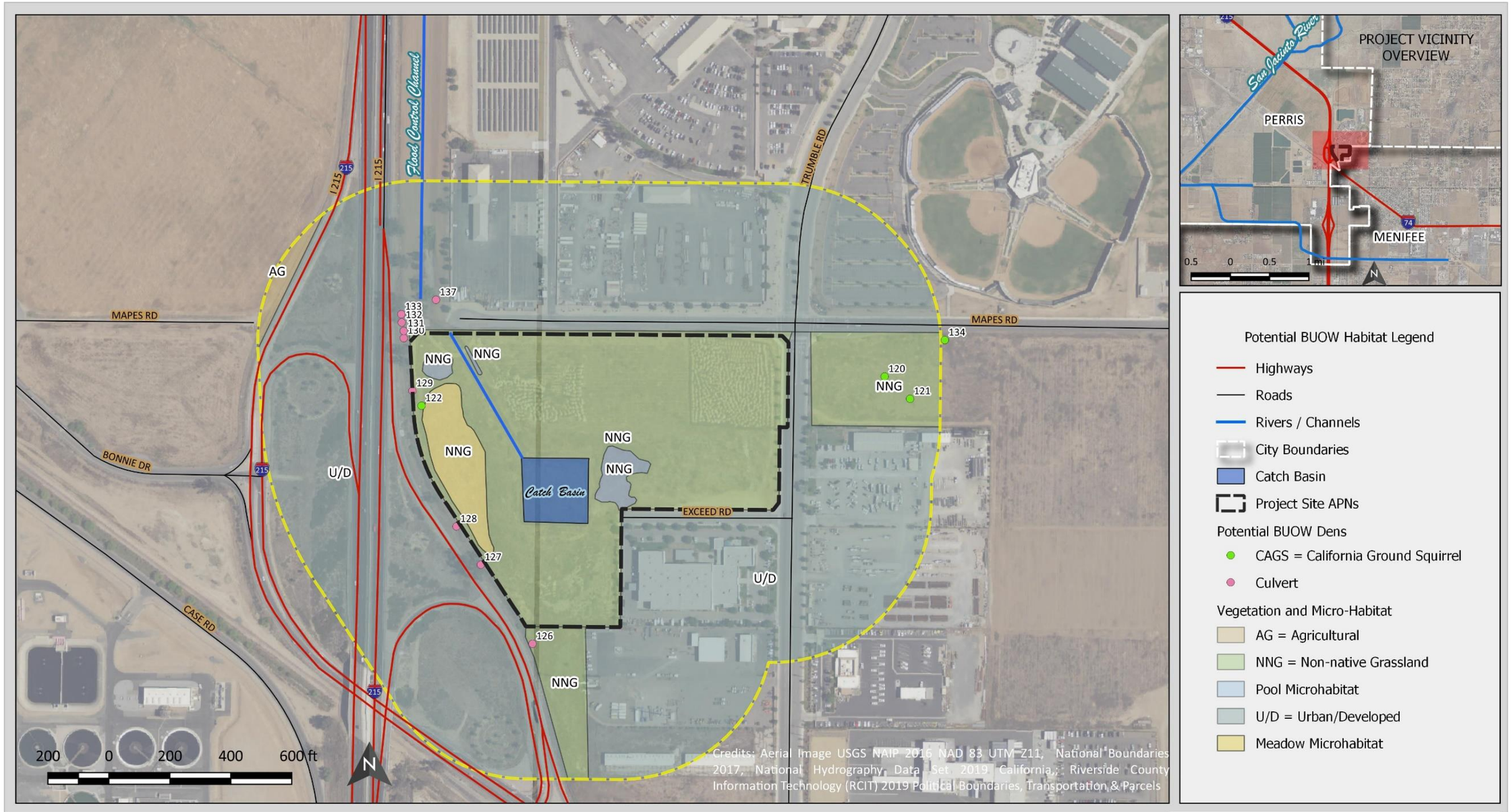


Figure 1 Locations of culverts and California ground squirrel dens with potential for burrowing owls within 500-Foot Survey Buffer of Perris Industrial Project in Perris, California.

