Ramona-Indian Warehouse Project

General Biological Resource Assessment and Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis

November 2022 | 04823.00001.001

Prepared for:

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ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Number
BUOW	Burrowing Owl
CASSA	Criteria Area Species Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Perris
CNPS	California Native Plant Society
County	County of Riverside
CWA	Clean Water Act
Dudek	Dudek & Associates
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
HELIX	HELIX Environmental Planning, Inc.
JD	Aquatic Resources Delineation
LDMF	Local Development Mitigation Fee
MBTA	Migratory Bird Treaty Act
MSHCP	Multiple Species Habitat Conservation Plan
NEPSSA	Narrow Endemic Plant Species Survey Area
NPPA	Native Plant Protection Act
NWI	National Wetland Inventory
Project	Perris Development Project
PVCCSP	Perris Valley Commerce Center Specific Plan
PVSD	Perris Valley Storm Drain
RCA	Western Riverside County Regional Conservation Authority
ROW	Right of Way
ROWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
sf	square foot
SKRHCP	Stephens' Kangaroo Rat Habitat Conservation Plan

ACRONYMS AND ABBREVIATIONS (cont.)

USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
UWIG	Urban/Wildlands Interface Guidelines

Report Date:	November 10, 2022
Title:	General Biological Resources Assessment and Western Riverside Multiple Species Habitat Conservation Plan Consistency Analysis for the Ramona-Indian Warehouse Project
Project Location:	The project is located in the City of Perris (City) in western Riverside County. The project is located west of the Perris Reservoir and east of Interstate 215 within Township 4 South, Range 3 West, in the San Jacinto Nuevo Y Potrero land grant on the U.S. Geological Survey (USGS) 7.5' Perris quadrangle. The approximately 15-acre project site is located at the northwest of the intersection of Perris Boulevard and the Ramona Expressway.
Assessor's Parcel Numbers:	302-060-041
Owner/Applicant:	Joe McKay JM Realty Group 3535 Inland Empire Boulevard Ontario, CA 91764
Principal Investigator:	HELIX Environmental Planning, Inc. 7578 El Cajon Blvd. La Mesa, CA 91942 (619) 462-1515
Report Summary:	The approximately 15.67-acre study area was surveyed for burrowing owl (*Athene cunicularia*), MSHCP Riparian/Riverine and Vernal Pool resources, fairy shrimp, and jurisdictional features. No burrowing owls, rare plants, or MSHCP Riparian/Riverine and Vernal Pool plant or animal species were observed in the study area. Several pools (not vernal) and two drainages occur on the property.
Report Preparers:	Robert Hogenauer (562) 537-2426 Beth Martinez (619) 462-1515
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EXECUTIVE SUMMARY

The Ramona-Indian Warehouse project study area is located within the Mead Valley Area Plan of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) but is not with a criteria cell or subunit. Proposed or existing MSHCP Cores and Linkages do not occur within the study area. Surveys conducted within the study area include an aquatic resources delineation, Riparian/Riverine and Vernal Pool habitat assessment, dry and wet fairy shrimp surveys, and a burrowing owl survey. The property is bordered to the south by a concrete brow ditch that parallels Ramona Expressway. Several pools occur on the eastern side of the site, and only the common versatile fairy shrimp (*Branchinecta lindahli*) was detected. No sensitive fairy shrimp were detected. No burrowing owl or MSHCP Riparian/Riverine or Vernal pool plant or animal species were detected on the property.

The project will result in impacts to the aquatic resources on the property. The impacts will be mitigated during the permitting process with the resource agencies, with mitigation proposed to be the purchase of rehabilitation credits at Riverpark Mitigation Bank or another approved mitigation bank. A Determination of Biologically Equivalent or Superior Preservation documenting mitigation for impacts to MSHCP resources has been prepared under separate documentation.

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1.0 INTRODUCTION

The Ramona-Indian Warehouse project study area is located in the City of Perris, Riverside County (County), California. The purpose of this report is (1) to document the results of a biological resource technical study and (2) analyze the potential impacts of the project pursuant to the requirement of the adopted Western Riverside Multiple Species Habitat Conservation Plan (MSHCP; Dudek and Associates [Dudek] 2003) and the California Environmental Quality Act (CEQA). As the project is located in the City of Perris (City), the City is the CEQA lead agency. The proposed project consists of the development of a multi-tenant warehouse retail and distribution building and associated infrastructure.

1.1 PROJECT AREA

The project study area is located in the City of Perris in western Riverside County (Figure 1, *Regional Location*). The project is located west of the Perris Reservoir and east of Interstate 215 within Township 4 South, Range 3 West, in the San Jacinto Nuevo Y Potrero land grant on the U.S. Geological Survey (USGS) 7.5' Perris quadrangle (Figure 2, *Project Vicinity on Aerial Photograph*). The approximately 15-acre project site is located northwest of the intersection of Perris Boulevard and the Ramona Expressway (Figure 3, *Project Location on Aerial Photograph*).

- The study area is comprised of a single Assessor's Parcel Number (APN 302-060-041).
- The study area covers 15.67 acres. This study area includes the APN plus the Right of Way (ROW) along Ramona Expressway to the south, Perris Boulevard to the east, and Indian Avenue to the west.
- The project impacts do not include off-site staging areas.

1.2 PROJECT DESCRIPTION

The proposed project involves the adoption of a Specific Plan Amendment to the Perris Valley Commerce Center Specific Plan (PVCCSP) and approval of a Development Plan to allow the construction and operation of a warehouse building and commercial development. Warehouse development would occur within the central portion of the project site, while the approximate 1.6 acres in the northeast would provide a pad for future commercial development, such as a hotel. Specifically, the warehouse building would comprise about 232,575 square feet (sf) and include 10,000 sf of planned office area (see Figure 4, *Project Plan*). Three vehicle/truck access points would be provided, including right-in/right-out/left-in access for trucks on Indian Avenue, right-in/right-out access for passenger cars only off Ramona Expressway, and right-in/right-out access for passenger cars only from Perris Boulevard. The site plan includes 215 auto parking stalls, 52 trailer parking stalls, and 39 truck docks. Buildings would not exceed 48 feet in height. Development of the commercial pad is not proposed to occur concurrently with the warehouse. As such, temporary staging activities may occur in this area to support the construction of the light industrial uses described above before development of any future commercial use. As directed by the City, the project plans to construct a portion of the Line E flood control facility as part of this project and also construct a 30-inch diameter lateral pipe that can connect to the existing Perris Valley Lateral Line E-11 in Perris Blvd. Stormwater would be accommodated through an underground water quality basin and the construction of the on-site portion of Line E that is part of the City's storm drain system.

1.3 GENERAL SETTING

The project site is located on a parcel that has been used for agriculture in the past and has been regularly disked. The northeast portion of the parcel has been used as a dirt parking lot. Vegetation associated with non-native grassland or disturbed habitat occurs on the slope along Indian Avenue, located on the western side of the study area. The majority of the property is mostly unvegetated but does include a few ruderal annual species common to the area. The project is directly bordered by a mix of commercial and undeveloped land with residential development to the southeast. The general area is predominantly comprised of commercial development.

The southern edge of the property includes an open brow ditch that connects to the Perris Valley Storm Drain (PVSD). The study is situated approximately 4,000 feet west of the PVSD. Storm drain flows enter the property from a pipe and a box culvert in the southwest corner of the property.

1.4 SOILS

The U.S. Department of Agriculture (USDA) web soil survey was reviewed for the types of soil occurring on the study area (USDA 2020). Soils on the study area are comprised of three types of sandy loam. These soils are Exeter sandy loam, Hanford coarse sandy loam, and Pachappa fine sandy loam.

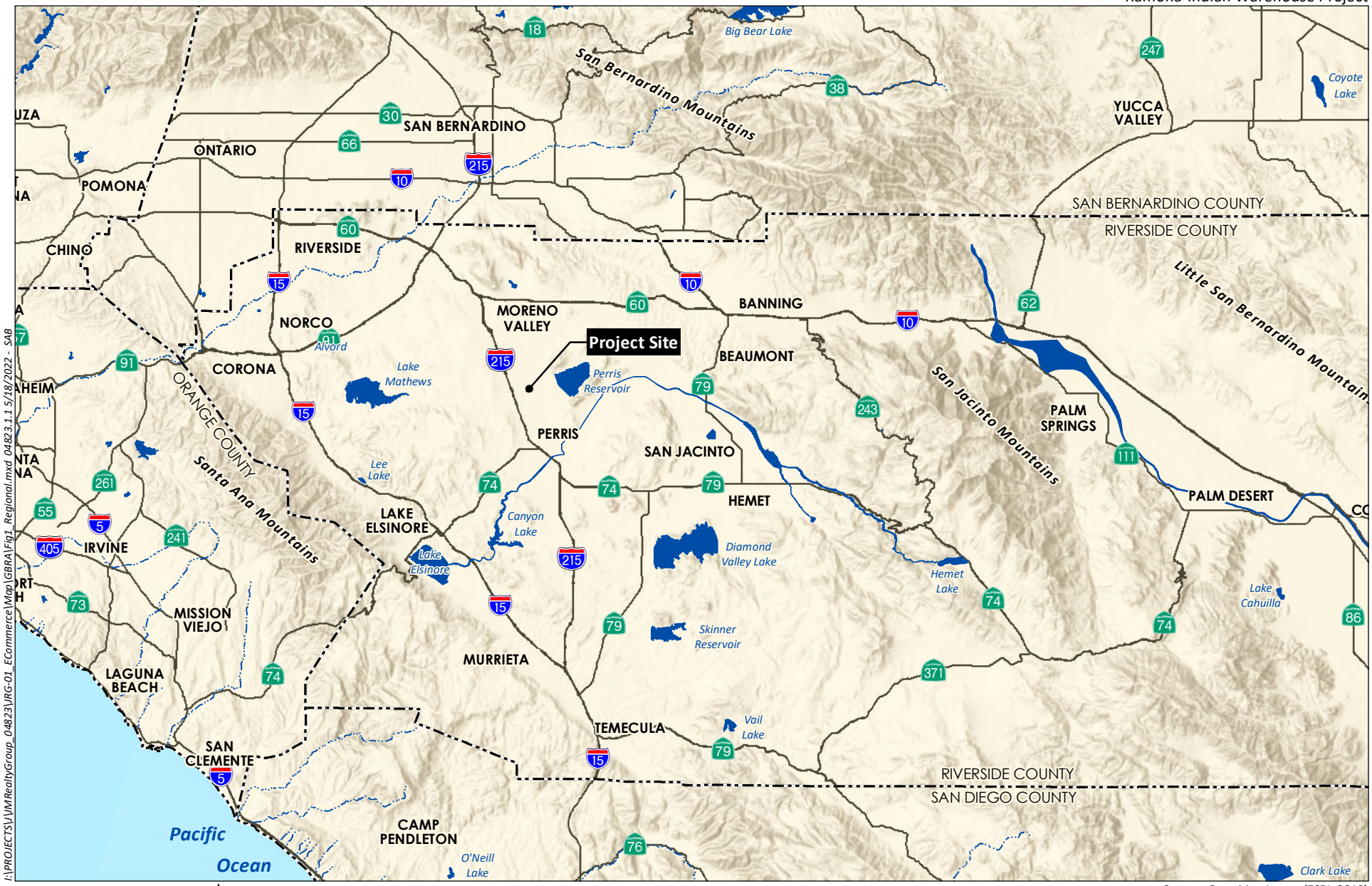
2.0 REGULATORY CONTEXT

2.1 FEDERAL GOVERNMENT

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

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

All migratory bird species that are native to the United States or its territories are protected under the Migratory Bird Treaty Act (MBTA), as amended under the MBTA of 2004 (FR Doc. 05-5127). This law is generally protective of migratory birds from the direct physical take of the species. Take for the MBTA uses the same definition as above and includes activity that results in the abandonment of a nest.



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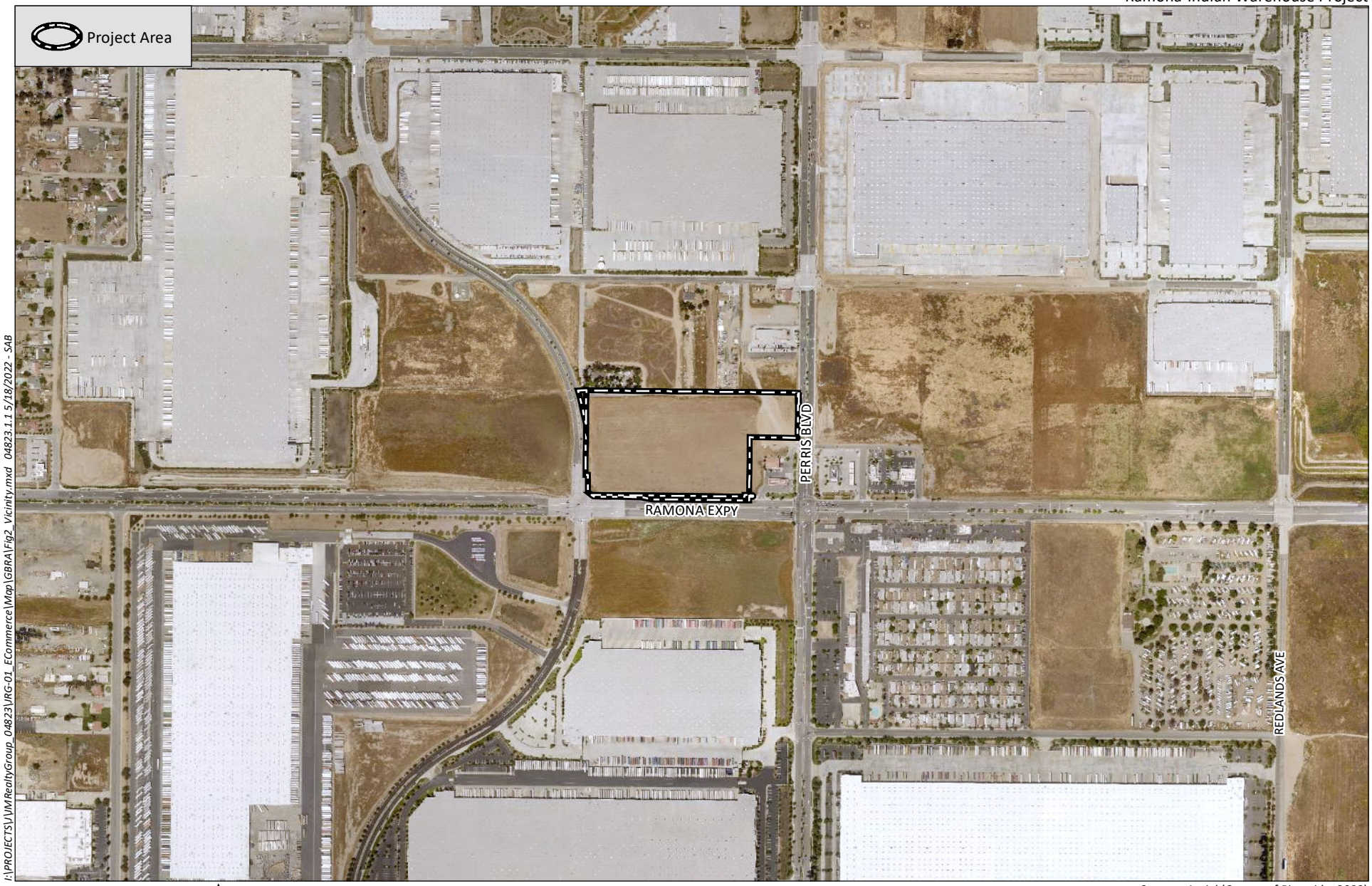
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Project Vicinity on Aerial Photograph

Figure 2

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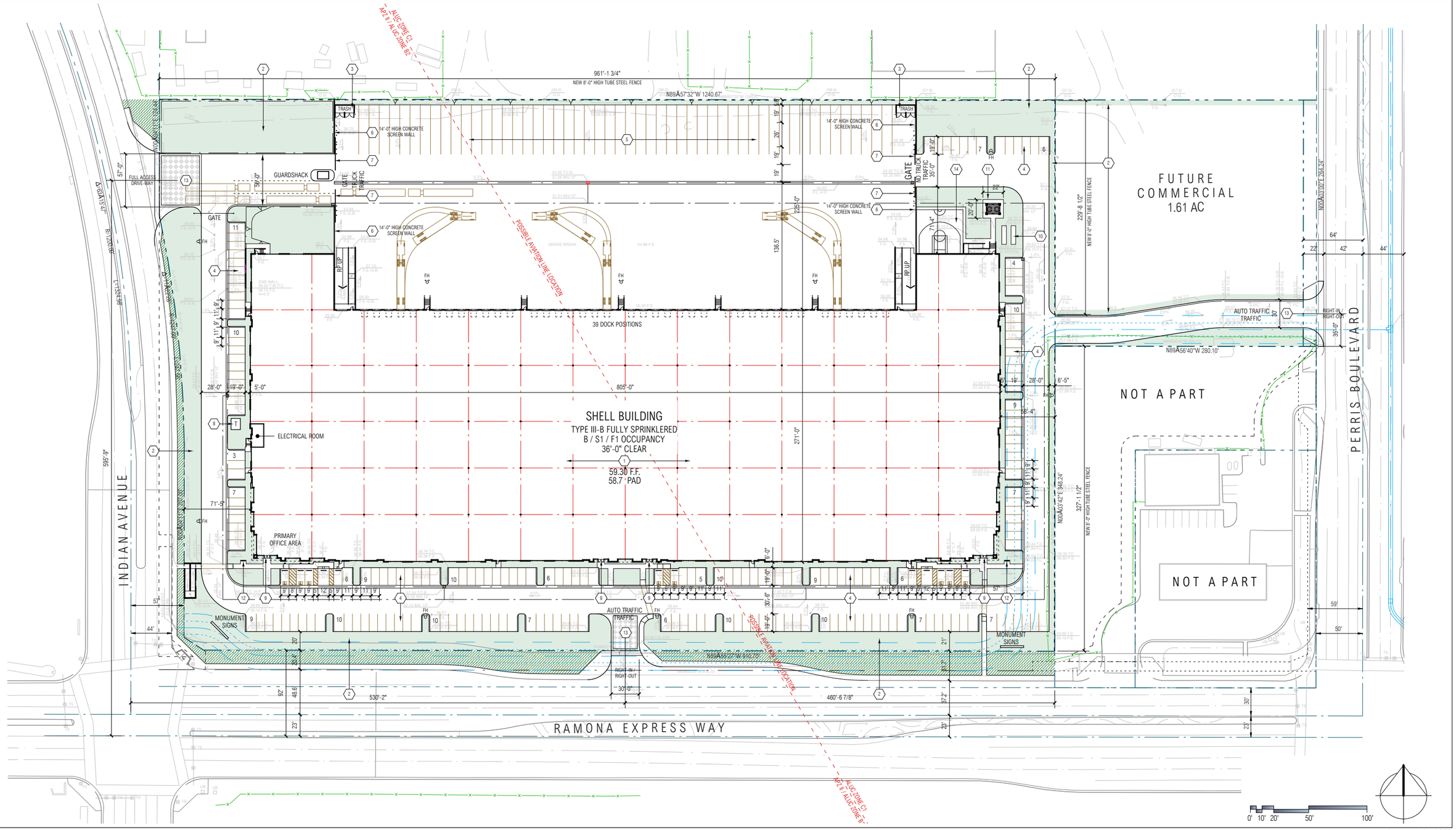
Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Project Location on Aerial Photograph

Figure 3



Source: RGA 2022

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act (CWA). The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. (including wetlands and vernal pools) is overseen by the USACE under Section 404 of the CWA.

Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits (NWPs). Individual Permits are assessed individually based on the type of action, amount of fill, etc. Individual Permits typically require substantial time (often longer than six months) to review and approve, while Nationwide Permits are pre-approved if a project meets appropriate conditions. A CWA Section 401 Water Quality Certification, which is administered by the State Water Resources Control Board, must be issued prior to any 404 Permit. NWPs are reviewed and republished every five years. The previously renewed NWPs expired in March 2022. Several NWPs, including NWP 39 that applies to Commercial developments, were reissued in 2021. NWP 39 allows for up to 0.5 acre of impacts to waters of the U.S. The updated NWP 39 includes the removal of the previous impact limit to a maximum of 300 linear feet of waters of the U.S.

2.2 STATE OF CALIFORNIA

The California ESA is similar to the federal ESA in that it contains a process for the listing of species and regulating potential impacts to listed species. Section 2081 of the California ESA authorizes the California Department of Fish and Wildlife (CDFW) to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. The MSHCP is the regional section 2081 for this portion of the County, including the City of Perris and the subject property. The golden eagle (*Aquila chrysaetos*) and white-tailed kite are considered State Fully Protected Species. Fully Protected species may not be taken or possessed at any time, and no state licenses or permits may be issued for their take except for collecting these species necessary for scientific research and relocation of the bird species for the protection of livestock (Fish and Game Code Sections 3511, 4700, 5050, and 5515).

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates the collection, transport, and commerce in plants that are listed.

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

The California Fish and Game Code (Section 1600 et seq.) requires an agreement with CDFW for projects affecting riparian and wetland habitats through the issuance of a Streambed Alteration Agreement (SAA). The proposed project impacts will require a 1602 SAA from CDFW.

The Regional Water Quality Control Board (RWQCB) regulates impacts to waters under federal jurisdiction via Section 401 of the CWA. When a project no longer is under the jurisdiction of the CWA due to the new rule discussed in the Federal section above, the waters are regulated under the Porter-Cologne Act as waters of the state. A Report of Waste Discharge (ROWD) from the RWQCB will be required for impacts to waters of the state. A ROWD is also referred to as a WDR (Waste Discharge Requirements) permit.

2.3 WESTERN RIVERSIDE MULTIPLE SPECIES HABITAT CONSERVATION PLAN

The MSHCP is a comprehensive multi-jurisdictional effort that includes Riverside County and multiple cities, including the City of Perris in western Riverside County. Rather than address sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Dudek 2003). Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the Riverside County Board of Supervisors (County 2003). The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004. The City is the lead agency/permittee, as this property occurs in the City of Perris, Riverside County, California.

3.0 MSHCP RESERVE ASSEMBLY ANALYSIS

The study area is not within or adjacent to a Criteria Cell, MSHCP conservation, or other conservation lands. The nearest cell is situated approximately 8,500 feet southwest of the study area and is separated from the study area by commercial development and Interstate 215 (Figure 5, *MSHCP*). The study area is not targeted for conservation.

3.1 PUBLIC QUASI-PUBLIC LANDS

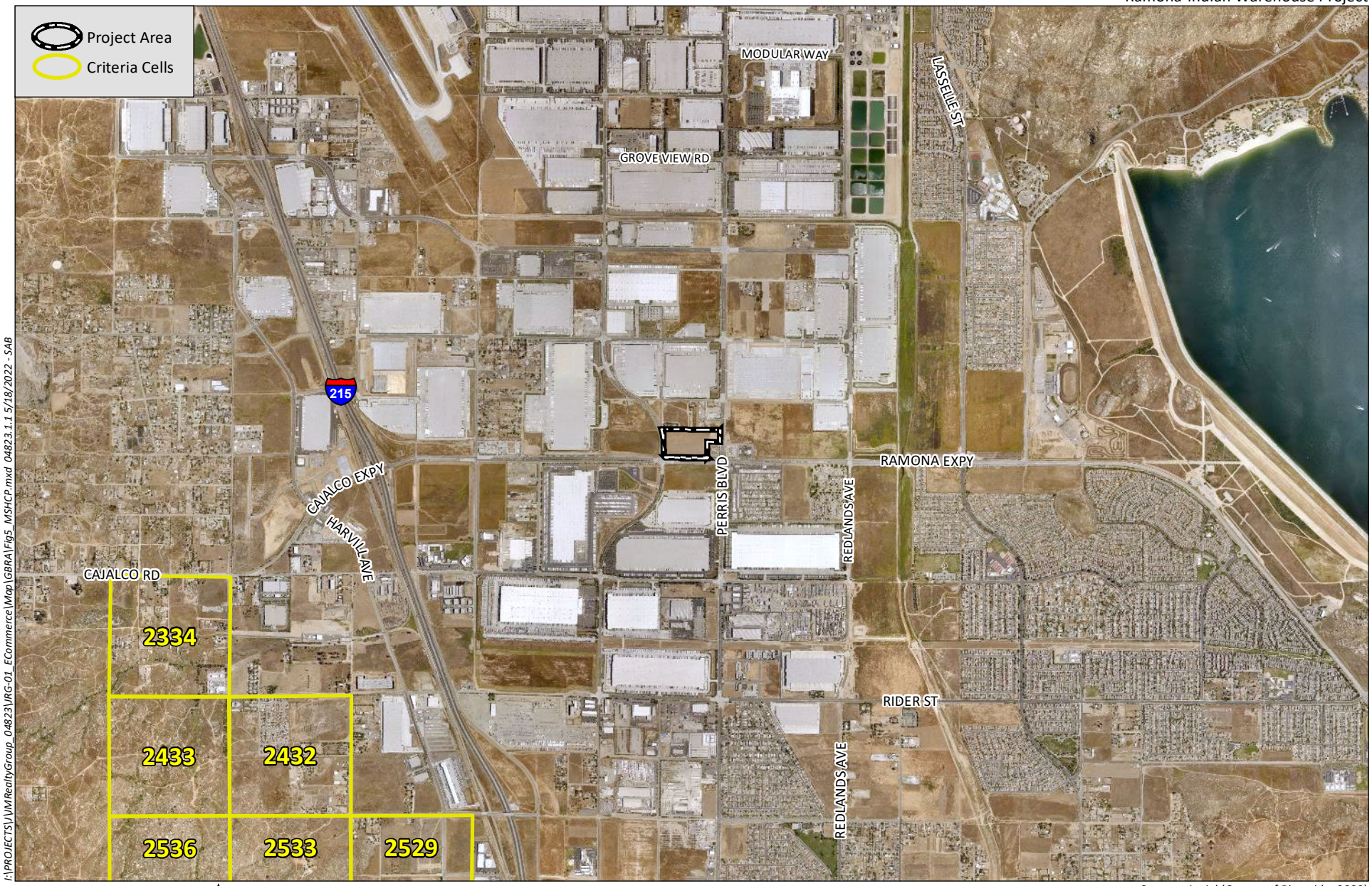
The project study area does not occur on or adjacent to public quasi-public (PQP) lands. No impacts to PQP lands are proposed.

3.2 LOCAL DEVELOPMENT MITIGATION FEE

Projects within the MSCHP plan area are subject to the MSHCP Local Development Mitigation Fee (LDMF). MSHCP reserve land purchase and management are funded by the collection of the LDMF. The LDMF is determined by the Regional Conservation Authority (RCA; 2021) and adjusted annually. These fees are adjusted annually and recently had a significant increase. The current fee for commercial and industrial developments is set at $16,358 per acre.

3.3 STEPHENS' KANGAROO RAT HABITAT CONSERVATION PLAN FEES

Because the project is within the Stephens' Kangaroo Rat Habitat Conservation Plan (SKRHCP) area, the project Proponent is required to pay a Stephens' kangaroo rat mitigation in accordance with the SKRHCP. The SKRHCP fee for the project shall be an amount determined in coordination with the County. The standard fee is $500 per acre (County 1996).



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Source: Aerial (County of Riverside, 2020)

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MSHCP

Figure 5

4.0 VEGETATION MAPPING

4.1 METHOD

HELIX Environmental Planning, Inc. (HELIX) biologist Rob Hogenauer mapped the vegetation types and land uses that occur in the study area on October 5, 2020. Mapping was conducted by walking the entire study area and mapping the habitat observed on an aerial photograph of the study area (1 inch = 150 feet scale). Vegetation community classifications follow Holland (1986) and the MSHCP (Dudek 2003). Lists of plant and animal species observed are included as Appendices A and B, respectively.

4.2 RESULTS

The mapping shows that the study area is dominated by agricultural land-fallow. Habitats in the study area include 13.1 acres agriculture-fallow, 0.3 acre of non-native grassland, 2.1 acres disturbed habitat, and 0.17 acre developed land (Table 1, *Existing Vegetation Communities and Land uses in the Perris Development Study Area*; Figure 6, *Vegetation*). The site includes pools that occur on the eastern side of the site. Specifically, 12 pools occur, with 11 occurring on disturbed habitat and one within fallow agriculture.

Table 1
EXISTING VEGETATION COMMUNITIES AND LAND USES IN THE PERRIS DEVELOPMENT STUDY AREA

Habitat/Land Use	MSHCP Equivalent Community	Acres
Agricultural land-fallow	Field Cropland-fallow	13.1
Non-native grassland	Non-native grassland	0.3
Disturbed habitat	Developed/Disturbed Land	2.1
Developed land	Developed/Disturbed Land	0.17
	Total	**15.67**

4.2.1 Non-native Grassland

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. Characteristic species include oats (*Avena* spp.), brome grasses (*Bromus* spp.), and mustards (*Brassica* spp., *Hirschfeldia incana*). Most of the annual introduced species within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. Intensive grazing and agricultural practices combined with severe droughts in California contributed to the successful invasion and establishment of these species, and the replacement of native grasslands with annual-dominated non-native grasslands.

In the study area, non-native grassland occurs primarily on the small slope on the western border along Indian Avenue. This habitat is dominated by a mix of grasses, including red brome (*Bromus madritensis*), short-podded mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), horseweed (*Erigeron canadensis*), and rancher's fiddleneck (*Amsinckia menziesii*). There is a total of 0.3 acre of non-native grassland in the study area.

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Source: Aerial (County of Riverside, 2020)

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Vegetation

Figure 6

4.2.2 Disturbed Habitat

Disturbed land includes land cleared of vegetation (e.g., dirt roads), land dominated by non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat. Disturbed habitat dominates the study area. The disturbed habitat is mainly comprised of land that is regularly disked, resulting in the removal of vegetation. The disked area has sparse annuals, mostly non-native species including short-podded mustard, horseweed, tocalote, and red brome. There is also a patch of disturbed habitat in the northeast corner that is compacted due to regular vehicle activity. There are 2.1 acres of disturbed habitat in the study area.

4.2.3 Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Within the study area, the developed land is comprised of a brow ditch that parallels the Ramona Expressway along the southern border. There is 0.17 acre of developed land in the study area.

4.3 IMPACTS

The project and associated infrastructure propose impacts to the entire study area, as shown in Table 2, *Vegetation Communities and Land Use Impacts for the Perris Development Project*.

Table 2
VEGETATION COMMUNITIES AND LAND USE IMPACTS FOR THE PERRIS DEVELOPMENT PROJECT

Habitat/Land Use	MSHCP Equivalent Community	Acres
Agricultural Land	Field/Cropland	13.1
Non-native grassland	Non-native grassland	0.3
Disturbed habitat	Disturbed/exotic	2.1
Developed land	Developed/Urban	0.17
	Total	**15.67**

5.0 AQUATIC RESOURCES DELINEATION

5.1 METHOD

Prior to beginning fieldwork, aerial photographs (1 inch = 150 feet), USGS quadrangle maps, and National Wetland Inventory (NWI) maps (USFWS 2020; USFWS 2021b) were reviewed to assist in determining the location of potential jurisdictional waters on the study area. Historical aerial photos of the site from 2018, 2014, 2011, 2006, and 1966, were also reviewed to aid in locating potential jurisdictional waters (NETROnline 2021). HELIX biologist Rob Hogenauer conducted an aquatic resources delineation of waters on the on-site study area on October 5, 2020. To properly map the extent of potentially jurisdictional pools on the property. Mr. Hogenauer returned to the site on January 2 and February 5, 2021. Both field visits in 2021 were conducted approximately one week following a significant rain event to ensure the mapping effort did not include short-lived non-jurisdictional puddles. The effort was conducted to identify jurisdictional waters potentially subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the CWA, Regional Water Quality Control

Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA, and streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 et seq. of the California Fish and Game Code. Data collection was targeted in areas that were deemed to have the potential to support jurisdictional resources, such as the presence of an ordinary high-water mark, the presence of a bed/bank and streambed associated vegetation, and/or other surface indications of streambed hydrology. Potential jurisdictional features were mapped at a scale of one-hundredth of an acre (0.01 acre).

The criteria used in the Aquatic Resources Delineation (JD) performed by HELIX was originally based on the U.S. Environmental Protection Agency (EPA) definition of waters of the U.S. as defined in the new Ruling by EPA known as the "Navigable Waters Protection Rule: Definition of "Waters of the United States" (EPA 2020)". The New Rule was published in the Federal Register on April 21, 2020 (National Archives 2020). The rule took effect 60 days after publication in the Federal Register, which was June 22, 2020. This new rule excluded ephemeral streams, swales, gullies, rills, and pools from jurisdiction under the CWA, which initially resulted in no federal waters occurring on the property. On August 30, 2021, the new rule was overturned by a U.S. District Judge, and the overturning was upheld on September 21, 2021.

The delineation has been updated to reflect the recent court decision that reverts the definitions of waters of the U.S. back to the pre-2015 regulatory guidance. The current delineation follows the Arid West Supplement to the 1987 Wetland Delineation Manual, which reflects the methods currently accepted by the USACE.

5.2 EXISTING CONDITIONS AND RESULTS

The NWI did not show wetlands as occurring within or adjacent to the study area (USFWS 2021). The project has a concrete brow ditch along the southern border that connects to culverts in the southwest corner of the study area and an off-site culvert near the southeast corner of the study area. The culverts convey storm flows from off-site, through the brow ditch, continuing to the east. Based on a review of historic aerials, the concrete brow ditch was installed between April 2014 and February 2016 (Google Earth 2021). Drainage 1 primarily consists of an eight-foot-wide (top to top) concrete brow ditch parallel to Ramona Expressway that is connected to culverts, consisting of approximately 18" pipes to the east and west. The pipe at the west end of the brow ditch enters from the south. Flows in the brow ditch eventually connect to the Perris Valley Storm Drain (PVSD), located approximately 4,000 feet to the east. The connection from the project site to the PVSD occurs via a series of pipes and open roadside channels.

Drainage 1 also includes a short (47 foot) earthen bottom connection to an approximately eight-foot-wide box culvert under Indian Avenue located in the southwest corner of the property. This box culvert was installed with the improvements to Indian Avenue between March 2011 and June 2012 based on a review of aerial photos (Google Earth 2021). Flows from the box culvert enter the site uncontrolled and are currently directed into the concrete brow ditch by an earthen berm. Prior to the creation of the earthen berm by an unknown entity in January 2021, some of the flow from the box culvert entered the agricultural field. The box culvert, earthen bottom channel, and concrete brow ditch are all storm drain features created in uplands.

Prior to the disturbance from the creation of the dirt berm in January 2021, a small drainage (Drainage 2) flowed from the box culvert into the agriculture field and consisted of a short (23 foot long, 3 feet wide) defined channel that dissipated into sheet flow (55 feet long and 10 feet wide). No additional sign

of flow was visible beyond the end of the sheet flow. Drainage 2 does not have a connection to downstream resources.

The City is working on a storm drain plain that includes directing the flows on the site into a subterranean pipe, referred to as Line E. Because the entire length of Line E is not anticipated to be ready for construction by the City before the project construction, the project proponent proposes to construct the portion of Line E that occurs on-site.

The land surrounding the project site has topography similar to the project site. The area is relatively level with a gentle slope from northwest to southeast. A review of historic aerials shows that prior to the development of the surrounding lands and improvements to the Ramona Expressway, potential drainages to the north and northwest of the project site existed but appeared to dissipate as sheet flow in the fields they occurred and lacked a downstream connection. The lack of downstream connection would result in these drainages not being a water of the U.S. but would still be a potential water of the State. The aerials also show that during the development of the surrounding lands between 1978 and 1997, these nearby drainages were removed. It is presumed that these drainages were directed into storm drain features along both Markham Street and Ramona Expressway.

Flows that are collected from the imperviable surfaces constructed west of the current project site are directed to the roadside ditch flood control channel along Ramona Expressway and eventually enter the subject property via the box culvert and pipe in the southwest corner. The flows entering the site include runoff from roads, surrounding development, and landscaping irrigation. As a result, the majority of the flows are human-induced artificial sources and are not naturally occurring.

The study area also has 12 pools on the eastern side of the property that hold water for at least seven days. Pools 1 through 11 occur on the disturbed hardpan, gravel-covered surface in the northeast that has been used as a parking lot. The northeast corner of the property was converted from agricultural use to a dirt/gravel parking lot between 1997 and 2002. The manipulation of the land to be used as a parking lot resulted in several low spots that now pool from rainfall. Pools one through eleven on the hardpan surface are essentially unvegetated and disturbed due to vehicle traffic and unauthorized dumping. Pools 1 through 11 continue to be regularly impacted by unauthorized vehicle activity, dumping, and use of the site by locals. The various activities change the shape and location of the pools that are essentially puddles in a dirt/gravel parking lot. These are artificial features and not considered jurisdictional, as they are not connected to streams or other upstream or downstream resources, which were formed from human activity.

The large pool (Pool 12) occurs on land that was used as active agriculture through 2005. This pool occurs adjacent to the commercial property located at the northwest corner of Ramona Expressway and Perris Drive. Pool 12 is not naturally occurring but rather the result of the manipulation of the adjacent land. A review of historic aerials shows the first sign of water pooling at Pool 12 in 2011. The construction of the development of the commercial property at the northwest corner of Ramona Expressway and N. Perris Boulevard and adjacent road (Ramona Expressway) at a slighter higher topographic elevation than the subject property caused rainwater and storm water overflows to impound on-site. The main hydrologic connection in Pool 12 is the artificial flows resulting from the increased imperviable surfaces constructed upstream of the site. These storm water flows were not captured into a controlled feature (such as the planned Line E) but rather allowed to flow onto the site. The artificial storm flows originating from the storm drain culvert resulted in the flooding of the field and the formation of Pool 12. The watershed for the pool is limited to approximately 12 acres of the

project site. This small sized watershed is unlikely to support the size of the pool on the property. Although the pool would be smaller if not for the artificially increased flows from the culvert, the pool may still exist from the direct rainfall on the property given the elevation of the development adjacent to the property. As a result, Pool 12 was determined to be a potential water of the State. No wetland or vernal pool indicator plant species was observed in the pool.

