GENERAL BIOLOGICAL ASSESSMENT
FOR
ASSESSOR'S PARCEL NUMBERS
327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018

ROMOLAND
RIVERSIDE COUNTY, CALIFORNIA

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1.0 Introduction

Hernandez Environmental Services (HES) was contracted to prepare a General Biological Assessment (GBA) and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for Assessor's Parcel Number (APNs) 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 located in the census designated area of Romoland, Riverside County, California.

1.1 Project Site Location

The approximately 39.9-acre project site is located at the northeast corner of Mapes Road and Tradewinds Drive in the census designated area of Romoland, Riverside County, California. The site consists of Riverside County APNs 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018. Specifically, the project site is located within Township 5 South, Range 3 West in Section 2 of the *Perris* United States Geological Survey (USGS) 7.5' topographic quadrangle. The center point latitude and longitude coordinates for the project site are 33° 45' 34.1246" North, 117° 09' 54.2262" West (Figures 1 and 2).

1.2 Project Description

The project site proposes the development of 157-lot single-family residential homes on approximately 39.9 acres in Romoland, Riverside County (Figure 3). The project includes a General Plan Amendment and zone change to accommodate medium-density residential development. New infrastructure, including internal roadways, utility systems, a retention basin, drainage features, stormwater facilities, and community amenities, will be constructed. Construction is anticipated to begin in September 2027 and continue for approximately 15 months. Temporary construction impacts will include noise, dust, traffic, and air emissions; mitigation measures will include temporary drainage controls, dust suppression, and the use of mufflers on construction equipment. Biological avoidance and minimization measures are discussed in this report to address sensitive biological resources. The proposed development will convert the entire project site from vacant land to residential use.

2.0 Methodology

2.1 Literature Review

HES conducted a literature review and reviewed aerial photographs and topographic maps of the project site and surrounding areas using United States Geological Survey (USGS) 7.5-minute topographic quadrangles. A five-mile radius was used to identify sensitive species with the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife Service (USFWS) Endangered Species Lists, Information for Planning and Consultation (IPaC) system, National Wetlands Inventory (NWI) mapping and the California

Native Plant Society (CNPS) Rare Plant Inventory to obtain species information for the project site. The CNDDB and USFWS critical habitat databases were utilized, together with Geographic Information System (GIS) software, to locate the previously recorded locations of sensitive plant and wildlife occurrences and designated critical habitat and determine the distance from the project site.

2.1.1 Western Riverside County MSHCP

The Western Riverside County MSHCP is a comprehensive, multijurisdictional habitat conservation planning program for western Riverside County, California. The purpose of the Western Riverside County MSHCP is to preserve native habitats, and to this end, the plan focuses upon the habitat needs of multiple species rather than one species at a time. The Western Riverside County MSHCP provides coverage/take authorization for some species listed under the federal or state Endangered Species Act (ESA) as well as non-listed special-status plant and wildlife species. It also provides mitigation for impacts to special-status species and their associated habitats.

Through agreements with the USFWS and California Department of Fish and Wildlife (CDFW), 146 listed and special-status plant and animal species receive some level of coverage under the Western Riverside County MSHCP. Of the 146 covered species, the majority have no additional survey needs or conservation requirements. Furthermore, the Western Riverside County MSHCP provides mitigation for project-specific impacts to these species, thereby reducing the degree of impact to below a level of significance, pursuant to the California Environmental Quality Act (CEQA).

Several of the species covered under the Western Riverside County MSHCP have additional survey requirements. These include the riparian communities and associated species addressed in Section 6.1.2 of the Western Riverside County MSHCP document ("Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools"), plants identified in Section 6.1.3 ("Narrow Endemic Plant Species"); and plants and animal species addressed in Section 6.3.2 ("Additional Survey Needs and Procedures").

2.1.2 Project Relationship to the Western Riverside County MSHCP

The project site is located within the Western Riverside County MSHCP boundaries. The County of Riverside, acting as the lead agency for the proposed project, is a permittee under the Western Riverside County MSHCP and, therefore, is afforded coverage under the state or federal ESAs for impacts to listed species covered by the plan. The County is required to document consistency with the Western Riverside County MSHCP in conjunction with any discretionary approvals for the project. As such, this report was prepared to provide all necessary information required to determine project consistency with the Western Riverside County MSHCP. The project site is located within San Jacinto Habitat Management Unit (HMU) of the Western Riverside County MSHCP. However, the project site is not located within a Criteria Cell or Cell Group, Conservation Area, Core Area, Linkage Area, or Public/Quasi-Public (P/QP) Lands. Thus, the project is not within plan-defined areas requiring surveys for narrow endemic plant species, criteria area species, amphibian species, mammal species, or invertebrate species. However, the project site is within plan defined areas requiring surveys for burrowing owl (*Athene*

cunicularia). A habitat assessment was conducted for burrowing owl determined that the site does provide suitable habitat for the species. Focused protocol burrowing owl surveys were conducted during the breeding season of 2025. The focused surveys determined that the burrowing owl does not currently occupy the project site. Despite the project site containing three man-made stormwater basins, these are soley artificial stormwater detention features which lack a defined stream channel, sustained hydrology and mature riparian vegetation. Therefore, the project site does not contain riparian/riverine habitat subject to the survey requirements of the MSHCP Section 6.1.2. More information can be found in this document under Section 4.4 Jurisdictional Waters.

2.2 Field Survey

On March 24, 2025, HES biologists conducted a field survey of the approximate 39.9-acre project site. The ambient temperature at 8:30 A.M was 59 degrees Fahrenheit and sunny with winds averaging 0-2 miles per hour from the south. The purpose of the field survey was to document the existing habitat conditions, obtain plant and animal species information, view the surrounding land uses, assess the potential for state and federal waters, assess the potential for wildlife movement corridors, and assess the presence of constituent elements for critical habitat, if present. Linear transects spaced approximately 50 to 100 feet apart were walked across the project site for 100 percent coverage. All species observed were recorded. Global Positioning System (GPS) waypoints were taken to delineate specific habitat types, species locations, state or federal waters, and any other information useful for the assessment of the project site. A comprehensive list of all plant and wildlife species that were detected during the field survey within the project site is included in Appendix A. Sensitive plant and wildlife species with the potential to occur within the project site are listed in Appendix B. Representative site photographs were taken and are included within Appendix C. In addition to the general biological field survey, focused surveys for burrowing owl (*Athene cunicularia*), Crotch's bumble bee (*Bombus crotchii*), and fairy shrimp were conducted to address applicable Western Riverside County MSHCP and regulatory requirements. The methods and results of these focused surveys are provided in Appendix E (Burrowing Owl Survey Report), Appendix F (Crotch's Bumble Bee Survey Report), and Appendix G (Fairy Shrimp Wet and Dry Season Survey Report), respectively.

3.0 Existing Conditions and Results

3.1 Environmental Setting

The project site is comprised primarily of ruderal habitat dominated by non-native plant species with patches of disturbed coastal sage scrub throughout the site and man-made basins within the northwest corner of the site. The site contains gentle slopes with an elevation range of 1,456 feet above mean sea level (AMSL) to 1,525 feet AMSL. The project site **is surrounded by vacant land to the north and rural residential development to the south, east, and west.**

3.2 Soils

According to the U.S. Department of Agriculture Natural Resources Conservation District's Web Soil Survey, nine soil classes are identified to occur on the project site (Appendix D, *Soils Map*). Soils at the project site are classified as follows:

- Cieneba rocky sandy loam (CkF2), 15 to 50 percent slopes, eroded;
- Exeter sandy loam (EnC2), 2 to 8 percent slopes, eroded

3.3 Plant and Habitat Communities

The 39.9-acre project site contains approximately 37.34 acres of disturbed/ruderal habitat, 1.67 acres of disturbed coastal sage scrub, and 0.89 acres of man-made basins. Following are descriptions of these habitat types:

Disturbed/Ruderal

The project site contains approximately 37.34 acres of disturbed/ruderal habitat. This area is characterized by dirt paths with sparse vegetation throughout. Dominant plant species found in this habitat include shortpod mustard (*Hirschfeldia incana*), fiddleneck (*Amsinckia* sp.), cheeseweed (*Malva parviflora*), and mouse barley (*Hordeum murinum*). Other species in this habitat include redstem filaree (*Erodium cicutarium*), telegraphweed (*Heterotheca grandiflora*), bur clover (*Medicago polymorpha*), annual yellow sweetclover (*Melilotus indicus*), tumbleweed (*Salsola tragus*) stinknet (*Oncosiphon pilulifer*), London rocket (*Sisymbrium irio*), and common sow thistle (*Sonchus oleraceus*).

Disturbed Coastal Sage Scrub

The project site contains approximately 1.67 acres of patches of disturbed coastal sage scrub habitat. These areas are dominated by California buckwheat and California aster (*Symphyotrichum chilense*). Other species in this habitat include California sagebrush (*Artemisia californica*), red brome (*Bromus rubens*), brittlebush (*Encelia californica*), ladies' tobacco (*Pseudognaphalium californicum*), and stinknet.

Man-made Basins

The project site contains approximately 0.89 acres of man-made basins within the northwestern corner of the site. The basins along the northern border contain emerging tamarisk (*Tamarix ramosissima*) and cottonwood (*Populus sp.*) trees. Dominant species within the basins include curly dock (*Rumex crispus*), tumbleweed, Maltese star thistle (*Centaurea melitensis*), bermuda grass (*Cynodon dactylon*), mulefat (*Baccharis salicifolia*), stinkwort (Dittrichia graveolens), shortpod mustard, and willow (*Salix* sp.)

3.4 Wildlife

General wildlife species documented on the project site or within the vicinity of the site include the mallard (*Anas platyrhynchos*), killdeer (*Charadrius vociferus*), common raven (*Corvus corax*), house sparrow (*Passer domesticus*), black-necked stilt (*Himantopus mexicanus*), black-tailed jackrabbit (*Lepus californicus*), northern mockingbird (*Mimus polyglottos*), black-crowned night heron (*Nycticorax nycticorax*), western meadowlark (*Sturnella neglecta*), and white-crowned sparrow (*Zonotrichia leucophrys*).

3.5 Regional Connectivity/ Wildlife Movement

Wildlife movement corridors can be local or regional in scale; their functions may vary temporally and spatially based on conditions and species present. Wildlife corridors represent areas where wildlife movement is concentrated due to natural or anthropogenic constraints. Local corridors provide access to resources such as food, water, and shelter. Animals use these corridors, which are often hillsides or riparian areas, to move between different habitats. Regional corridors provide these functions and link two or more large habitat areas. They provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations. The project site is not located within a designated wildlife corridor or linkage. The project site was evaluated for its function as a wildlife corridor that species use to move between wildlife habitat zones. The site consists primarily of ruderal land surrounded by rural residential development. No wildlife movement corridors were found to be present on the project site.

4.0 Sensitive Biological Resources

4.1 Threatened and Endangered Species

A total of 33 sensitive species of plants and 58 sensitive species of animals have the potential to occur on or within the vicinity of the project location. These include those species listed or candidates for listing by the USFWS, CDFW, and CNPS. All habitats with the potential to be used by sensitive species were evaluated during the site visit and a determination has been made for the presence or probability of presence within this report. This section will address those species listed as Candidate, Rare, Threatened, or Endangered under the state and federal endangered species laws or directed to be evaluated under the Western Riverside County MSHCP. Sensitive species which have potential to occur will also be discussed in this section. All sensitive species within a 5-mile radius of the project site were reviewed and a complete list of those species are discussed within Appendix B.

4.1.1 Threatened and Endangered Plants

A total of sixteen plant species listed as state and/or federally Threatened, Endangered, Rare, or Candidate Species; listed as 1B.1 on the CNPS Rare Plant Inventory; listed as a species within a survey area under the MSHCP; or have a potential to exist on the project site will be discussed in this section. Below are descriptions of these species:

Chaparral sand-verbena
Chaparral sand-verbena (*Abronia villosa var. aurita*) is ranked 1B.1 in the CNPS Rare Plant Inventory. It is found in sandy areas of chaparral, coastal scrub, and desert dunes habitats. No habitat for this species is present on site. **This species is not present.**

Munz's onion
Munz's onion (*Allium munzii*) is a federally Endangered Species, a state Threatened Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. It is found in chaparral, coastal scrub, valley and foothill grasslands, cismontane woodland, and pinyon and juniper woodland. It is commonly found in heavy clay soils. No habitat for this species is present on the project site. **This species is not present.**

San Diego ambrosia
San Diego ambrosia (*Ambrosia pumila*) is a federally Endangered Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. Its habitat includes wetlands in chaparral, coastal sage scrub, and valley and foothill grassland. It is commonly found in sandy loam or clay soil and sometimes in alkaline soils. This species persists where disturbance has been superficial. It is also sometimes found on margins or near vernal pools. Based on the site visits and the site's disturbed condition, the project site does not contain potentially suitable habitat for this species. **This species is not present.**

Marsh sandwort
Marsh sandwort (*Arenaria paludicola*) is a federally and state Endangered Species and ranked 1B.1 in the CNPS Rare Plant Inventory. It is found in freshwater marsh, wetland, and marsh and swamp habitats. No habitat for this species is present on the project site. **This species is not present.**

Jaeger's milk-vetch
Jaeger's milk-vetch (*Astragalus pachypus var. jaegeri*) is ranked 1B.1 in the CNPS Rare Plant Inventory. It is often found in dry ridges and valleys, and open sandy slopes. Its habitat includes sandy areas in coastal scrub, chaparral, valley and foothill grassland, and cismontane woodland. No habitat for this species is present on the project site. **This species is not present.**

San Jacinto Valley crownscale
San Jacinto Valley crownscale (*Atriplex coronata var. notatior*) is listed as a federally Endangered Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. The project site is within a survey area for this criteria area species. Its habitat includes playas, valley and foothill grassland, and vernal pools. No habitat for this species is present on the project site. **This species is not present.**

Parish's brittlescale
Parish's brittlescale (*Atriplex parishii*) is ranked 1B.1 in the CNPS Rare Plant Inventory. Its habitat includes shadescale scrub, alkali sink, riparian, playas, vernal pools and wetland. It is usually found on drying alkali flats with fine soils. No habitat for this species is present on the project site. **This species is not present.**

Nevin's barberry
Nevin's barberry (*Berberis nevinii*) is a federally and state Endangered Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. It is typically found on steep, north facing slopes or in low grade sandy washes. Its habitat includes chaparral, cismontane woodland, coastal scrub, and riparian scrub. No habitat for this species is present on the project site. **This species is not present.**

Thread-leaved brodiaea
Thread-leaved brodiaea (*Brodiaea filifolia*) is a federally Threatened Species, a state Endangered Species, and is ranked 1B.1 in the CNPS Rare Plant Inventory. The project site is within a survey area for this criteria area species. This species is usually associated with annual grassland and vernal pools and is often surrounded by shrubland habitats. Its habitats include chaparral, cismontane woodlands, coastal sage scrub, valley and foothill grasslands, vernal pools, and wetland. No habitat for this species is present on the project site. The clay soils required for this species are absent on site. **This species is not present.**

Smooth tarplant
Smooth tarplant (*Centromadia pungens ssp. laevis*) is ranked 1B.1 in the CNPS Rare Plant Inventory. The project site is within a survey area for this criteria area species. The species habitat includes alkali playa, chenopod scrub, meadows and seeps, riparian woodlands, wetlands, and valley and foothill grasslands. No habitat for this species is present on the project site. The project site is too disturbed. **This species is not present.**

Salt marsh bird's-beak
Salt marsh bird's-beak (*Chloropyron maritimum ssp. maritimum*) is a federally and state Endangered Species. This species is limited to the higher zones of salt marsh habitat at elevations of less than ten meters. Its habitat includes coastal dunes, marsh and swamp, salt marsh, and wetland. No habitat for this species is present on the project site. **This species is not present.**

Parry's spineflower
Parry's spineflower (*Chorizanthe parryi var. parryi*) is ranked 1B.1 in the CNPS Rare Plant Inventory. The species occurs in dry, sandy soils on dry slopes and flats, sometimes at the interface of two vegetations types, such as chaparral and oak woodland. Its habitat includes coastal scrub, chaparral, cismontane woodland, and valley and foothill grassland. No habitat for this species is present on the project site. **This species is not present.**

Slender-horned spineflower
Slender-horned spineflower (*Dodecahema leptoceras*) is a federally and state Endangered Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. This species is typically found near flood deposited terraces and washes. Its habitat includes chaparral, cismontane woodland, and coastal scrub (alluvial fan sage scrub). No habitat for this species is present on the project site. **This species is not present.**

Coulter's goldfields
Coulter's goldfields (*Lasthenia glabrata ssp.coulteri*) is ranked 1B.1 in the CNPS Rare Plant Inventory. The project site is within a survey area for this criteria area species. Its habitat includes alkali playas,

marsh, swamp, salt marsh, vernal pool, and wetland. It is usually found on alkaline soils in playas, sinks, and grasslands. No habitat for this species is present on the project site. **This species is not present.**

Spreading navarretia
Spreading navarretia (*Navarretia fossalis*) is a federally Threatened species and is ranked 1B.1 in the CNPS Rare Plant Inventory. The project site is within a survey area for this narrow endemic plant species. Its habitat includes alkali playa, chenopod scrub, marsh and swamp, vernal pools, and wetlands. This species is typically found in swales and vernal pools, often surrounded by other habitat types. No habitat for this species is present on the project site. **This species is not present.**

California Orcutt grass
California Orcutt grass (*Orcuttia californica*) is a federally and state Endangered Species. The project site is within a survey area for this narrow endemic plant species. It is ranked 1B.1 in the CNPS Rare Plant Inventory. It is found in vernal pools. No habitat for this species is present on the project site. **This species is not present.**

San Bernardino aster
San Bernardino aster *(Corethrogyne filaginifolia var. incana)* is ranked 1B.2 in the CNPS rare plant inventory. Its habitat includes Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, and valley and foothill grassland. This species is typically found in vernally mesic grassland or near ditches, streams, springs, and disturbed areas. No habitat for this species is present on the project site. **This species is not present.**

4.1.2 Threatened and Endangered Wildlife

A total of seventeen animal species listed as state and/or federally Threatened, Endangered, Rare, or Candidate Species will be reviewed in this section. Sensitive species which have a potential to occur will also be discussed in this section. Below are descriptions of these species:

Southwestern pond turtle
Southwestern pond turtle (*Actinemys pallida*) is a federally listed Proposed Threatened species. This species uses permanent and seasonal aquatic habitats including rivers, sloughs, lakes, reservoirs, ponds, and irrigation canals. Nesting typically occurs within 100 meters of aquatic habitat in areas with compact well-drained soil, sparse vegetation, and good sun exposure. There is no habitat for this species on the project site. **This species is not present.**

Tricolored blackbird
Tricolored blackbird (*Agelaius tricolor)* is a state Threatened Species and a CDFW Species of Special Concern. Its habitat includes freshwater marsh, marsh and swamp, swamp, and wetland. This species is largely endemic to California and is most numerous in and around Central Valley. This species requires

open accessible water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. There is no habitat for this species on the project site. **This species is not present.**

Burrowing owl
Burrowing owl (*Athene cunicularia*) is a state listed Candidate Endangered species. Its habitat includes coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojave desert scrub, Sonoran desert scrub, and valley and foothill grassland. This species is typically found in open and dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. It is a subterranean nester and is dependent upon burrowing mammals, most notably the California ground squirrel. Potential habitat for this species is present on the project site. Focused surveys for this species were conducted on the project site (Appendix E). Although suitable habitat occurs on the project site, this species was not observed during focused surveys. **This species is not present.**

Crotch's bumble bee
Crotch's bumble bee (*Bombus crotchii*) is a state Candidate Endangered Species. It's located in coastal California east to the Sierra-Cascade crest and south into Mexico. Its food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. Focused Crotch's bumble bee (CBB) surveys were performed on site June 30th, July 18th, and August 11th, 2025 (Appendix F). No CBB was found on site during the focused surveys. **This species is not present.**