KINSINGER ENVIRONMENTAL CONSULTING

Map Created on 09/22/2022

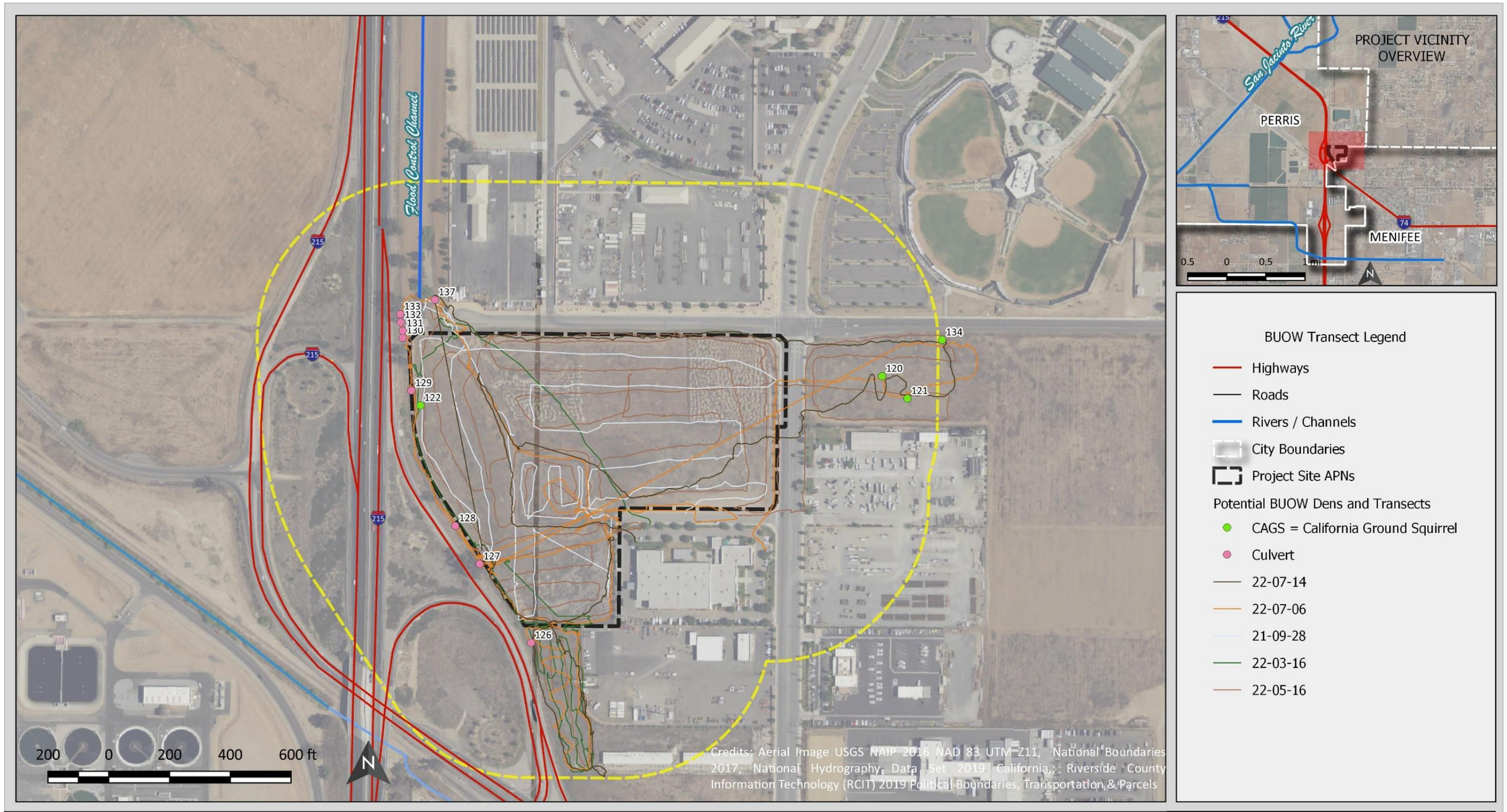


Figure 2 Survey transect GPS Tracks and potential den sites within 500-Foot Survey Buffer of Perris Industrial Project in Perris, California.

Map Created on 09/22/2022

KINSINGER ENVIRONMENTAL CONSULTING

1.1 Project Description

The project proponent is proposing to build a 396,000 gross square foot industrial facility, warehouse, with up to three attached office spaces. Plan alternatives include 45 tractor loading docks.

1.2 Project Schedule

Construction of the Project is anticipated to commence in early 2023 and be completed in the winter/spring of 2024, resulting in a total construction duration of approximately twelve months.

2.0 Survey Methods

The study area includes the project site and a 500-foot survey buffer north, west, east and south of the project site Figure 1. The Habitat Suitability Assessment (HSA) results in fall of 2021 indicated that, potential habitat is present for Riverside fairy shrimp (Streptocephalus woottoni) which is federally listed as endangered and BUOW.

KEC's principal biologist, Debbie Kinsinger, conducted the focused surveys according to the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) burrowing owl survey guidelines (RTLMA-EPD, 2006a)

Table 1 below lists the 2021 and 2022 field dates and weather conditions for the BUOW habitat suitability survey and focused survey den mapping. Four focused surveys were needed to cover the entire 500-foot survey area within the survey window time frame. A mapping survey (MSHCP Part A) was conducted in fall of 2021 as part of a habitat suitability assessment that determined potential BUOW habitat was present. That mapping was repeated in March during the breeding season. Four focused surveys were conducted throughout the breeding season to confirm absence for the season and to cover the entire area within the time frame of the survey window. The GPS tracks for those transects are shown in Figure 2 along with the locations of potential den sites that were limited to culverts and ground squirrel burrows.

The survey window is defined as two hours before sunset to one hour after or one hour before sunrise to two hours after. Protocol requires transects 30 meters apart on the center for 100 % visual coverage. Variations are acceptable for inaccessible areas or private property to be survey by binoculars or areas of non-habitat or inaccessibility. KEC surveyed 100% of the project site and 500-foot survey buffer on foot except for urban habitat and a binocular survey on either side of the EMWD flood control channel that was disced. All of the MSHCP Part B surveys met the weather criteria of winds less than 20 miles per hour (mph) and temperatures less than 90° Fahrenheit (F) and more than 5 days after a rain. Rain, high temperatures or excessive wind did not impact any of our surveys. (RTLMA-EPD, 2006a)

KEC recorded our survey track marked potentially suitable burrow locations using a Garmin eTrex Vista GPS. We took GPS waypoints and photographs of suitably sized burrows or artificial habitats (3 inches or greater) within the non-native grassland habitat, disced & mowed fields, and drainage channels. (Figure 1 and 2).

Table 1 Survey Dates and Weather Conditions

Date	Survey Type	Surveyor	Time	Survey Window	Temp ° F	Wind mph	Cloud cover
9/28/2021	BUOW Mapping Part A Step I CAGS burrow mapping	Debbie Kinsinger	15:20 – 16:34	n/a	73°	10-Jul	clear
3/16/2022	BUOW Mapping Part A Step I (new-season repeat)	Debbie Kinsinger	11:36 – 12:11 13:07 – 19:37	16:57 – 19:37	70°	5	clear
5/16/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:22 – 20:23	17:43 – 20:43	66 - 77°	8 – 10	clear
5/26/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:00 – 19:58	17:51 – 20:51	80°	3 – 8	clear
7/6/2022	BUOW Focused Survey Step II	Debbie Kinsinger	18:37 – 20:42	18:03 – 21:03	69°	8 – 10	clear and hazy
7/14/2022	BUOW Focused Survey Step II	Debbie Kinsinger	13:07 – 19:47	17:51 – 19:47	72°	5 – 10	10 % clouds

KEC conducted a literature review that includes:

- Analysis of the site by a previous owner including a:
    - Biological Resource Analysis (Cadre, 2011)
    - Focused Burrowing Owl Survey (L&L, 2016b)
    - Focused Burrowing Owl Survey (KEC, 2022)
- The California Burrowing Owl Consortium, Survey Protocol and Mitigation Guidelines (CBOC, 1993)
- The California Fish and Game, Staff Report on Burrowing Owl Mitigation (CDFW, 2012)
- CDFW current species status lists (CDFW, 2022a) (CDFW, 2022b)
- Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Program (MSHCP) (RTLMA-EPD, 2006a)

KEC queried the California Natural Diversity Data Base (CNDDB) geographic for a 2 mile radius to determine locations of other BUOW records (CNDDB 2019).