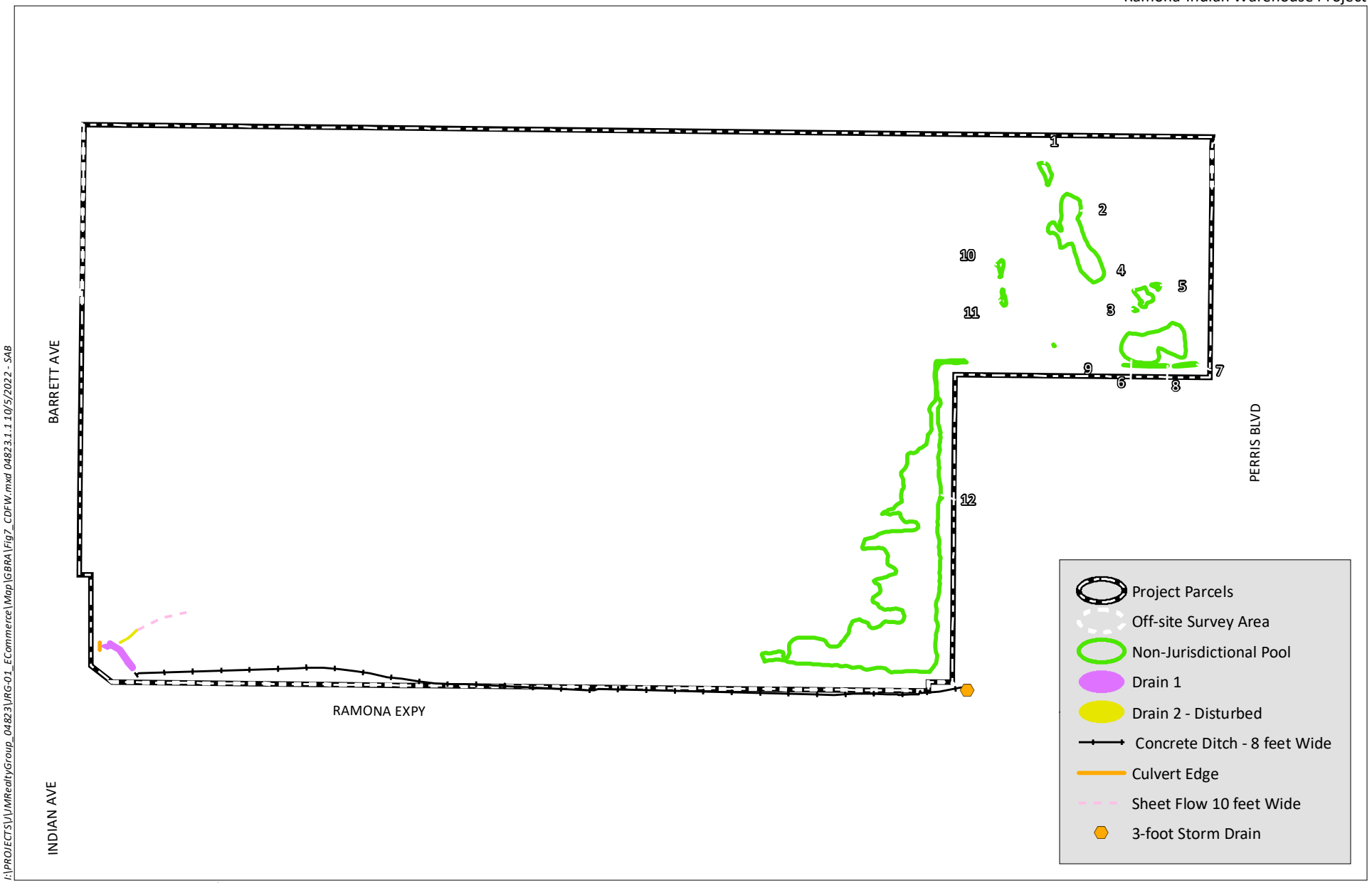
5.2.1 Potential CDFW Jurisdiction

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

Based on the results of the jurisdictional assessment, the site has two drainages (Figure 7, CDFW). Drainage 1 is comprised of a short earthen bottom channel that connects to a concrete ditch along the Ramona Expressway that serves as a storm drain, including flows from the box culvert under Indian Avenue and a storm drain under Ramona Expressway. Flow from the box culvert bifurcates with a portion of flows entering Drainage 1 and other flows forming Drainage 2. Drainage 2 flows onto the site for a short distance (23 feet) then transitions to a 10-foot-wide sheet flow. (Table 3, *CDFW Jurisdictional Resources*). Both drainages originate from culverts with flows that primarily are from artificial sources

Based on a conversation with CDFW on September 22, 2022, Pool 12, lacking bed and bank and not connected to downstream resources, is not considered a CDFW jurisdictional as a water (Pers Com 2022). Flows from the box culvert contribute to the ponding of this pool. The flows from the box culvert are partially from the redirection of a naturally occurring stream (waters of the State) but mostly from runoff of the existing developments located north and west of the project site. The artificially increased flows and the increase in elevation from development to the southeast resulted in the formation of Pool 12.

Pools 1 through 11 are located on a hardpan dirt/gravel parking lot and are artificially created. These pools lack an upstream or downstream connection to a streambed and are not considered jurisdictional. Concurrence from CDFW will be required to confirm these conditions.



Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

CDFW

Figure 7

Table 3
CDFW JURISDICTIONAL RESOURCES

Habitat Type	On-Site	
	Acres*	Linear feet**
Drainage 1-earthern bottom	0.008	47
Drainage 1 concrete brow ditch	0.17	922
Drainage2- channel	0.002	23
Drainage 2 sheetflow	0.01	55
TOTALS	**0.19**	**527**

* acres are rounded to nearest 0.01 acre except for acres less than 0.01.
** linear feet of pool not included in total linear feet.

5.2.2 Potential RWQCB Jurisdiction

The RWQCB limits were mapped similarly to the CDFW limits discussed above in Section 5.2.1. The exception is the definition of waters of the state is defined broadly by the RWQCB to include "any surface water or groundwater, including saline waters, within the boundaries of the state" (RWQCB 2021). Drainages 1 and 2, along with Pool 12, which are all described above in Section 5.2, are considered waters of the state (Figure 8, *RWQCB*; Table 4, *RWQCB Jurisdictional Resources*).

Pools 1 through 11 are located on a hardpan dirt/gravel parking lot and are artificially created. These pools lack an upstream or downstream connection to a streambed and are not considered jurisdictional. Concurrence from RWQCB will be required to confirm these conditions.

Table 4
RWQCB JURISDICTIONAL RESOURCES

Habitat Type	On-Site	
	Acres*	Linear feet**
Drainage 1-earthern bottom	0.008	47
Drainage 1 concrete brow ditch	0.17	922
Drainage2- channel	0.002	23
Drainage 2 sheetflow	0.01	55
Pool 12	0.39	520**
TOTALS	**0.58**	**1,047**

* acres are rounded to nearest 0.01 acre except for acres less than 0.01.
** linear feet of pool not included in total linear feet.

5.2.3 Potential USACE Jurisdiction

Based on the aquatic resource delineation, the drainages on-site are not waters of the U.S. jurisdictional to the USACE. The NWI does not show resources occurring on-site (USFWS 2021). The drainages on-site, as described in Section 5.2 above, are storm drain flood control features constructed in uplands and only flow in direct response to precipitation resulting in stormwater runoff. As storm drain features constructed in uplands; they are not considered to be a water of the U.S. The brow ditch flows in direct response to rainfall runoff, with flows typically lasting from a day to a week, depending on the amount and frequency of rainfall. Based on confirmation by USACE staff which included a review of site conditions, the storm drain (Drainage 1) constructed in uplands is not a water of the U.S (pers. com 2021). Since no other waters in the study area have a downstream connection to a water of the U.S., the

other waters in the study area are also not waters of the U.S., resulting in no waters of the U.S. occurring in the study area. A request for a formal letter stating no waters of the U.S. occur on the property will be submitted to the USACE as part of the permitting process.

5.3 IMPACTS

The project will result in impacts to all the waters of the State on the property. No impacts to waters of the U.S. are proposed, as none occur on the property.

Impacts to waters of the State will result from the construction of the reach of Line E within the property limits and from the development of the proposed warehouse and associated infrastructure. The storm drain flows will be directed into the reach of Line E, which will connect to an existing storm drain lateral at the western edge of Perris Boulevard to allow flow to continue to the east and connect to the PVSD. This interim proposed connection of Line E will be in place until such time as the City constructs additional downstream sections of the Line E storm drain that are not part of this project.

The proposed project impacts will require an SAA from CDFW and a WDR from RWQCB. The limits of jurisdiction, impacts, and mitigation (discussed below) will be confirmed during the permitting process.

5.4 MITIGATION

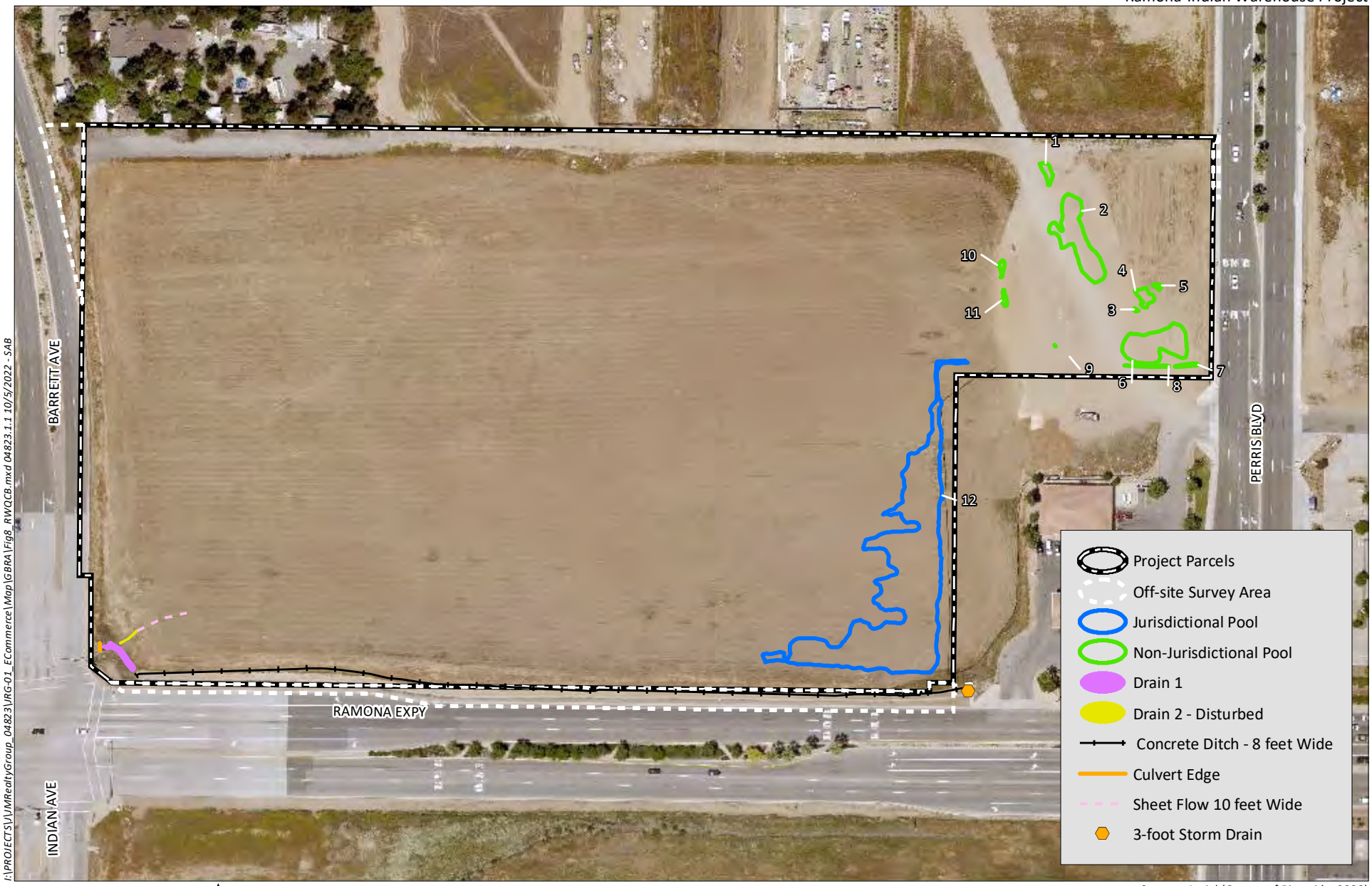
Mitigation for impacts to CDFW waters of the State is proposed to be accomplished via the purchase of credits at the Riverpark Mitigation Bank or another approved bank. The Drainage 2 (sheet flow and channel) and the earthen bottom portions of Drainage 1 that are the result of storm drain flows, are proposed to be mitigated with a 2:1 ratio, comprised of 1:1 re-establishment and 1:1 rehabilitation credit. Purchase of mitigation credits is not proposed for the impacts to the concrete brow ditch portion of Drainage 1, as this will be replaced on-site and in-kind with the construction of Line E.

Table 5
CDFW IMPACTS AND MITIGATION

Habitat Type	Impacts Acres[1]	Impacts Linear Feet[2]	Mitigation Ratio	Mitigation[3] Rehabilitation
Drainage 1-earthern bottom	0.008	47	2:1	0.016
Drainage 1 concrete brow ditch	0.17	922	NA	To be replaced onsite
Drainage2- channel	0.002	23	2:1	0.004
Drainage 2 sheet flow	0.01	55	2:1	0.02
TOTALS	**0.19**	**1,047**		**0.04**

1 acres are rounded to nearest 0.01 acre except for acres less than 0.01.
2 linear feet of pool not included in total linear feet.
3 Proposed as credits at Riverpark Mitigation Bank.

Mitigation for RWQCB waters of the State is proposed to consist of mitigation proposed for the streambeds discussed above, along with a 2:1 mitigation ratio for impacts to Pool 12 (Table 6, *RWQCB Impacts and Mitigation*). This 2:1 mitigation ratio is proposed, given the degraded nature of the site, and that flows on-site are primarily the result of storm drains constructed in uplands and not the redirection of a naturally occurring stream.



Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

RWQCB

Figure 8

Table 6
RWQCB IMPACTS AND MITIGATION

Habitat Type	Impacts Acres[1]	Impacts Linear Feet[2]	Mitigation Ratio	Mitigation[3] Rehabilitation
Drainage 1-earthern bottom	0.008	47	2:1	0.0016
Drainage 1 concrete brow ditch	0.17	922	NA	To be replaced on site
Drainage2- channel	0.002	23	2:1	0.004
Drainage 2 sheet flow	0.01	55	2:1	0.02
Pool 12	0.39	520	2:1	0.78
TOTALS	**0.58**	**1,047**		**0.82**

[1] acres are rounded to nearest 0.01 acre except for acres less than 0.01.
[2] linear feet of pool not included in total linear feet.
[3] Proposed as credits at Riverpark Mitigation Bank.

Prior to project impacts to the aquatic resources on the project site, authorization for those impacts is required to be obtained from the corresponding regulatory agency. The authorization will determine the extent of authorized impacts and include the associated mitigation required.

6.0 PROTECTION OF SPECIES ASSOCIATED WITH RIPARIAN/RIVERINE AREAS AND VERNAL POOLS (SECTION 6.1.2)

The MSHCP requires that all projects be assessed for Section 6.1.2 resources, including riparian/riverine resources, vernal pools, fairy shrimp, and riparian birds. The goal is to protect resources used by MSHCP-covered species, as well as the existing and future downstream conservation areas.

According to Section 6.1.2 of the MSHCP:

> "**Riparian/Riverine Areas** are lands which contain Habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year."
>
> "**Vernal pools** are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its

history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records."

"**Fairy Shrimp**. For Riverside, vernal pool and Santa Rosa fairy shrimp, mapping of stock ponds, ephemeral pools and other features shall also be undertaken as determined appropriate by a qualified biologist.

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

Note that the MSHCP states that "areas demonstrating characteristics [of riparian/riverine habitat] which are artificially created are not included in these definitions" of riparian/riverine habitat. The identification of Riparian/Riverine and Vernal Pool habitats is based on the potential for the habitat to support Riparian/Riverine and Vernal Pool Covered Species, which are identified in Section 6.1.2 of the MSHCP. These species include Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), and a suite of other animals and plants outlined in Section 6.1.2 of the MSHCP. During the field survey, the study area was evaluated for habitat that could support animals and/or plants identified by the MSHCP as Riparian/Riverine and Vernal Pool species.

6.1 RIPARIAN/RIVERINE

The MSHCP has a separate definition for "riparian" and for "riverine." Riverine features include those that are natural in origin, as well as part natural features that have been modified and/or redirected and can include features indirectly created through 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. Riverine features are typically unvegetated or include vegetation similar to surrounding uplands. Riparian features are those with vegetation dependent upon a water source such as a stream, drainage, pond, or similar.

6.1.1 Methods

Historical aerial photos of the site from 2018, 2014, 2011, 2006, and 1966 were reviewed to aid in the identification of potential Riparian/Riverine and vernal pool resources (NETROnline 2021). A review of these aerials noted significant historical uses on the property that have contributed to the degradation of resources on the site. Mr. Hogenauer conducted a Riparian/Riverine and Vernal Pool habitat assessment during site visits on October 5, 2020. The assessment was conducted concurrently in the field with the aquatic resources delineation (Section 3.0 above) and updated during additional visits in February and March 2021. The initial evaluation on October 5, 2020, consisted of a directed search for field characteristics indicative of Riparian/Riverine habitats. Field indicators include the presence of certain plant species, drainage courses, drainage patterns, ponded water, changes in soil character, changes in vegetation character, and deposits of water-borne debris. The March 2021 visit consisted of a focused survey for Riparian/Riverine and Vernal Pool plant species.

6.1.2 Existing Conditions and Results

No riparian habitat occurs on the site. The site does have two riverine features, labeled as Drainage 1 and Drainage 2. These features are described above in detail in Section 6.2 of this report. Drainage 1 is comprised of the concrete ditch located along the Ramona Expressway and the earthen bottom connection to a box culvert. Drainage 2 originates from a box culvert and flows onto the site for 23 feet, then changes to sheet flow for an additional 55 feet, where it dissipates (Table 7, *Habitats Evaluated for Riparian/Riverine Potential*). Both drainages originate from culverts.

The concrete brow ditch and associated earthen channel, as discussed in section 5.2 above, are storm drain features constructed in uplands. Per the MSHCP, features that are artificially created in uplands do not meet the definition of an MSHCP riverine feature. However, the brow ditch does have a downstream connection to the PVSD with the potential to support downstream biological resources. Based on the downstream connection. Drainage 1 is considered an MSHCP Riparian/Riverine resource. All features evaluated for the potential to be MSHCP Riparian/Riverine are shown below (Table 7).

Table 7
HABITATS EVALUATED FOR RIPARIAN/RIVERINE POTENTIAL

Riverine habitat	Acre*	Linear Feet
Drainage 1- earthen bottom	0.008	47
Drainage 1 - concreate brow ditch	0.17	922
Drainage 2- channel	0.002	23
Drainage 2 - sheetflow	0.01	55
TOTAL	**0.19**	**1,047**

* acres are rounded to nearest 0.01 acre except for acres less than 0.01.