Vernal pool fairy shrimp
Vernal pool fairy shrimp (*Branchinecta lynchi*) is a federally Threatened Species. This species is found in seasonal pools of water in valley and foothill grasslands. This species typically inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools. Dry season surveys were performed on site June 10, 2025, and 15 wet season survey visits were conducted between February 21st and May 23rd, 2025 (Appendix G). No sensitive fairy shrimp species were found on site during the focused surveys. **This species is not present.**

Western snowy plover
Western snowy plover (*Charadrius alexandrinus nivosus*) is federally Threatened Species and a CDFW Species of Special Concern. It is found in great basin standing waters, sand shore, and wetland. This species needs sandy, gravelly, or friable soils for nesting. The project site does not contain suitable habitat for this species. **This species is not present.**

Western yellow-billed cuckoo
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a federally Threatened and state Endangered Species. This species typically nests in riparian jungles of willows, often mixed with cottonwoods, with a lower story of blackberry, nettles, or wild grape. It is found in riparian forest habitat. The project site does not contain suitable habitat for this species. **This species is not present.**

San Bernardino kangaroo rat
San Bernardino kangaroo rat (*Dipodomys merriami parvus*) is a federally Endangered Species, a state Candidate Endangered Species, and a CDFW Species of Special Concern. It is found in coastal scrub habitat. This species is found in alluvial scrub vegetation on sandy loam substrates, characteristic of alluvial fans and flood plains. It needs early to intermediate seral stages. The project site does not contain suitable habitat for this species. **This species is not present.**

Stephens' kangaroo rat
Stephens' kangaroo rat (*Dipodomys stephensi*) is a federally listed Endangered and state listed Threatened Species. This species is found in coastal sage scrub with sparse vegetation cover, and in valley and foothill grasslands. This species prefers buckwheat, chamise, brome grass, and filaree and will burrow into firm soil. No habitat for this species is present on the project site. **This species is not present.**

Southwestern willow flycatcher
Southwestern willow flycatcher (*Empidonax traillii extimus*) is a federally and state Endangered Species. It is found in riparian woodland habitat in southern California. The project site does not contain suitable habitat for this species. **This species is not present.**

Quino checkerspot butterfly
Quino checkerspot butterfly (*Euphydryas editha quino*) is a federally Endangered Species. It is found in chaparral and coastal sage scrub. This species requires high densities of food plants, including *Plantago erecta*, *P. insularis*, and *Orthocarpus purpurescens*. The project site does not have suitable habitat for this species. **This species is not present.**

Bald eagle
Bald eagle (*Haliaeetus leucocephalus*) is a state Endangered Species and CDFW Fully Protected Species. This species is found in lower montane coniferous forest and old-growth forest. They nest in large old-growth or trees with open branches, especially ponderosa pine. The project site does not contain suitable habitat for this species. **This species is not present.**

California black rail
California black rail (*Laterallus jamaicensis coturniculus*) is a state Threatened Species and a CDFW Fully Protected Species. It inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. This species needs water depths of about one inch that do not fluctuate throughout the year and dense vegetation for nesting habitat. Its habitat includes brackish marsh, freshwater marsh, marsh and swamp, salt marsh, and wetland. The project site does not have suitable habitat for this species. **This species is not present.**

Coastal California gnatcatcher
Coastal California gnatcatcher (*Polioptila californica californica*) is a federally Threatened Species and CDFW Species of Special Concern. This species is found in coastal bluff scrub and coastal scrub habitat. This species is typically found in low, coastal sage scrub in arid washes, on mesas and slopes. The project site does not have suitable habitat for this species. **This species is not present.**

Western spadefoot
Western spadefoot (*Spea hammondii*) is a federally listed Proposed Threatened species. This species needs vernal pools for breeding and egg-laying. Its habitat includes grassland habitats but can be found in valley-foothill hardwood woodlands. Suitable habitat for this species occurs on site. **This species has the potential to be present.**

Riverside fairy shrimp
Riverside fairy shrimp (*Streptocephalus woottoni*) is a federally Endangered Species. This species is found in coastal scrub, valley and foothill grassland, vernal pool, and wetland habitat. This species typically inhabits seasonally astatic pools filled by winter/spring rains. It is endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales, or earth slump basins in grassland and coastal sage scrub habitat. Dry season surveys were performed on site June 10, 2025, and 15 wet season survey visits were conducted between February 21st and May 23rd, 2025. No sensitive fairy shrimp species were found on site during the focused surveys. **This species is not present.**

Least Bell's vireo
Least Bell's vireo (*Vireo bellii pusillus)* is a federally and state Endangered Species. This species is found in riparian forest, riparian scrub, and riparian woodland. Nesting habitat of this species is restricted to willow and/or mule fat dominated riparian scrub along permanent or nearly permanent streams. The project site does not contain suitable habitat for this species. **This species is not present.**

4.2 Critical Habitat

The project site is not within or adjacent to any federal critical habitat for endangered species. The closest critical habitat is spreading navarretia critical habitat located approximately 1.1 miles northwest of the project site near the San Jacinto River.

4.3 Nesting Birds

Migratory non-game native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. The project site contains trees and shrubs that can be utilized by nesting birds during the nesting bird season of February 1 through September 15.

4.4 Jurisdictional Waters

The project site does not contain waters or habitat that would be considered jurisdictional by CDFW under Section 1602 of the Fish and Game Code. In addition, no Waters of the United States, which are regulated by the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) under Sections 404 and 401 of the Clean Water Act, are present on the project site.
After a review of National Wetlands Inventory mapping, USGS topographic mapping, aerial imagery, and field observations we did not identify any natural drainages, wetlands, streams, or other aquatic features on the project site that would be considered Waters of the United States or Waters of the State. The project site contains multiple man-made basins within the northwestern corner of the project site. These features collect and hold water for short periods of time resulting from storm events. The onsite basins are artificial features constructed to collect stormwater and do not exhibit a defined bed and bank, ordinary high-water mark, or connectivity to downstream jurisdictional waters.

5.0 Project Impacts

5.1 Impacts to Existing Habitats

The 39.9-acre project site contains ruderal habitat throughout. The development of the proposed project is expected to impact the entire site containing 37.34 acres of disturbed/ruderal habitat, 1.67 acres of disturbed coastal sage scrub, and 0.89 acres of man-made basins (Figure 5).

5.2 Impacts to Sensitive Species

5.2.1 Sensitive Plant Species

The following state or federally listed plants or CNPS listed plants have the potential to be impacted by the project.

San Diego ambrosia

San Diego ambrosia is a federally Endangered Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. Earlier drafts identified potentially suitable habitat; however, after multiple site visits and consideration of the site's disturbed condition, HES determined that the project site does not contain potentially suitable habitat for this species. San Diego ambrosia is covered under the Western Riverside County MSHCP; project participation in the MSHCP provides the applicable conservation framework for covered impacts.

5.2.2 Sensitive Animal Species

Western spadefoot

Western spadefoot is a federally listed Proposed Threatened species. The project site does contain potentially suitable habitat for this species. This species is covered under the Western Riverside County MSHCP. Project participation with the MSHCP provides adequate mitigation for this species.

5.3 Impacts to Nesting Birds

If the project removes trees, shrubs or ground disturbing activities between February 1 and September 15, the project will have a potential to impact nesting birds. Implementation of the measures identified in the Recommendations section of this report will ensure that potential impacts to nesting birds are less than significant.

5.4 Impacts to Critical Habitat

The project site is not within or adjacent to any federal critical habitat for endangered species. No impacts to critical habitat would occur.

5.5 Impacts to Jurisdictional Drainages

The project site does not contain any state or federal jurisdictional drainages; therefore, no impacts will result from project implementation.

5.6 Impacts to Wildlife Movement Corridors

The project site was evaluated for its function as a wildlife corridor that species would use to move between wildlife habitat zones. Typically, mountain canyons or riparian corridors are used by wildlife as corridors; the project site does not contain these features. The site consists primarily of ruderal land surrounded by rural residential development. No wildlife movement corridors were found to be present on the project site. No impacts to wildlife movement corridors are expected.

5.7 Conflict with Local Policies or Ordinances Protecting Biological Resources

Trees including, palo verde (*Parkinsonia* sp.), cottonwood (*Populus* sp.), and willow (*Salix* sp.) exist on site. Should the proposed project result in the removal of trees, it will be required to comply with County of Riverside Ordinance No. 559.

5.8 Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan

The site is located within the boundaries of the Western Riverside MSHCP. If Western Riverside MSHCP guidelines and requirements are followed, no conflicts are expected.

6.0 Western Riverside County MSHCP Consistency Analysis

6.1 MSHCP Requirements

The project site is located within the Western Riverside County MSHCP San Jacinto Habitat Management Unit (HMU). The project site is not located within a Criteria Cell or Cell Group, Conservation Area, Core Area, Public/Quasi-Public Land, or Linkage identified for Reserve Assembly under the Western Riverside County MSHCP; therefore, Reserve Assembly Analysis is not warranted. The site is located within the MSHCP Burrowing Owl Survey Area. During the biological assessment, specialized surveys were identified for burrowing owl, Crotch's bumble bee, and fairy shrimp. Focused surveys were conducted for all three, and the results are provided in Appendices E, F, and G, respectively. No other MSHCP-covered species were determined to have suitable habitat within the project site. The project site was evaluated for species identified in Table 9-3 of the Western Riverside County MSHCP. This evaluation included review of literature sources, MSHCP mapping resources, Appendix B species data, and field observations. The site consists primarily of disturbed ruderal habitat, limited disturbed coastal sage scrub, and artificial stormwater basins surrounded by rural residential development. This area has unsuitable habitat for Table 9-3 species. Impacts to species identified as Not Adequately Conserved under the Western Riverside County MSHCP are not expected. A discussion of the applicable Western Riverside County MSHCP requirements follows:

Section 6.1.2 Species Associated with Riparian/Riverine Habitat and Vernal Pools

The project site was evaluated for the presence of riparian/riverine areas as defined under Section 6.1.2 of the Western Riverside County MSHCP. Three man-made stormwater basins occur within the northwestern portion of the site and contain limited amount of willow (*Salix* sp.) and cottonwood (*Populus* sp.). However, these features are artificial detention basins and do not possess the hydrologic, vegetative, or ecological characteristics necessary to function as riparian/riverine habitat as defined by the MSHCP.

Section 6.1.2 of the MSHCP defines riparian/riverine areas as "habitats associated with a nearby freshwater source or areas supporting freshwater flow during all or a portion of the year." The onsite basins are artificial stormwater detention features and were not created to provide riparian or wetland habitat. The basins lack a defined stream channel, sustained surface flows, mature riparian vegetation, and habitat functions capable of supporting riparian-requiring wildlife species. The project site does not contain riparian/riverine habitat subject to the survey requirements of MSHCP Section 6.1.2. Further, during the biological assessments, none of the riparian/riverine bird species listed in Section 6.1.2 of the MSHCP were found within the project site. The functions and values of the onsite basins were evaluated in accordance with MSHCP Section 6.1.2. The basins provide limited temporary stormwater storage but do not provide significant riparian habitat, floodplain connectivity, or nutrient cycling functions identified in Section 6.1.2 of the MSHCP. Therefore, the onsite basins are not considered riparian/riverine habitat subject to the survey requirements of MSHCP Section 6.1.2, and focused surveys for riparian/riverine bird species were not warranted.

Due to the lack of suitable riparian habitat on the project site, focused surveys for riparian/riverine bird species listed in Section 6.1.2 of the MSHCP are not warranted. Vernal pools are seasonal depressional wetlands that occur under Mediterranean climate conditions of the west coast and in glaciated conditions of northeastern and midwestern states. They are covered by shallow water for variable periods from winter to spring but may be completely dry most of the summer and fall. Vernal pools are usually associated with hard clay layers or bedrock, which helps keep water in the pools. Vernal pools and seasonal depressions usually are dominated by hydrophytic plants, hydric soils, and evidence of hydrology. The entire site was evaluated for the presence of habitat capable of supporting branchiopods. The site was evaluated as described in the USFWS Survey Guidelines for the Listed Large Branchiopods (November 13, 2017). The project site contains multiple basins, ditches, and ruts that allow for pooling water. Wet and dry season fairy shrimp surveys were conducted on the site in 2025. The results came back positive for the Lindahl's fairy shrimp (*Branchinecta lindahli*). No federally listed Endangered or Threatened species were observed during the surveys.

Section 6.1.3 Sensitive Plant Species

The project site is not located within the Western Riverside County MSHCP Narrow Endemic Plant Species Survey Area (NEPSSA) pursuant to Section 6.1.3 of the MSHCP. Therefore, the NEPSSA requirements are not applicable to the project.

Section 6.1.4 Urban/Wildlands Interface Guidelines

The project site is not located within or adjacent to a Western Riverside County MSHCP Conservation Area; therefore, the project site is not required to address Section 6.1.4 of the Western Riverside County MSHCP.

Section 6.3.2 Additional Surveys and Procedures

The project site is not located within the Western Riverside County MSHCP Additional survey areas for amphibians, mammals, or any special linkage areas. In addition, the project site is not located within the Western Riverside County MSHCP Criteria Area Plant Species Survey Area (CAPSSA) pursuant to Section 6.3.2 of the Western Riverside County MSHCP. However, the project site is located within the Western Riverside County MSHCP Additional survey area for burrowing owl. The habitat assessment conducted on the site found that the project site does provide suitable burrows/nesting opportunities for burrowing owl. Therefore, focused surveys for this species were conducted on the project site in March, April, May, and June, 2025 (Appendix E). Survey dates and conditions are described in Table 1 below.

Table 1. Survey Information

Survey	Date	Survey Start Time	Survey End Time	Sunrise/Sunset	Weather

1	March 24, 2025	0720 hours	O830 hours	0645 hours 1903 hours	53-59 degrees Fahrenheit, clear skies, winds 0- 2 miles per hour from the south
2	April 15, 2025	0700 hours	O815 hours	0616 hours 1920 hours	50-53 degrees Fahrenheit, 100% cloudy, winds 0-2 miles per hour from the northeast
3	May 12, 2025	O643 hours	O745 hours	0549 hours 1940 hours	58-61 degrees Fahrenheit, 40% cloudy, winds 0-8 miles per hour from the north
4	June 30, 2025	O640 hours	O740 hours	O542 hours 2003 hours	66-70 degrees Fahrenheit, clear skies, winds 0-3 miles per hour from the northwest

Well-drained soils, piles of compacted dirt, debris piles, and evidence of fossorial mammals were observed on the site. Approximately 103 suitable burrows were identified and recorded. However, burrowing owl signs such as molted feathers, pellets, prey remains, or whitewash were not found. No burrowing owls were observed within the project area. Based on the absence of burrowing owls and burrowing owl evidence within the project area, it can be concluded that the project site is not currently in use by burrowing owl. However, because the project site is located within the Western Riverside County MSHCP burrowing owl survey area, a 30-day preconstruction survey is required prior to commencement of project activities (e.g., vegetation clearing, clearing and grubbing, tree removal, or site watering) to ensure that no owls have colonized the site in the days or weeks preceding project activities. If BUOW are found to have colonized the project site prior to construction, the project proponent will immediately coordinate with CDFW and as directed by CDFW, prepare a Burrowing Owl Protection and Relocation Plan for CDFW review and approval prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a preconstruction survey will again be necessary to ensure burrowing owl has not colonized the site since it was last disturbed. If burrowing owl is found, the same CDFW coordination described above will be required.

7.0 Recommendations

Implementation of the following measures will mitigate any potential impacts resulting from project activities. Project construction shall comply with the Construction Guidelines identified in Section 7.5.3 of the Western Riverside County MSHCP to minimize temporary and permanent impacts to biological resources. In addition, Best Management Practices (BMPs) identified in Appendix C of the Western Riverside County MSHCP shall be implemented during all construction activities to reduce indirect impacts including dust, erosion, runoff, noise, and unauthorized disturbance outside approved work areas

Nesting Birds

- It is recommended that vegetation removal be conducted outside of the nesting season for migratory birds to avoid direct impacts. The nesting season is between February 1 and September 15.
- If vegetation removal will occur during the migratory bird nesting season, it is recommended that pre-construction nesting bird surveys be performed within three days prior to vegetation removal.
- If active nests are found during nesting bird surveys, they shall be flagged and a suitable buffer shall be fenced around the nests, as determined by a qualified biologist.
- A biological monitor shall visit the site during ground disturbing activities to ensure all fencing is in place and no sensitive species are being impacted.

Burrowing Owl

Due to the fact that the project site is located within the Western Riverside County MSHCP burrowing owl survey area, a 30-day preconstruction survey is required prior to commencement of project activities (e.g., vegetation clearing, clearing and grubbing, tree removal, or site watering) to ensure that no owls have colonized the site in the days or weeks preceding project activities. If BUOW are found to have colonized the project site prior to construction, the project proponent will immediately coordinate with CDFW and, as directed by CDFW, prepare a Burrowing Owl Protection and Relocation Plan for CDFW review and approval prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a preconstruction survey will again be necessary to ensure burrowing owl has not colonized the site since it was last disturbed. If burrowing owl is found, the same CDFW coordination described above will be required.

8.0 Certification

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

Date 08-10-2026 Signed 

PROJECT MANAGER

Date 09-22-2025 Signed

Fieldwork Performed By:

Carissa Gomez and Sarah Vasquez

ASSOCIATE BIOLOGISTS

9.0 References

California Department of Fish and Wildlife (CDFW), Natural Diversity Database (CNDDB). Accessed June 2025. California Department of Fish and Wildlife, Sacramento, California.

Garrett, K. and J. Dunn, 1981. Birds of Southern California. Los Angeles Audubon Society. The Artisan Press, Los Angeles, California.

Grenfell, W. E., M. D. Parisi, and D. McGriff, 2003. A Checklist of the Amphibians, Reptiles, Birds and Mammals of California. California Wildlife Habitat Relationship System, California Department of Fish and Game, Sacramento, California.

Grinnell, J., 1933. Review of the Recent Mammal Fauna of California. University of California Publications in Zoology, 40:71-234.

Hall, E. R., 1981. The Mammals of North America, Volumes I and II. John Wiley and Sons, New York, New York.

Hickman, J. C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press.

Hickman, J. C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press.

Ingles, L. G., 1965. Mammals of the Pacific States. Stanford University Press, Stanford, California.

Jameson, jr., E. W. and H. J. Peters. California Mammals. University of California Press, Berkeley, Los Angeles, London. 403 pp.

List of Vegetation Alliances and Associations. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September 2010.

Munz, P.A., 1974. A Flora of Southern California. University of California Press, Berkeley, California.

Peterson, R. 1990 *A Field Guide to Western Birds*. Houghton Mifflin Company, Boston, MA.

Riverside County Integrated Project (RCIP) 2003 Final Multiple Species Habitat Conservation Plan (MSHCP). Riverside, CA.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens 2009 *A Manual of California Vegetation, 2nd edition*. California Native Plant Society Press, Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). 2025. Federal Endangered and Threatened Species by County. Available online at: USFWS Environmental Conservation Online System. Accessed June 2025.

U.S. Fish and Wildlife Service (USFWS). 2025. Information for Planning and Consultation (IPaC). Available online at: IPaC. Accessed June 2026.

U.S. Fish and Wildlife Service (USFWS). 2025. National Wetlands Inventory (NWI). Available online at: National Wetlands Inventory. Accessed June 2026.

USGS (United States Geological Survey). 2021. Steele Peake, California, Quadrangle. 7.5 Minute Series (topographic map).

Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 2025.

Western Riverside County Multiple Species Habitat Conservation Plan. *Burrowing Owl Instructions for Western Riverside Multiple Species Habitat Conservation Plan.*

Western Riverside County Multiple Species Habitat Conservation Plan. Section *6.0 MSHCP Implementing Structure.*

WRCRCA (Western Riverside County Regional Conservation Authority). 2021a. WRCRCA MSHCP Information Tool. Accessed from: https://www.wrc-rca.org/rcamaps/. Accessed June 2025.