2.1.1 Topography and Soils

There is only one soil series mapped at the Perris Industrial site; Madera fine sandy loam 0 to 2% slope (MaA). The taxonomic classification for Madera is Fine, montmorillonitic, thermic Abruptic Durixeralfs (NRCS, 2013). However, the surface layers of soil at this site have been truncated (removed) by excavation, grading, and discing leaving the soil both too hard and too shallow to be suitable for California ground squirrels to make burrows.

Existing Conditions

The 19.16-acre project site is nearly level. Vegetation on the site is predominantly non-native grass and ruderal species. There are areas of shallow seasonal ponding that support aquatic crustaceans; versatile fairy shrimp (Branchinecta lindahli) (LSA, 2022). Flowering herbs, tidy tips (Layia platyglossa) and coastal

goldfields (Lasthenia gracilis) occur in these ponded areas that are typical of moist meadows and openings in sage scrub. They are sometimes indicators of vernal pools and L. platyglossa is a USACE facultative wetland species (USACE, 2016)

Tall red gum eucalyptus trees on the western boundary of the site and Mexican palo verde are a frequent roost for foraging raptors including redtail and Cooper's hawks and typically support large flocks of Cassin's king bird. The prey base includes lizards, mice and pocket gopher. Insects and lizards would be the potential prey base for BUOW if they were present. Say's phoebes routinely make use of the detention basin fence posts as a foraging roost to search for insects.

Flocks of lark sparrows and horned larks that are ground nesting birds were present and foraging in the grasslands in the spring but not detected nesting on site. Horned lark is an MSHCP-covered species. A pair of killdeers, also a ground nesting bird, were observed nesting on site on March 16, in the southeast corner of the 329-020-046 parcel but were not relocated on the next site visit on April 14 after vehicles entered the site and removed silt fence. (See Appendix B Species Occurring on Site)

2.1 Vegetation Communities

Non-native grassland is the only vegetation community on site. The vegetation community on site; is altered from its original habitat prior to agricultural into non-native grassland because of disturbance from drainage and agriculture. Some intermixture of sage scrub may have occurred here at one time and a single scrub species was detected on site, California buckwheat. Within the 500-foot survey buffer are urban landscape features that are mapped as Urban/Developed and include horticultural trees, shrubs and bare ground, as well as buildings and paved surfaces

The Figure 1 shows the vegetation types and also includes MSHCP features within the 500-foot survey buffer that are "micro-habitats" within the Non-native grassland vegetation communities. Potential habitats for BUOW include the culverts along the I-215 right-of-way embankment and the EMWD flood control channel (Figure 2).

Micro-habitat areas of pools ditches and culverts did not support suitable burrows for BUOW but could have provided an insect prey base if BUOW used the habitat. Potentially suitable burrows of the California ground squirrel are mapped on the east side of Trumble Road within the 500-foot survey buffer (Figure 1).

2.2 Burrowing Owl Survey

The project site is located with the MSHCP's burrowing owl survey area. Focused surveys are required in these areas. Burrowing owl is a California Species of Special Concern (SSC) and USFWS Bird of Conservation Concern (BCC). There are four records of BUOW within the CNDDB 2-mile query area mostly near channelized tributaries of the San Jacinto River to the north and south.

One CNDDB BUOW locality is approximately one mile east of the project site on Mapes Road within a ruderal non-native grassland community with similar species composition to that on site. The record is from 1987 for "two burrows and two owls" but no indication if the two were breeding. Aerial photos of the site show that it is still undeveloped as of February 2022 and a recent drive past that location on Mapes Road confirm the habitat remains extant.

2.2.2 Results

Non-native grasslands are important habitats for raptors because they support small burrowing animals that forage on herbs and seeds. Fences and utility poles serve as perches for raptors such as burrowing owls and hawks, which prey on ground squirrels, snakes, mice, lizards and in the case of BUOW, insects.

The BUOW, is attracted to agricultural fields near irrigation canals that have water that support an insect prey base. An important component to burrowing owl success is the presence of California ground squirrels which create burrows that the BUOW modifies and uses as a natal den as well as for roosting. (CDFW, 2012)

There are two CNDDB BUOW localities on the "Perris Storm Drain" to the north that is also a channelized tributary of the San Jacinto River. The channelized tributary of the San Jacinto River to the south of SR-74 has the most recent BUOW occurrence from 2015 near the intersection of McLaughlin and Matthews Road. There is development in the area but some open fields are still present there with potential habitat.

The project site has a water source in the EMWD flood channel to the north of the project site (Figure 1). The project site has suitable perches and potentially suitable artificial burrows in the form of culverts, tires and debris piles. The soil is too hard and shallow for ground squirrels to create burrows on site. Ground squirrels do occupy the vacant parcel on the southeast site of the Mapes and Trumble Road intersection within the 500-foot survey buffer.

One manmade cavity, a pile of lumber debris near the north western boundary of parcel 329-020-046, was lying horizontally on the site. It had no evidence of use by California ground squirrels or by BUOW. A couple of tires and four sets of double culverts along the base of the I-215 freeway slope provide artificial cavities as potential habitat. BUOW could use these for dens with the EMWD channel as a source of water and insect prey nearby.