6.1.3 Impacts

All features evaluated will be impacted by the construction of Line E, the warehouse, and the associated infrastructure. The potential resources proposed for impact are on highly disturbed land and are supported mainly by stormwater runoff introduced to the property by culverts. The drainages on the property transport stormwater runoff from the impermeable surfaces constructed to the west, and are not a diversion of a naturally occurring stream.

6.1.4 Mitigation

The storm drain flows are to be directed into the portion of Line E being constructed along with the project. This will allow the flows to continue to flow to the east to PVSD. The existing concrete brow ditch is an artificial feature constructed in an upland, and will be replaced on-site with the construction of Line E. No mitigation is proposed for the impacts to the concrete brow ditch as the full functions of the brow ditch will be replaced by Line E. The other drainages will also be mitigated 2:1, with the flows being directed into Line E, along with an additional 2:1 purchase of re-establishment and rehabilitation credits at the Riverpark Mitigation Bank to replace the minor loss of the functions and values for minimal toxin and nutrient trapping. The change from an open brow ditch to a closed pipeline will aid in reducing the trash, debris, and potential toxins from being deposited into the open roadside ditch, thus potentially reducing the impacts of those items to the downstream resources.

As a small infill project, the site itself is not a significant resource for MSHCP planning species and does not occur within a proposed or existing linkage or core area. The storm flows that cross the property will continue to reach the PVSD to support planning area species that may occur downstream of the site.

The Riverpark Mitigation Bank includes streams, pools (natural and created), and floodplain habitat that includes many sensitive plant species, including vernal pool species such as spreading navarretia (*Navarretia fossalis*). As the Riverpark Mitigation Bank is an existing habitat there will be no temporal loss in functions and values as a bank. Additionally, the Riverpark Mitigation Bank has strict preservation and maintenance requirements with agency oversight. Habitat at the Riverpark Mitigation Bank is superior to those resources proposed for impacts on the Study Area. The purchase of re-establishment and rehabilitation credits at Riverpark Mitigation Bank and the construction of Line E for storm water flows result in a biologically equivalent or superior preservation of resources (Table 8, *MSHCP Riparian/Riverine and Vernal Pool Impacts and Mitigation*).

Table 8
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL IMPACTS AND MITIGATION

Habitat Type	Impacts Acres[1]	Impacts Linear Feet[2]	Mitigation Ratio	Mitigation[3] Rehabilitation
Drainage 1-earthern bottom	0.008	47	2:1	0.016
Drainage 1 concrete brow ditch	0.17	922	NA	to be replaced on site
Drainage2- channel	0.002	23	2:1	0.004
Drainage 2 sheet flow	0.01	55	2:1	0.02
Pool 12	0.39	520	2:1	0.78
TOTALS	**0.58**	**1,047**		**0.82**

[1] acres are rounded to nearest 0.01 acre except for acres less than 0.01.
[2] linear feet of pool not included in total linear feet.
[3] Proposed as credits at Riverpark Mitigation Bank.

6.2 VERNAL POOLS

6.2.1 Methods

Historical aerial photos of the site from 2018, 2014, 2011, 2006, and 1966 were reviewed to aid in the identification of potential vernal pools (NETROnline 2021). HELIX biologist Rob Hogenauer conducted an initial Riparian/Riverine and Vernal pool resource evaluation on October 5, 2020. Vernal pool indicators searched for include standing water, cracked soil, presence of certain plant species, and changes in soil or vegetation characteristics. Soils information was gathered from the U.S. Department of Agriculture online database (USDA 2020). Due to potential vernal pools (or ephemeral pools) being detected during the October 5 survey, the site was surveyed again on January 5 and February 5, 2021. Both field visits in 2021 were conducted approximately one week following a significant rain event to ensure the mapping effort did not include short-lived non-jurisdictional puddles.

6.2.2 Existing Conditions and Results

The study area includes 12 pools on the eastern side of the property that hold water for at least seven days. All but one of the pools occur on the hardpan dirt/gravel surface in the northeast that was used as a parking lot in the past. The northeast corner of the property was converted from agriculture to a dirt

parking lot between 1997 and 2002. The manipulation of the land to be used as a parking lot resulted in several low spots that now pool from rainfall. These pools (pools 1-11) on the hardpan surface are essentially unvegetated and are disturbed due to vehicle traffic and unauthorized dumping. These are artificial features and not naturally occurring.

One pool, (Pool 12, the largest of the pools), occurs in the southeast area of the site within the fallow agricultural field. Pool 12 occurs on land that was used as active agriculture through 2005. This pool occurs adjacent to the commercial property located at the northwest corner of Ramona Expressway and Perris Drive. This area now pools as a result of the commercial property and adjacent Ramona Expressway being constructed at a slighter higher topographic elevation than the subject property. Pool 12 is not naturally occurring but rather the result of the manipulation of the adjacent land. A review of historic aerials shows the first sign of water pooling at the location in 2011, at approximately the same time that the box culvert was installed under Indian Avenue. Vegetation within Pool 12 is similar to the adjacent land within the fallow agricultural field. No wetland or vernal pool indicator plant species were observed in the pool. It is unknown if this pool historically existed prior to agricultural use of the land but a review of historical aerials dating back to 1966 do not show a pool at this location. The source of water for this pool is primarily uncontrolled flows entering the site from the box culvert and storm drain overflows. Pool 12 has limited functions and services, consisting of minimal potential sediment, toxin, and nutrient trapping.

All 12 pools on-site were mapped and measured using a sub-meter accurate Global Position System device, although only the 0.39-acre of Pool 12 is considered to be an MSHCP vernal pool resource (Table 9, *Areas Evaluated as Potential Vernal Pool Resources*).

The soil mapped at the location of the pools is Pachappa fine sandy loam. This soil and its minor components are not classified as hydric soils (USDA 2020). Plant species observed in Pool 12 include purple sand spurrey (*Spergularia rubra*), stinknet (*Oncosiphon piluliferum*), prostrate knotweed (*Polygonum aviculare*), short pod mustard (*Hirschfeldia incana*), and mouse barley (*Hordeum murinum*). None of the plants observed in the pools are classified as wetland species. The other 11 pools occur on the hardpan soils in the area used as a parking lot and lack vegetation. The pools do not meet the MSHCP definition of vernal pools since they lack two of the three criteria (soils and vegetation) and were created from artificial manipulation of the land. The acreage of each pool is provided for informational purposes (Table 9).

Table 9
AREAS EVALATED AS POTENTIAL VERNAL POOL RESOURCES

Pool Number	Acres*	Linear feet**
1	0.004	22
2	0.05	100
3	0.0002	5
4	0.006	22
5	0.0008	7
6	0.047	72
7	0.001	26
8	0.001	49
9	0.098	156
10	0.002	18
11	0.001	17

Pool Number	Acres*	Linear feet**
12	0.393	520
TOTALS	**0.604**	**1,014**

* due to small size of many of the pools the acres is rounded to nearest 0.001 acre, the smallest pools are rounded to nearest 0.0001 acre.

** linear feet measures along the longest axis of the pool

6.2.3 Impacts

All features evaluated will be impacted by the construction of Line E, the warehouse, and the associated infrastructure. The potential resources proposed for impact are on highly disturbed land and are supported mainly by stormwater runoff introduced to the property by culverts.

6.2.4 Mitigation

The impacts to pool 12 will also be mitigated at 2:1 to replace the function and values via the purchase of 1:1 re-establishment and 1:1 rehabilitation credits at the Riverpark Mitigation Bank (Table 8). The Riverpark Mitigation Bank includes streams, pools (natural and created), and floodplain habitat that includes many sensitive plant species, including vernal pool species such as spreading navarretia (*Navarretia fossalis*).

6.3 FAIRY SHRIMP

The project site includes 12 pools resulting from anthropocentric manipulation of the land. The pools were determined to include potential habitat for fairy shrimp. Both a wet and a dry season survey were conducted. The dry season survey was conducted in eight areas suspected of being potential fairy shrimp habitat. The wet season survey was expanded to twelve pools. Surveys reports are included as Appendices C and D.

6.3.1 Survey Method

Wet Season

HELIX permitted biologists Amy Mattson and Erica Harris (Permit TE778195-14) conducted the wet season survey according to USFWS protocol (USFWS 2017) to determine the presence/absence of vernal pool and Riverside fairy shrimp (Appendix C). A total of 12 features were sampled for this survey (Figure 7, *CDFW*). Fourteen survey visits and a ponding check were conducted within the survey area for this focused survey.

The first substantial rainfall of the season occurred on December 28, 2020 (1.04 inches; Weather Currents 2021a). A ponding check was conducted by HELIX biologist Dane Van Tamelen on December 30, 2020. The first survey visit with observed ponding occurred on January 5, 2021, which followed rain events on December 24 (0.04 inch) and 27, 2021 (1.04 inches). Subsequent visits occurred on January 12, 19, and 25, February 3, 9, 16, and 23, March 2, 9, 16, 23, and 30, and April 6, 2021. None of these visits were exclusively ponding checks; all visits were survey visits. No features were ponded on April 6, 2021, the last visit for this report.

The water-holding features were sampled using fine mesh aquarium nets. If fairy shrimp were present, an attempt to identify netted fairy shrimp to species occurred in the field. Following identification,

individuals identified in the field were immediately returned to their pool of origin. Fairy shrimp that were not able to be identified to species in the field were collected and identified using the key in Eriksen and Belk (1999) with the aid of a dissecting scope. When "take" of fairy shrimp occurred, no more than 20 specimens of each species from each feature, or less than 50 percent of the estimated subpopulation for each feature, were collected (whichever was the lesser amount). Care was taken to ensure that nets were cleaned after each feature was sampled. Feature depth, area, water temperature, air temperature, habitat condition, and species present were noted and recorded on USFWS vernal pool data sheets.

Dry Season

HELIX permitted biologist Amy Mattson (Permit TE778195-14) conducted the dry season sampling in accordance with USFWS protocol (USFWS 2017). Eight features were identified as potential basins using readily available aerial imagery from a known wet year for the region (Google Earth dated December 2, 2018). These were sampled for the presence of fairy shrimp eggs. Soil was collected from these features on October 15, 2020, by Ms. Mattson (Appendix D).

Following soil collection, the samples were transferred to the HELIX laboratory for processing by Ms. Mattson. Samples were processed in February 2021. Samples were prepared by dissolving the soil samples in water and sequentially sieving the material through 710- and 75 µm pore size screens. The small size of these screens ensures that eggs from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope by Ms. Mattson. Eggs were identified to genus level based on surface characteristics. Multiple species of the *Branchinecta* genus can occur in Riverside County but cannot be identified past genus level based on egg characteristics. Eggs of each genus were counted within each soil sample, and egg abundance was estimated for each feature and is provided in the Results section, according to the guidelines provided in the USFWS Survey Guidelines: none (no eggs found in sample); low abundance (estimate of 1 to 10 eggs/100 milliliters [mL] soil); medium abundance (estimate of 11 to50 eggs/100 mL soil); and high abundance (estimate of more than 50 eggs/100 mL of soil). Basins were re-labeled to match those sampled during the 2020-2021 wet season fairy shrimp survey.

6.3.2 Results

No sensitive fairy shrimp were detected. The non-sensitive versatile fairy shrimp were observed within six of the 12 pools: 1, 2, 6, 9, 11, and 12 (Figure 7). Immature fairy shrimp were additionally observed within Feature 4.

6.3.3 Impacts

No impacts to sensitive fairy shrimp are proposed as none occur on the site.

6.3.4 Mitigation

As there are no impacts to sensitive fairy shrimp no mitigation is required.

6.4 RIPARIAN BIRDS

6.4.1 Methods

The vegetation in the study area was mapped on October 5, 2020, with an additional assessment conducted on February 3, 2021. The study area was determined not to have habitat with the potential to support MSHCP riparian bird species (including least Bell's vireo [LBVI; *Vireo bellii pusillus*], southwestern willow flycatcher [SWFL; *Empidonax traillii extimus*], or yellow-billed cuckoo [YBCU; *Coccyzus americanus*]). The site lacks riparian habitat but does have a streambed and pools. The aforementioned riparian bird species utilize willow riparian or similar woodland or forest habitats that are layered. The preferred habitat for the riparian bird species does not occur in the study area.

Other MSHCP riparian bird species are bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*). These species primarily occur adjacent to open water habitats, with the peregrine falcon possibly occurring in riparian woodland and forest habitats. Suitable nesting habitat for these species do not occur in the study area.

The study area does not include habitat with the potential to support MSHCP riparian birds. No impacts are proposed to occur to riparian bird habitat; therefore, no surveys or mitigation is required.

6.4.2 Results

Habitat for sensitive riparian bird does not occur in or adjacent to the study area. Sensitive riparian bird species do not occur in the study area.

6.4.3 Impacts

No impacts are proposed to sensitive riparian birds as they do not occur on-site.

6.4.4 Mitigation

No mitigation is required for riparian birds as no impacts are proposed.

6.5 PLANTS

6.5.1 Plants

The MSHCP lists 23 sensitive plant species that have the potential to occur in Riparian/Riverine and Vernal Pool habitats. These species are:

- California black walnut (*Juglans californica* var. *californica*),
- Engelmann oak (*Quercus engelmannii*),
- Coulter's matilija poppy (*Romneya coulteri*),
- San Miguel savory (*Clinopodium chandleri*),

- spreading navarretia (*Navarretia fossalis*),
- graceful tarplant (*Holocarpha virgata* ssp. *elongata*),
- California Orcutt grass (*Orcuttia californica*),
- prostrate navarretia (*Navarretia prostrata*),
- San Diego button-celery (*Eryngium aristulatum* var. *parishii*),
- Orcutt's brodiaea (*Brodiaea orcuttii*),
- thread-leaved brodiaea (*Brodiaea filifolia*),
- Fish's milkwort (*Polygala cornuta* var. *fishiae*),
- lemon lily (*Lilium parryi*),
- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*),
- ocellated Humboldt lily (*L. humboldtii* ssp*. ocellatum*),
- Mojave tarplant (*Deinandra mohavensis*),
- vernal barley (*Hordeum intercedens*),
- Parish's meadowfoam (*Limnanthes gracilis* var. *parishii*),
- slender-horned spineflower (*Dodecahema leptoceras*),
- Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*),
- Brand's phacelia (*Phacelia stellaris*),
- mud nama (*Nama stenocarpum*), and
- smooth tarplant (*Centromadia pungens* ssp. *laevis*)

6.5.2 Methods

Focused surveys for MSHCP Riparian/Riverine plant species were conducted on March 9 and 22, 2020, by HELIX biologist Rob Hogenauer. Mr. Hogenauer walked transects throughout the entire site searching for Riparian/Riverine and vernal pool plant species. Additionally, biologist Amy Mattson surveyed the pools for riparian plant species during the fairy shrimp survey.

6.5.3 Results

The study area has limited habitat with the potential to support Riparian/Riverine species and Vernal pool plant species. Prior agricultural use of the site has removed the naturally occurring vegetation. The

plant species associated with Riparian/Riverine and Vernal Pool areas were confirmed to be absent from the study area.

A number of the species, including California Orcutt grass, spreading navarretia, thread-leaved brodiaea, San Miguel savory, graceful tarplant, prostrate navarretia, Orcutt's brodiaea, and vernal barley, and occur in vernal pool or similar habitats. The pools on-site were repeatedly observed for this species during the fairy shrimp survey, along with the focused survey by Mr. Hogenauer. Other species, such as San Diego button-celery, Fish's milkwort, lemon lily, San Jacinto Valley crownscale, Mojave tarplant, Brand's phacelia, Santa Ana River woolly-star, and Parish's meadowfoam, have distributions well outside of the study area.

The remaining species have a distribution that includes the study area or occurs in habitats found on the study area and are discussed in greater detail below.

Engelmann oak is a conspicuous tree species associated with alluvial fans and slopes with a mesic aspect. Coast live oak trees occur on the study area. No Engelmann oaks were observed, and this species is presumed to be absent from the study area.

Mud nama is restricted to muddy embankments of marshes and swamps and within lake margins and riverbanks (CNPS 2021). Three populations are known from Riverside County, with two occurring along the San Jacinto River (Dudek 2003). This species was not observed and is presumed to be absent from the study area.

Smooth tarplant is found in southwestern California and northwestern Baja California, Mexico (Baja), and occurs in San Bernardino, Riverside, and San Diego counties. This species occurs in open spaces within a variety of habitats, including alkali scrub and playas, riparian woodland, watercourses, and grasslands with alkaline affinities (Dudek 2003; CNPS 2021). This species was not observed and is presumed to be absent from the study area.

Coulter's Matilija poppy occurs in dry washes and canyons below 3,600 feet. It often occurs within sage scrub and chaparral habitats. Dense shrub cover may limit the expansion of this species (Dudek 2003). This species is easily detected when present. It was not observed and is presumed absent from the study area.

Ocellated Humboldt lily is associated with riparian corridors in coniferous forest and chaparral habitats. Within Western Riverside County, ocellated Humboldt lily is restricted to canyons along the east slope of the Santa Ana Mountains and the north slope of the Palomar Mountains. The study area does not include riparian habitats. This species was not observed and is presumed to be absent from the study area.

Slender-horned spineflower is typically found in mature alluvial scrub with sandy soils but is also found in rocky soils and open chamise chaparral. Ideal habitat is thought to be benches or terraces that receive overbank flow every 50 to 100 years. Habitat for this species does not occur on the study area. This species was not observed and is presumed to be absent from the study area.

None of the 23 MSHCP Riparian/Riverine and Vernal pool plant species were observed on the study area, and none are expected to occur within the study area. A list of plant species observed during the field surveys is provided as Appendix A.

6.5.4 Impacts

No impacts to MSHCP Riparian/Riverine plant species are proposed.

6.5.5 Mitigation

No mitigation for impacts to MSHCP Riparian/Riverine plant species is required, as no impacts are proposed.

6.6 OTHER SECTION 6.1.2 SPECIES

Section 6.1.2 of the MSHCP also includes the protection of fish and amphibian species.

6.6.1 Fish

The Santa Ana sucker is restricted to the Santa Ana River watershed with year-round flows. This species generally lives in small shallow streams less than seven meters wide with various current strengths. They require permanent streams with a gravel bottom preferred. They prefer cool, clear water but can tolerate turbid waters. Habitat for this species is not present on the study area; thus, this species is not expected to occur.

6.6.2 Amphibians

The MSHCP Section 6.1.2 includes the protection of three amphibian species, arroyo toad, mountain yellow-legged frog, and California red-legged frog. Arroyo toad occurs in streams that have breeding pools that are shallow with minimal current. Requirements also include sandy banks with areas of minimal vegetative cover. A minimal amount of streambed does occur in the study area. However, it is ephemeral and primarily occurs as a concrete brow ditch. Mountain yellow-legged frog and California red-legged frog are not known to occur on or adjacent to the study area. The mountain yellow-legged frog occurs in mountain streams and is currently only known within the County in the San Jacinto Mountains. The California red-legged frog is only known within the County on the Santa Rosa Plateau. It requires deep water with adjacent uplands to move between breeding sites. Habitat for these species does not occur on the study area; thus, none of the MSHCP sensitive amphibian species are expected to occur.