WRCRCA. 2021b. Western Riverside County Multiple Species Habitat Conservation Plan. Accessed online at: http://www.wrc-rca.org/about-rca/multiple-species-habitat-conservation-plan/. Accessed June 2025.

FIGURES



Legend

Project Site

N

Hernandez Environmental Services

Figure 1

Location Map

Mapes and Tradewind

Romoland, Riverside County, CA

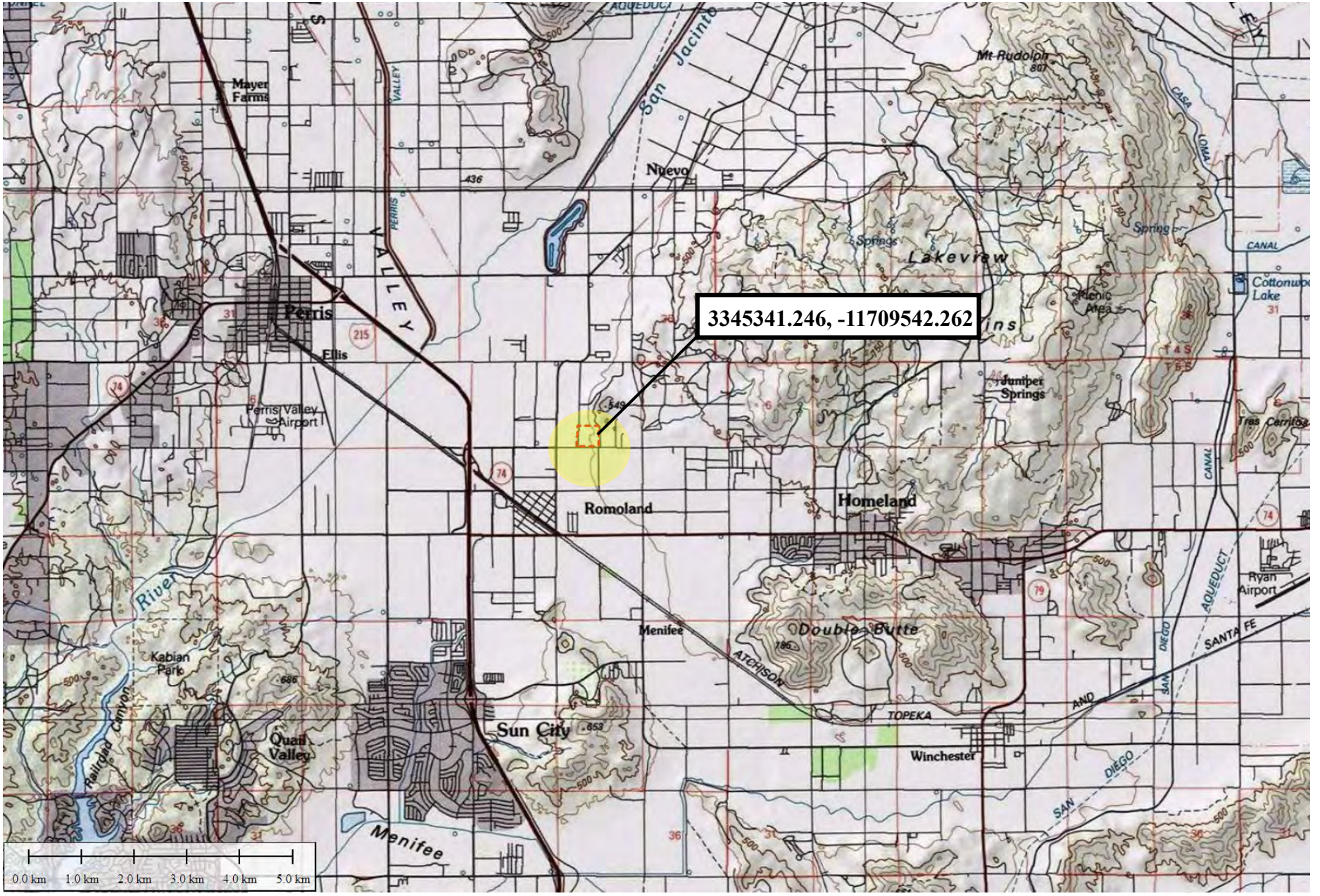


Figure 2

Vicinity Map

Mapes and Tradewind

Romoland, Riverside County, CA

Legend

Project Site

N

Hernandez Environmental Services

IN THE UNINCORPORATED TERRITORY OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP NO. 39316

JANUARY 2026

GENERAL NOTES

1. TOTAL PROJECT AREA = 36.6323 AC
2. THIS SUBDIVISION MAP INCLUDES THE ENTIRE CONTIGUOUS OWNERSHIP OF THE LAND DIVIDER
3. THE SITE HAS "NO GROSS LOTS 2 ACRE OR LARGER IN SIZE"
4. THE PROJECT IS WITHIN THE MOUNTAIN VISTA COMMUNITY FACILITIES DISTRICT, NOT WITHIN A RECREATION AND PARK DISTRICT OR COUNTY SERVICE AREA AUTHORIZED TO COLLECT FEES FOR PARK AND RECREATION SERVICES.
5. PROPOSED IMPROVEMENT SCHEDULE 'A' SUBDIVISION.
6. THOMAS BROTHERS GUIDE: RIVERSIDE COUNTY, PAGE 808, GRID E6
7. EXISTING ZONING: R-R
   PROPOSED ZONING: R-4
8. EXISTING LAND USE: LOW DENSITY RESIDENTIAL (LDR)
   PROPOSED LAND USE: MEDIUM DENSITY RESIDENTIAL (MDR)
9. ADJACENT LAND USE:
   NORTH – LOW DENSITY RESIDENTIAL (LDR)
   SOUTH – CITY OF MENIFEE (RR)
   EAST – LOW DENSITY RESIDENTIAL (LDR)
   WEST – LOW DENSITY RESIDENTIAL (LDR)
10. THIS PROJECT IS NOT WITHIN AN EXISTING SPECIFIC PLAN
11. THE SITE IS WITHIN PERRIS UNION DISTRICT
12. THIS TRACT IS WITHIN S.E. 1/4 OF THE S.W. 1/4 OF SECTION 2, T5S, R3W, S.B.M.–STREET LIGHTING–CSA.
13. TOPO SOURCE AEROTECH MAPPING DATED 05/02/25.
14. THIS PROPERTY IS SUBJECT TO LOW LIQUEFACTION POTENTIAL AMP, NO GEOLOGIC HAZARDS, AND NOT WITHIN A SPECIAL STUDY ZONE.
15. THIS TRACT IS WITHIN FLOOD ZONE "X" FEMA COMMUNITY MAP NO. 06065C1445H.
16. THERE ARE NO KNOWN EXISTING WELLS ON THE PROPERTY.
17. THERE ARE NO EXISTING BUILDINGS LOCATED ON THIS SITE.
18. THIS TRACT CONTAINS 157 NUMBERED LOTS AND 15 LETTERED LOTS.
19. THIS PARCEL CONTAINS FOUR (4) PHASES
    TRACT 39316–1 = 32 RESIDENTIAL LOTS/39 TOTAL LOTS AND STREETS A,B,C,E,H,I,&J
    TRACT 39316–2 = 34 RESIDENTIAL LOTS/37 TOTAL LOTS AND STREETS C&D
    TRACT 39316–3 = 43 RESIDENTIAL LOTS/47 TOTAL LOTS AND STREETS B,D,G,H&J
    TRACT 39316–4 = 48 RESIDENTIAL LOTS/49 TOTAL LOTS AND STREETS B,D&F

EXISTING EASEMENTS

EASEMENTS SHOWN HEREON ARE LISTED IN CHICAGO TITLE COMPANY, PRELIMINARY REPORT NO. 00205355–K27 DATED APRIL 29, 2025, NUMBERED ACCORDING TO REPORT.

PLOTTABLE EASEMENTS ARE SHOWN FROM AN OWNER–SUPPLIED TITLE REPORT INDICATED BY A "◯", NON–PLOTTABLE EASEMENTS ARE INDICATED BY " □ " ALL WITHIN THE "EXCEPTION" ITEMS OF THE TITLE REPORT.

THE FOLLOWING ITEMS AFFECT PARCEL A:

[2] EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043, OF OFFICIAL RECORDS.
AFFECTS ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

[8] EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH D. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS, IMPROVEMENTS WERE NOT CONSTRUCTED. (PLOTTED HEREON)(TO BE VACATED)

[9A] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'PRIVATE DRAINAGE EASEMENT' AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

[9B] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 5, 18, 28, AND 29 AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

[11] EASEMENT FOR THE PURPOSE OF PUBLIC UTILITIES AND RIGHTS INCIDENTAL THERETO, AS GRANTED TO SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED DECEMBER 2, 2022 AS INST NO. 2022–0489553 OFFICIAL RECORDS
AFFECTS: A PORTION OF THE LAND OVER LOT 1 (PLOTTED HEREON)(TO REMAIN)

THE FOLLOWING MATTERS AFFECT PARCEL B:

[12] EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED DECEMBER 27, 1946 IN BOOK 802, PAGE 595 OF OFFICIAL RECORDS, AND RE–RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 491, OF OFFICIAL RECORDS. AFFECTS PORTION OF THE LAND OVER LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

[13] EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 501 OF OFFICIAL RECORDS, AFFECTS PORTION OF THE LAND OVER LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

[14] EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043 OF OFFICIAL RECORDS. AFFECTS ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

[21] EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687–1, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 1–3 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH D. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS, IMPROVEMENTS WERE NOT CONSTRUCTED. ALSO AFFECTS WATER QUALITY BASIN IN LOT 18. (PLOTTED HEREON)(TO BE VACATED)

[22] THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY SAID MAP/PLAT.
AFFECTS: LOTS 1 THROUGH 6, AND 19 ABUTTING MAPES ROAD (LETTERED LOT B) (PLOTTED HEREON)

[23A] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAINS THE EASEMENTS INDICATED AS 'BLANKET DRAINAGE EASEMENT OVER OPEN SPACE WATER QUALITY BASIN LOT 18, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES, THE EASEMENT INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE AND LANDSCAPING LOT 19, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES. (TO BE VACATED)

[23B] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 1THROUGH 7, 12 AND 17 AS SHOWN ON TRACT NO. 31687–1, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 1–3 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

THE FOLLOWING ITEMS AFFECT PARCEL C:

[25] EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED DECEMBER 27, 1946 IN BOOK 802, PAGE 595 OF OFFICIAL RECORDS, AND RE–RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 491, OF OFFICIAL RECORDS. AFFECTS PORTION OF THE LAND OVER LOT 1 AND LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

[26] EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED SEPTEMBER 27, 1966 IN INST. NO 1966–95825 OFFICIAL RECORDS, (PLOTTED HEREON)(TO REMAIN)

[27] EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043, OF OFFICIAL RECORDS.
AFFECTS ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

[31] EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH E. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS, IMPROVEMENTS WERE NOT CONSTRUCTED. (PLOTTED HEREON) (TO BE VACATED)

[32] THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY SAID MAP/PLAT. AFFECTS LOT 18 ABUTTING MAPES ROAD (LETTERED LOT A) (PLOTTED HEREON)

[33A] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAINS THE EASEMENTS INDICATED AS 'BLANKET DRAINAGE EASEMENT OVER OPEN SPACE WATER QUALITY BASIN LOT 18, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES, THE EASEMENT INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE AND LANDSCAPING LOT 19, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

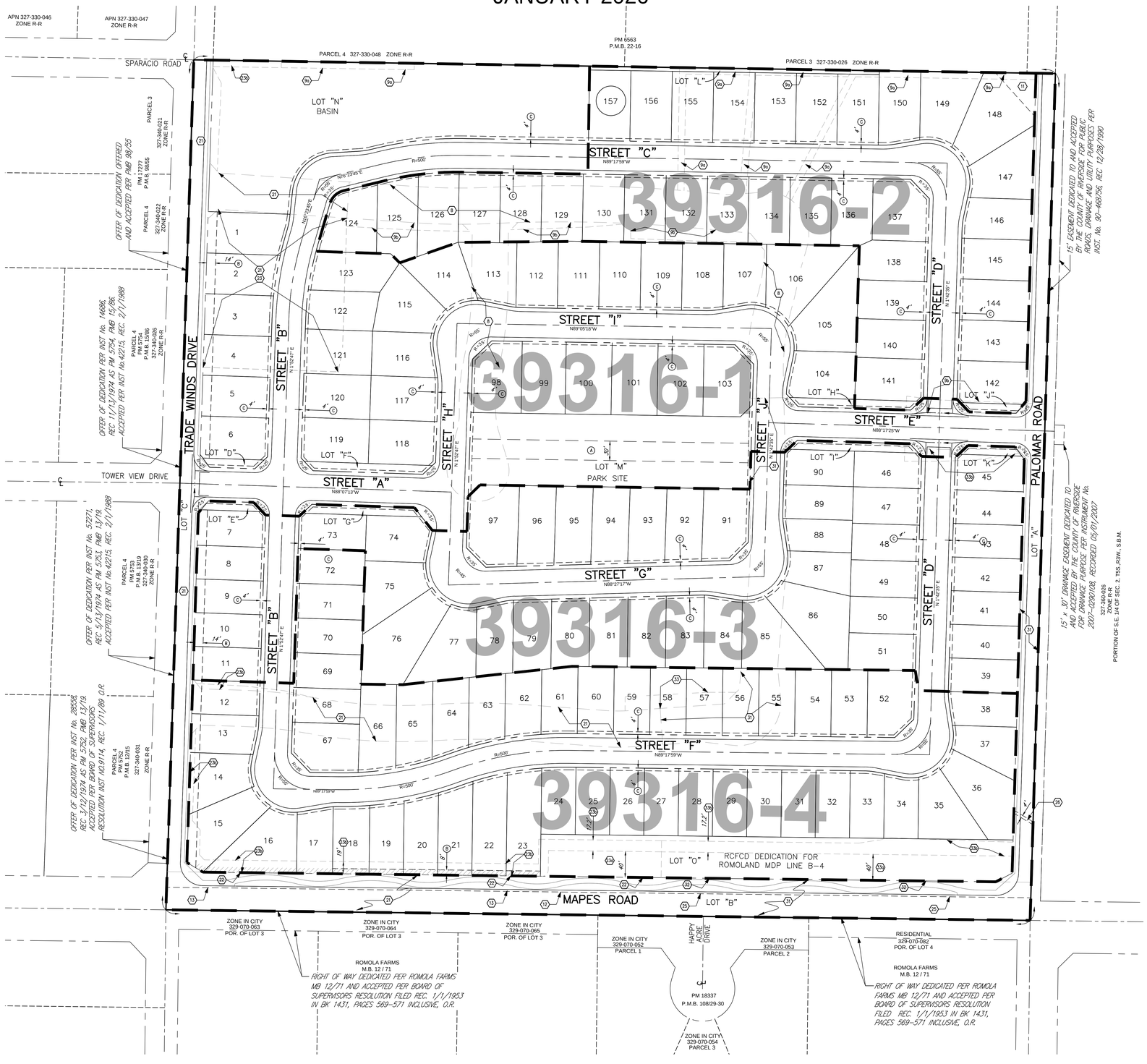
[33B] EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 1,6,11,12,13 AND 14 AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

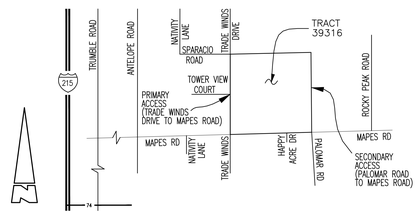
PROPOSED EASEMENTS

(A) INDICATES PROPOSED EASEMENT FOR STORM DRAIN PURPOSES.

(B) INDICATES PROPOSED EASEMENT FOR LANDSCAPE PURPOSES.

(C) INDICATES PROPOSED PUBLIC UTILITY EASEMENT FOR UTILITY PURPOSES.





VICINITY MAP

N.T.S.

OWNER/DEVELOPER

EDP SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612
PHONE: (949)794–1188
CONTACT: DANE PALANJIAN

CIVIL ENGINEER

KWC ENGINEERS
1181 CALIFORNIA AVE., SUITE 235
CORONA, CA 92881
PHONE: (951) 734–2130
CONTACT: NICK NGUYEN

ARCHITECT

KEVIN L CROOK ARCHITECTS, INC.
1360 REYNOLDS AVENUE
IRVINE, CA 92614
PHONE: (949) 660–1568
CONTACT: JEFF ADDISON

PROPERTY ADDRESS

NORTH SIDE OF MAPES ROAD BETWEEN TRADE WINDS DRIVE AND PALOMAR ROAD IN THE UNINCORPORATED COUNTY OF RIVERSIDE, CA

ASSESSOR'S PARCEL NUMBER

327–490–001 THRU 327–490–016; 327–491–001
THRU 327–491–018; 327–480–001 THRU
327–480–022 & 327–481–001 THRU 327–481–012

LEGAL DESCRIPTION

REAL PROPERTY IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING A SUBDIVISION OF LOTS 1 THROUGH 31 AND LETTERED LOTS A THROUGH D OF TRACT NO. 31687, FILED IN BOOK 486, PAGES 7 THROUGH 10 OF MAPS, TOGETHER WITH LOTS 1 THROUGH 19 AND LETTERED LOTS A THROUGH D OF TRACT NO. 31687–1, FILED IN BOOK 486, PAGES 1 THROUGH 3 OF MAPS, TOGETHER WITH LOTS 1 THROUGH 18 AND LETTERED LOTS A THROUGH C OF TRACT NO. 31687–2, FILED IN BOOK 486, PAGES 4 THROUGH 6 OF MAPS, ALL INCLUSIVE IN THE OFFICE OF THE COUNTY RECORDER OF THE COUNTY RIVERSIDE, CALIFORNIA.

BENCHMARK

RIVERSIDE COUNTY BENCHMARK NO. 600–31–68. DESCRIBED AS 700' NORTH OF INTERSECTION OF MURRIETA ROAD AND ETHANAC ROAD, 40' WEST OF MURRIETA ROAD AND LEVEL WITH ROAD, 3 FT NORTHEAST OF THE SOUTHEAST CORNER OF 8 FT CHAIN LINK FENCE OF EMWD MURRIETA PUMPING STATION, 2 FT NORTH OF A MARKER POST, A SET BRASS CAP IN TOP OF A CONCRETE POST.

ELEV.= 1414.416 FEET (NGVD 29 DATUM)

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "BILL", "NOCO" AND "PSAA" NAD 83 (NSRS2011) EPOCH 2010.00 GRID DISTANCES MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 0.99991457. CALCULATIONS ARE MADE AT SET MONUMENT "POINT # 1 WITH COORDINATES OF N 2221797.0090', E 6284021.8260', AT ELEVATION 1507.01' (WGS) GEOID 18. ELEVATIONS ARE ADJUSTED TO BENCHMARK STAMPED "600–31–68, COUNTY OF RIVERSIDE (PUBLISHED ELEVATION= 1414.416 FEET NGVD 29 DATUM).

UTILITY PURVEYORS

WATER:	EASTERN MUNICIPAL WATER DISTRICT (EMWD)	(951) 928–3777
SEWER:	EASTERN MUNICIPAL WATER DISTRICT (EMWD)	(951) 928–3777
GAS:	SOUTHERN CALIFORNIA GAS COMPANY	(951) 335–7674
ELECTRIC:	SOUTHERN CALIFORNIA ELECTRIC COMPANY	(951) 930–8580
PHONE:	FRONTIER	(805) 388–7351
CABLE:	SPECTRUM	(844) 780–6054
WASTE:	CR&R ENVIRONMENTAL SERVICES	(951) 943–1991

LEGEND

- PROPOSED PROJECT BOUNDARY
- PROPOSED PHASING BOUNDARY
- PROPOSED LOT LINES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- EXISTING EASEMENTS

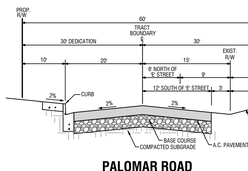
60 0 60 120 180
SCALE IN FEET

STATEMENT OF PREPARER

I HEREBY STATE THAT THIS MAP WAS PREPARED UNDER MY SUPERVISION AND THAT THE OWNER OF RECORD HAS KNOWLEDGE OF AND CONSENTS TO THE FILING OF THIS MAP.