KEC conducted a BUOW den mapping survey and three focused BUOW transect surveys and failed to detect evidence of BUOW activity at any of the potentially suitable den sites on the project site.

There are 3 pairs of culverts along the western boundary of the project site (127 – 129) and 4 pairs of culverts on the northwest of the site (130-133) with number 137 a double box culvert at the end of the EMWD flood control channel (Figure 1). Point 122 on the west side of the project site is a lumber pile with a potentially suitable cavity for use by BUOW. (See Photos Appendix B)

The vacant parcel on the east side of Trumble, within the jurisdiction of the City of Menifee, supported several California ground squirrel burrow complexes in the softer and regularly disced soil. There were many burrows with openings between three and six inches wide or wider and burrow complexes that would be suitable habitat for BUOW. Numbers 120, 121 and 134 in Figure 1 are the California ground squirrel burrow complexes in the field on the east side of Trumble Road. None of the burrows had evidence of BUOW pellets, den-apron decoration, feathers, white wash or tracks. (See Photos Appendix B)

This field on the east side of Trumble Road was mowed and used as an event parking lot for trailered horses sometime close to the July 4th holiday (based on tire/hoof tracks and manure). Afterwards, vegetation on site was nearly absent, most of the burrows were collapsed and ground squirrel activity was diminished. If BUOW were to occupy the site, this might have been a time to take over an abandoned ground squirrel den but there still was no evidence of BUOW use in the July survey or when we returned for other site investigations in August.

2.2.3 Impacts

There is a moderate potential for burrowing owl to occur within the 500-foot buffer area because of its isolation from pedestrian traffic, proximity to the EMWD flood channel as a water source, and vegetation that is grassland or open. There is potentially suitable artificial habitat in freeway culverts in the I-215 right-of-way on the western boundary of the project site. There is potential for BUOW to occur within the 500-foot buffer in the field on the southeast side of the Mapes and Trumble Road intersection where there are abundant ground squirrel colonies and suitable den habitat.

There is low potential for BUOW to occur on the project site because there are no burrows on site that meet the criteria for BUOW to occupy and only one pile of discarded lumber as potential artificial burrow.

Direct impacts to potentially occurring burrowing owl within the 500-foot buffer caused by activity and noise on the project site can be avoided by mitigation.

Indirect impacts to BUOW from loss of habitat are less-than-significant because loss of the potential habitat does not fragment existing habitat and there is no evidence that the project site or suitable habitat within the 500-foot survey buffer was occupied by BUOW within the last three years (CDFW, 2012).

2.2.4 Conclusions and Recommendations

There is a very low potential to impact BUOW on the project site or within the 500-foot survey buffer that can be avoided by implementing the following mitigation recommendations.

There is a moderate potential to impact ground nesting birds such as killdeer, horned lark, and lark sparrow that were observed on site that can be avoided by implementing the following mitigation recommendations.

2.2.5 Mitigation

MM-1 to avoid impacts to nesting and riparian birds and a violation of the Migratory Bird Treaty Act and the California Fish and Game Code:

Site preparation activities (ground disturbance, construction activities, staging equipment, and/or removal of trees and vegetation) for the project shall be avoided, to the greatest extent possible, during the nesting season of potentially occurring native and migratory bird species.

If site-preparation activities are proposed during the nesting/breeding season, the project proponent shall retain a qualified biologist to conduct a pre-activity field survey prior to the issuance of grading permits to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone.

If active nests are not located within the project site and an appropriate buffer of 500 feet of an active listed species or raptor nest, 300 feet of other sensitive or protected bird nests (non-listed), or 100 feet of sensitive or protected songbird nests, construction may be conducted during the nesting/breeding season. However, if active nests are located during the pre-activity field survey, the biologist shall immediately establish a conservative avoidance buffer surrounding the nest based on their best professional judgement and experience. The biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. If the biologist determines that such project activities may be causing an adverse reaction, the biologist shall adjust the buffer accordingly or implement alternative avoidance and minimization measures, such as redirecting or rescheduling construction or erecting sound barriers. All work within these buffers will be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite qualified biologist will review and verify compliance with these nesting avoidance buffers and will verify the nesting effort has finished. Work can resume within these avoidance areas when no other active nests are found. Upon completion of the survey and nesting bird monitoring, a report shall be prepared and submitted to City for mitigation monitoring compliance record keeping.

MM-2: The project proponent shall retain a qualified biologist to conduct a pre-construction survey for resident burrowing owls within 30 days prior to commencement of grading and construction activities at the project site. The survey shall include the project site and all suitable burrowing owl habitat within a

500-foot buffer. The results of the survey shall be submitted to the City prior to obtaining a grading permit. In addition, if burrowing owls are observed during the Migratory Bird Treaty Act nesting bird survey required by mitigation measure MM-1, to be conducted within three days of ground disturbance or vegetation clearance, the observation shall be reported to the CDFW. If ground disturbing activities in these areas are delayed or suspended for more than 30 days after the pre-construction survey, the area shall be resurveyed for owls. The pre-construction survey and any relocation activity shall be conducted in accordance with the current Burrowing Owl Instruction for the Western Riverside MSHCP.