7.0 PROTECTION OF NARROW ENDEMIC PLANT SPECIES (SECTION 6.1.3)

The study area is not located within an MSHCP Section 6.1.3 Narrow Endemic Plant Species Survey Area (NEPSSA). Sensitive plant surveys are not required, and focused plant surveys were not conducted.

7.1 METHODS

Mr. Hogenauer conducted several visits to the property to conduct an aquatic resource assessment and burrowing owl surveys. During these visits, a list of plant species observed was recorded.

7.2 EXISTING CONDITIONS AND RESULTS

The survey resulted in the observation of 17 plant species. Dominant plant species observed include stinknet, short pod mustard, purple sand spurrey, prostrate knotweed, mouse barley, red brome, and red stem filaree (*Erodium cicutarium*). All species are typical of disturbed areas.

None of the plants observed are NEPSSA plants.

7.3 IMPACTS

No NEPSSA Species occur; therefore, no impacts are anticipated.

7.4 MITIGATION

Due to a lack of NEPSSA species resulting in a lack of impacts, no mitigation is required.

8.0 ADDITIONAL SURVEY NEEDS AND PROCEDURES (SECTION 6.3.2)

8.1 CRITERIA AREA PLANT SPECIES

The study area is not within a Criteria Area Plant Species Survey Area (CASSA). Surveys for CASSA species are not required and were not conducted.

8.2 AMPHIBIANS

The study area is not within an amphibian survey area. Amphibian surveys are not required and were not conducted.

8.3 BURROWING OWL

The study area is located within the survey area for burrowing owl. A habitat assessment and protocol burrowing owl survey was conducted in accordance with the MSHCP Burrowing Owl Survey Instructions (RCA 2006).

8.3.1 Methods

The survey was conducted according to the Burrowing Owl Survey Instructions for the Western Riverside MSHCP Area (County 2006). This survey included a habitat assessment (Step I) and focused surveys (Step II). Step II surveys are made up of focused burrow surveys (Part A) and focused burrowing owl surveys (Part B) and are required when potential burrowing owl habitat is observed during the initial habitat assessment. This report is intended to comply with reporting requirement Step III. The specific survey information is provided below in Table 10, *BUOW Survey Information.* Details regarding the habitat assessment and focused burrow and BUOW surveys are described further below.

The Step I survey was conducted on foot and included the entire project area, along with a visual survey for potential burrowing owl habitat within a 150-meter (approximately 500-foot) buffer zone around the periphery of the study area (survey area). The survey area was slowly walked and assessed for suitable BUOW habitat, including:

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

Because suitable habitat was observed during the Step I habitat assessment, Step II surveys were conducted on March 9, 22, 31, and April 6, 2021, by Mr. Hogenauer. Step II surveys, which consist of a focused burrow survey (Part A) and four focused BUOW surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or BUOW. Step II surveys were conducted during the breeding season for BUOW (March 1 to August 31) during weather conducive to observing owls outside their burrows and detecting burrowing owl sign, within one hour before sunrise to two hours after sunrise. As required by the survey instructions, it had not rained within five days prior to the surveys, which could have obscured owl sign. In accordance with the survey protocol, the focused burrow survey was conducted concurrently with the first BUOW survey.

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

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

The biologist walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologists walked slowly and methodically, closely checking suitable habitat within the survey area for suitable burrows, BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual BUOW. Inaccessible areas of the survey area were visually assessed using binoculars. Where detected, all suitable burrows, burrow surrogates, BUOW sign, and/or BUOW observations were recorded using a handheld Global Positioning System (GPS) unit.

Table 10
BUOW SURVEY INFORMATION

Survey Number	Survey Date	Start/Stop Time	Start/Stop Weather Conditions	Focus	Survey Results
HA	2/3/21	0900-1030	N/A	Step I – Habitat Assessment	Suitable habitat occurs, potential burrows are present.
1[1]	3/9/21	0555-0645	45°F, wind 1-3 mph, 100% clouds 47°F, wind 1-3 mph, 100% clouds	Step II Parts A and B - Burrows and owls	Suitable habitat, a few burrows observed; no BUOW detected.
2	3/22/21	0710-0845	40°F, wind 0-1 mph, 0% clouds 43°F, wind 0-1 mph, 0% clouds	Step II Part B - owls	No BUOW detected.
3	3/31/21	0645-0730	66°F, wind 2-5 mph, 0% clouds 67°F, wind 4-8 mph, 0% clouds	Step II Part B - owls	No BUOW detected.
4	4/6/21	0650-0720	53°F, wind 1-2 mph, 100% clouds 54°F, wind 0-2 mph, 100% clouds	Step II Part B - owls	No BUOW detected.

8.3.2 Existing Conditions and Results

The study area consists of an open disturbed field dominated by low-the growing annual plant species. Burrows with the potential to be utilized by burrowing owl were only observed along the western edge Figure 9, *Burrows Suitable for Use by BUOW*. In addition to the potential burrowing on the west side of the study area, some debris piles occur on the northeast corner of the study area, but these debris piles lacked holes for burrowing owl use. Additionally, the debris piles were being used as a human encampment, which would highly discourage the use of the debris by burrowing owl. The majority of the study area lacked burrows with the potential to support burrowing owl.

No sign of burrowing owl or use by burrowing owl was observed in the study area. Burrowing owl are presumed not to occur in the study area.

8.3.3 Impacts

Burrowing owl were not observed in the study area and are not expected to occur. No impacts to burrowing owl are anticipated.

8.3.4 Mitigation

Although burrowing owl were not present during the focused surveys and are not expected to occur on the study area, PVCCSP mitigation measure MM Bio 2 is required. This requires a pre-construction survey to occur no more than 30 days prior to the initiation of ground disturbance (e.g., vegetation clearing, clearing and grubbing, tree removal, site watering).

I:\PROJECTS\VJVMRealtyGroup_04823\VRG-01_ECommerce\Map\GBRA\Fig9_BUOW.mxd 04832.1.1 10/5/2022 - SAB

Source: Aerial (County of Riverside, 2020)

HELIX Environmental Planning

Burrows Suitable for Use by BUOW

Figure 9

MM Bio 2 **Burrowing Owl Preconstruction Survey**. A pre-construction survey for resident burrowing owls will be conducted by a qualified biologist within 30 days prior to the commencement of grading and construction activities on the Project site. The survey will include the Project site and all suitable burrowing owl habitat within a 500-foot buffer. The results of the survey would be submitted to the City prior to obtaining a grading permit. In addition, if burrowing owls are observed during the MBTA nesting bird survey, to be conducted within three days of ground disturbance or vegetation clearance, the observation shall be reported to 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 will be conducted in accordance with the current Burrowing Owl Instruction for the Western Riverside MSHCP.

If burrowing owl are detected, CDFW shall be sent a written notification by the City within three days of the 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 Applicant shall coordinate with the City of Perris Planning Department, USFWS, and the CDFW, to develop a Burrowing Owl Plan to be approved by the City, in consultation with CDFW and 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, 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 CDFW prior to the start of Project activities. When a 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.

In accordance with Objective 5 of the MSHCP for burrowing owl, if the project site (including adjacent areas) supports three or more pairs of burrowing owl, is greater than 35 acres of suitable habitat, and is non-contiguous with MSHCP conservation land, at least 90 percent of the area with long-term conservation value will be conserved on-site. Based on the small size of the study area and surrounding development and land uses, the study area does not represent land with a long-term conservation value for burrowing owl, and this Objective does not apply.

8.4 MAMMALS

The study area does not fall within a mapped survey area for mammal species. Surveys for mammal species are not required.

9.0 INFORMATION ON OTHER SPECIES

9.1 SPECIES NOT ADEQUATELY CONSERVED

The MSHCP includes a table (MSHCP Table 9-3) of 28 species that are not adequately conserved under the MSHCP. These species were not observed on the property during the various site visits conducted on the property.

9.2 SPECIAL STATUS PLANT SPECIES

The study area was evaluated for the potential for sensitive plant species to occur. A total of 30 sensitive plant species known to occur in the general vicinity of the study area were evaluated (Appendix E). None of the 30 species were observed in the study area. Six of the species evaluated are listed at either the federal or state level, with five of the six listed at both the federal and state level. Three of the listed species have low potential to occur but were not observed. They are the federal threatened and state endangered thread-laved brodiaea (*Brodiaea filifolia*), federal endangered San Jacinto valley crownscale (*Atriplex coronata var. notatior*), and the federal threatened spreading navarretia (*Navarretia fossalis*).

An additional three sensitive (but not listed) species also have low potential to occur in the study area. They are vernal barley (Hordeum intercedens), paniculate tarplant (*Deinandra paniculata*), and smooth tarplant (*Centromadia pungens laevis*). Although these three species were assessed as having a low potential to occur, they were not observed during the various surveys are presumed absent.

9.3 SPECIAL STATUS ANIMAL SPECIES

The study area was evaluated for the potential for sensitive animal species to occur. Species evaluated are comprised of four invertebrates, two amphibians, eight reptiles, seventeen birds, and ten mammals (Appendix F).

One species, California horned lark (*Eremophila alpestris actia*), was observed foraging on-site. Potential impacts to this species are covered via compliance with the MSHCP. Payment of the LDMF and compliance with the MSCHP are the required mitigation for this species.

There are two species with low potential to occur (Appendix F). They are western spadefoot (*Spea hammondii*) and burrowing owl (*Athene cunicularia*). The pools on-site represent potential habitat for western spadefoot, but no tadpoles (of any species) were observed during the fairy shrimp or other surveys on the property. Focused surveys for burrowing owl were conducted, and burrowing owl was not observed. Western spadefoot and burrowing owl are considered to be absent from the site.

9.3.1 Nesting Birds

In addition to the above sensitive animal species, nesting birds are protected under the Migratory Bird Treaty Act (MBTA) and under the CDFW code. The MBTA is interpreted as protecting nesting birds from direct impacts, while the CDFW code protects nests from direct and indirect impacts. To avoid impacts to nesting birds, PVCCSP mitigation measure MM Bio-1 should be implemented.

MM Bio-1 **Nesting Bird Survey**. In order to avoid violation of the MBTA 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 a pre-activity field survey shall be conducted by a qualified biologist prior to the issuance of grading permits for such project to determine if active nests of species protected by the MBTA 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 independently from the nest). The on-site qualified biologist will review and verify compliance with these nesting avoidance buffers and verify that 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.

10.0 GUIDELINES PERTAINING TO THE URBAN/WILDLANDS INTERFACE (SECTION 6.1.4)

Proposed projects within the MSHCP plan area are required to address indirect effects to the MSHCP Conservation area when the project is in proximity to a conservation area. This is addressed in the MSHCP under the Urban/Wildlands Interface Guidelines (UWIG). MSHCP conservation, public quasi-public, or other conservation land does not occur on or adjacent to the study area. The nearest MSHCP cell occurs approximately 8,500 feet southwest of the project site and is separated from the study area by residential and commercial development along with Interstate 215. The nearest existing conservation occurs at Perris Valley Storm Drain approximately 4,000 feet east of the project site. The project is not adjacent to an MSHCP conservation area and is, therefore, not subject to the UWIG. Project landscaping should not include invasive plant species, as seeds from invasive plants can be washed downstream via storm drains and potentially affect downstream MSHCP conservation (Appendix G).

The project will collect runoff into an underground water quality basin located near the northeast corner of the industrial development. The runoff will enter this first flush basin prior to being discharged into pipes that will connect to Line E being installed with the project. Both the basin and Line E will connect to the existing lateral in Perris Boulevard until the rest of Line E to the east is constructed by the City.

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Appendix A

Plant Species Observed

Family	Scientific Name*,†	Common Name	Habitat[1]
Dicots			
Anacardiaceae	*Schinus molle**	Peruvian pepper tree	NNG
Asteraceae	*Oncosiphon pilulifer*	stinknet	NNG
	Erigeron canadensis	Horseweed	NNG, DH
	*Lactuca serriola**	Wild lettuce	DH, NNG
	*Sonchus asper**	Prickly sow-thistle	NNG
	Helianthus annuus	Annual Sunflower	NNG, DH
Boraginaceae	*Amsinckia menziesii* var. *menziesii*	Menzies' fiddleneck	DH, NNG
Brassicaceae	*Hirschfeldia incana **	short pod mustard	DH, NNG
Caryophyllaceae	*Spergularia rubra*	Purple sand spurrey	DH
Geraniaceae	*Erodium cicutarium**	Red-stem filaree	DH
Malvaceae	*Malva parviflora **	Cheeseweed	DH
Polygonaceae	*Rumex crispus **	Curly dock	DH
	Polygonum aviculare	Prostrate knotweed	DH
Portulacaceae	*Portulaca oleracea**	Purslane	DH
Salicaceae	*Salix lasiolepis*	Arroyo willow	DH (inside culvert)
Monocots			
Poaceae	*Bromus madritensis* ssp. *rubens**	red brome	DH, NNG
	*Hordeum murinum**	Mouse barley	DH, NNG

* Non-native

† Sensitive

1 DH=Disturbed habitat; NNG=Non-native grassland; Pool=seasonal/vernal pool

Appendix B

Animal Species Observed or Detected

Taxon Order	Taxon Family	Scientific Name	Common Name
INVERTEBRATES			
Anostraca	Branchinectidae	*Branchinecta lindahli*	Versatile fairy shrimp
VERTEBRATES			
Amphibians and Reptiles			
Squamata	Phrynosomatidae	*Uta stansburiana*	side-blotched lizard
Birds			
Accipitriformes	Accipitridae	*Buteo jamaicensis*	red-tailed hawk
Charadriiformes	Laridae	*Larus sp.*	Gull
Passeriformes	Icteridae	*Sturnella neglecta*	western meadowlark
	Passeridae	*Passer domesticus*	house sparrow
	Tyrannidae	*Sayornis nigricans*	black phoebe
	Alaudidae	*Eremophila alpestris actia*†	California horned lark
Mammals			
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

† Sensitive

Appendix C

Wet Season Fairy Shrimp Report

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June 16, 2021 04823.00001.001

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

Subject: 2020-2021 Wet Season Fairy Shrimp Survey Report for the JM Realty Perris Development Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol (USFWS 2017) presence/absence wet season survey for vernal pool and Riverside fairy shrimp by HELIX Environmental Planning, Inc. (HELIX) for the JM Realty Perris Development Project (project), formerly referred to as the Ramona E-Commerce Park Project. This report describes the survey methods and results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE778195-14.

The purpose of this survey was to determine the presence/absence of the federally listed threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and federally listed endangered Riverside fairy shrimp (*Streptocephalus woottoni*) within 12 features located within the survey area. These features are comprised of shallow depressions and tire tracks. HELIX is not aware of previous surveys for fairy shrimp in the study area.

PROJECT LOCATION

The project site is located in the City of Perris, Riverside County (County), California (Figure 1, *Regional Location*). It is depicted in Section 6, Township 4 South, Range 3 West, as shown on the California U.S. Geological Survey (USGS) 7.5-minute Perris quadrangle map (Figure 2, *USGS Topography*). More specifically, the project is east of Interstate 215 and south of State Route 60, northwest of the intersection of Ramona Expressway and Perris Boulevard (Figure 3, *Project Vicinity on Aerial Photograph*).

Species Information

There are three species of fairy shrimp with potential to occur on-site: vernal pool fairy shrimp, Riverside fairy shrimp, and versatile fairy shrimp (*Branchinecta lindahli*). Vernal pool fairy shrimp are federally listed as threatened and Riverside fairy shrimp are federally listed as endangered, while versatile fairy shrimp are relatively common and are not listed or considered sensitive. Vernal pool fairy shrimp are found in southern Oregon and in California, south to Riverside County. This species occurs in vernal pools and other ephemeral ponds or basins. Riverside fairy shrimp can be found in Riverside, Orange, and San Diego counties and occur in vernal pools and other ephemeral basins with long inundation times. The versatile fairy shrimp are common in pools throughout California and can co-occur with both vernal pool and Riverside fairy shrimp.

METHODS

HELIX permitted biologists Amy Mattson and Erica Harris (Permit TE778195-14) conducted the wet season survey according to U.S. Fish and Wildlife Service (USFWS) protocol (USFWS 2017) to determine the presence/absence of vernal pool and Riverside fairy shrimp. A total of 12 features were sampled for this survey (Figure 4, *Sampled Features*). Fourteen survey visits and a ponding check were conducted within the survey area for this focused survey.

The first substantial rainfall of the season occurred on December 28, 2020 (1.04 inches; Weather Currents 2021a). A ponding check was conducted by HELIX biologist Dane Van Tamelen on December 30, 2020. The first survey visit with ponding occurred on January 5, 2021, which followed rain events on December 24 (0.04 inch) and 27, 2021 (1.04 inches). Subsequent visits occurred on January 12, 19, and 25, February 3, 9, 16, and 23, March 2, 9, 16, 23, and 30, and April 6, 2021. None of these visits were exclusively ponding checks; all visits were survey visits. No features were ponded on April 6, 2021, the last visit for this report.

The water-holding features were sampled using fine mesh aquarium nets. If fairy shrimp were present, an attempt to identify netted fairy shrimp to species occurred in the field. Following identification, individuals identified in the field were immediately returned to their pool of origin. Fairy shrimp that were not able to be identified to species in the field were collected and identified using the key in Eriksen and Belk (1999) with the aid of a dissecting scope. When "take" of fairy shrimp occurred, no more than 20 specimens of each species from each feature, or less than 50 percent of the estimated subpopulation for each feature, were collected (whichever was the lesser amount). Care was taken to ensure that nets were cleaned after each feature was sampled. Feature depth, area, water temperature, air temperature, habitat condition, and species present were noted and recorded on USFWS vernal pool data sheets (Attachment A). Representative site photos are included in Attachment B.

RESULTS

Fairy Shrimp

No sensitive fairy shrimp were detected. The non-sensitive versatile fairy shrimp were observed within six of the 12 features: 1, 2, 6, 9, 11, and 12 (Figure 4; Table 1, *2020-2021 Wet Season Survey Results for the JM Realty Perris Development Project*). Immature fairy shrimp were additionally observed within Feature 4.

Rainfall

Based on the WeatherCurrents.com precipitation summary for Perris, the precipitation total for the 2020-2021 rain season is 5.15 inches, and the average precipitation for the region is 9.40 inches (Weather Currents 2021b). This translates to a precipitation total that is 4.25 inches below average, or 55 percent of the average for the region.