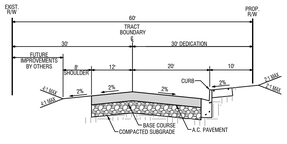
REGISTERED PROFESSIONAL ENGINEER NICK V. NGUYEN No.59138 CIVIL STATE OF CALIFORNIA

NICK V. NGUYEN, P.E. — DATE



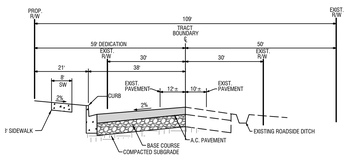
PALOMAR ROAD (LOOKING NORTH) TYPICAL STREET SECTION (PER RIV. CO. STD. NO. 104-A)

NOT TO SCALE



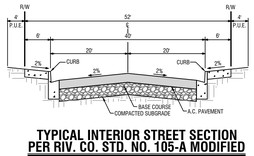
TRADE WINDS DRIVE (LOOKING NORTH) TYPICAL STREET SECTION

NOT TO SCALE



MAPES ROAD (LOOKING EAST) TYPICAL STREET SECTION

NOT TO SCALE



TYPICAL INTERIOR STREET SECTION PER RIV. CO. STD. NO. 105-A MODIFIED

NOT TO SCALE

MARK	REVISIONS	APPR.	DATE

SCALE: 1" = 60'
DATE: JAN/2026
DESIGNED: GG
CHECKED: NN

E|P|D SOLUTIONS, INC

KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235•CORONA, CA. 92881•3370 • 951–734–2130

SHEET 1 OF 2 SHEETS

R:\2025\2025\PRELIM\MAPS\TENTL\2507 TTM 01.dwg 02/03/26 2:31pm

Area Table (SQ. FT.)		
LOT	Area	LAND USE
LOT "A"	37687	ROW DEDICATION
LOT "B"	78821	ROW DEDICATION
LOT "C"	37845	ROW DEDICATION
LOT "D"	1155	OPEN SPACE AND LANDSCAPE
LOT "E"	1167	OPEN SPACE AND LANDSCAPE
LOT "F"	2576	OPEN SPACE AND LANDSCAPE
LOT "G"	2402	OPEN SPACE AND LANDSCAPE
LOT "H"	2632	OPEN SPACE AND LANDSCAPE
LOT "I"	2632	OPEN SPACE AND LANDSCAPE
LOT "J"	1209	OPEN SPACE AND LANDSCAPE
LOT "K"	1209	OPEN SPACE AND LANDSCAPE
LOT "L"	2688	STORM DRAIN MAINTENANCE AREA
LOT "M"	48875	PARK SITE
LOT "N"	87169	BASIN
LOT "O"	47245	RCFC

Area Table (SQ. FT.)	
LOT	Area
1	7724
2	6855
3	6568
4	6552
5	6552
6	6738
7	5686
8	5418
9	5418
10	5418
11	5418
12	5418
13	6093
14	7056
15	8814
16	9279
17	5502
18	5911
19	5806
20	6358
21	7214
22	8110
23	8684
24	5487
25	5512
26	5512
27	5512
28	5512
29	5512
30	5512
31	5512
32	5512
33	5468
34	5093
35	7426
36	9383
37	5868
38	5386
39	5564
40	5564

Area Table (SQ. FT.)	
LOT	Area
41	5564
42	5564
43	5564
44	5564
45	5850
46	5708
47	5867
48	5867
49	5867
50	5867
51	5863
52	7125
53	5824
54	5824
55	5824
56	5824
57	5824
58	5824
59	5824
60	5824
61	5716
62	5603
63	5829
64	6411
65	7012
66	7551
67	7512
68	5582
69	5582
70	5582
71	5582
72	5582
73	5707
74	6817
75	7681
76	11650
77	8588
78	6289
79	6486
80	6243

Area Table (SQ. FT.)	
LOT	Area
81	6313
82	6449
83	6586
84	6417
85	9128
86	10924
87	5760
88	5195
89	5615
90	5927
91	7543
92	6499
93	6639
94	6778
95	6918
96	7057
97	9359
98	8124
99	7567
100	7896
101	7896
102	7896
103	7932
104	7362
105	10430
106	10669
107	6367
108	6630
109	6656
110	6656
111	6656
112	6527
113	6993
114	6758
115	7720
116	6674
117	7066
118	7060
119	7059
120	7072

Area Table (SQ. FT.)	
LOT	Area
121	7134
122	6518
123	7359
124	7955
125	7714
126	7452
127	6933
128	6871
129	6679
130	6656
131	6656
132	6656
133	6656
134	6656
135	6656
136	6565
137	7876
138	6479
139	6360
140	6360
141	6878
142	6920
143	6741
144	6741
145	6741
146	6598
147	8099
148	12058
149	8147
150	7144
151	6976
152	6976
153	6976
154	6976
155	6976
156	6976
157	6976

PROPOSED EASEMENTS

- (A) INDICATES PROPOSED EASEMENT FOR STORM DRAIN PURPOSES.
- (B) INDICATES PROPOSED EASEMENT FOR LANDSCAPE PURPOSES.
- (C) INDICATES PROPOSED PUBLIC UTILITY EASEMENT FOR UTILITY PURPOSES.

UTILITY LEGEND

- IRR — EXISTING IRRIGATION
- E — EXISTING ELECTRICAL LINE
- (OH) — EXISTING OVERHEAD ELECTRICAL LINE
- X" W — EXISTING WATER LINE
- TV — EXISTING CABLE LINE
- X" G — EXISTING GAS LINE

60' 0 60' 120' 180'
SCALE IN FEET

39316-1
39316-2
39316-3
39316-4

E|P|D SOLUTIONS, INC

TENTATIVE TRACT MAP NO. 39316

KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
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SHEET 2 OF 2 SHEETS

R:\25\2505\PRELIM\MAPS\TENT\2505T TTM 02.dwg 02/03/26 2:02pm

SPARACIO ROAD

TRADE WINDS DRIVE

TOWER VIEW DRIVE

MAPES ROAD

PALOMAR ROAD

HAPPY ACRE DRIVE

STREET 'A'

STREET 'B'

STREET 'C'

STREET 'D'

STREET 'E'

STREET 'F'

STREET 'G'

STREET 'H'

STREET 'I'

LOT "M"

LOT "N"

LOT "O"

TRACT BOUNDARY

PRELIMINARY GRADING PLAN
MAPES ROAD RESIDENTIAL
COUNTY OF RIVERSIDE, CA

PREPARED FOR:
EPD SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235 CORONA, CA. 92881-3376 951-734-2130

SHEET 2 OF 4 SHEET

SCALE IN FEET

JN: 22-22552 R:\22\22552\PRELIM\GRAD\Preliminary Grading Plan\22552 PRELIM GRADING PLAN 02.dwg 02/01/23 3:56pm

IN THE UNINCORPORATED TERRITORY OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

PRELIMINARY GRADING PLAN

N/E CORNER OF MAPES ROAD AND TRADE WINDS DRIVE

GENERAL NOTES

1. TOTAL PROJECT AREA = 36.6323 AC
2. THIS SUBDIVISION MAP INCLUDES THE ENTIRE CONTIGUOUS OWNERSHIP OF THE LAND DIVIDER
3. THE SITE HAS "NO GROSS LOTS 2 ACRE OR LARGER IN SIZE"
4. THE PROJECT IS WITHIN THE MOUNTAIN VISTA COMMUNITY FACILITIES DISTRICT, NOT WITHIN A RECREATION AND PARK DISTRICT OR COUNTY SERVICE AREA AUTHORIZED TO COLLECT FEES FOR PARK AND RECREATION SERVICES.
5. PROPOSED IMPROVEMENT SCHEDULE 'A' SUBDIVISION.
6. THOMAS BROTHERS GUIDE: RIVERSIDE COUNTY, PAGE 808, GRID E6
7. EXISTING ZONING: R-R
   PROPOSED ZONING: R-4
8. EXISTING LAND USE: LOW DENSITY RESIDENTIAL (LDR)
   PROPOSED LAND USE: MEDIUM DENSITY RESIDENTIAL (MDR)
9. ADJACENT LAND USE:
   NORTH – LOW DENSITY RESIDENTIAL (LDR)
   SOUTH – CITY OF MENIFEE (RR)
   EAST – LOW DENSITY RESIDENTIAL (LDR)
   WEST – LOW DENSITY RESIDENTIAL (LDR)
10. THIS PROJECT IS NOT WITHIN AN EXISTING SPECIFIC PLAN
11. THE SITE IS WITHIN PERRIS UNION DISTRICT
12. THIS TRACT IS WITHIN S.E. 1/4 OF THE S.W. 1/4 OF SECTION 2, T5S, R3W, S.B.M.–STREET LIGHTING–CSA.
13. TOPO SOURCE AEROTECH MAPPING DATED 05/02/25.
14. THIS PROPERTY IS SUBJECT TO LOW LIQUEFACTION POTENTIAL AMP, NO GEOLOGIC HAZARDS, AND NOT WITHIN A SPECIAL STUDY ZONE.
15. THIS TRACT IS WITHIN FLOOD ZONE "X" FEMA COMMUNITY MAP NO. 06065C1445H.
16. THERE ARE NO KNOWN EXISTING WELLS ON THE PROPERTY.
17. THERE ARE NO EXISTING BUILDINGS LOCATED ON THIS SITE.
18. THIS TRACT CONTAINS 157 NUMBERED LOTS AND 15 LETTERED LOTS.
19. THIS PARCEL CONTAINS FOUR (4) PHASES
    TRACT 39316–1 = 32 RESIDENTIAL LOTS/39 TOTAL LOTS AND STREETS A,B,C,E,H,I,&J
    TRACT 39316–2 = 34 RESIDENTIAL LOTS/37 TOTAL LOTS AND STREETS C&D
    TRACT 39316–3 = 43 RESIDENTIAL LOTS/47 TOTAL LOTS AND STREETS B,D,G,H&J
    TRACT 39316–4 = 48 RESIDENTIAL LOTS/49 TOTAL LOTS AND STREETS B,D&F

EXISTING EASEMENTS

EASEMENTS SHOWN HEREON ARE LISTED IN CHICAGO TITLE COMPANY; PRELIMINARY REPORT NO. 00205355–K27 DATED APRIL 29, 2025, NUMBERED ACCORDING TO REPORT:

PLOTTABLE EASEMENTS ARE SHOWN FROM AN OWNER–SUPPLIED TITLE REPORT INDICATED BY A "○"; NON–PLOTTABLE EASEMENTS ARE INDICATED BY "□" ALL WITHIN THE "EXCEPTION" ITEMS OF THE TITLE REPORT.

THE FOLLOWING ITEMS AFFECT PARCEL A:

[2] EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043, OF OFFICIAL RECORDS.
AFFECTS ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

(8) EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH D. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS. IMPROVEMENTS WERE NOT CONSTRUCTED. (PLOTTED HEREON)(TO BE VACATED)

(9a) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'PRIVATE DRAINAGE EASEMENT' AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

(9b) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 5, 18, 28, AND 29 AS SHOWN ON TRACT NO. 31687, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 7–10 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

(11) EASEMENT FOR THE PURPOSE OF PUBLIC UTILITIES AND RIGHTS INCIDENTAL THERETO, AS GRANTED TO SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED DECEMBER 2, 2022 AS INST NO. 2022–0489553 OFFICIAL RECORDS
AFFECTS: A PORTION OF THE LAND OVER LOT 1 (PLOTTED HEREON)(TO REMAIN)

THE FOLLOWING MATTERS AFFECT PARCEL B:

(12) EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED DECEMBER 27, 1946 IN BOOK 802, PAGE 505 OF OFFICIAL RECORDS; AND RE–RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 491, OF OFFICIAL RECORDS. AFFECTS PORTION OF THE LAND OVER LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

(13) EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 501 OF OFFICIAL RECORDS, AFFECTS PORTION OF THE LAND OVER LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

[14] EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043 OF OFFICIAL RECORDS. AFFECTS ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

(21) EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687–1, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 1–3 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH D. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS. IMPROVEMENTS WERE NOT CONSTRUCTED. ALSO AFFECTS WATER QUALITY BASIN IN LOT 18. (PLOTTED HEREON)
(TO BE VACATED)

(22) THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY SAID MAP/PLAT.
AFFECTS: LOTS 1 THROUGH 6, AND 19 ABUTTING MAPES ROAD (LETTERED LOT B) (PLOTTED HEREON)

(23a) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAINS THE EASEMENTS INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE WATER QUALITY BASIN LOT 18, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES, THE EASEMENT INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE AND LANDSCAPING LOT 19, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES. (TO BE VACATED)

(23b) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 1 THROUGH 7, 12 AND 17 AS SHOWN ON TRACT NO. 31687–1, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 1–3 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

THE FOLLOWING ITEMS AFFECT PARCEL C:

(25) EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED DECEMBER 27, 1946 IN BOOK 802, PAGES 505 OF OFFICIAL RECORDS; AND RE–RECORDED JANUARY 18, 1950 IN BOOK 1139, PAGE 491, OF OFFICIAL RECORDS. AFFECTS PORTION OF THE LAND OVER LOT 1 AND LETTERED LOT B. (PLOTTED HEREON)(TO REMAIN)

(26) EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND UNDERGROUND FACILITIES AND RIGHTS INCIDENTAL THERETO, AS SET FORTH IN A DOCUMENT RECORDED SEPTEMBER 27, 1966 IN INST. NO 1966–95825 OFFICIAL RECORDS, (PLOTTED HEREON)(TO REMAIN)

(27) EASEMENT FOR THE PURPOSE OF PERPETUAL AIR OR FLIGHT EASEMENT, ALSO REFERRED TO AS 'AVIGATION RIGHTS.' RECORDED MARCH 28, 2007 AS INST. NO 2007–0210043, OF OFFICIAL RECORDS.
AFFECTS: ALL THE AIR SPACE ABOVE SAID LAND. (BLANKET IN NATURE)

(31) EASEMENTS FOR STREET AND PUBLIC UTILITY PURPOSES AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. A PORTION OF THE LAND OVER LETTERED LOTS A THROUGH E. OFFERED FOR DEDICATION AND ACCEPTED AS SUBJECT TO IMPROVEMENTS IN ACCORDANCE TO COUNTY STANDARDS. IMPROVEMENTS WERE NOT CONSTRUCTED. (PLOTTED HEREON) (TO BE VACATED)

(32) THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY SAID MAP/PLAT. AFFECTS LOT 18 ABUTTING MAPES ROAD (LETTERED LOT A) (PLOTTED HEREON)

(33a) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAINS THE EASEMENTS INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE WATER QUALITY BASIN LOT 18, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES, THE EASEMENT INDICATED AS 'BLANKET DRAINAGE EASEMENT' OVER OPEN SPACE AND LANDSCAPING LOT 19, THE RETENTION IS FOR THE MAINTENENCE OF FLOOD CONTROL FACILITES AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

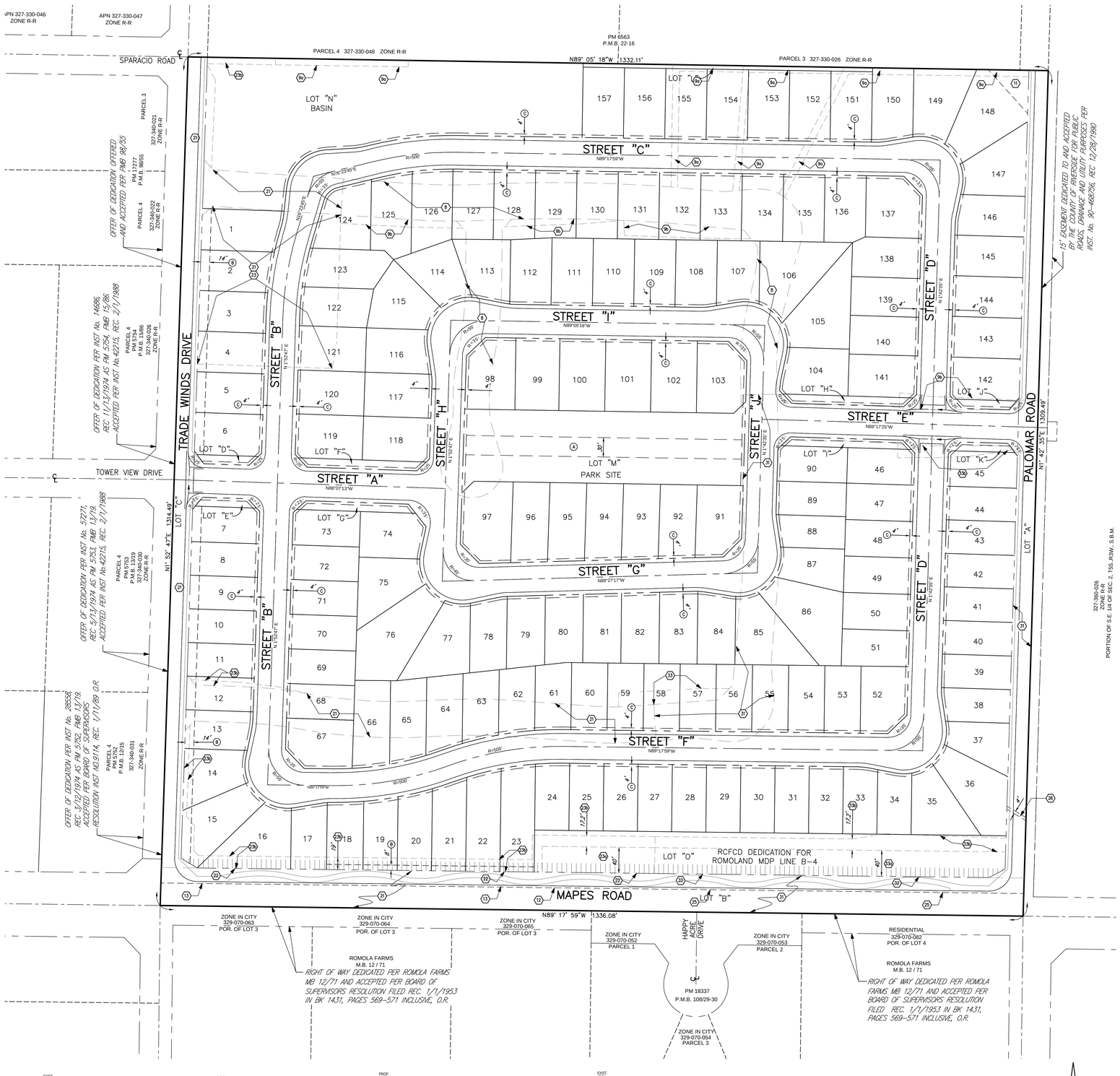
(33b) EASEMENTS FOR THE PRIVATE USE FOR THE SOLE BENEFIT OF WATERMARKE HOMES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, THEIR SUCCESSORS, ASSIGNEES, AND LOT OWNERS WITHIN SAID TRACT. WATERMARKE HOMES, LLC RETAIN THE EASEMENTS INDICATED AS 'LANDSCAPE AND MAINTENANCE EASEMENT' OVER LOTS 1,6,11,12,13 AND 14 AS SHOWN ON TRACT NO. 31687–2, RECORDED SEPTEMBER 28, 2022 IN BOOK 486, PAGES 4–6 INCLUSIVE OF MAPS. (PLOTTED HEREON)(TO BE VACATED)

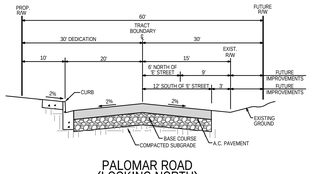
PROPOSED EASEMENTS

(A) INDICATES PROPOSED EASEMENT FOR STORM DRAIN PURPOSES.