If burrowing owl are detected, the CDFW shall be sent written notification within three days of detection of burrowing owls. If active nests are identified during the pre-construction survey, the nests shall be avoided, and the qualified biologist and project proponent shall coordinate with the City of Perris Planning Division, the USFWS, and the CDFW to develop a Burrowing Owl Plan to be approved by the City in consultation with the CDFW and the USFWS prior to commencing project activities. The Burrowing Owl Plan shall be prepared in accordance with guidelines in the CDFW Staff Report on Burrowing Owl (March 2012) and MSHCP. The Burrowing Owl Plan shall describe proposed avoidance, minimization, relocation, and monitoring as applicable. The Burrowing Owl Plan shall include the number and location of occupied burrow sites and details on proposed buffers if avoiding the burrowing owls and/or information on the adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation and funding of artificial burrows (numbers, location, and type of burrows) and management activities for relocated owls may also be required in the Burrowing Owl Plan. The permittee shall implement the Burrowing Owl Plan following CDFW and USFWS review and concurrence. A final letter report shall be prepared by the qualified biologist documenting the results of the Burrowing Owl Plan. The letter shall be submitted to the CDFW prior to the start of project activities. When the qualified biologist determines that burrowing owls are no longer occupying the Project site per the criteria in the Burrowing Owl Plan, project activities may begin.

If burrowing owls occupy the project site after project activities have started, then construction activities shall be halted immediately. The project proponent shall notify CDFW and USFWS within 48 hours of detection. A Burrowing Owl Plan, as detailed above, shall be implemented.

3.0 Certification

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

Date: 09/23/2022

If you have any question regarding this biological technical report, please contact Debra Kinsinger at (877)-593-6275.

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Appendix A Photos

Fig 1. 03/16/2022 Looking north from center/west of project site over goldfields meadow adjacent to fence parallel to I-215 on west end of project site.

Fig 2. 03/16/2022 Looking northeast from center/west from goldfields meadow. See Location of meadow on Main document map Figure 1-3.

Fig. 3. 03/16/2022 Looking south from center/west from goldfields meadow. Note cell transmitter tower near southern boundary of project site where a pair of red-tailed hawks feldged a chick this season. Raptors perch in Eucalyptus along west perimeter of site to forage for prey in meadow. Eucalyptus support flocks of Cassin's kingbird that harass the hawks.

Fig 4. Lasthenia gracilis (Coastal goldfields) FACU left & right. Phyllaries not fused, hairy; leaves linear. L. glabrata ssp. coulteri (Coulter's goldfields) has fused phyllaries. L. coronaria (Royal goldfields) phyllaries not fused, leaves pinnate.

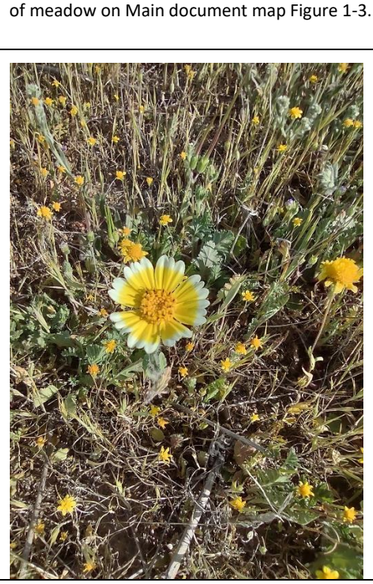


Fig 5. 03/16/2022 Tidy tips (Layia platyglossa) left, Woolly marbles (Psilocarphus brevisimus) FACW right

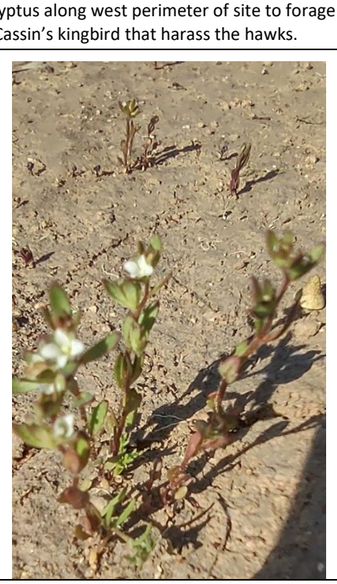
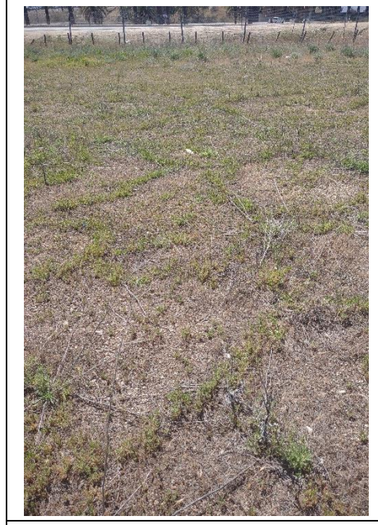
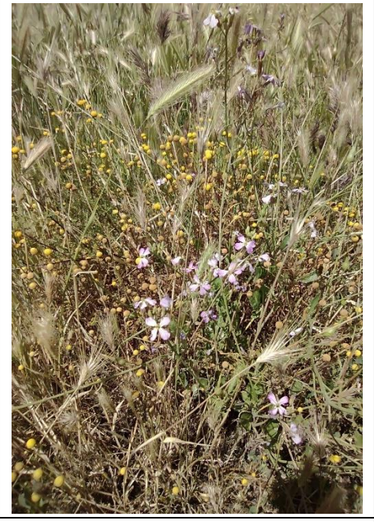
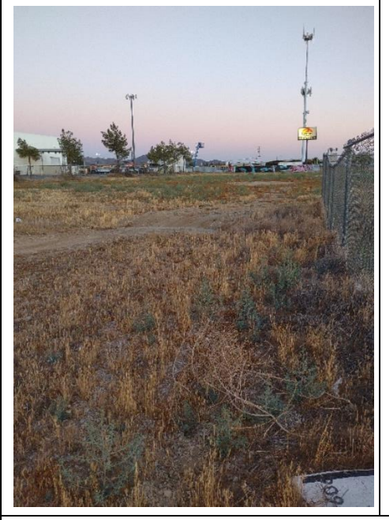
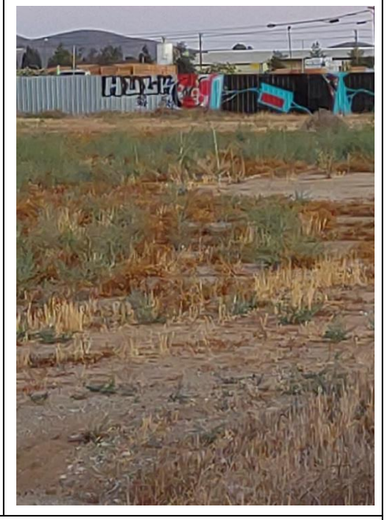


Fig 6 03/16/2022 Hairy purselane speedwell (Veronica peregrina ssp. xalapensis) FAC left & right. Emerging from cracks in areas that have already dried.