Table 1
2020-2021 WET SEASON SURVEY RESULTS FOR THE JM REALTY PERRIS DEVELOPMENT PROJECT

FEATURE	UTM	2021													
		1/5	1/12	1/19	1/25	2/3	2/9	2/16	2/23	3/2	3/9	3/16	3/23	3/30	4/6
1	479014.641246, 3745137.06376	---	Dry	Dry	Dry	BR sp.	BRLI	Dry	Dry	Dry	Dry	---	BRLI	Dry	Dry
2	479025.126253, 3745114.76624	---	BRLI	BRLI	---	---	BRLI	BRLI, BR sp.	BRLI	Dry	Dry	---	BRLI	BRLI	Dry
3	479044.485509, 3745091.1595	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
4	479047.629551, 3745095.56251	---	Dry	Dry	Dry	BR sp.	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
5	479051.897514, 3745099.17255	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
6	479051.31063, 3745079.5522	---	---	Dry	Dry	---	BRLI	BRLI, BR sp.	BRLI	Dry	Dry	---	BRLI	BRLI	Dry
7	479062.265899, 3745072.88744	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
8	479048.683988, 3745072.4621	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
9	479015.660801, 3745098.23329	---	BRLI	BRLI	---	---	BRLI	BRLI, BR sp.	BRLI	---	---	---	BRLI	BRLI	Dry
10	478999.65542, 3745105.33967	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry	Dry	Dry	---	Dry	Dry	Dry
11	479000.67353, 3745094.4098	Dry	Dry	Dry	Dry	---	Dry	BRLI, BR sp.	Dry	Dry	Dry	---	Dry	Dry	Dry
12	478965.909277, 3745000.15997	---	Dry	Dry	Dry	---	BRLI	BRLI, BR sp.	Dry	Dry	Dry	BR sp.	BRLI	Dry	Dry

--- : Feature sampled, but no fairy shrimp observed
BRLI – Versatile Fairy Shrimp (Branchinecta lindahli)
BR sp. – Branchinecta species. Identification to species level did not occur because shrimp were immature, were not collected, and could not be identified in the field.

DISCUSSION

The Palmer Drought Severity Index (NOAA 2021) categorizes precipitation into ranges that fall either above or below what is classified as average precipitation. The region where the survey occurred was in a period classified as mid-range from July 2020 to November 2020, and moderate drought from December 2020 and January 2021. Data for February 2021 to present are not available. Areas are considered to be mid-range when precipitation ranges from 1.99 inches below average to 1.99 inches above average. Areas are considered to be moderate drought when precipitation ranges from

2.99 inches below average to 2.00 inches above average. According to the 2017 USFWS protocol, a wet season survey may be considered unreliable if moderate to extreme drought conditions persist through the wet season as determined by this index. A mid-range classification for part of the season, therefore, successfully meets the 2017 USFWS protocol as a reliable survey. Although location-specific data obtained by WeatherCurrents.com puts the precipitation total 4.25 inches below normal, or extreme drought, there was enough rainfall to identify fairy shrimp in twelve features.

It is my opinion that this survey meets protocol. This determination is made based on:

- Features on-site held water long enough to sample for fairy shrimp; and
- The Palmer Drought Severity Index was classified as mid-range for a portion of the 2020-2021 rain season.

No federally listed as endangered Riverside fairy shrimp or federally listed as threatened vernal pool fairy shrimp were observed during the protocol 2020-2021 wet season fairy shrimp survey.

CERTIFICATION

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

Amy Mattson
Senior Scientist
TE778195-14

Erica Harris
Senior Scientist
TE778195-14

Attachments:

Figure 1: Project Location
Figure 2: USGS Topography
Figure 3: Project Vicinity on Aerial Photograph
Figure 4: Sampled Features
Attachment A: Data Sheets
Attachment B: Representative Site Photos

REFERENCES

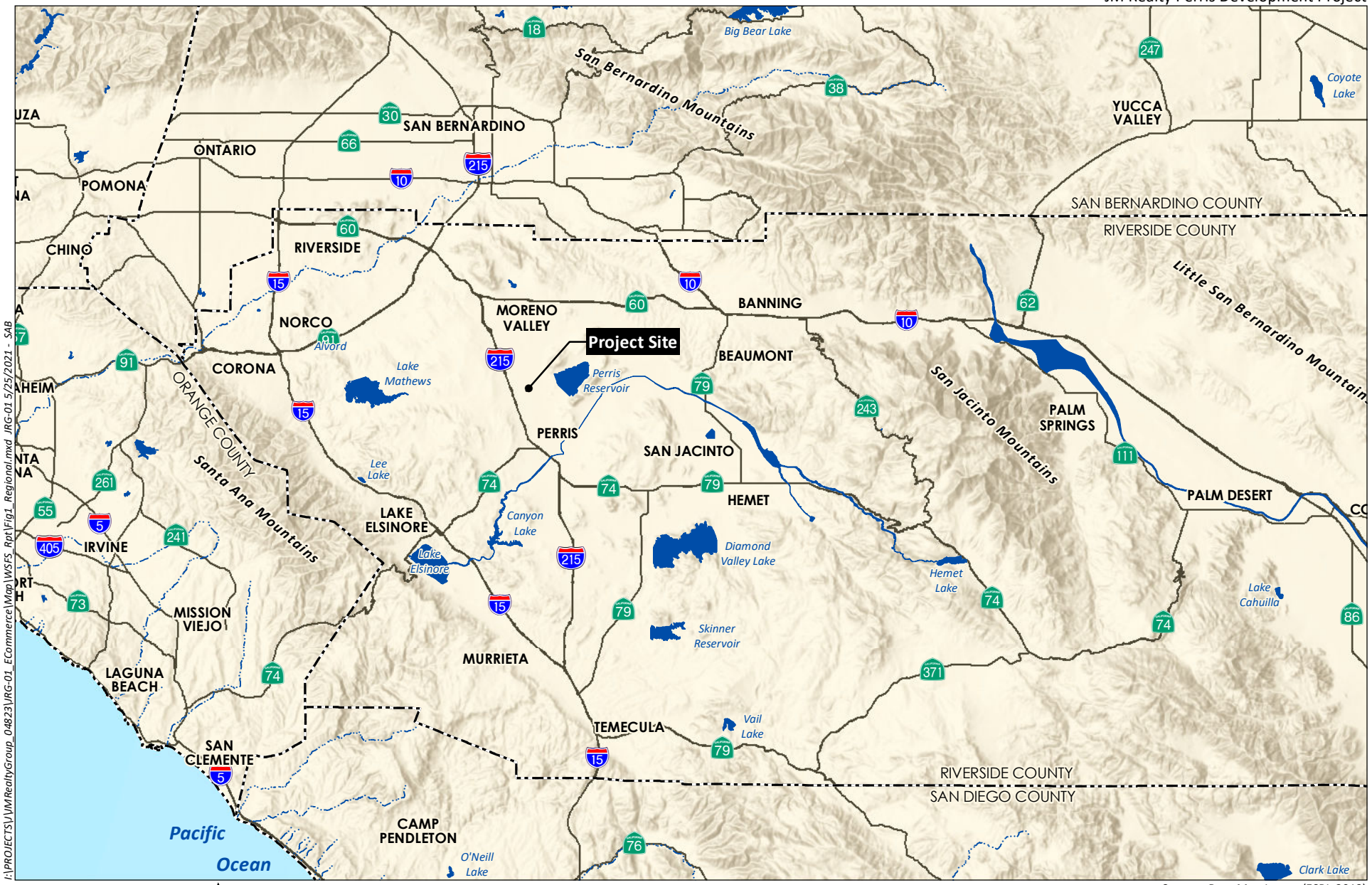
Eriksen, C.H. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press. Eureka, California. 196pp.

National Oceanic and Atmospheric Administration (NOAA). 2021. Historical Palmer Drought Indices. Available from: https://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/psi/202007-202101.

U.S. Fish and Wildlife Service (USFWS). 2017. Survey Guidelines for the Listed Large Branchiopods. November 13.

Weather Currents. 2021a. Hemet, California Weather Summary. Available from: https://www.weathercurrents.com/perris/Archive2021.do.

2021b. Perris, California Precipitation Summary. Available from: https://weathercurrents.com/perris/ArchivePrecipitation.do.



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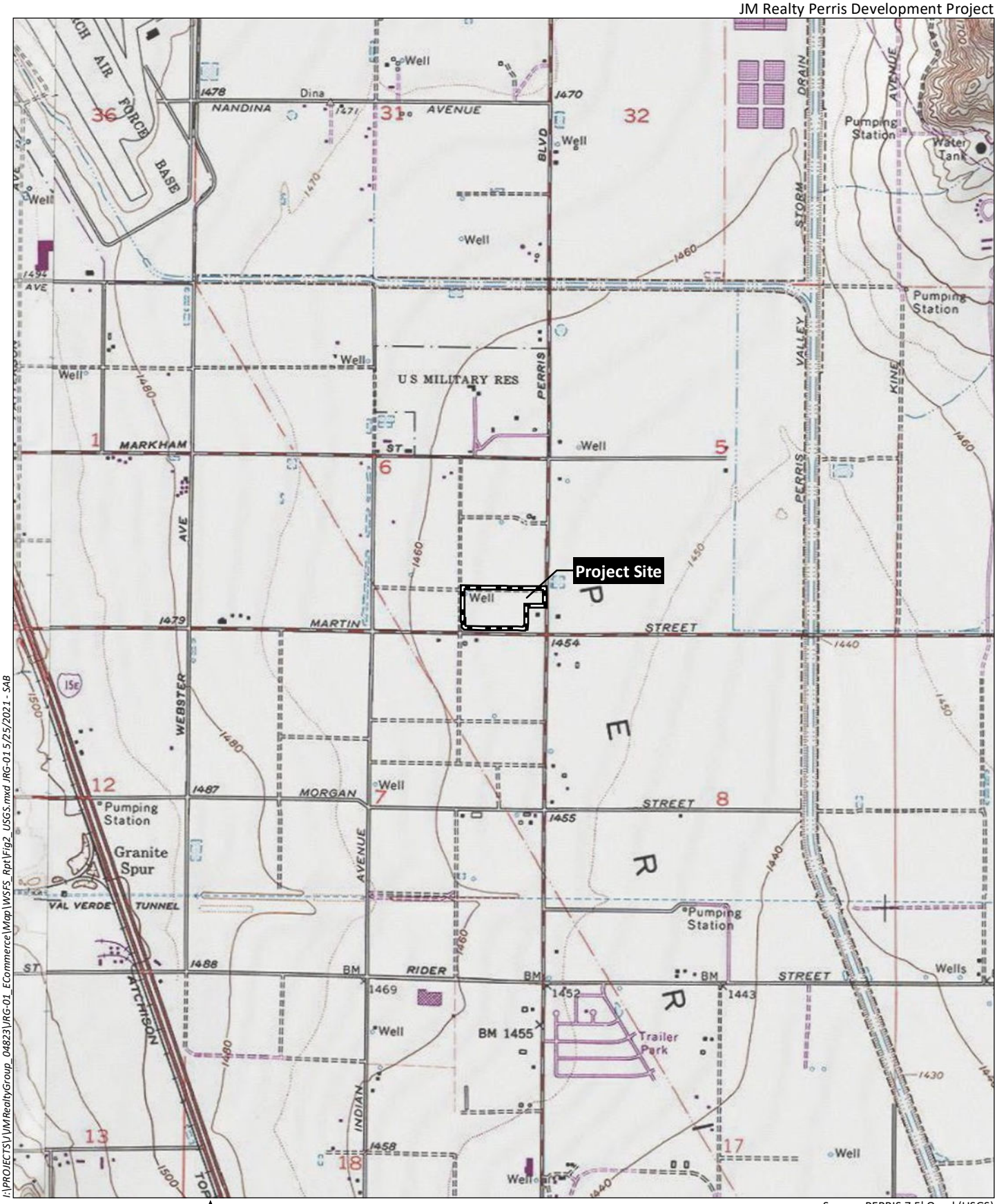
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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0 2,000 Feet

Source: PERRIS 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

I:\PROJECTS\JVMRealtyGroup_04823\JRG-01_ECommerce\Map\WSFS_Rpt\Fig3_Aerial.mxd JRG-01 5/25/2021 - SAB

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Project Vicinity on Aerial Photograph

Figure 3

I:\PROJECTS\JVMRealtyGroup_04823\IRG-01_ECommerce\Map\WSFS_Rpt\Fig4_Features.mxd IRG-01 5/25/2021 - SAB

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Sampled Features

Figure 4

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 1/5/21 | Time: 1152-1312 | Weather Conditions: 18-21 deg C, 1% clouds (high, wispy), 0 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
6		18	17.0	10	25	26.5x8.5	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	Ponded in low lying areas
4		19	19.9	3	25	2x2	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	1s-10s, immature
1		20	16.3	8	25	4x3	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
2		21	16.8	10	25	38x9	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
9		22	16.5	11	25	48.5x7	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
9		23	20.5	3	25	1x0.2	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
12		23	16.9	12	25	57x10	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, P	
12		24	20.8	3	25	2x1	175x175	-	-	-	-	-	-	-	-	-	-	TT, P	
12		24	21	3	25	3x3	175x175	-	-	-	-	-	-	-	-	-	-	TT, P	

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 1/12/21 | Time: 1015-1125 | Weather Conditions: 17-20 deg C, 1% clouds (clear, slight haze), 0 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
6		17	14.3	5.5	25	14x4.5	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
9		18	12.0	5	25	22x5	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s
		18	10.7	7	25	5x3	175x175		-	-	-	-	-	-	-	-	-	TT,T	
		18	12.7	4.5	25	4x1.5	175x175		-	-	-	-	-	-	-	-	-	TT,T	
2		20	9	7	25	13x7	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s

Notes: Fill in abbreviated names of Anostricans 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*).

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(estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 1/19/21 | Time: 0928-0947 | Weather Conditions: 17 deg C, 75% clouds, 10-15 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
9		17	6.4	7	25	10x2	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	1s, lots birds present
2		17	7.9	3	25	5x3	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	1s, lots birds present

Notes: Fill in abbreviated names of Anostricans 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*).
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APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 1/25/21 | Time: 1020-1055 | Weather Conditions: 9 deg C, 20% clouds, 10-20 mph, sunny but has been raining

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
2		9	8.0	9	25	37x8	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
9		9	7.2	11	25	48x10	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
Additional areas wet, but it's been raining since Friday. Will check these for shrimp next visit.																			

Notes: Fill in abbreviated names of Anostricans 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*).
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(estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 2*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 2/3/21 | Time: 0910-1100 | Weather Conditions: 15-21 deg C, 10% clouds, 0-5 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
1		15	11.2	14	25	7x4	175x175	BRsp	-	-	-	-	-	-	-	-	-	TT,T, AB	1s, small
2		15	13.9	11	25	38x5	175x175	-	-	-	X	-	-	-	-	-	-	TT,T, AB	
2		16	15.1	6	25	4x3	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
2		16	13.6	5	25	6x3	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
9		17	13.1	14	25	59x33	175x175	-	-	-	X	-	-	-	-	-	-	TT,T	
10		17	12.0	6	25	6x2.5	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
11		18	12.8	5	25	4.5x1.2	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
4		19	14.2	6	25	6.5x3	175x175	BRsp	-	-	-	-	-	-	-	-	-	TT,T, AB	1s, very small
6		19	12.5	13	25	161x27	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
7		20	10.7	4	25	5x0.6	175x175	-	-	-	-	-	-	-	-	-	-	D (graded)	

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 2 of 2*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 2/3/21 | Time: 0910-1100 | Weather Conditions: 15-21 deg C, 10% clouds, 0-5 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
8		20	12.1	4	25	16.5x0.3	175x175	-	-	-	-	-	-	-	-	-	-	D (graded)	
12		21	13.1	11	25	11x3	175x175	-	-	-	-	-	-	-	-	-	-	D (graded)	
12		21	11.5	11	25	100x54	175x175	-	-	-	-	-	-	-	-	-	-	D (graded)	

Notes: Fill in abbreviated names of Anostricans 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*).
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APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 2/9/21 | Time: 0920-1050 | Weather Conditions: 10-11 deg C, 100% clouds, 0-1 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
2		10	10.2	9	25	25x7	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s-100s
1		10	10.3	7	25	4x3	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s
9		10	11.0	19	25	48x19	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	1s-10s
6		11	12.4	11	25	24x7.5	175x175	BRLI	-	-	X	-	-	-	-	-	-	TT,T	10s
12		11	11.6	9	25	109x37	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	1s-10s

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 2/16/21 | Time: 0915-1025 | Weather Conditions: 10-11 deg C, 100% clouds, 0-1 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
6		13	13.2	9	25	18x5.1	175x175	BRLI, BRsp	-	-	-	X	X	-	-	-	-	TT,T	1s, gravid
2		13	13.0	6	25	10x5.5	175x175	BRLI, BRsp	-	-	-	-	-	-	-	-	-	TT,T	1s, gravid
9		13	13.9	13	25	49.5x13	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid
11		13	15.2	5	25	4x1.5	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT	1s, gravid
9		13	14.4	5	25	7x3	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid
12		13	18.0	1-2	25	19x0.4 15x0.8 5x0.2 2x0.1 1x0.1 0.5x0.1	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	P,T	100s, gravid, dried to 6 puddles

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 2/23/21 | Time:1000-1050 | Weather Conditions: 16-19 deg C, 0% clouds, 0-3 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
6		16	17.0	1	25	1x0.6	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid
2		17	18.2	2	25	4x3	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid
9		18	17.1	9	25	20x5	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid
9		19	17.6	6	25	5x2.5	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT, T	1s, gravid
9		19	17.9	5	25	5x2	175x175	BRLI, BRsp	-	-	-	X	-	-	-	-	-	TT,T	1s, gravid

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 3/2/21 | Time:0900-0940 | Weather Conditions: 17 deg C, 1% clouds, 0-3 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
9		17	9.0	6	25	6.5x3	175x175	-	-	-	X	-	-	-	-	-	-	TT,T	

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 3/9/21 | Time:0854-0925 | Weather Conditions: 12 deg C, 75% clouds, 0-1 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
9		12	13.4	5	25	3x2	175x175	-	-	-	X	-	-	-	-	-	-	TT,T	

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 2*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 3/16/21 | Time:0930-1040 | Weather Conditions: 7-10 deg C, 0% clouds, 0-2 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
9		7	6.4	18	25	49x34	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
6		7	7.4	14	25	25x10	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
7		7	9.8	5	25	7x0.6	175x175	-	-	-	-	-	-	-	-	-	-	T, AB, CP (graded)	
8		7	8.8	8	25	16x1	175x175	-	-	-	-	-	-	-	-	-	-	CP (graded)	
4		7	10.3	10	25	7.5x6	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
5		8	12.6	3	25	5x3	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
3		8	9.6	3	25	3x1	175x175	-	-	-	-	-	-	-	-	-	-	TT	
2		8	7.3	13	25	37x15	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
1		8	6.3	17	25	9x4	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 2 of 2*

Site or Project Name: JM Realty Perris Development Project	County: Riverside	Quad: Perris	Township: 4S	Range: 3W	Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 3/16/21 Time:0930-1040 Weather Conditions: 7-10 deg C, 0% clouds, 0-2 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
10		9	7.9	8	25	6.5x2.5	175x175	-	-	-	-	-	-	-	-	-	-	TT,T	
11		9	9.5	4	25	4x2	175x175	-	-	-	-	-	-	-	-	-	-	TT,T, AB	
12		9	9.6	7	25	10x3	175x175	BRsp	-	-	-	-	-	-	-	-	-	100s, very tiny, TT, T, AB	
12		10	10.7	6	25	8x1	175x175		-	-	-	-	-	-	-	-	-		
12		10	5.8	12	25	98.5x5	175x175		-	-	-	-	-	-	-	-	-		
12		10	10.6	5	25	41x2	175x175		-	-	-	-	-	-	-	-	-		

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: E.Harris / TE778195-14

Date: 3/23/21 | Time:0950 | Weather Conditions: 18 deg C, 0% clouds, 0-2 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
1		18	20.2	2	25	1.5x1	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s, collected 3 males
2		18	15.9	4	25	18x4	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s, collected 3 males
9		18	12.6	4	25	22x6	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT, T	100s, collected 9 males
9		18	16.8	2	25	2x1	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT, T	10s, collected 4 males
6		18	14.4	4	25	12x8	175x175	BRLI	-	-	-	-	-	-	-	-	-	P, T	10s, collected 3 males
12		18	15.2	3	25	12x1	175x175	BRLI	-	-	-	-	-	-	-	-	-	P, T	100s, collected 3 males
9		18	16.1	2	25	3x1	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT, T	10s, collected 3 males

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

APPENDIX 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys for Listed Large Branchiopods *PAGE 1 of 1*

Site or Project Name: JM Realty Perris Development Project | County: Riverside | Quad: Perris | Township: 4S | Range: 3W | Section: 6

SURVEYOR/Permit Number: A.Mattson / TE778195-14

Date: 3/30/21 | Time:0935-1025 | Weather Conditions: 17 deg C, 0% clouds, 0-1 mph

Feature ID #	UTM (Northing, Easting, Datum) *See Table 1 of report*	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes/Voucher Information
		Air	Water	Average	Est. Max.	Present	Est. Max	Anostracans	Notostracans	Copepods	Ostrachods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
6		17	16.7	4	25	2x5x2	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s-100s
2		17	20.1	1	25	1x0.5	175x175	BRLI	-	-	-	-	-	-	-	-	-	TT,T	10s, driven through
9		17	19.3 17.2	3	25	3x2 17x3	175x175	BRLI	-	-	X	-	-	-	-	-	-	TT,T	10s, 2 ponded areas

Notes: Fill in abbreviated names of Anostricans 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; UG = ungrazed, G = grazed 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.