(B) INDICATES PROPOSED EASEMENT FOR LANDSCAPE PURPOSES.

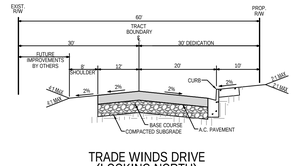
(C) INDICATES PROPOSED PUBLIC UTILITY EASEMENT FOR UTILITY PURPOSES.





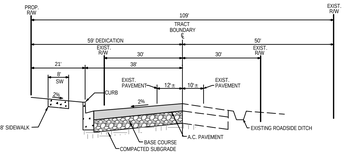
PALOMAR ROAD
(LOOKING NORTH)
TYPICAL STREET SECTION
(PER RIV. CO. STD. NO. 104-A)

NOT TO SCALE



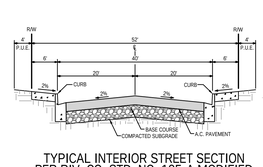
TRADE WINDS DRIVE
(LOOKING NORTH)
TYPICAL STREET SECTION

NOT TO SCALE



MAPES ROAD
(LOOKING EAST)
TYPICAL STREET SECTION

NOT TO SCALE

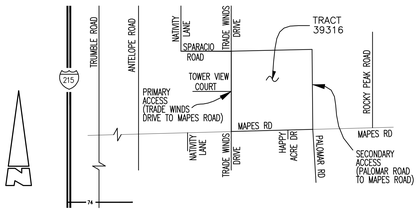


TYPICAL INTERIOR STREET SECTION
PER RIV. CO. STD. NO. 105-A MODIFIED

NOT TO SCALE

60 0 60 120 180

SCALE IN FEET



VICINITY MAP

N.T.S.

INDEX

	SHEET NO.
TITLE SHEET	1
CONCEPTUAL GRADING PLAN	2
PRELIMINARY UTILITY PLAN	3
PRELIMINARY UTILITY PLAN	4

OWNER/DEVELOPER

EDP SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612
PHONE: (949)794–1188
CONTACT: DANE PALANJIAN

CIVIL ENGINEER

KWC ENGINEERS
1181 CALIFORNIA AVE., SUITE 235
CORONA, CA 92881
PHONE: (951) 734–2130
CONTACT: NICK NGUYEN

ARCHITECT

KEVIN L CROOK ARCHITECTS, INC.
1360 REYNOLDS AVENUE
IRVINE, CA 92614
PHONE: (949) 660–1568
CONTACT: JEFF ADDISON

PROPERTY ADDRESS

NORTH SIDE OF MAPES ROAD BETWEEN TRADE WINDS DRIVE AND PALOMAR ROAD IN THE UNINCORPORATED COUNTY OF RIVERSIDE, CA

ASSESSOR'S PARCEL NUMBER

327–490–001 THRU 327–490–016; 327–491–001
THRU 327–491–018; 327–480–001 THRU
327–480–022 & 327–481–001 THRU 327–481–012

LEGAL DESCRIPTION

REAL PROPERTY IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING A SUBDIVISION OF LOTS 1 THROUGH 31 AND LETTERED LOTS A THROUGH D OF TRACT NO. 31687, FILED IN BOOK 486, PAGES 7 THROUGH 10 OF MAPS, TOGETHER WITH LOTS 1 THROUGH 19 AND LETTERED LOTS A THROUGH D OF TRACT NO. 31687–1, FILED IN BOOK 486, PAGES 1 THROUGH 3 OF MAPS, TOGETHER WITH LOTS 1 THROUGH 18 AND LETTERED LOTS A THROUGH C OF TRACT NO. 31687–2, FILED IN BOOK 486, PAGES 4 THROUGH 6 OF MAPS, ALL INCLUSIVE IN THE OFFICE OF THE COUNTY RECORDER OF THE COUNTY RIVERSIDE, CALIFORNIA.

BENCHMARK

RIVERSIDE COUNTY BENCHMARK NO. 600–31–68. DESCRIBED AS 700' NORTH OF INTERSECTION OF MURRIETA ROAD AND ETHANAC ROAD, 40' WEST OF MURRIETA ROAD AND LEVEL WITH ROAD, 3 FT NORTHEAST OF THE SOUTHEAST CORNER OF B FT CHAIN LINK FENCE OF EMWD MURRIETA PUMPING STATION, 2 FT NORTH OF A MARKER POST, A SET BRASS CAP IN TOP OF A CONCRETE POST.

ELEV.= 1414.416 FEET (NGVD 29 DATUM)

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "BILL", "NOCO" AND "7584" NAD 83 (NSRS2011) EPOCH 2010.00 GRID DISTANCES MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 0.99991487. CALCULATIONS ARE MADE AT SET MONUMENT "POINT # 1 WITH COORDINATES OF N 2221797.0090', E 6284021.8260', AT ELEVATION 1507.01' (WGS) GEOID 18. ELEVATIONS ARE ADJUSTED TO BENCHMARK STAMPED "600–31–68, COUNTY OF RIVERSIDE (PUBLISHED) ELEVATION= 1414.416 FEET NGVD 29 DATUM).

EARTHWORK QUANTITIES

TOTAL CUT:	–140,536	CY
TOTAL FILL:	136,505	CY
PIPE SPOILS:	–9,616	CY
NET EXPORT:	13,647	CY

UTILITY PURVEYORS

WATER:	EASTERN MUNICIPAL WATER DISTRICT (EMWD)	(951) 928–3777
SEWER:	EASTERN MUNICIPAL WATER DISTRICT (EMWD)	(951) 928–3777
GAS:	SOUTHERN CALIFORNIA GAS COMPANY	(951) 335–7674
ELECTRIC:	SOUTHERN CALIFORNIA ELECTRIC COMPANY	(951) 930–8580
PHONE:	FRONTIER	(805) 388–7351
CABLE:	SPECTRUM	(844) 780–6054
WASTE:	CR&R ENVIRONMENTAL SERVICES	(951) 943–1991

LEGEND

- *PROPOSED PROJECT BOUNDARY*
- *PROPOSED LOT LINES*
- *PROPOSED RIGHT OF WAY*
- *EXISTING RIGHT OF WAY*
- *EXISTING EASEMENTS*

REGISTERED PROFESSIONAL ENGINEER – NICK V. NGUYEN – No. 59138 – CIVIL – STATE OF CALIFORNIA

PREPARED FOR:
EPD SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235 · CORONA, CA. 92881–3370 951–734–2130

SHEET 1 OF 4 SHEET

J.N. 222252-2 R:\2252\2527\PRELIM\Civil\Preliminary Grading Plan\2527 PRELIM GRADING PLAN 01.dwg 02/03/26 9:30am

MATCHLINE - SEE SHEET 4

APN 327-330-047

SPARACIO ROAD

327-330-048
VERY LOW DENSITY-RESIDENTIAL
R-R

N89°05'18"W 1332.11' TRACT BOUNDARY

327-330-026
28481 MAHOGANY LANE
VERY LOW DENSITY-RESIDENTIAL
R-R

327-350-008
24700 PALOMAR ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

327-340-021
28185 SPARACIO ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

327-340-022
VERY LOW DENSITY-RESIDENTIAL
R-R

327-340-026
28248 TOWER VIEW COURT
VERY LOW DENSITY-RESIDENTIAL
R-R

327-340-030
28243 TOWER VIEW COURT
VERY LOW DENSITY-RESIDENTIAL
R-R

327-340-031
28240 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

327-360-026
28538 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

APN 329-360-025

329-070-063
25050 TRADE WINDS DRIVE
VERY LOW DENSITY-RESIDENTIAL
R-R

329-070-064
28309 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

329-070-065
28369 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

329-070-052
25025 HAPPY ACRES DRIVE
VERY LOW DENSITY-RESIDENTIAL
R-R

329-070-053
25020 HAPPY ACRE DRIVE
VERY LOW DENSITY-RESIDENTIAL
R-R

329-070-082
28485 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

329-310-011
28521 MAPES ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

TRADE WINDS DRIVE

TOWER VIEW DRIVE

HAPPY ACRE DRIVE

PALOMAR ROAD

MAPES ROAD

STREET 'A'

STREET 'B'

STREET 'C'

STREET 'D'

STREET 'E'

STREET 'F'

STREET 'G'

STREET 'H'

STREET 'I'

STREET 'J'

LOT "L"

LOT "M"

LOT "N"

LOT "O"

LOT "D"

LOT "E"

LOT "F"

LOT "G"

LOT "H"

LOT "I"

LOT "J"

LOT "K"

1 PAD=1464.7
2 PAD=1465.2
3 PAD=1465.7
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144 PAD=1488.2
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146 PAD=1489.2
147 PAD=1489.0
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150 PAD=1487.1
151 PAD=1483.4
152 PAD=1480.4
153 PAD=1478.9
154 PAD=1477.4
155 PAD=1475.9
156 PAD=1474.0
157 PAD=1471.9

N15°24'47"E 1314.49'

N1°42'35"E 1309.46'

N89°17'59"W 1336.08'

N89°27'17"W

N88°07'13"W

N16°23'45"E

R=500'

R=25'

R=55'

PROP. 36" SD RCTD MAINTAINED

PROP. CB

PROP. SD

PROP. SEWER

PROP. WTR

PROP. R/W

EXIST. R/W

EXIST. PP TO BE REMOVED & UNDERGROUNDED BY OTHERS

EXIST. PP PROTECT IN PLACE

EXIST. SCE ESMT. INSTRUMENT # 2022-0489553

EXIST. 3" GAS PER SOCAL FAC MAP RCO 4543

EXIST. 8" ACP WATER PER D-3654

EXIST. 12" IRR WATER PER D-3654

EXIST. 8" PVC WATER

EXIST. WM & BFD

EXIST. WM

EXIST. 8" WATER

EXIST. 8" ACP WTR INLINE WITH PROP. 8" PVC WATER

PROP. 8" WATER

EXIST. COMM LINE PER FRONTIER SUBSTRUCTURE MAP NO. 701105268040

EXIST. GAS PER SOCAL GAS FAC MAP RCO4643

EXIST. 8" ACP WATER PER D-5489

EXIST. TELEPHONE PER EMWD D-21788

EXIST. 8" CWL & C PER D-278

EXIST. FRONTIER PED

EXIST. SPECTRUM PB

EXIST. TELE PED

EXIST. FH

PROP. 6' MEANDERING SIDEWALK

PROP. ROW

65' RCTCD DEDICATION

ROMONA AND MOP VAR. ST.

PROP. CONCRETE DROP INLET PER RCFCD STD DWG NO. CB110 AND 6" PCC PAD W/24"H x 24"W GABIONS SURROUNDING THE INLET

EX. 15' x 30' DRAINAGE EASEMENT DEDICATED TO AND ACCEPTED BY THE COUNTY OF RIVERSIDE FOR DRAINAGE PURPOSE PER INSTRUMENT No. 2007-0206108, RECORDED 05/01/2007

PROP. CATCH BASIN WITH 6" CONC PAD AND 6" AC DIKE

PROP. SIDEWALK

PROP. CURB & GUTTER

PROP. 30' SD EASEMENT RCTD MAINTAINED

6' HOA COMMON LOT

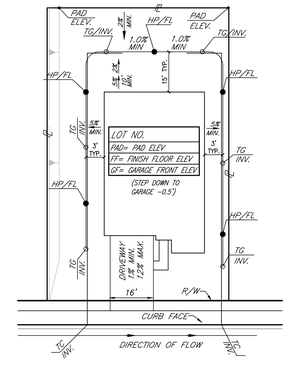
4' PUE

14' LS ESMT. CFD MAINTAINED

8' LS ESMT. CFD MAINTAINED

TRACT BOUNDARY

CALTRANS EXIST. ROW



TYPICAL LOT DRAINAGE DETAIL

NOT TO SCALE

UTILITY LEGEND

- W — PROPOSED WATER (1801 ZONE)
- S — PROPOSED SEWER
- PROPOSED STORM DRAIN
- W — EXISTING WATER
- S — EXISTING SEWER
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT

N

50 0 50 100 150

SCALE IN FEET

PRELIMINARY UTILITY PLAN
MAPES ROAD RESIDENTIAL
COUNTY OF RIVERSIDE, CA

PREPARED FOR:
EPD SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • SURVEYORS • PLANNERS
1181 CALIFORNIA AVENUE, SUITE 205 CORONA, CA 92881-3370 951-734-2130

SHEET 3 OF 4 SHEET

J.N. 22-255.2 R:\22\255\PRELIM\GVN\Preliminary Grading Plan\255 PRELIM GRADING PLAN 03.dwg 02/03/26 3:53pm

APN 327-170-004

APN 327-330-013

APN 327-330-044

APN 327-330-045

APN 327-330-046

APN 327-340-002

APN 327-340-003

APN 327-340-019

APN 327-340-020

APN 327-340-021
28185 SPARACIO ROAD
VERY LOW DENSITY-RESIDENTIAL
R-R

APN 327-340-023

APN 327-340-024

APN 327-340-025

APN 327-340-027

APN 327-340-028

APN 327-340-029

APN 327-304-001

APN 327-340-013

APN 327-340-014

APN 327-340-015

APN 329-050-001

APN 329-050-002

APN 329-360-001

APN 329-360-002

APN 329-360-022

APN 329-360-023

TRACT 37358

TRACT 37358

BLUE GRASS LANE

BEAM CLAY LANE

HABITAT PLACE

PITCHER STREET

STRIKE OUT DRIVE

ANTELOPE ROAD

ANTELOPE ROAD

NATIVITY LANE

NATIVITY LANE

SPARACIO ROAD

MAPES ROAD

MAPES ROAD

MAPES ROAD

TOWER VIEW DRIVE

EXIST. R/W

60'

EXIST. R/W

JOIN EXIST. 36" SD
1438.44 INV.

EXIST. 36" SD PER RCFCD &
WCD PROJECT NO. 4-0-00426,
DRAWING NO. 4-1221, LAT A-7

EXIST. 42" SD
PER TR 37358

20' SD EASEMENT

EXIST. CB

EXIST. CB

EXIST. DROP INLET

EXIST. 18" SD

EXIST. PROPERTY LINE

PROP. 36" SD
RCTD MAINTAINED

30'

EXIST. UTILITY ESMT PER
INSTRUMENT # 67-26936

EXIST. UTILITY ESMT PER
INSTRUMENT # 67-26936

30'

PROP. 36" SD
RCTD MAINTAINED

30'
EX RW

EXIST. R/W

6'

℄ OF STREET

60'
EX RW

PROP. 36" SD
RCTD MAINTAINED

EXIST.
R/W

RCTD MAINTAINED

EXIST. 3" GAS PER SOCAL
FAC MAP RCO 4543

EXIST. 3" GAS PER SOCAL
FAC MAP RCO 4543

EXIST. 8" ACP
WATER PER D-3654

EXIST. 8" ACP
WATER PER D-3654

EXIST. R/W

60'

EXIST. R/W

EXIST. UTIL
PED

EXIST. PP
PROTECT IN
PLACE

EXIST.
ROW

EXIST. 8" WATER

EXIST. 8" WATER

JOIN EX. 15" SEWER
1420.71 INV.

N89°34'04"W

60'

℄ OF STREET

EXIST. 8" SEWER

EXIST. M.H. #12
PER EMWD D-67583
COUNTY FILE NO. 972 S

PROP. 15" SEWER

EXIST.
ROW

PROP. 15" SEWER

EXIST. GAS PER SOCAL
GAS FAC MAP RCO4643

EXIST. PP
PROTECT IN
PLACE

EXIST.
ROW

EXIST. PP
PROTECT IN
PLACE

EXIST.
SPECTRUM
PB

EXIST. PP
PROTECT IN
PLACE

EXIST. GTE
PED

EXIST. PP
PROTECT IN
PLACE

EXIST. WM

EXIST. FH

EXIST.
ROW

EXIST. PP
PROTECT IN
PLACE

EXIST. WM

℄ OF STREET

PROP. 15" SEWER

EXIST. GAS PER SOCAL
GAS FAC MAP RCO4643

EXIST. WM

EXIST.
SPECTRUM
PB

EXIST. PP
PROTECT IN
PLACE

60'

MATCHLINE - SEE SHEET 3

50 0 50 100 150
SCALE IN FEET

PRELIMINARY UTILITY PLAN
MAPES ROAD RESIDENTIAL
COUNTY OF RIVERSIDE, CA

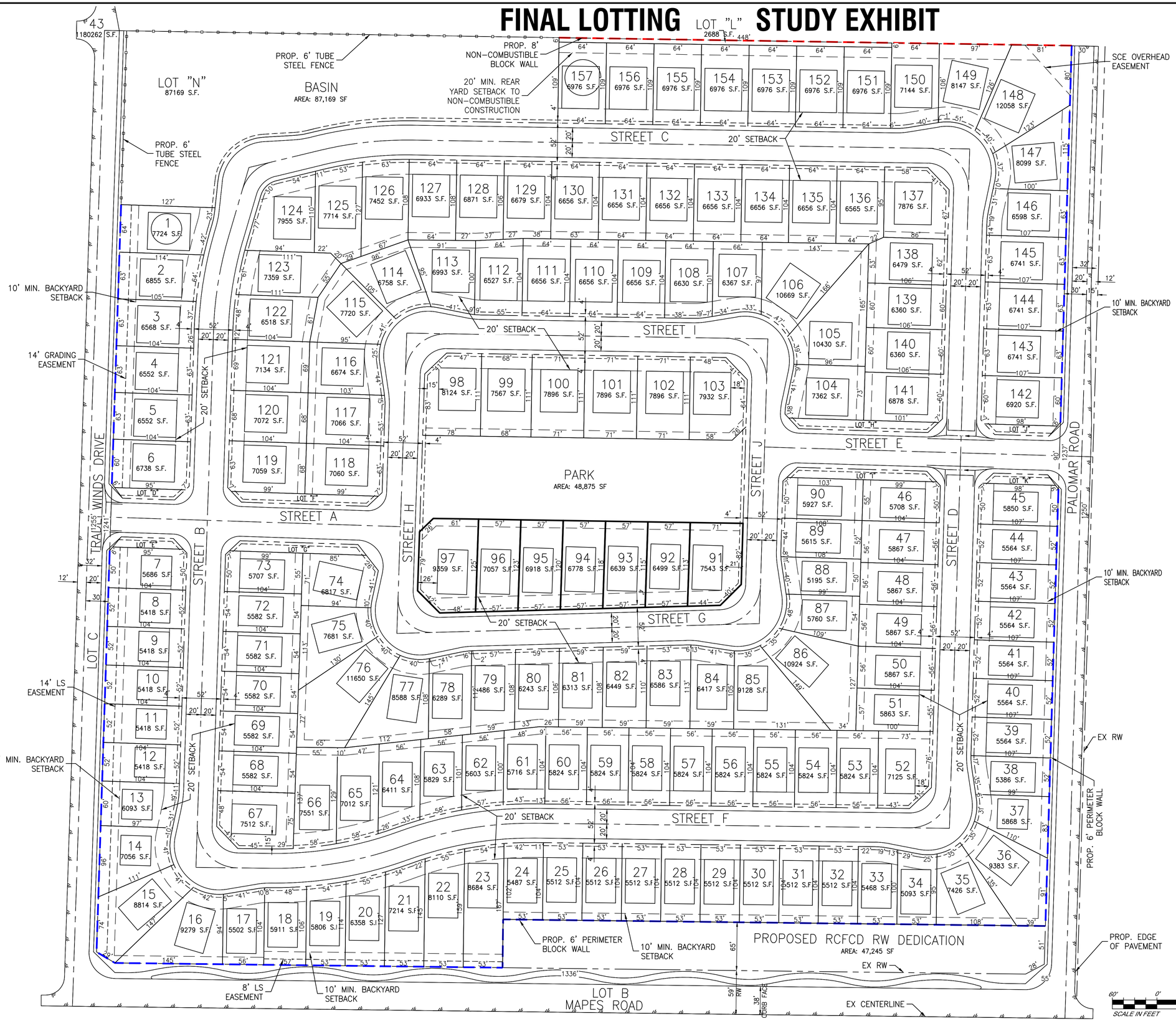
PREPARED FOR:
EPD SOLUTIONS, INC.
3333 MICHELSON DRIVE, SUITE 500
IRVINE, CA 92612