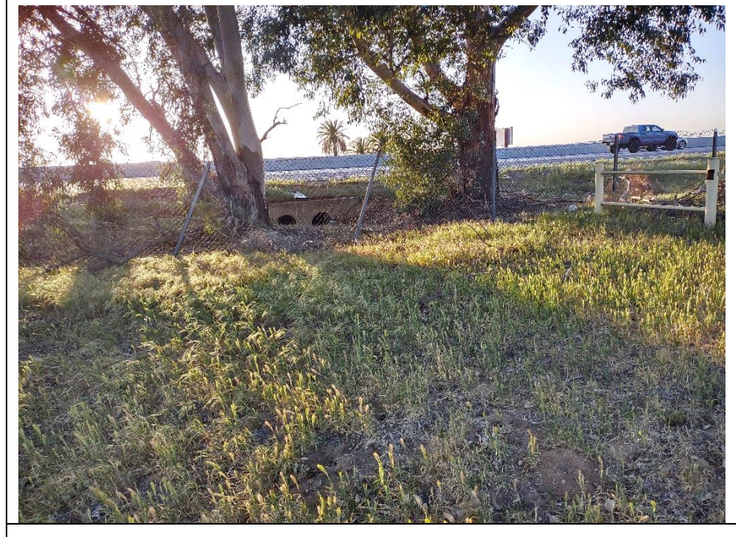



7. 04/14/2022 (left) North side of project barren soil is shallow, hexagonal cracks fill in with filaree (Erodium sp.) and rat-tail fescue (festuca myuros). Seeds support harvester ant colonies. (right) Pool 1 on south side of project supports tall grass: perennial ryegrass (festuca perenne) foxtail barley (hordeum murinum) and Mediterranean brome (bromus madritensis).

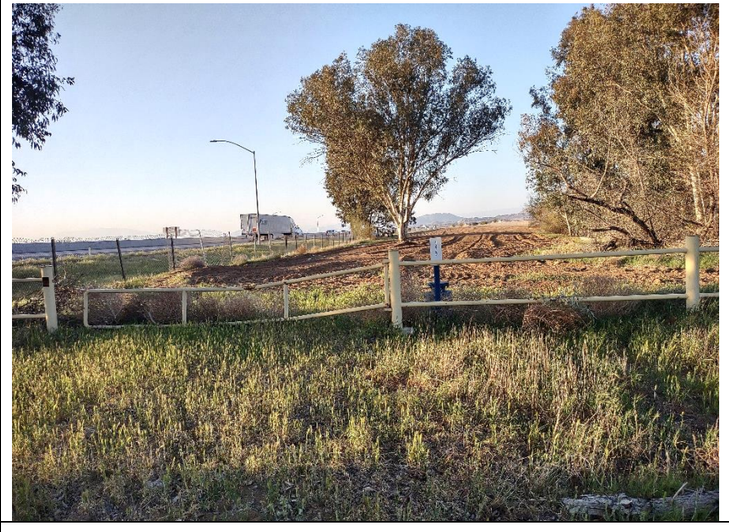

8. 07/06/2022 (Left) Looking northwest at interior of catchment basin is disced and mowed. Vegetation is grass. (Right) Looking southeast toward Exceed building from inside catchment basin.

9. 07/06/2022 (Left) Looking south from outside catchment along its eastern fence toward microwave tower. (Right) Looking south from south portion of project site toward Sun State Rentals fence. This is where the killdeer pair were nesting in a barren soil area in April. Microwave tower is to right but out of frame where redtails are nesting.



10. 3/16/2022 Looking northwest toward I-215 from outside the project boundary's northwest corner. These two culverts that go under the freeway are not connected by a drainage leading to the flood control channel. They are potential habitat for BUOW.



11. 3/16/2022 Looking north from same location as 10. All vegetation has been disced since the March survey around the EMWD flood control channel, out of frame to the right. Den habitat, perching posts, short grass, barren soil and nearly permanent water make suitable BUOW habitat.

12. 3/16/2022 Looking north toward flood control channel. Water is visible far center. 50 feet west of end of Mapes Road and higher in elevation than the channel. It was disced for the whole length preventing the longterm establishment of riparian vegetation. The channel banks are suitable BUOW habitat In this barren condition with water present in the channel.

Fig 13. 3/16/2022 Pocket gopher burrows along north boundary of catchment basin fence. The soil is too shallow and/or too hard throughout most of the site for ground squirrels. The base of the catchment on the north side creates a very low berm with slightly deeper soil suitable for pocket gopher. There were some ground squirrel burrows in the ditch parallel to Mapes Road.

Fig 14. 3/16/2022 BUOW will use artificial cavaties as dens like this tire at the end of Mapes Road near the location of photos 10 – 12.

Fig 15. 3/16/2022 You can see the water in the EMWD flood channel through the brush here.