Photo 1. Overview. Pan to north from north of ARCO lot. 1-25-21. AM.

Photo 2. Overview. Looking north from drainage ditch along Ramona Expwy, next to ARCO. 1-25-21. AM.

Photo 3. Looking southeast at Feature 2. 2-3-21. AM.

Photo 4. Looking southwest at Feature 12. 2-3-21. AM.

Photo 5. Looking north at Feature 9. 3-16-21. AM.

Appendix D

Dry Season Fairy Shrimp Report

JM Realty Perris Development Project

2020 Dry Season Survey Report

May 2021 | 04823.00001.001

Prepared for:

JM Realty Group, Inc.
3535 Inland Empire Boulevard
Ontario, CA 91764

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

JM Realty Perris Development Project

2020 Dry Season Survey Report

Prepared for:

JM Realty Group, Inc.
3535 Inland Empire Boulevard
Ontario, CA 91764

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

May 2021 | 04823.00001.001

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1.0 INTRODUCTION

This report presents the findings of the 2020 dry season fairy shrimp sampling conducted by HELIX Environmental Planning, Inc. (HELIX) for the JM Realty Perris Development Project (project), formerly referred to as the Ramona E-Commerce Park Project, which will be provided to the U.S. Fish and Wildlife Service (USFWS). The site is located in the City of Perris, Riverside County (County), California (Figure 1, *Regional Location*). It is depicted in Section 6, Township 4 South, Range 3 West, as shown on the California U.S. Geological Survey 7.5-minute Perris quadrangle map (Figure 2, *USGS Topography*). More specifically, the project is east of Interstate 215 and south of State Route 60, northwest of the intersection of Ramona Expressway and Perris Boulevard (Figure 3, *Project Vicinity on Aerial Photograph*). Eight basins identified on historical Google Earth aerial imagery were sampled for this survey (Google Earth 2021).

1.1 SPECIES INFORMATION

There are three species of fairy shrimp with potential to occur on-site: vernal pool fairy shrimp (*Branchinecta lynchi*), Riverside fairy shrimp (*Streptocephalus woottoni*), and versatile fairy shrimp (*Branchinecta lindahli*) (Erikson and Belk 1999; California Natural Diversity Database 2020). Vernal pool fairy shrimp are federally listed as threatened and Riverside fairy shrimp are federally listed as endangered, whereas the versatile fairy shrimp is relatively common and is not listed or considered sensitive. Vernal pool fairy shrimp have the widest geographic range of the federally listed vernal pool crustaceans occurring from southern Oregon to northern and central California, generally west of the Sierra Nevada, to southern California. The species' range extends south to Orange and Los Angeles counties and east to western Riverside County, but is generally absent from San Diego County. Vernal pool fairy shrimp are found in vernal pools and other vernal pool-like habitats such as ephemeral ponds or basins that can be formed from anthropogenic events such as tire ruts. Riverside fairy shrimp can be found in Riverside, Orange, and San Diego counties and occur in vernal pools and other ephemeral basins with long inundation times. The versatile fairy shrimp is common in pools throughout California and can co-occur with both vernal pool and Riverside fairy shrimp.

Fairy shrimp are adapted for variable and uncertain rainfall patterns. When fertilized by males of their species, female fairy shrimp produce "resting eggs," which are dormant embryos surrounded by hard-shelled membranes capable of remaining viable in the soil for long periods of time. Dry season fairy shrimp surveys are designed to detect, collect, and identify eggs present in the soil. The surface characteristics of these eggs can be used to differentiate the genus and potentially the species of fairy shrimp. Certain fairy shrimp, such as *B. lindahli* and B. *lynchi*, cannot be identifiable to the species level by examination of the eggs alone. For these species, a wet season fairy shrimp survey or authorized hatching would be required to identify individuals to species level.

2.0 METHODS

HELIX permitted biologist Amy Mattson (Permit TE778195-14) conducted the dry season sampling in accordance with USFWS protocol (USFWS 2017). Eight features were identified as potential basins using readily available aerial imagery from a known wet year for the region (Google Earth dated December 2, 2018). These were sampled for the presence of fairy shrimp eggs (Figure 4, *Dry Season Survey Results*). Soil was collected from these features on October 15, 2020 by Ms. Mattson.

Following soil collection, the samples were transferred to the HELIX laboratory for processing by Ms. Mattson. Samples were processed in February 2021. Samples were prepared by dissolving the soil samples in water and sequentially sieving the material through 710- and 75 µm pore size screens. The small size of these screens ensures that eggs from the target fairy shrimp species are retained. The portion of each sample retained in the screen was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope by Ms. Mattson. Eggs were identified to genus level based on surface characteristics. Multiple species of the *Branchinecta* genus can occur in Riverside County, but cannot be identified past genus level based on egg characteristics. Eggs of each genus were counted within each soil sample, and egg abundance was estimated for each feature and is provided in the Results section, according to the guidelines provided in the USFWS Survey Guidelines: none (no eggs found in sample); low abundance (estimate of 1-10 eggs/100 milliliters [mL] soil); medium abundance (estimate of 11-50 eggs/100 mL soil); and high abundance (estimate of more than 50 eggs/100 mL of soil). Basins were re-labeled to match those sampled during the 2020-2021 wet season fairy shrimp survey.

3.0 RESULTS

Branchinecta eggs were observed in all of the eight sampled features (Table 1, *Dry Season Results*). The *Branchinecta* sp. eggs would require hatching to positively identify the eggs to the species level. These are expected to be versatile fairy shrimp, given that only versatile fairy shrimp were observed in samples collected between January 5 and April 30, 2021 during the 2020-2021 wet season fairy shrimp survey (HELIX 2021). Versatile fairy shrimp is not listed. The USFWS Data Sheet for Dry Season Sample Analysis for Listed Large Branchiopods is included as Appendix A.

Table 1
DRY SEASON RESULTS

Feature	*Branchinecta* sp. Present	Abundance*	*Streptocephalus* sp. Present	Abundance*
1	Yes	High	No	---
2	Yes	Medium	No	---
4	Yes	Medium	No	---
5	Yes	Low	No	---
6	Yes	High	No	---
9	Yes	Medium	No	---
12	Yes	Medium	No	---
13	Yes	High	No	---

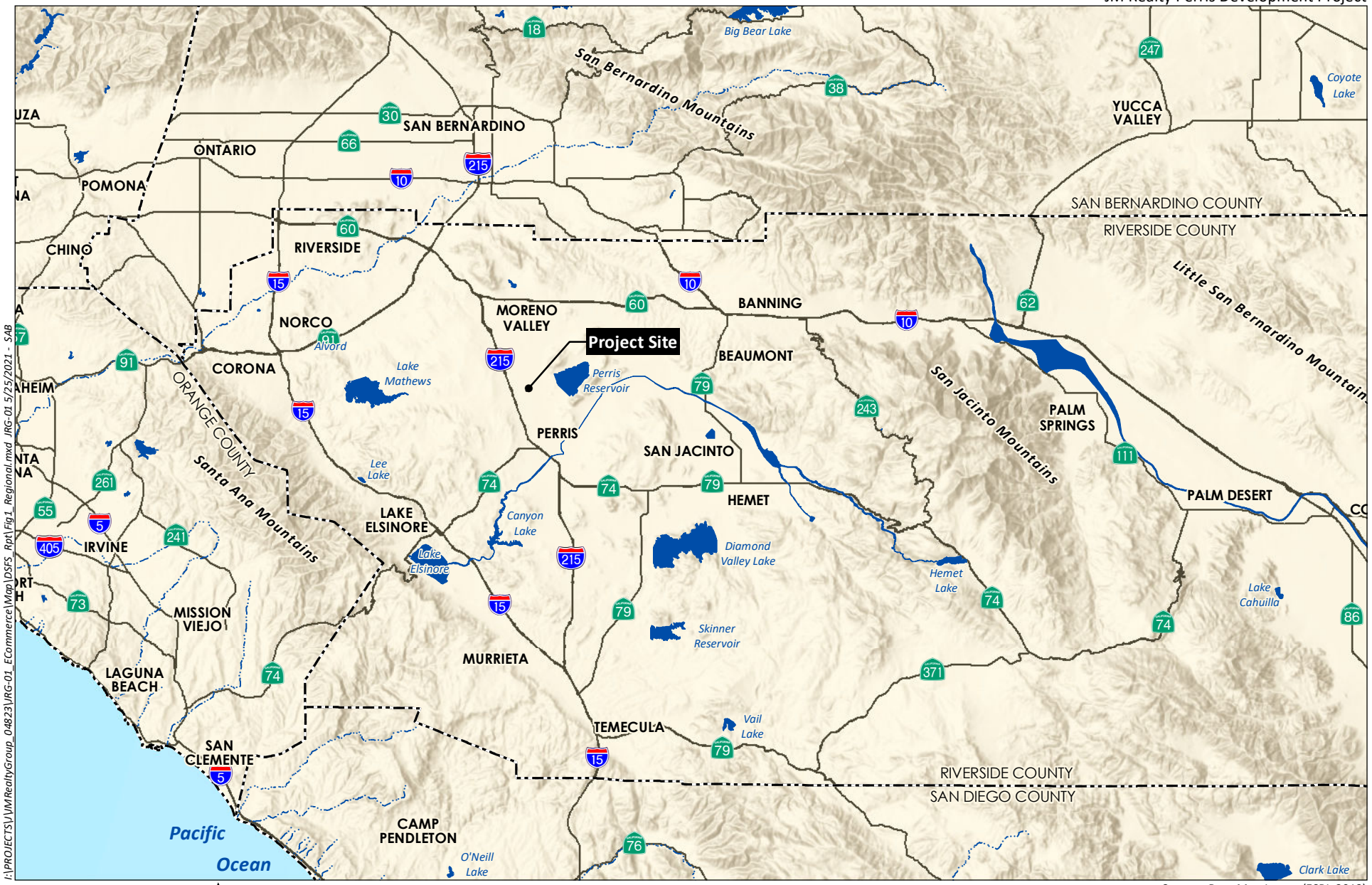
*Based on abundance categories found within the 2017 U.S. Fish and Wildlife Service Survey Guidelines for the Listed Large Branchiopods.

4.0 CERTIFICATION

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

Amy Mattson, Biologist
TE778195-14

HELIX Environmental Planning



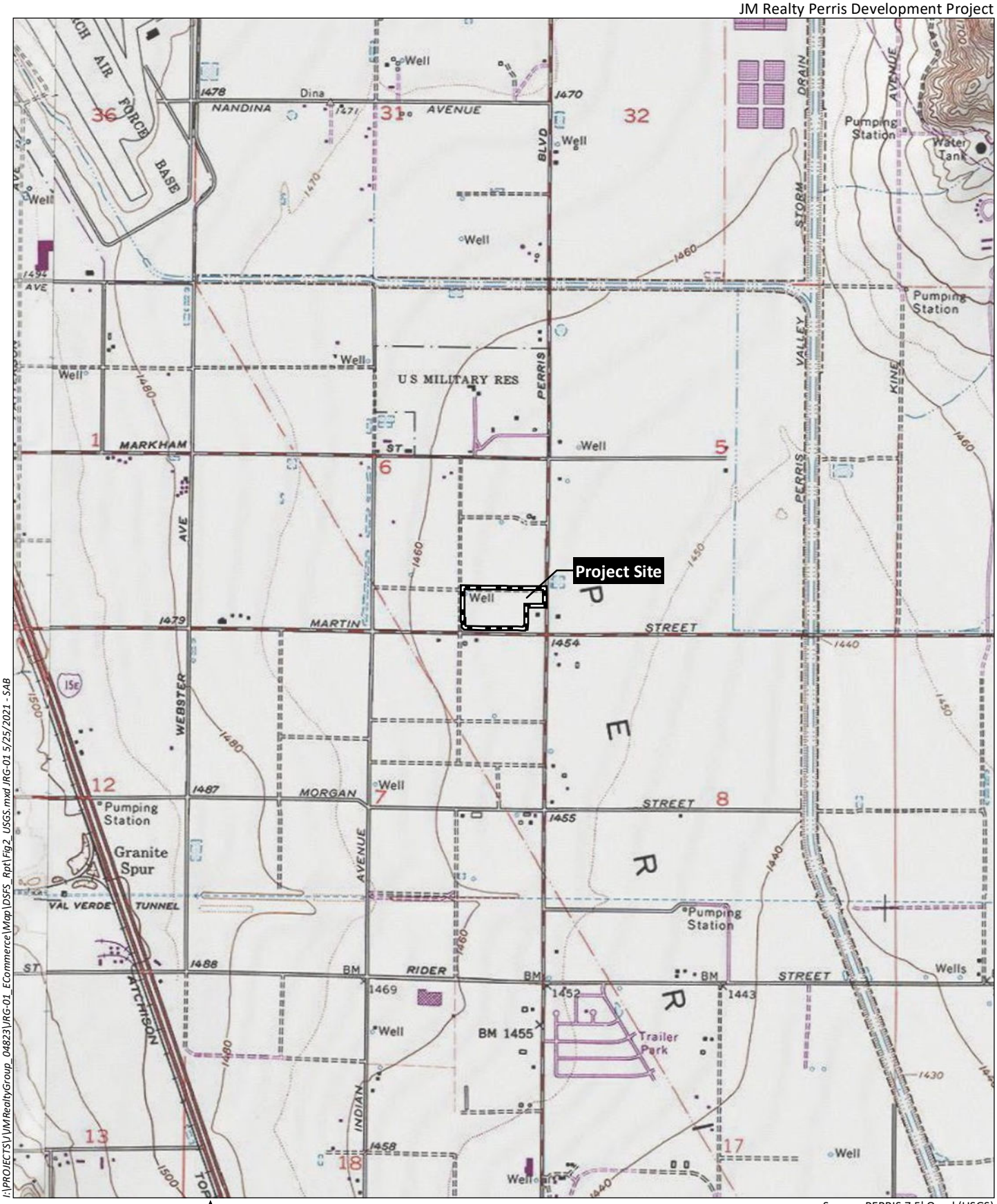
I:\PROJECTS\VJM RealtyGroup_04823\JRG-01_ECommerce\Map\DSFS_Rpt\Fig1_Regional.mxd JRG-01 5/25/2021 - SAB

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\V\VMRealtyGroup_04823\VRG-01_ECommerce\Map\DSFS_Rpt\Fig2_USGS.mxd JRG-01 5/25/2021 - SAB

0 2,000 Feet

Source: PERRIS 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

I:\PROJECTS\JVMRealtyGroup_04823\JRG-01_ECommerce\Map\DSFS_Rpt\Fig3_AerialJRG-01 5/25/2021 - SAB.mxd

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Project Vicinity on Aerial Photograph

Figure 3

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Dry Season Survey Results

Figure 4

5.0 REFERENCES

California Department of Fish and Wildlife (CDFW), 2020. California Natural Diversity Database (CNDDB). RareFind Database Program.

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HELIX Environmental Planning, Inc. (HELIX). 2021. 2020/2021 Wet Season Survey Report for the JM Realty Perris Development Project. June.

U.S. Fish and Wildlife Service (USFWS). 2017. Survey Guidelines for the Listed Large Branchiopods. Revised November 13.

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Appendix A

USFWS Data Sheets for Dry Season Sampling for Large Branchiopods

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

Project Information

Project Name: Ramona E. Commerce
USFWS Project Number:
County: Riverside
Lat: approx. 33°50'44.47" N
Long: approx. 117°13'36.09" W
Quad: Perris
Township: 4 South
Range: 3 West
Section: 6

Biologist Information

Name of Person(2) Who Conducted the Following Tasks and Permit Number(s):
Soil Collection: Amy Mattson TE-778195-14
Soil Processing: Amy Mattson
Soil Analysis/Cysts ID: Amy Mattson
Soil Collection Date: October 15, 2020

Pool/ Habitat/ Basin No.	Invertebrates Present (X)															Other Species	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		
						Branchinecta sp.	*Lepidurus packardi*	*Streptocephalus wootoni*	*Linderiella occidentalis*	*Lynceus brachyurus*	*Cyzicus californicus*					
1	X					X		–								
2	X			X		X		–								
4	X		X			X		–								
5						X		–								
6	X		X	X		X		–								
9	X		X	X		X		–								
12	X		X	X		X		–								
13	X			X		X		–								

Appendix E

Sensitive Plant Species Potential to Occur

Scientific Name	Common Name	Status[1,2]	Habit, Ecology and Life History	Potential to Occur[3]
chaparral sand verbena	*Abronia villosa aurita*	--/-- CNPS Rank 1B.1	Sandy soils, requires bare ground, not tolerant of weeds.	Not likely to occur. Soils are loam and weedy.
Munz's onion	*Allium munzii*	FE/ST CNPS Rank 1B.1	Clay soils, opening in grassland, sage scrub.	Not likely to occur. Soils are loam and highly disturbed.
San Jacinto Valley crownscale	*Atriplex coronata* var. *notatior*	FE/-- CNPS Rank 1B.1	Occurs in playas, chenopod scrub, valley and foothill grassland, and vernal pools. From 1,250 to 1,805 feet in elevation.	Low. Pools occur on site by are disturbed.
south coast saltscale	*Atriplex pacifica*	--/-- CNPS Rank 1B.2	Xeric site, disturbed areas, usually around scrub vegetation.	Not likely to occur. No scrub vegetation on site.
Parish's brittlescale	*Atriplex parishii*	--/-- CNPS Rank 1B.1	Alkaline lowlands with saline soil.	Not likely to occur. Specific habitat not present.
Marsh sandwort	*Arenaria paludicola*	FE/SE CNPS Rank 1B.1	Marshes and Swamps	Not likely to occur. No marshes and swamps on site.
Salt marsh bird's-beak	*Sidalcea neomexicana*	FE/SE CNPS 1B.2	Coastal dunes, marshes and swamps, Often in saline areas.	Not likely to occur. Specific habitat not present.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	--/-- CNPS Rank 1B.2	Alkaline lowlands with saline soil.	Not likely to occur. Specific habitat not present.
Nevin's barberry	*Berberis nevinii*	FE/SE CNPS Rank 1B.2	Occurs in chaparral, woodland, coastal and riparian scrub communities and cismontane woodland, in gravelly soils. Associated with steep.	Not likely to occur. Specific habitat not present.
thread-leaved brodiaea	*Brodiaea filifolia*	FT/SE CNPS Rank 1B.1	Occurs in chaparral, cismontane woodlands, coastal scrub, playas, vernal pools, and valley and foothill grasslands, usually in clay soils. From 80 to 2,820 feet in elevation.	Low. Pools do occur on site but are disturbed.
Plummer's mariposa lily	*Calochortus plummerae*	--/-- CNPS Rank 4.2	Rocky and sandy soils, in scrub, chaparral, woodland and grassland.	Not likely to occur. Specific habitat not present.
Peninsular spineflower	*Chorizanthe leptotheca*	--/-- CNPS Rank 4.2	Alluvial fans with granitic soils and chaparral, coastal scrub or coniferous forest habitats.	Not likely to occur. Specific habitat not present.