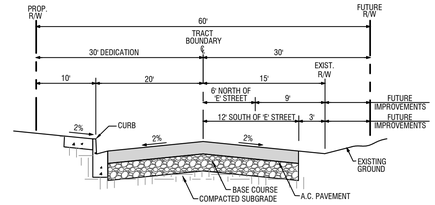
PREPARED BY:
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CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 220, CORONA, CA. 92881-3370 951-734-2130

SHEET
4 OF 4
SHEET

J.N. 22-225-2 R:\22\225\PRELIM\DWG\Preliminary Grading Plan\225P PRELIM GRADING PLAN 04.dwg 02/03/23 3:05pm

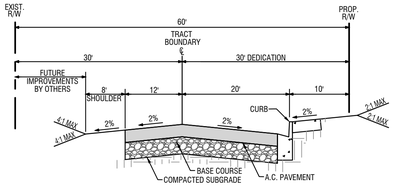
FINAL LOTTING STUDY EXHIBIT





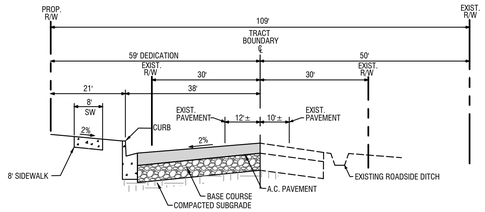
PALOMAR ROAD (LOOKING NORTH) TYPICAL STREET SECTION (PER RIV. CO. STD. NO. 104-A)

NOT TO SCALE



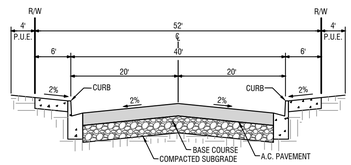
TRADE WINDS DRIVE (LOOKING NORTH) TYPICAL STREET SECTION

NOT TO SCALE



MAPES ROAD (LOOKING EAST) TYPICAL STREET SECTION

NOT TO SCALE



TYPICAL INTERIOR STREET SECTION PER RIV. CO. STD. NO. 105-A MODIFIED

NOT TO SCALE

60' 0' 60' 120' 180'

SCALE IN FEET

SHEET 1 OF 2

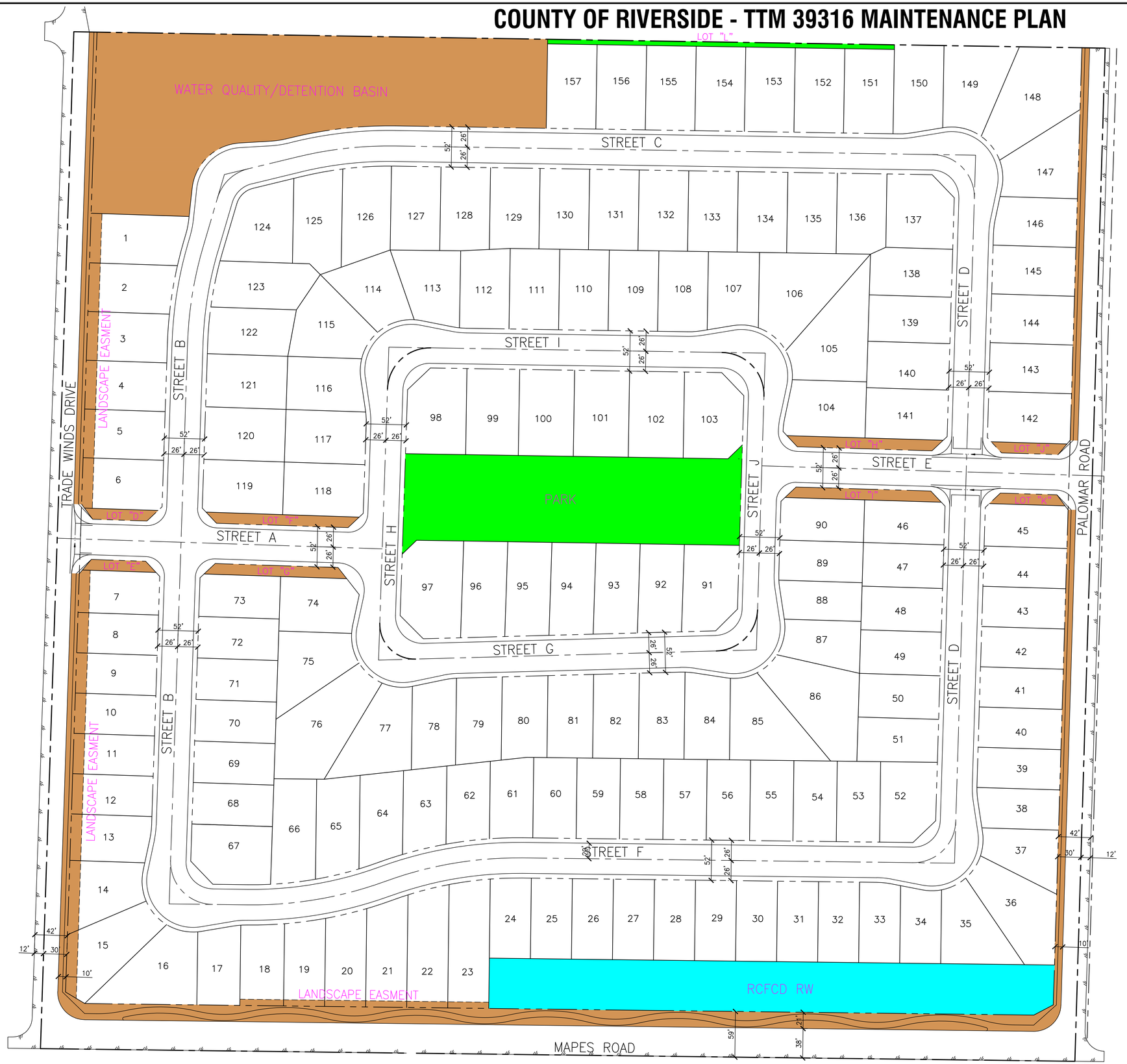
DATE OF EXHIBIT: 2/3/2026

KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235 •CORONA, CA. 92881-3370 •951-734-2130

PRINT: 02/03/2026

R:\25\25071\PRELIM\EXH\Conceptual Lotting Study Exhibit\Conceptual Lotting Study Exhibit.dwg

COUNTY OF RIVERSIDE - TTM 39316 MAINTENANCE PLAN



LEGEND

AREA = 51,563 SF
HOA MAINTAINED

AREA = 47,245 SF
RCFCD MAINTAINED

AREA = 167,996 SF
COUNTY CFD MAINTAINED

60' 0' 60' 120' 180'
SCALE IN FEET

DATE OF EXHIBIT: 2/3/26

KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235 • CORONA, CA. 92881-3370 • 951-734-2130

PRINT: 02/03/2026
R:\25\25071\PRELIM\EXH\Maintenance Exhibit\Mapes Maintenance Exhibit.dwg



OVERALL PLAN VIEW

(Sunset Zone 18)

Symbol	Botanical Name	Common Name	WUCOLS (Region 4)
MAPES ROAD - TRADEWINDS - PALOMAR - STREETSCAPE			
	Quercus agrifolia	Coast Live Oak	Low
	Myoporum parvifolium	Myoporum	Low
	Macfadyena unguis-cati	Cat's Claw Vine	Low
ENTRY / INTERIOR PARKWAY			
	Cercis occidentalis	Western Redbud	Low
	Lagerstroemia i. spp.	Crape Myrtle	Mod
	Pistacia chinensis	Chinese Pistache	Low
	Agave species	Avave	Low
	Bouteloua gracilis	Blue grama grass	Low
	Hesperaloe parviflora	Red Yucca	Low
	Lantana 'New Gold'	New Gold Lantana	Low
PARK			
	Cercis occidentalis	Western Redbud	Low
	Platanus racemosa	California Sycamore	Mod
	Jacaranda mimosifolia	Jacaranda	
	Fraxinus uhdei	Evergreen Ash	Mod
	Quercus agrifolia	Coast Live Oak	Low
	Cistus purpureus	Orchid Rock Rose	Low
	Lavandula spp.	Lavender	Low
	Leucophyllum f. 'Compacta'	Texas Ranger	Low
	Oenothera caespitosa	Evening primrose	Low
TURF			
	DOG TUFF TURF	DROUGHT TOLERANT SEEDLESS BERMUDA GRASS	Mod
PRIVATE LOT			
	Chilopsis linearis	Desert Willow	Low
	Geijera parviflora	Australian Willow	Low
	Lagerstroemia i. spp.	Crape Myrtle	Mod
	Laurus nobilis 'Saratoga'	Sweet Bay	Low
	Achillea tomentosa	Woolly Yarrow	Low
	Leucophyllum f. 'Compacta'	Texas Ranger	Low
	Oenothera caespitosa	Evening primrose	Low
BASIN			
	Laurus nobilis 'Saratoga'	Sweet Bay	Low
	Quercus agrifolia	Coast Live Oak	Low
BOTTOM			
	Muhlenbergia rigens	Deer Grass	Low
	Carex oshimensis 'Evergold'	Evergold Japanese Sedge	Low
	Lomandra 'Breeze'	Dwarf Mat Rush	Low
	Zauschneria californica	California Fuschia	Low
PERIMETER			
	Lantana 'New Gold'	New Gold Lantana	Low
	Lavandula spp.	Lavender	Low
SLOPES			
	Ceanothus spp.	California Lilac	Low
RCFCD			
	2" Unstabilized D.G Color: Desert Gold		

NOTES:

PER COUNTY OF RIVERSIDE FUEL MODIFICATION PLAN STANDARDS:

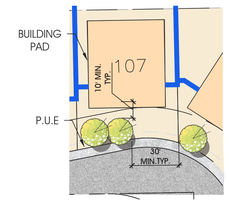
ALL TREES TO BE SPACED OUT 10'-0" MINIMUM FROM ANY COMBUSTIBLE STRUCTURES, MEASURED FROM TREE CANOPY AT MATURITY

ALL GROUPINGS OF TREES TO BE SPACED AT 30'-0" APART MINIMUM FROM ANOTHER TREE , MEASURED FROM TREE CANOPY AT MATURITY

ALL INDIVIDUAL TREES NOT IN A GROUP TO BE SPACED OUT 10'-0" MINIMUM FROM ANOTHER TREE, MEASURED FROM TREE CANOPY AT MATURITY

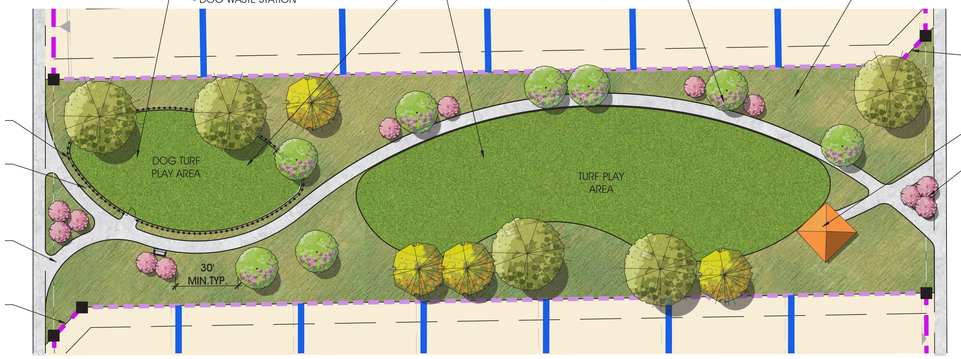
SHRUB & GROUNDCOVER SPACING & SIZES ADEQUATE TO PROVIDE COVERAGE OF PLANTED AREAS.

SLOPE PLANTING CONCEPT IS COMPLIANT WITH MINIMUM STANDARDS FOR BUILDLING & SAFETY EROSION COONTROL STANDARDS.



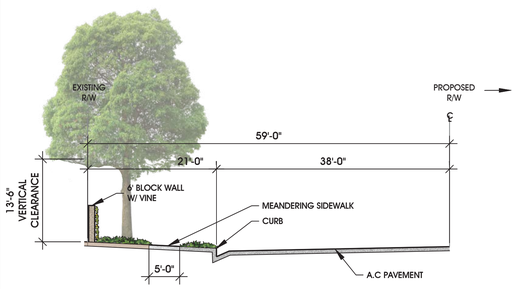
TYPICAL PRIVATE LOT TREE SPACING

0' 20' 40' 80' 120'
SCALE:1"=40'

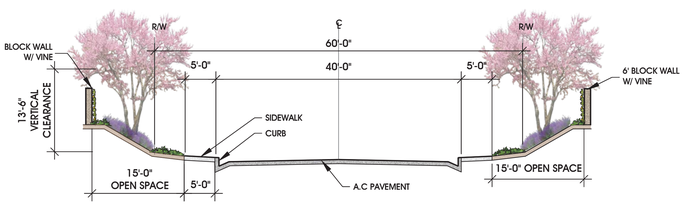


CENTRAL OPEN SPACE ENLARGEMENT

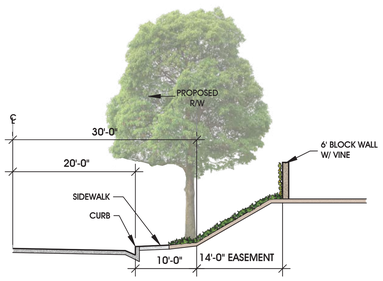
0' 15' 30' 60' 90'
SCALE:1"=30'



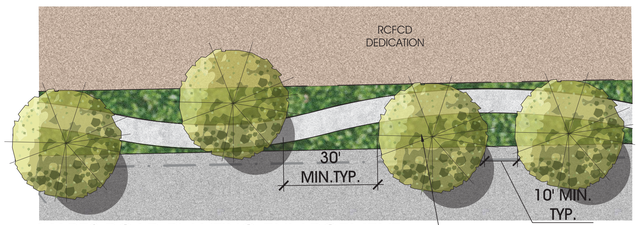
SECTION A N.T.S



SECTION B N.T.S



SECTION C N.T.S



MAPES ROAD PLANTING ENLARGEMENT

0' 10' 20' 40' 60'
SCALE:1"=20'

NOTES:

I AGEE TO SUBMIT A COMPLETE LANDSCAPE CONSTRUCTION DOCUMENT PACKAGE THAT COMPLIES WITH THE REQUIREMENTS OF APPLICABLE ORDINANANCES, INCLUDING BUT NOT NECESSARILY LIMITED TO ORDINANCE NO. 859.2; ORDINANCE 348, ORDINANCE 461; PROJECT CONDITIONS OF APPROVAL; AND IN SUBSTANTIAL CONFORMANCE OF THE APPROVED LANDSCAPE CONCEPT PLAN. SHOULD THE ORDINANE BE REVISED PLANS MAY BE SUBJECT TO CHANGE.

*PRIOR TO PROJECT CONSTRUCTION. I AGREE TO SUBMIT A COMPLETE LANDSCAPE CONSTRUCTION DOCUMENT PACKAGE.

THERE ARE NO MSHCP BOUNDARIES ON OR WITHIN 200' OF THE PROJECT.

THERE ARE NO ENVIRONMENTALLY SENSITIVE, PRESERVE OR CONSERVATION AREAS ON SITE OR WITHIN 200' OF THE PROJECT.

THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS WITHIN 1 MILE OF THE PROJECT.

STREET FRONTAGE TREES ARE PLANTED AT A MIN. OF 60' IN ACCORDANCE WITH ORDINANCE 460.

REGISTERED LANDSCAPE ARCHITECT
JAMES P. BALDWIN 4176
Signature
July 31, 2027
Exp. Date
Date
STATE OF CALIFORNIA

VICINITY MAP



E | P | D SOLUTIONS, INC

CONCEPTUAL LANDSCAPE PLAN - OVERALL CONCEPT AND STREET SECTIONS

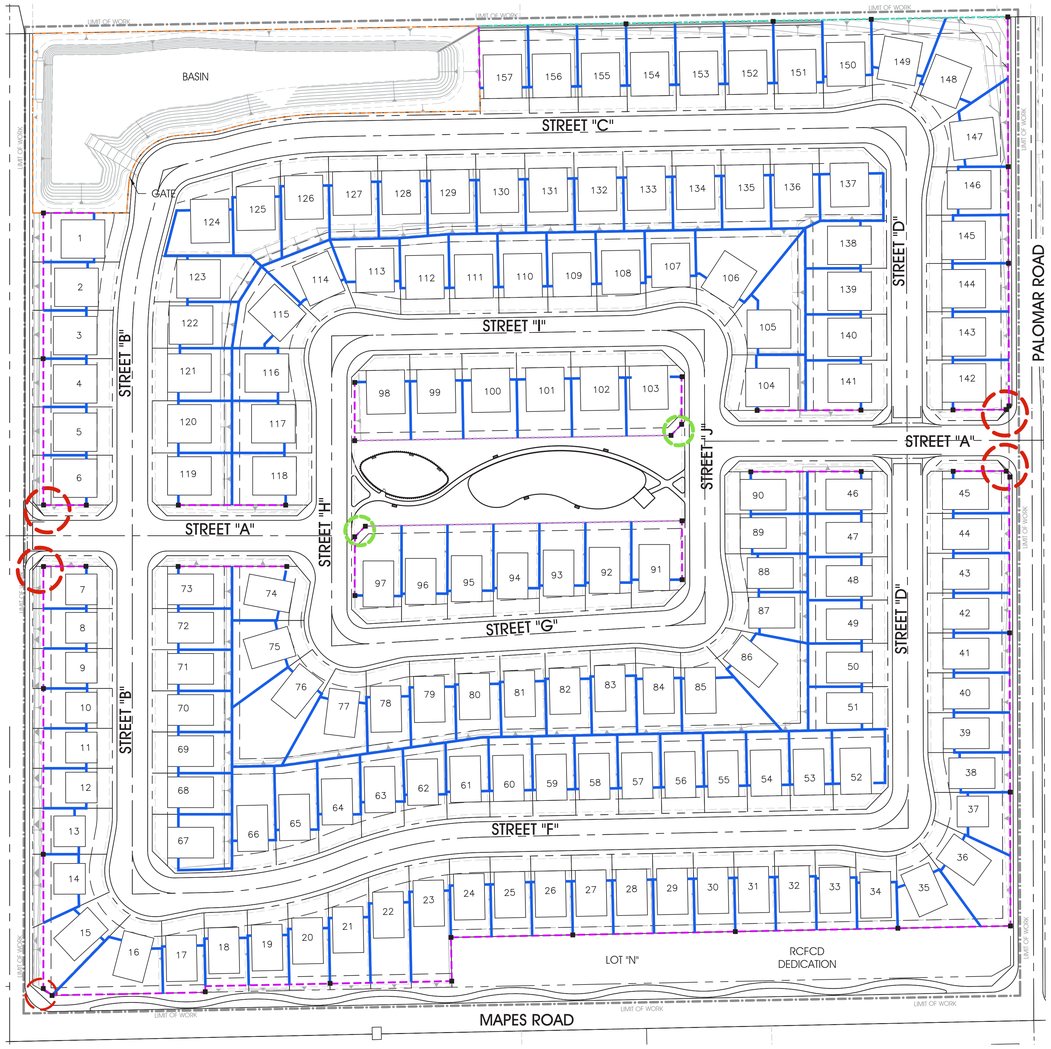
MAPES ROAD RESIDENTIAL
RIVERSIDE COUNTY, CA

STG

0' 40' 80' 160' 240
SCALE:1"=80'
CDPC PROJECT NO. 25048
JANUARY 30, 2026
NORTH

conceptual design + planning company
1675 Scenic Drive, Suite 200
Costa Mesa, CA 92626
T: 949.399.0870
www.cdpcinc.com
COSTA MESA • CENTRAL COAST • LAS VEGAS

L-1



OVERALL PLAN VIEW

WALL AND FENCE LEGEND

- 6'-0" HIGH TUBULAR STEEL FENCE
- 6'-0" HIGH 'ORCO' CMU BLOCK WALL
- 8'-0" HIGH 'ORCO' CMU BLOCK WALL
- 6'-0" HIGH COMBO 'ORCO' CMU BLOCK WALL AND TUBULAR STEEL FENCE
- 6'-0" HIGH STEEL FENCE
- 5'-0" HIGH TUBULAR STEEL FENCE
- ENTRY MONUMENT WALL WITH COMMUNITY SIGNAGE
- PARK IDENTIFICATION
- 6'-6" 'ORCO' CMU BLOCK PILASTER

Riverside County Ordinance 859 Landscape Water Use Calculations
Project Type Commercial
Mapes Road Residential
6.45 ETo allowance

Applicant to use drop down menus in cells that indicate a selection to describe each hydrozone.
Where "INPUT" is shown, applicant to enter project specific information.
Please note that embedded formulas will reflect as 'false' or as an error until selections are completed.