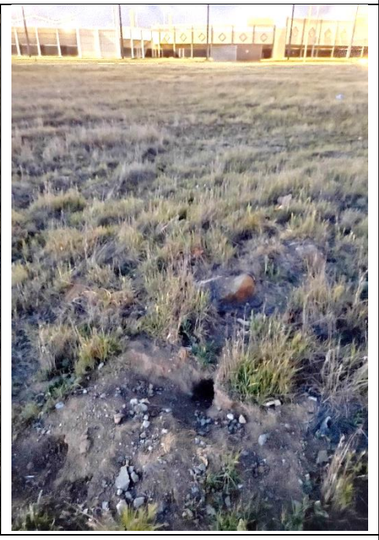
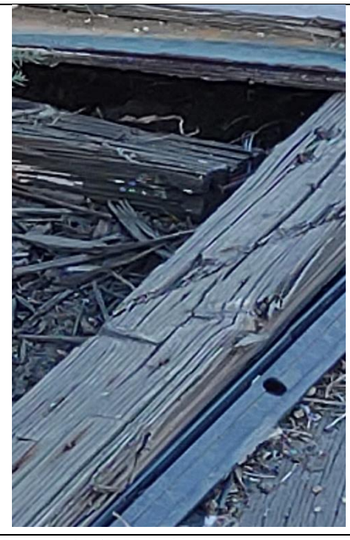


Fig 10. 3/16/2022 (left and right) Looking northeast toward Big League Dreams from vacant field at southeast corner of the intersection of Trumble Rd. and Mapes Rd. There several active California ground squirrel colonies here. The soil supports grass but is kept mowed.

Fig 11. 3/16/2022 Close up of ground squirrel burrow from Fig 10. The opening is about 3.5 inches wide. There is an apron of soil around the opening. Such burrows in a short grass habitat are suitable for BUOW.



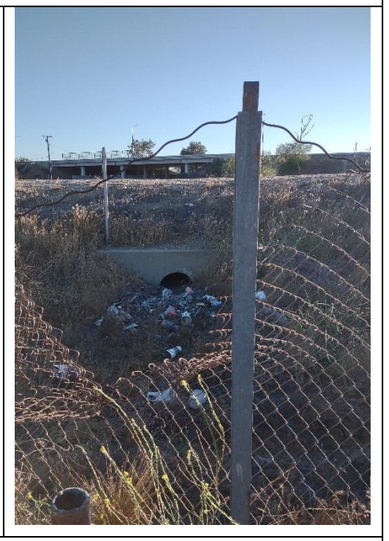


Fig 12 . 3/16/2022 (Left) Discarded pile of lumber at the west end of the project site provides potential artificial den habitat for BUOW. (Right) This culvert one of several along I-215 on the west side of the project site. This one is in the vacant lot behind Sun State Rentals.

19. 11/28/2021 Looking northeast from 100 feet east of the end of Exceed Road. Pool 1 can be seen in the green area. The bush to the right of the pool is a red willow growing in the ditch behind the storm drain.

20. 11/28/2021 Looking northeast past pool1 across barren field toward Big League Dreams in the distance.

21. 11/28/2021 Looking east from 100 feet east of the end of Exceed Road from inside ditch that leads from the stormdrain to the catchment basin.

22. 11/28/2021 Looking southwest past the end of Exceed Road

23. 11/28/2021 Looking east from end of Exceed Road along the length of the south boundary of the project site.

24. 11/28/2021 Looking east from center east boundary of project site toward Sturgeon Electric. Filaree grows in soil cracks.

Appendix B Flora and Fauna Observed On Site

Flora and Fauna Observed Onsite

The vegetation communities in this document follow a Manual of California Vegetation (Sawyer, 2009). Scientific and common names of the flora follow The Vascular Plants of Western Riverside County, California (Roberts et al, 2004) with current updates to nomenclature as found in the Jepson Interchange Index to California Plant Names (Jepson Flora Project (eds.), 2021). Scientific and common names of fauna follow (NatureServe, 2022). All flora and fauna observed at the time of the field surveys are listed in Table 2. The third column in Table 2 includes the Abundance/Sensitivity and wetland status as they appear in the Arid West Regional Wetland Plant List (USACE, 2016).