Scientific Name	Common Name	Status[1,2]	Habit, Ecology and Life History	Potential to Occur[3]
Payson's jewel-flower	*Caulanthus simulans*	--/-- CNPS Rank 4.2	Pinyon-juniper woodland, chaparral and sage scrub. Typically, on slopes and ridgelines with sandy granitic soil.	Not likely to occur. Specific habitat not present.
smooth tarplant	*Centromadia pungens* spp. *laevis*	--/-- CNPS Rank 1B.1	Riparian/watercourses, grassland, alkali scrub.	**Low potential to occur**. Species easily identified and was not observed. Species known to occur in disturbed agriculture areas.
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	--/-- CNPS Rank 1B.1	Openings in chaparral and sage scrub, sandy, or rocky soil.	Not likely to occur. Specific habitat not present.
long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	--/-- CNPS Rank 1B	Chaparral, sage scrub, grassland, often in clay soils	Not likely to occur. Specific habitat not present.
Small-flowering morning-glory	*Convolvulus simulans*	--/-- CNPS Rank 4.2	Clay soils, seeps, in chaparral, coastal scrub and grasslands.	Not likely to occur. No clay soils or seeps, site disturbed.
Snake cholla	*Cylindropuntia californica* var. *californica*	--/-- CNPS Rank 1B.1	Chaparral and coastal scrub	Not likely to occur. Specific habitat not present.
Paniculate tarplant	*Deinandra paniculata*	--/-- CNPS Rank 4.2	Usually found in vernally mesic areas and sometimes sandy areas within coastal scrub, grassland and vernal pools.	**Low potential to occur**. Species easily detected and was not observed. Pools are present.
Palmer's grapplinghook	*Harpagonella palmeri*	--/-- CNPS Rank 4.2	Clay soil, chaparral, sage scrub and grassland.	Not likely to occur. Specific habitat not present.
vernal barley	*Hordeum intercedens*	--/-- CNPS Rank 3.2	mesic grasslands, vernal pools, and large saline flats or depressions.	**Low potential to occur**. Pools present but are disturbed.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	--/-- CNPS Rank 1B.1	Alkaline habitats associated w/Travers soil.	Not expected. No travers soils on site.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	--/-- CNPS Rank 4.3	Openings in chaparral and sage scrub, typically dry sites	Not likely to occur. Specific habitat not present.
Little mousetail	*Myosurus minimus* ssp. *apus*	--/-- CNPS Rank 3.1	Alkaline vernal pools in grassland.	Not expected. Although pools occur, habitat is not alkaline and pools are disturbed.
spreading navarretia	*Navarretia fossalis*	FT/-- CNPS Rank 1B.1	Vernal pools.	**Low potential to occur**. Pools present but are disturbed.
Coulter's matilija poppy	*Romneya coulteri*	--/-- CNPS Rank 4.2	Often in burns, chaparral, coastal scrub.	Not likely to occur. Specific habitat not present.

Scientific Name	Common Name	Status[1,2]	Habit, Ecology and Life History	Potential to Occur[3]
Chaparral ragwort	*Senecio aphanactis*	--/-- CNPS Rank 2B.2	Chaparral, woodland and coastal scrub.	Not likely to occur. Specific habitat not present.
San Bernardino aster	*Symphyotrichum defoliatum*	--/-- CNPS Rank 1B.2	Near ditches, streams, seeps, marshes in grassland, scrub, forest.	Not expected to occur. Stream on site is concrete lined and site is disturbed.
Woven spored lichen	*Texosporium sancti-jacobi*	--/-- CNPS Rank 3	Chaparral openings, usually on animal pellets, dead twigs or detritus rich soil.	Not likely to occur. Specific habitat not present.
Wright's trichocoronis	*Trichocoronis wrightii* var. *Wrightii*	--/-- CNPS 2B.1	Vernal pools, marshes, meadows and other alkaline riparian habitats.	Not expected to occur. Pools present but disturbed.

1 Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare

2 CNPS = California Native Plant Society Rare Plant Rank: 1A–presumed extirpated in California and either rare or extinct elsewhere; 1B–rare, threatened, or endangered in California and elsewhere; 2A–presumed extirpated in California, but more common elsewhere; 2B–rare, threatened, or endangered in California, but more common elsewhere; 3–more information needed; 4–watch list for species of limited distribution. Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very endangered.

3 the potential to occur status is based on the property being active agriculture through 2005 and disked regularly from 2006 to present.

Not Likely to Occur–There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.
Low Potential to Occur–There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.
Moderate Potential to Occur–The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.
High Potential to Occur–There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).
Species Present–The species was observed on the Project Site at the time of the survey or during a previous biological survey

Appendix F

Special Status Animal Species Potential to Occur

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
INVERTEBRATES				
Insects				
Bombus crotchii	Crotch bumblebee	--/--	Scrub and grassland habitats. Uses sage, sunflowers, and similar species for nectar.	Not Likely to Occur. The site is disturbed and lacks nectar resources.
Ceratochrysis longimala	Desert cuckoo wasp	--/--	Possibly, sage scrub, specific unknown. Last CNDDB record in Riverside County from 1915. Possibly extirpated.	Not likely to occur. Habitat does not occur; species may no longer occur in Riverside County.
Euphydryas editha quino	Quino checkerspot butterfly	FE/SC	Open areas, sparse vegetation, flowers. Host plants include *Plantago* spp., *Antirrhinum coulterianum*, *Cordylanthus rigidus.*	Not likely to occur. Host plants not observed. Site disturbed.
Streptocephalus wootoni	Riverside fairy shrimp	FE/--	Endemic to Western Riverside, Orange, and San Diego Counties. Found in deep long lasting seasonal vernal pools, ephemeral ponds and similar habitats.	Not likely to occur. Surveys conducted for fairy shrimp and species was not detected.
VERTEBRATES				
Amphibians and Reptiles				
Arizona elegans occidentalis	California glossy snake	--/SC	Scrub and grassland habitats, usually with loose or sandy soils. A generalist.	Not Likely to Occur. Site is disturbed and does not have sandy soils.
Phrynosoma coronatum blainvillei	coast horned lizard	--/SC	Grassland, scrub, chaparral, woodland with a supply of prey (ants).	Not likely to occur. Soils disturbed regularly reducing supply of prey.
Salvadora hexalepis virgultea	coast patch-nosed snake	--/SC	Coastal and desert scrub, chaparral, washes. A generalist.	Not likely to occur. Site disturbed, lacking shrub species.
Aspidoscelis tigris stenjnegeri	coastal western whiptail	--/SC	Open rocky areas with sparse vegetation usually scrub or grassland.	Not likely to occur. Site has been previously cleared of rocks and lacks shrub vegetation.
Cnemidophorus hyperthrus	orange-throated whiptail	--/SC	Chaparral, sage scrub, grassland, woodland, riparian areas.	Not likely to occur. Site has been previously cleared of rocks and lacks shrub vegetation.
Crotalus ruber	red-diamond rattlesnake	--/SC	Heavy brush, boulders, can use a variety of habitats. Prey density a determining factor.	Not likely to occur. Site has been previously cleared of rocks and lacks shrub vegetation.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
Diadophis punctatus modestus	San Bernardino ringneck snake	--/--	Moist habitats. woodlands, farms, grassland, chaparral.	Not likely to occur. Site is disturbed and lacks a significant vegetation layer.
Anniella stebbinsi	Southern California legless lizard	--/SC	Coastal dune, sandy washed, alluvial fans, oak woodlands, conifer forest, sandy soils.	Not likely to occur. Site has loam soils, lack appropriate vegetation.
Actinemys marmorata pallida	western pond turtle	--/SC	Slow-moving streams, ponds, reservoirs, other water bodies deeper than 6 feet with logs or other submerged cover.	Not likely to occur. Pools occur on site but are less than 1 foot deep and lacks significant vegetation.
Spea hammondii	western spadefoot	--/SC	Grassland, sage scrub or occasionally chaparral. Standing water, puddles, vernal pools, needed for reproduction.	Low. Pools occur on site. Eggs, tadpoles, or adults not observed during fairy shrimp surveys.
Birds				
Accipiter cooperi	Cooper's hawk	--/WL	This raptor species requires mature forest, open woodlands, and river groves habitat.	Not Likely to Occur. The project site does not contain suitable habitat to support this species.
Haliaeetus leucocephalus	Bald eagle	DL/SE	Large bodies of open water for foraging, Nearby trees for nesting and roosting.	Not likely to occur. No large open bodies of water occur on site.
Artemisiospiza belli belli	Bell's sage sparrow	--/WL	Evenly spaced sage scrub	Not likely to occur. No shrubs on site.
Athene cunicularia	Burrowing owl	--/SC	Grassland, fallow agriculture, and areas of sparse cover, preferably with burrows of fossorial mammals.	Low. Not observed during focused survey. Burrows with potential to support limited to slope adjacent to Indian Avenue.
Laterallus jamaicensis coturniculus	California black rail	--/ST	Salt marshes, freshwater marsh, wet meadows, and mesic grasslands.	Not likely to occur. Species habitat does not occur on site.
Eremophila alpestris actia	California horned lark	--/WL	Grassland, agriculture fields, and disturbed fields.	**Present.** Species relative common on open field in area.
Polioptila californica californica	coastal California gnatcatcher	FT/SC	Coastal sage and other low scrub.	Not likely to occur. Shrub habitat does not occur.
Buteo regalis	ferruginous hawk	--/SC	Large areas of open grassland or shrub with elevated nest sites.	Not likely to occur. Site lacks significant vegetation and elevated nest sites.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
Spinus lawrencei	Lawrence's goldfinch	--/--	Arid open woodlands, near chaparral, weed fields and small bodies of water.	Not likely to occur. Site lacks significant vegetation. Pools on site are temporary in nature.
Vireo bellii pusillus	least Bell's vireo	FE/SE	Riparian areas with dense ground cover and stratified canopy, prefers willows.	Not likely to occur. No willow or other riparian canopy on site.
Lanius ludovicianus	loggerhead shrike	--/SC	Open grassland or shrubland with trees, utility poles, fence post or other perch sites.	Not likely to occur. Site disturbed and lacks, shrubs, trees and other perch sites.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	--/SC	Hillsides, with grassland, sage scrub, or chaparral.	Not likely to occur. No hillsides and site lacks significant vegetative cover.
Onychomys torridus ramona	southern grasshopper mouse	--/SC	Grassland and sparse sage scrub.	Not likely to occur. Grassland limited to short slope on west side. Site lacks significant vegetative cover.
Agelaius tricolor	tricolored blackbird	--/SC	Wetland with dense cattails, tall grasses or thickets of willows.	Not likely to occur. Cattails, tall grasses, and willows thickets lacking on site.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT/SE	Dense, thick riparian with willows, dense understory, slow-moving watercourses.	Not likely to occur. Riparian habitat does not occur on site.
Elanus leucurus	white-tailed kite	--/-- Fully protected	Grassland, agriculture with nearby woodland for nesting.	Low. Site has fallow agriculture, but trees nearby are in developed areas and not suitable for nesting.
Icteria virens	Yellow breasted chat	--/SC	Wide riparian woodland, dense willow thickets, with well-developed understory.	Not likely to occur. Riparian habitat does not occur on site.
Mammals				
Taxidea Taxus	American badger	--/SC	Upland grasslands, meadows, field.	Not Likely to Occur. Site disturbed and does not support burrows of appropriate size for species.
Chaetodipus fallax fallax	San Diego pocket mouse	--/SC	Sage scrub and grassland, sandy soils.	Not likely to occur. Soils are loam, and site lacks significant vegetation.

Scientific Name	Common Name	Status	Habitat Associations	Potential to Occur
Nyctinomops femorosaccus	Pocketed free-tailed bat	--/SC	Desert scrub, roosts in cliffs, rocky crevices in small colonies.	Not likely to occur. Roost locations do not occur on site.
Asio otus	long-eared owl	--/SC	Dense vegetation adjacent to open grassland or shrubland, and open forests.	Not likely to occur. Site lacks significant vegetation.
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE/SC	Sage scrub, sandy soils, alluvial fans, floodplains.	Not likely to occur. Soils are loam. Site lacks shrubs.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	--/SC	Primarily open scrub with short grasses.	Not likely to occur. Site lacks shrubs.
Neotoma lepida	San Diego desert woodrat	--/SC	Scrub and desert, rock outcrops, or areas of dense cover.	Not likely to occur. No scrub habitats or other dense cover. Neotoma middens not observed.
Dipodomys stephensi	Stephen's kangaroo rat	FE/ST	Open areas with sparse perennial cover and loose soil.	Not likely to occur. Loose soils and perennial cover not present.
Eumops perotis californicus	Western mastiff bat	--/SC	Roosts on cliffs, foraging over open areas with washes.	Not likely to occur. Washes and roosting habitat not present.
Lasiurus xanthinus	western yellow bat	--/SC	Desert grassland and scrub with an associated water feature.	Not likely to occur. Site lacks significant vegetation, water feature ephemeral.

[1] Listing codes are as follows: FE = Federally Endangered; FT = Federally Threatened; FC= Federal Candidate species; BCC = Birds of Conservation Concern; SE = State of California Endangered; FP = State of California Fully Protected; WL = State of California Wait-Listed; SC = State of California Species of Special Concern.

[2] County of San Diego Sensitive Animal List: Group 1 = Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met; Group 2 = Animals that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action; these species tend to be prolific within their suitable habitat types.

Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).

Species Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey

Appendix G

MSHCP Table 6-2

BOTANICAL NAME	COMMON NAME
Acacia spp. (all species)	acacia
Achillea millefolium	var. *millefolium* common yarrow
Ailanthus altissima	tree of heaven
Aptenia cordifolia	red apple
Arctotheca calendula	cape weed
Arctotis spp. (all species & hybrids)	African daisy
Arundo donax	giant reed or arundo grass
Asphodelus fistulosus	asphodel
Atriplex glauca	white saltbush
Atriplex semibaccata	Australian saltbush
Carex spp. (all species*)	sedge
Carpobrotus chilensis	ice plant
Carpobrotus edulis	sea fig
Centranthus ruber	red valerian
Chrysanthemum coronarium	annual chrysanthemum
Cistus ladanifer	(incl. hybrids/varieties) gum rockrose
Cortaderia jubata [*syn.C. Atacamensis*]	jubata grass, pampas grass
Cortaderia dioica [syn. *C. sellowana*]	pampas grass
Cotoneaster spp. (all species)	cotoneaster
Cynodon dactylon	(incl. hybrids varieties) Bermuda grass
Cyperus spp. (all species*)	nutsedge, umbrella plant
Cytisus spp. (all species)	broom
Delosperma 'Alba'	white trailing ice plant
Dimorphotheca spp. (all species)	African daisy, Cape marigold
Drosanthemum floribundum	rosea ice plant
Drosanthemum hispidum	purple ice plant
Eichhornia crassipes	water hyacinth
Elaeagnus angustifolia	Russian olive
Eucalyptus spp. (all species)	eucalyptus or gum tree
Eupatorium coelestinum [syn. Ageratina sp.]	mist flower
Festuca arundinacea	tall fescue
Festuca rubra	creeping red fescue
Foeniculum vulgare	sweet fennel
Fraxinus uhdei	(and cultivars) evergreen ash, shamel ash
Gaura (spp.) (all species)	gaura
Gazania spp. (all species & hybrids)	gazania
Genista spp. (all species)	broom
Hedera canariensis	Algerian ivy
Hedera helix	English ivy
Hypericum spp. (all species)	St. John's Wort
Ipomoea acuminata	Mexican morning glory
Lampranthus spectabilis	trailing ice plant
Lantana camara	common garden lantana
Lantana montevidensis [syn. *L. sellowiana*]	lantana
Limonium perezii	sea lavender
Linaria bipartita	toadflax
Lolium multiflorum	Italian ryegrass
Lolium perenne	perennial ryegrass
Lonicera japonica	(incl. 'Halliana') Japanese honeysuckle

BOTANICAL NAME	COMMON NAME
Lotus corniculatus	birdsfoot trefoil
Lupinus arboreus	yellow bush lupine
Lupinus texanus	Texas blue bonnets
Malephora crocea	ice plant
Malephora luteola	ice plant
Mesembryanthemum nodiflorum	little ice plant
Myoporum laetum	myoporum
Myoporum pacificum	shiny myoporum
Myoporum parvifolium	(incl. 'Prostratum') ground cover myoporum
Oenothera berlandieri	Mexican evening primrose
Olea europaea	European olive tree
Opuntia ficus-indica	Indian fig
Osteospermum spp. (all species)	trailing African daisy, African daisy,
Oxalis pes-caprae	Bermuda buttercup
Parkinsonia aculeata	Mexican palo verde
Pennisetum clandestinum	Kikuyu grass
Pennisetum setaceum	fountain grass
Phoenix canariensis	Canary Island date palm
Phoenix dactylifera	date palm
Plumbago auriculata	cape plumbago
Polygonum spp. (all species)	knotweed
Populus nigra 'italica	' Lombardy poplar
Prosopis spp. (all species)*	mesquite
Ricinus communis	castor bean
Robinia pseudoacacia	black locust
Rubus procerus	Himalayan blackberry
Sapium sebiferum	Chinese tallow tree
Saponaria officinalis	bouncing bet, soapwort
Schinus molle	Peruvian pepper tree, California pepper
Schinus terebinthifolius	Brazilian pepper tree
Spartium junceum	Spanish broom
Tamarix spp. (all species)	tamarisk, salt cedar
Trifolium fragiferum	strawberry clover
Tropaeolum majus	garden nasturtium
Ulex europaeus	prickly broom
Vinca major	periwinkle
Yucca gloriosa	Spanish dagger

An asterisk (*) indicates some native species of the genera exist that may be appropriate.

Sources: California Exotic Pest Plant Council, United States Department of Agriculture-Division of Plant Health and Pest Prevention Services, California Native Plant Society, Fremontia Vol. 26 No. 4, October 1998, The Jepson Manual; Higher Plants of California, and County of San Diego-Department of Agriculture.