1 Maximum Annual Water Allowance (MAWA)

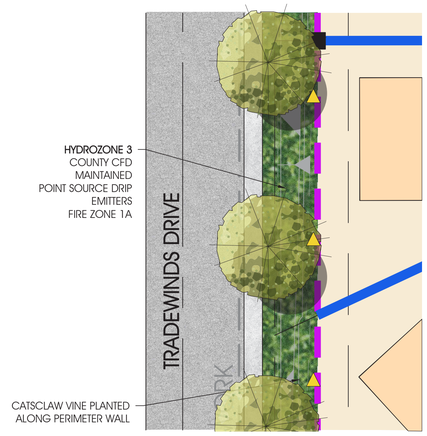
INPUT the total square footage of landscape =	193,295	s.f.
INPUT the Hist. ETo for the area =	6.50	
MAWA =	3,603	cu ft / yr

2 Estimated Annual Water Use (EAWU)

	Plant Type	Water Use
Hydrozone # 1		
INPUT Square Foot Area of Hydrozone =	17,680	Turf - Recreational - High
Hydrozone Irrigation Efficiency = 0.75	Rotator / Precision Spray Nozzle	
EAWU = 782 cu ft / yr		
Hydrozone # 2		
INPUT square footage of hydrozone =	169,584	Shrubs / Groundcover - Low
Hydrozone Irrigation Efficiency = 0.75	Rotator / Precision Spray Nozzle	
EAWU = 1,205 cu ft / yr		
Hydrozone # 3		
INPUT square footage of hydrozone =	6,031	Shrubs / Groundcover - Low
Hydrozone Irrigation Efficiency = 0.90	Point Source Drip	
EAWU = 668 cu ft / yr		
Hydrozone # 4		
INPUT square footage of hydrozone =	4,706	Trees / Mulch - Moderate
Hydrozone Irrigation Efficiency = 0.85	Bubblers	
EAWU = 715 cu ft / yr		
Hydrozone # 5		
INPUT square footage of hydrozone =	0	n/a - n/a
Hydrozone Irrigation Efficiency = n/a		
EAWU = 0 cu ft / yr		
Hydrozone # 6		
INPUT square footage of hydrozone =	0	n/a - n/a
Hydrozone Irrigation Efficiency = 1		
EAWU = 0 cu ft / yr		

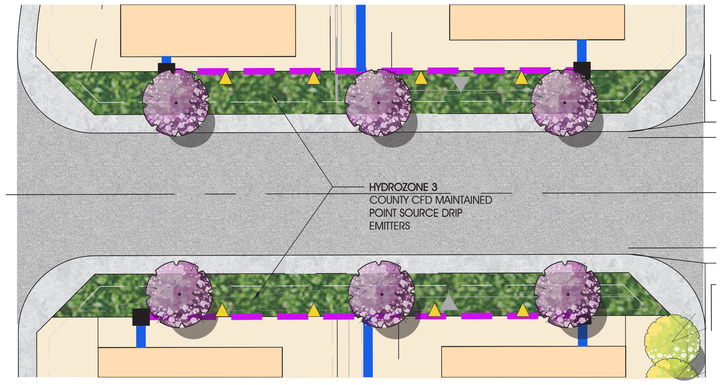
SubTotal EAWU =	2,670	cu ft / yr
Input Irrigation System Operation Factor =	0.85	
Total EAWU =	**3,141**	
MAWA - EAWU =	**462**	cu ft / yr
(this number must be positive)		
PERCENTAGE OF WATER SAVED RELATIVE TO MAX. ALLOWED =	13%	

* Trees are not required to be listed as a separate hydrozone if understory is planted with plants of an equal or higher plant factor, and foot area is already included in calculations.



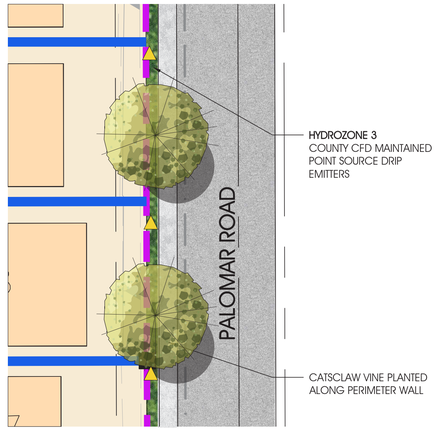
TRADEWINDS DRIVE PLANTING ENLARGEMENT

0' 10' 20' 40' 60' SCALE:1"=20'



ENTRY ROAD PLANTING ENLARGEMENT

0' 10' 20' 40' 60' SCALE:1"=20'



PALOMAR ROAD PLANTING ENLARGEMENT

0' 10' 20' 40' 60' SCALE:1"=20'


INTERSECTION OF MAPES ROAD AND TRADEWINDS DR LOOKING NORTHWEST


TRADEWINDS DR LOOKING SOUTHWEST


INTERSECTION OF TRADEWINDS DR AND SPARACIO ROAD LOOKING SOUTH


INTERSECTION OF TRADEWINDS DR AND PALOMAR ROAD LOOKING EAST

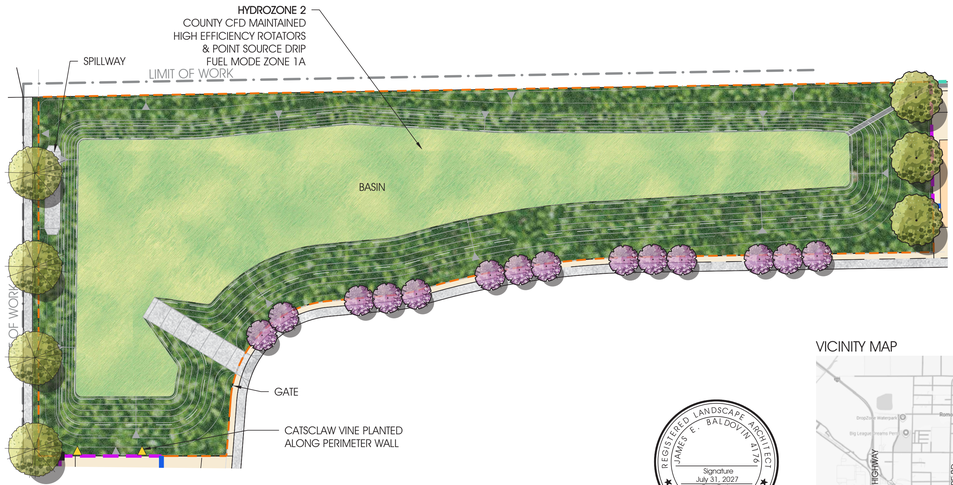

SOUTHSIDE OF MAPES ROAD


SOUTHSIDE OF MAPES ROAD


INTERSECTION OF MAPES ROAD AND TRADEWINDS LOOKING SOUTHWEST


INTERSECTION OF MAPES ROAD AND TRADEWINDS DR LOOKING NORTHWEST

EXISTING ADJACENT LANDSCAPE WITHIN 200' OF PROJECT



MAPES ROAD PLANTING ENLARGEMENT

0' 20' 40' 80' 120' SCALE:1"=40'

REGISTERED LANDSCAPE ARCHITECT
JAMES E. BALDWIN 4745
Signature
July 31, 2027
Exp. Date
Date
STATE OF CALIFORNIA

VICINITY MAP



E|P|D SOLUTIONS, INC

CONCEPTUAL LANDSCAPE PLAN - WALL AND FENCE PLAN

MAPES ROAD RESIDENTIAL
RIVERSIDE COUNTY, CA

STG

0' 40' 80' 160' 240' SCALE:1"=80'

CDPC PROJECT NO. 25048

JANUARY 30, 2026

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cd|pc

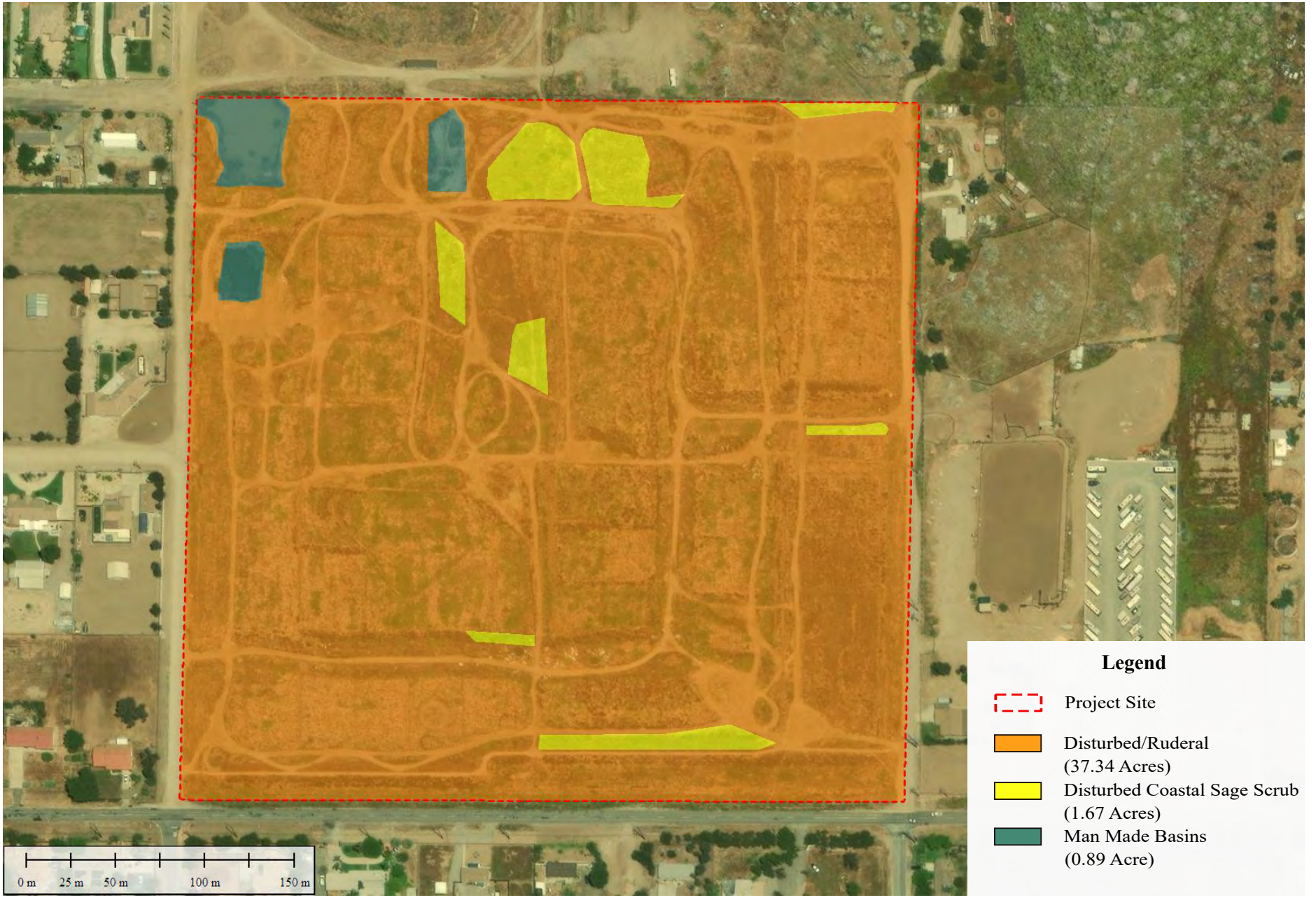


Figure 4

Habitat Map
Mapes and Tradewind
Romoland, Riverside County, CA

N

Hernandez Environmental Services



Figure 5

Impact Map
Mapes and Tradewind
Romoland, Riverside County, CA

N

Hernandez Environmental Services

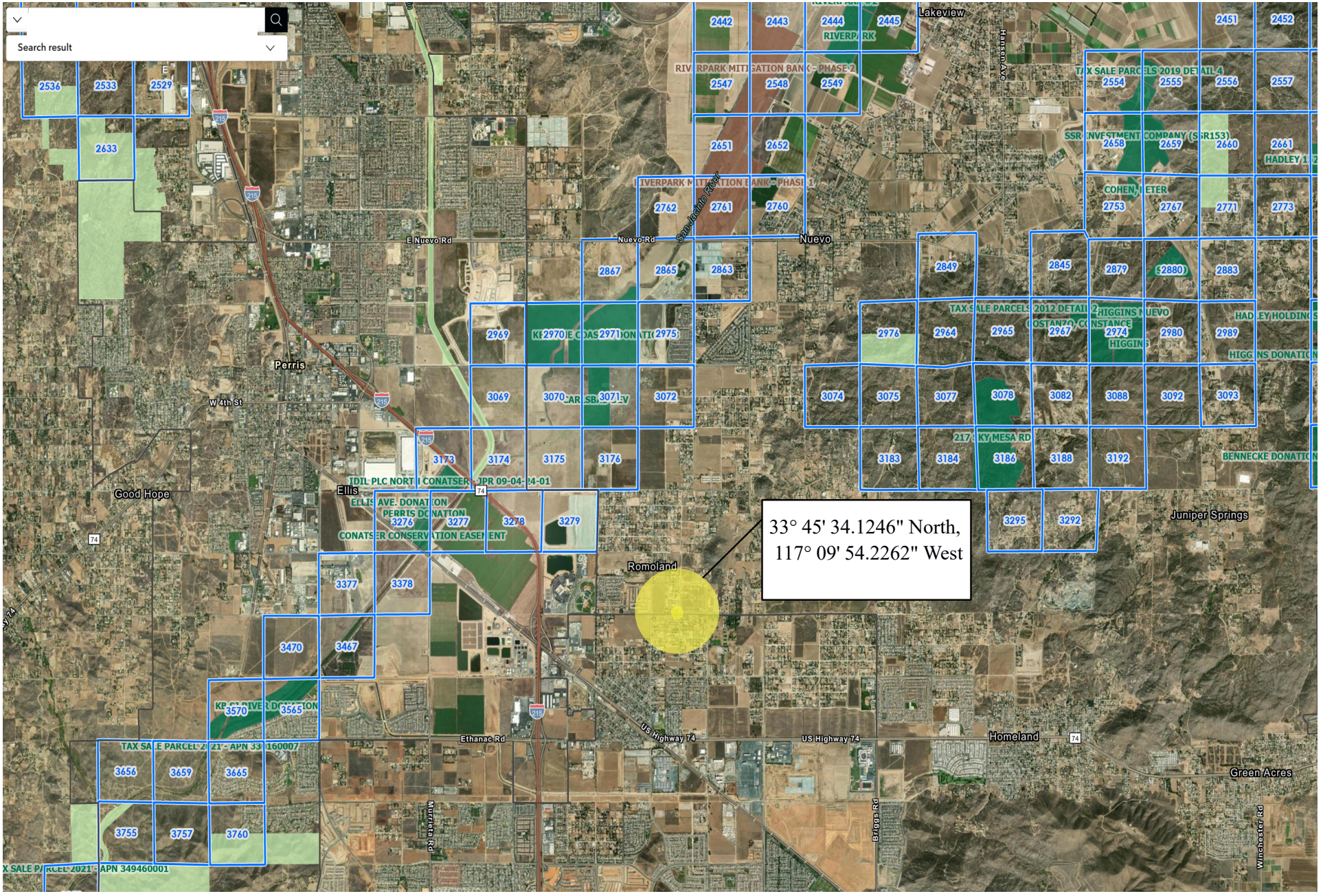


Figure 6

Western Riverside MSHCP Cell Map

Mapes and Tradewind

Romoland, Riverside County, CA

APPENDIX A

Observed Species

Plant List

Scientific Name	Common Name
Amphiachyris dracunculoides	Prairie broomweed
Amsinckia sp.	Fiddleneck
Artemisia californica	California sagebrush
Artemisia vulgaris	Common wormwood
Baccharis salicifolia	Mulefat
Bromus diandrus	Great brome
Bromus rubens	Red brome
Bromus tectorum	Cheatgrass
Centaurea melitensis	Maltese star thistle
Cynodon dactylon	Bermuda grass
Descurainia pinnata	Western tansymustard
Dittrichia graveolens	Stinkwort
Ehrharta erecta	Panic veldtgrass
Eleocharis acicularis	Needle spike rush
Encelia farinosa	Brittlebush
Eriogonum fasciculatum	California buckwheat
Erodium cicutarium	Red stemmed filaree
Helianthus annuus	Common sunflower
Heliotropium curassavicum	Salt heliotrope
Heterotheca grandiflora	Telegraphweed
Hirschfeldia incana	Shortpod mustard
Hordeum murinum	Mouse barley
Lactuca serriola	Prickly lettuce
Malva parviflora	Cheeseweed
Medicago polymorpha	Bur clover
Melilotus indicus	Annual yellow sweetclover
Nicotiana glauca	Tree tobacco
Oncosiphon pilulifer	Stinknet
Parkinsonia sp.	Palo verde

Observed Species

Plagiobothrys nothofulvus	Rusty popcorn flower
Populus sp.	Cottonwood
Pseudognaphalium californicum	Ladies' tobacco
Rumex crispus	Curly dock
Salix sp.	Willow sp.
Salsola tragus	Tumbleweed
Schismus barbatus	Kelch-grass
Sisymbrium irio	London rocket
Sonchus asper	Spiny sow thistle
Sonchus oleraceus	Common sow thistle
Symphyotrichum chilense	California aster
Tamarix ramosissima	Tamarisk
Trifolium campestre	Hop clover

Observed Species

Wildlife List

Scientific Name	Common Name
Agelaius phoeniceus	Red-winged blackbird
Anas platyrhynchos	Mallard
Branchinecta	Fairy shrimp
Charadrius vociferus	Killdeer
Chondestes grammacus	Lark sparrow
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Haemorhous mexicanus	House finch
Himantopus mexicanus	Black-necked stilt
Lepus californicus	Black-tailed jackrabbit
Mareca strepera	Gadwall
Melozone crissalis	California towhee
Mimus polyglottos	Northern mockingbird
Molothrus ater	Brown-headed cowbird
Nycticorax nycticorax	Black-crowned night heron
Passer domesticus	House sparrow
Sayornis nigricans	Black phoebe
Sayornis saya	Say's phoebe
Sturnella neglecta	Western meadowlark
Sturnus vulgaris	European starling
Tringa melanoleuca	Greater yellowlegs
Tyrannus vociferans	Cassin’s kingbird
Zonotrichia leucophrys	White-crowned sparrow