Table 2 Flora and Fauna Observed on the Project Site

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Plants		
Monocots		
Poaceae		
Avena fatua L*	Wild oat	
*Avena barbata**	Slender wild oat	
*Bromus diandrus **	Ripgut Grass	
*Bromus madritensis ssp. rubens**	Mediterranean (foxtail) brome	
*Festuca myuros**	Rat-tail fescue	
*Hordeum murinum**	Foxtail barley	FAC
*Festuca perenne**	Perennial ryegrass	
Dicots		
Anacardiaceae		
*Schinus terebinthifolius**	Brazilian pepper tree	offsite
Apocynaceae		
*Nerium oleander**	Common oleander	
Asteraceae [Compositae]		
Ambrosia psilostachya	Western Ragweed	FACU
Baccharis salicifolia	Mule fat	FAC
*Cirsium vulgare**	Bull thistle	
*Centaurea melitensis**	Tocalote	
Erigeron canadensis [*Conyza canadensis*]	Horseweed	
Corethrogyne filaginifolia	Sand aster	
*Glebionis coronaria**	Garland chrysanthemum (crown daisy)	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Helianthus annuus	Western sunflower	FACU
Heterotheca grandiflora	Telegraph weed	
*Hypochaeris glabra**	Smooth cat's ear	
*Lactuca serriola**	Prickly lettuce	
Lasthenia gracilis [*L. coronaria* mis-applied in other studies]	Coastal goldfields	FACU
Layia platyglossa	Common tidy tips	
*Oncosiphon piluliferum** [*Matricaria discoidea* misapplied in other studies]	Stink-net (Globe Chamomile)	FACU
Sonchus asper ssp. *asper**	Prickly sowthistle	
Psilocarphus brevissimus	Woolly marbles / dwarf woollyheads	FACW
Uropappus lindleyi	Silver puffs	
Boraginaceae		
Amsinckia intermedia	Small Flowered fiddleneck	
Amsinckia menziesii	Common (Menzies') fiddleneck	
Cryptantha intermedia	Common cryptantha	
Heliotropium curassavicum var. oculatum	Salt heliotrope	FACU
Plagiobothrys sp. (canescens ?)	Popcorn flower	U
Brassicaceae (Cruciferae)		
Capsella bursa-pastoris	Shepherd's purse	FACU
*Hirschfeldia incana**	Shortpod mustard	
Lepidium nitidum	Shinning peppergrass	FAC
*Raphanus sativus**	Wild radish	
Caryophyllaceae		
*Spergularia bocconi**	Boccone's sand spurry	FACW
Chenopodiaceae		
*Atriplex semibaccata**	Australian saltbush	FAC
*Salsola tragus**	Prickly Russian thistle	
Convolvulaceae		
*Convolvulus arvensis**	Field bindweed	
Crassulaceae		
Crassula connata	Sand Pygmyweed	FAC
Euphorbiaceae		
Croton setiger	Doveweed, turkey-mullein	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Fabaceae		
*Parkinsonia aculeata**	Mexican paloverde (Jerusalem thorn)	onsite along I-215 fence
*Medicago polymorpha**	Bur clover	
Fagaceae		
Quercus agrifolia	Coast live oak	offsite by EMWD
Geraniaceae		
*Erodium botrys**	Long-beak filaree	
*Erodium cicutarium**	Red-stemmed filaree	
*Erodium moschatum**	White-stemmed filaree	
Lamiaceae		
Trichostema lanceolatum	Vinegar weed	FACU
Malvaceae		
*Malva parviflora **	Cheeseweed	
Myrtaceae		
*Eucalyptus camaldulensis**	Red gum	
Nyctaginaceae		
Nicotiana glauca	Tree tobacco	
Oleaceae		
Fraxinus sp. (*uhdei**)	Shamel ash	Questionable ID, no samaras observed on ground or in tree
Pinaceae		
Pinus contorta	Lodgepole pine	Offsite in back of Exceed
Platanaceae		
*Platanus x acerifolia**	Hybrid plane	
Plantaginaceae		
Veronica peregrina ssp. xalapensis	Hairy purslane speedwell	FAC
Polygonaceae		
Eriogonum fasciculatum	California buckwheat	
Polygonum arenastrum [incl. *P. aviculare*] *	Prostrate (Common) knotweed	FAC
*Rumex crispus**	Curly doc	FAC
Salicaceae		
Salix laevigata	Red willow	FACW
Zygophyllaceae		
*Tribulus terrestris**	Puncture vine	
Animals		

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Mammals		
Geomyidae		
Thomomys bottae	Pocket gopher	
Leporidae		
Sylvilagus audubonii	Desert cottontail	
Lepus californicus bennettii	San Diego black-tailed jackrabbit	MSHCP Group 1 Species†, CDFW SSC, Observed in 2020 survey
Sciuridae		
Otospermophilus beecheyi	California ground squirrel	Infrequent around perimeter abundant offsite
Vespertilionidae		
Parastrellus hesperus	Western canyon bat [Western pipistrelle]	
Birds		
Acciptiridae		
Accipiter cooperii	Cooper's hawk	MSHCP species, Forages site routinely
Buteo jamaicensis	Red-tailed hawk	Nesting in cell tower with successful fledge
Aegithalidae		
Psaltriparus minimus	Bush tit	
Alaudidae		
Eremophila alpestris	Horned lark	MSHCP Group 1 Species†, large flocks
Anatidae		
Anas platyrhynchos	Mallard	Previous survey flyover
Cardinalidae		
Pheucticus melanocephalus	Black-headed grosbeak	Infrequent
Cathartidae		
Cathartes aura	Turkey vulture (fly over)	
Charadridae		
Charadrius vociferus	Killdeer	Ground nesting species; Pair observed actively nesting on site.
Columbidae		
Columba livia	Rock Dove (Feral Pigeon)	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Streptopelia decaocto	Eurasian collared dove	
Zenaida macroura	Mourning dove	
Corvidae		
Corvus brachyrhynchos	American crow	
Corvus corax clarionensis	Common raven	
Emberizidae		
Chondestes grammacus	Lark sparrow	MSHCP Group 2 Species†, CDFW SSC, Large flocks foraging on site, ground nesting species
Melozone crissalis	California towhee	Infrequent
Falconidae		
Falco columbarius	Merlin	Questionable ID, MSHCP Group 1†, CDFW SSC,
Fringillidae		
Carpodacus mexicanus	House finch	
Carduelis psaltria	Lesser goldfinch	
Hirundinidae		
Stelgidopteryx serripennis	Northern rough-winged swallow	Foraging on site
Petrochelidon pyrrhonota	Cliff swallow	Foraging on site
Icteridae		
Euphagus cyanocephalus	Brewer's blackbird	
Molothrus ater	Brown-headed cowbird	
Quiscalus mixicanus	Great-tailed grackle	
Mimidae		
Mimus polyglottos polyglottos	Northern mockingbird	
Parulidae		
Dendroica coronata	Yellow-rumped warbler	
Passerellidae		
Chondestes grammacus	Lark sparrow	Large flocks, ground nesting species
Passerculus sandwichensis	Savannah sparrow	Previous survey
Passeridae		
Passer domesticus	House sparrow	

Scientific Name	Common Name	Abundance/Sensitivity USACE wetland status
Picidae		
Picoides nuttallii	Nuttall's woodpecker	
Scolopacidae		
Tringa flavipes	Lesser yellowlegs	2020 fly over
Sturnidae		
Sturnus vulgaris	European starling	
Threskiornithidae		
Plegadis chihi	White-faced ibis	2020 (flyover)
Trochilidae		
Calypte anna	Anna's hummingbird	
Tyrannidae		
Sayornis nigricans	Black phoebe	
Sayornis saya	Say's phoebe	
Tyrannus vociferans	Cassin's kingbird	
Herptofauna		
Iguanidae		
Sceloporus occidentalis	Western fence lizard	
Uta stansburiana	Side-blotched lizard	
Insects		
Pogonomyrmex occidentalis	Harvester ants	Observed

* = Non-Native Species † = MSHCP covered species