APPENDIX B

Scientific Name	Common Name	Taxon Group	Federal List	State List	Rare Plant Rank	Other Status (RVA MSHCP)	Habitats	General Habitat	Microhabitat	Presence/Absence
Abronia villosa var. aurita	chaparral sand-verbena	Dicots	None	None	1B.1	Not an MSHCP Covered Species	Chaparral | Coastal scrub | Desert dunes	Chaparral, coastal scrub, desert dunes.	Sandy areas. 60-1570 m.	No suitable habitat occurs on site. This species is not present.
Allium marvinii	Yucaipa onion	Monocots	None	None	1B.2	MSHCP Covered Species	Chaparral	Chaparral.	In openings on clay soils. 850-1070 m.	No clay soils occur on site. This species is not present.
Allium munzii	Munz's onion	Monocots	Endangered	Threatened	1B.1	MSHCP Narrow Endemic Plant Species	Chaparral | Cismontane woodland | Coastal scrub | Pinon & juniper woodlands | Valley & foothill	Chaparral, coastal scrub, cismontane woodland, pinyon and juniper woodland, valley and foothill	Heavy clay soils; grows in grasslands and openings within shrublands or woodlands. 375-1040	No clay soils occur on site. This species is not present.
Ambrosia pumila	San Diego ambrosia	Dicots	Endangered	None	1B.1	MSHCP Narrow Endemic Plant Species	Chaparral | Coastal scrub | Valley & foothill grassland	Chaparral, coastal scrub, valley and foothill grassland.	Sandy loam or clay soil; sometimes alkaline. In valleys; persists where disturbance has been superficial.	Suitable habitat occurs on site. **This species has the potential to be present. This species was not found**
Arenaria paludicola	marsh sandwort	Dicots	Endangered	Endangered	1B.1	Not an MSHCP Covered Species	Freshwater marsh | Marsh & swamp | Wetland	Marshes and swamps.	Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh.	No suitable habitat occurs on site. This species is not present.
Astragalus pachypus var. jaegeri	Jaeger's milk-vetch	Dicots	None	None	1B.1	Not an MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland.	Dry ridges and valleys and open sandy slopes; often in grassland and oak-chaparral. 365-1040 m.	No suitable habitat occurs on site. This species is not present.
Atriplex coronata var. notatior	San Jacinto Valley crownscale	Dicots	Endangered	None	1B.1	MSHCP Narrow Endemic Plant Species	Alkali playa | Valley & foothill grassland | Vernal pool | Wetland	Playas, valley and foothill grassland, vernal pools.	Alkaline areas in the San Jacinto River Valley. 35-460 m.	No suitable habitat occurs on site. This species is not present.
Atriplex parishii	Parish's brittlescale	Dicots	None	None	1B.1	MSHCP Covered Species	Alkali playa | Chenopod scrub | Meadow & seep | Vernal pool | Wetland	Vernal pools, chenopod scrub, playas.	Usually on drying alkali flats with fine soils. 4-1420 m.	No suitable habitat occurs on site. This species is not present.
Atriplex serenana var. davidsonii	Davidson's saltscale	Dicots	None	None	1B.2	Not an MSHCP Covered Species	Coastal bluff scrub | Coastal scrub	Coastal bluff scrub, coastal scrub.	Alkaline soil. 0-480 m.	No suitable habitat occurs on site. This species is not present.
Berberis nevinii	Nevin's barberry	Dicots	Endangered	Endangered	1B.1	MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Riparian scrub	Chaparral, cismontane woodland, coastal scrub, riparian scrub.	On steep, north-facing slopes or in low grade sandy washes. 90-1590 m.	No suitable habitat occurs on site. This species is not present.
Brodiaea filifolia	thread-leaved brodiaea	Monocots	Threatened	Endangered	1B.1	MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal	Usually associated with annual grassland and vernal pools; often surrounded by shrubland habitats.	No suitable habitat occurs on site. This species is not present.
Calochortus plummerae	Plummer's mariposa-lily	Monocots	None	None	4.2	Not an MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Lower montane coniferous forest | Valley & foothill	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane	Rocky and sandy sites, usually of granitic or alluvial material. 60-2500 m.	No suitable habitat occurs on site. This species is not present.
Calochortus weedii var. intermedius	intermediate mariposa-lily	Monocots	None	None	1B.2	Not an MSHCP Covered Species	Chaparral | Coastal scrub | Valley & foothill grassland	Coastal scrub, chaparral, valley and foothill grassland.	Dry, rocky calcareous slopes and rock outcrops. 60-1575 m.	No suitable habitat occurs on site. This species is not present.
Caulanthus simulans	Payson's jewelflower	Dicots	None	None	4.2	Not an MSHCP Covered Species	Chaparral | Coastal scrub	Chaparral, coastal scrub.	Frequently in burned areas or disturbed sites such as streambeds; also rocky, steep slopes. Sandy, granitic	No suitable habitat occurs on site. This species is not present.
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	None	None	1B.1	MSHCP Covered Species	Alkali playa | Chenopod scrub | Meadow & seep | Riparian woodland | Valley & foothill grassland	Valley and foothill grassland, chenopod scrub, meadows and seeps, playas, riparian woodland.	Alkali meadow, alkali scrub; also in disturbed places. 5-1170 m.	No suitable habitat occurs on site. This species is not present.
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Dicots	Endangered	Endangered	1B.2	Not an MSHCP Covered Species	Coastal dunes | Marsh & swamp | Salt marsh | Wetland	Marshes and swamps, coastal dunes.	Limited to higher zones of salt marsh habitat. 0-10 m.	No suitable habitat occurs on site. This species is not present.
Chorizanthe parryi var. parryi	Parry's spineflower	Dicots	None	None	1B.1	MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland	Coastal scrub, chaparral, cismontane woodland, valley and foothill grassland.	Dry slopes and flats; sometimes at interface of chaparral and oak woodland; dry sandy sites.	No suitable habitat occurs on site. This species is not present.

Chorizanthe polygonoides var. longispina	long-spined spineflower	Dicots	None	None	1B.2	MSHCP Covered Species	Chaparral | Coastal scrub | Meadow & seep | Ultramafic | Valley & foothill grassland | Vernal pool	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools.	Gabbroic clay. 30-1630 m.	No Gabbroic clay soils occur on site. This species is not present.
Dodecahema leptoceras	slender-horned spineflower	Dicots	Endangered	Endangered	1B.1	MSHCP Narrow Endemic Plant Species	Chaparral | Cismontane woodland | Coastal scrub	Chaparral, cismontane woodland, coastal scrub (alluvial fan sage scrub).	Flood deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc.;	No suitable habitat occurs on site. This species is not present.
Dudleya multicaulis	many-stemmed dudleya	Dicots	None	None	1B.2	MSHCP Covered Species	Chaparral | Coastal scrub | Valley & foothill grassland	Chaparral, coastal scrub, valley and foothill grassland.	Heavy, often clayey soils or grassy slopes. 1-910 m.	No clay soils occur on site. This species is not present.
Harpagonella palmeri	Palmer's grapplinghook	Dicots	None	None	4.2	MSHCP Covered Species	Chaparral | Coastal scrub | Valley & foothill grassland	Chaparral, coastal scrub, valley and foothill grassland.	Clay soils; open grassy areas within shrubland. 20-955 m.	No clay soils occur on site. This species is not present.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	None	None	1B.1	MSHCP Covered Species	Alkali playa | Marsh & swamp | Salt marsh | Vernal pool | Wetland	Coastal salt marshes, playas, vernal pools.	Usually found on alkaline soils in playas, sinks, and grasslands. 1-1375 m.	No suitable habitat occurs on site. This species is not present.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Dicots	None	None	4.3	Not an MSHCP Covered Species	Chaparral | Coastal scrub	Chaparral, coastal scrub.	Dry soils, shrubland. 4-1435 m.	No suitable habitat occurs on site. This species is not present.
Myosurus minimus ssp. apus	little mousetail	Dicots	None	None	3.1	Not an MSHCP Covered Species	Valley & foothill grassland | Vernal pool | Wetland	Vernal pools, valley and foothill grassland.	Alkaline soils. 20-640 m.	No alkaline soils occur on site. This species is not present.
Nama stenocarpa	mud nama	Dicots	None	None	2B.2	Not an MSHCP Covered Species	Marsh & swamp | Wetland	Marshes and swamps.	Lake shores, river banks, intermittently wet areas. -68-815 m.	No suitable habitat occurs on site. This species is not present.
Navarretia fossalis	spreading navarretia	Dicots	Threatened	None	1B.1	MSHCP Covered Species	Alkali playa | Chenopod scrub | Marsh & swamp | Vernal pool | Wetland	Vernal pools, chenopod scrub, marshes and swamps, playas.	San Diego hardpan and claypan vernal pools; in swales and vernal pools.	No suitable habitat occurs on site. This species is not present.
Orcuttia californica	California Orcutt grass	Monocots	Endangered	Endangered	1B.1	MSHCP Covered Species	Vernal pool | Wetland	Vernal pools.	10-660 m.	No suitable habitat occurs on site. This species is not present.
Senecio aphanactis	chaparral ragwort	Dicots	None	None	1B.2	Not an MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub	Chaparral, cismontane woodland, coastal scrub.	Drying alkaline flats. 20-1020 m.	No suitable habitat occurs on site. This species is not present.
Sidalcea neomexicana	salt spring checkerbloom	Dicots	None	None	2B.2	Not an MSHCP Covered Species	Alkali playa | Chaparral | Coastal scrub | Lower montane coniferous forest | Mojavean desert scrub	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub.	Alkali springs and marshes. 3-2380 m.	No suitable habitat occurs on site. This species is not present.
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	None	None		Not an MSHCP Covered Species	Riparian forest			This is not present.
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	None	None		Not an MSHCP Covered Species	Riparian forest			This is not present.
Southern Riparian Scrub	Southern Riparian Scrub	Riparian	None	None		Not an MSHCP Covered Species	Riparian scrub			This is not present.
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	None	None		Not an MSHCP Covered Species	Riparian woodland			This is not present.
Symphyotrichum defoliatum	San Bernardino aster	Dicots	None	None	1B.2	MSHCP Covered Species	Cismontane woodland | Coastal scrub | Lower montane coniferous forest | Marsh & swamp | Meadow & seep |	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and	Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 3-2045 m.	No suitable habitat occurs on site. This species is not present.

Texosporium sancti-jacobi	woven-spored lichen	Lichens	None	None	3	Not an MSHCP Covered Species	Chaparral	Chaparral.	Open sites; found on soil, small mammal pellets, dead twigs, and on Selaginella. 60-870 m.	No suitable habitat occurs on site. This species is not present.
Tortula californica	California screw moss	Bryophytes	None	None	1B.2	Not an MSHCP Covered Species	Chenopod scrub | Valley & foothill grassland	Chenopod scrub, valley and foothill grassland.	Moss growing on sandy soil. 45-750 m.	No suitable habitat occurs on site. This species is not present.
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Dicots	None	None	2B.1	Not an MSHCP Covered Species	Marsh & swamp | Meadow & seep | Riparian forest | Vernal pool | Wetland	Marshes and swamps, riparian forest, meadows and seeps, vernal pools.	Mud flats of vernal lakes, drying river beds, alkali meadows. 5-435 m.	No suitable habitat occurs on site. This species is not present.
Accipiter cooperii	Cooper's hawk	Birds	None	None		Not an MSHCP Covered Species	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest	Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees; also live oaks.	No suitable habitat occurs on site. This species is not present.
Actinemys pallida	southwestern pond turtle	Reptiles	Proposed Threatened	None		MSHCP Covered Species	Aquatic / wetland habitats	Ponds, streams, and other aquatic habitats.	Requires suitable aquatic habitat and basking/nesting areas.	No suitable habitat occurs on site. This species is not present.
Agelaius tricolor	tricolored blackbird	Birds	None	Threatened		MSHCP Covered Species	Freshwater marsh | Marsh & swamp | Swamp | Wetland	Highly colonial species; largely endemic to California.	Requires open water, protected nesting substrate, and nearby foraging area with insect prey.	No suitable habitat occurs on site. This species is not present.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	None	None		MSHCP Covered Species	Chaparral | Coastal scrub	Resident in Southern California coastal sage scrub and sparse mixed chaparral.	Steep, often rocky hillsides with grass and forb patches.	No suitable habitat occurs on site. This species is not present.
Anniella stebbinsi	Southern California legless lizard	Reptiles	None	None		MSHCP Covered Species	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub	Sandy or loose loamy soils under sparse vegetation.	Variety of habitats; generally in moist, loose soil with high moisture content.	No suitable habitat occurs on site. This species is not present.
Aquila chrysaetos	golden eagle	Birds	None	None		MSHCP Covered Species	Broadleaved upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons and large trees in open areas provide nesting habitat.	No suitable habitat occurs on site. This species is not present.
Arizona elegans occidentalis	California glossy snake	Reptiles	None	None		Not an MSHCP Covered Species	Scrub and grassland habitats	Patchily distributed in California and Baja California.	Generalist in scrub and grassland habitats, often with loose or sandy soils.	No suitable habitat occurs on site. This species is not present.
Artemisiospiza belli belli	Bell's sparrow	Birds	None	None		MSHCP Covered Species	Chaparral | Coastal scrub	Nests in chaparral dominated by chamise; also coastal sage scrub.	Nests on the ground beneath a shrub or low in a shrub.	No suitable habitat occurs on site. This species is not present.
Asio otus	long-eared owl	Birds	None	None		Not an MSHCP Covered Species	Cismontane woodland | Great Basin scrub | Riparian forest | Riparian woodland | Upper montane	Riparian bottomlands with tall willows and cottonwoods; live oak belts near streams.	Requires adjacent open land and old nests of crows, hawks, or magpies for breeding.	No suitable habitat occurs on site. This species is not present.
Aspidoscelis hyperythra	orange-throated whiptail	Reptiles	None	None		MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats.	Prefers washes and sandy areas with brush and rocks; perennial plants support termites.	No suitable habitat occurs on site. This species is not present.
Aspidoscelis tigris stejnegeri	coastal whiptail	Reptiles	None	None		Not an MSHCP Covered Species	Desert, semi-arid, woodland and riparian habitats	Deserts and semi-arid areas with sparse vegetation and open areas; also woodland and riparian areas.	Ground may be firm soil, sandy, or rocky.	No suitable habitat occurs on site. This species is not present.
Athene cunicularia	burrowing owl	Birds	None	Candidate Endangered		MSHCP Covered Species	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran	Open, dry grasslands, deserts, and scrublands with low-growing vegetation.	Subterranean nester dependent on burrowing mammals, especially California ground squirrel.	Suitable habitat occurs on site. **This species was not found during focused surveys. This species is not**
Bombus crotchii	Crotch's bumble bee	Insects	None	Candidate Endangered		Not an MSHCP Covered Species	Coastal California to Sierra-Cascade crest and south into Mexico	Forages on several native flowering plant genera.	Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and	Suitable habitat occurs on site. This species has the potential to be present.
Bombus pensylvanicus	American bumble bee	Insects	None	None		Not an MSHCP Covered Species	Coastal prairie | Great Basin grassland | Valley & foothill grassland	Long-tongued bumble bee; forages on wide variety of flowers.	Nests above ground under long grass or underground; queens overwinter in rotten wood or underground.	No suitable habitat occurs on site. This species is not present.

Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	Threatened	None		MSHCP Covered Species	Valley & foothill grassland | Vernal pool | Wetland	Astatic rain-filled pools in grassland regions.	Small clear-water sandstone-depression pools and grassed swales, earth slump, or basalt-flow pools.	Suitable habitat occurs on site. This species has the potential to be present.
Buteo regalis	ferruginous hawk	Birds	None	None		MSHCP Covered Species	Great Basin grassland | Great Basin scrub | Pinon & juniper woodlands | Valley & foothill grassland	Open grasslands, sagebrush flats, desert scrub, low foothills and pinyon-juniper fringes.	Eats mostly lagomorphs, ground squirrels, and mice.	No suitable habitat occurs on site. This species is not present.
Campylorhynchus brunneicapillus sandiegensi	coastal cactus wren	Birds	None	None		MSHCP Covered Species	Coastal scrub	Southern California coastal sage scrub.	Requires tall opuntia cactus for nesting and roosting.	No suitable habitat occurs on site. This species is not present.
Ceratochrysis longimala	Desert cuckoo wasp	Insects	None	None		Not an MSHCP Covered Species				No suitable habitat occurs on site. This species is not present.
Chaetodipus californicus femoralis	Dulzura pocket mouse	Mammals	None	None		Not an MSHCP Covered Species	Chaparral | Coastal scrub | Valley & foothill grassland	Variety of habitats including coastal scrub, chaparral, and grassland primarily in San Diego County.	Attracted to grass-chaparral edges.	No suitable habitat occurs on site. This species is not present.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	Mammals	None	None		Not an MSHCP Covered Species	Chaparral | Coastal scrub	Coastal scrub, chaparral, grasslands, sagebrush, etc. in western southern California.	Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	No suitable habitat occurs on site. This species is not present.
Charadrius nivosus nivosus	western snowy plover	Birds	Threatened	None		Not an MSHCP Covered Species	Great Basin standing waters | Sand shore | Wetland	Sandy beaches, salt pond levees, and shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting.	No suitable habitat occurs on site. This species is not present.
Cicindela senilis frosti	senile tiger beetle	Insects	None	None		Not an MSHCP Covered Species	Mud shore/flats | Wetland	Marine shoreline from Central California coast south to salt marshes of San Diego; also Lake Elsinore.	Dark-colored mud in lower zone and dried salt pans in upper zone.	No suitable habitat occurs on site. This species is not present.
Circus hudsonius	northern harrier	Birds	None	None		MSHCP Covered Species	Coastal scrub | Great Basin grassland | Marsh & swamp | Riparian scrub | Valley & foothill grassland |	Coastal salt and freshwater marsh; nests and forages in grasslands.	Nests on ground in shrubby vegetation, usually at marsh edge.	No suitable habitat occurs on site. This species is not present.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	Threatened	Endangered		MSHCP Covered Species	Riparian forest	Riparian forest nester along broad lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods and understory.	No suitable habitat occurs on site. This species is not present.
Coleonyx variegatus abbotti	San Diego banded gecko	Reptiles	None	None		MSHCP Covered Species	Chaparral | Coastal scrub	Coastal and cismontane Southern California.	Found in granite or rocky outcrops in coastal scrub and chaparral habitats.	No suitable habitat occurs on site. This species is not present.
Crotalus ruber	red-diamond rattlesnake	Reptiles	None	None		MSHCP Covered Species	Chaparral | Mojavean desert scrub | Sonoran desert scrub	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to eastern mountain	Rocky areas and dense vegetation; needs rodent burrows, cracks in rocks or surface cover objects.	No suitable habitat occurs on site. This species is not present.
Diadophis punctatus modestus	San Bernardino ringneck snake	Reptiles	None	None		Not an MSHCP Covered Species	Rocky areas / intermittent streams	Most common in open, relatively rocky areas; moist microhabitats near intermittent streams.	Avoids open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation.	No suitable habitat occurs on site. This species is not present.
Dipodomys merriami parvus	San Bernardino kangaroo rat	Mammals	Endangered	Endangered		MSHCP Covered Species	Coastal scrub	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood	Needs early to intermediate seral stages.	No suitable habitat occurs on site. This species is not present.
Dipodomys stephensi	Stephens' kangaroo rat	Mammals	Threatened	Threatened		MSHCP Covered Species	Coastal scrub | Valley & foothill grassland	Primarily annual and perennial grasslands; also coastal scrub and sagebrush with sparse canopy cover.	Prefers buckwheat, chamise, brome grass and filaree; burrows into firm soil.	No suitable habitat occurs on site. This species is not present.
Elanus leucurus	white-tailed kite	Birds	None	None		MSHCP Covered Species	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | Wetland	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to	Open groves, river valleys, marshes, and open foraging areas.	No suitable habitat occurs on site. This species is not present.
Eremophila alpestris actia	California horned lark	Birds	None	None		Not an MSHCP Covered Species	Marine intertidal & splash zone communities | Meadow & seep	Coastal regions from Sonoma County to San Diego County; also San Joaquin Valley and foothills.	Short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	No suitable habitat occurs on site. This species is not present.

Eugnosta busckana	Busck's gallmoth	Insects	None	None		Not an MSHCP Covered Species	Coastal dunes | Coastal scrub	Coastal southern California.	Tiny micro-moth; larva form galls on Encelia californica; adults fly in winter.	No suitable habitat occurs on site. This species is not present.
Eumops perotis californicus	western mastiff bat	Mammals	None	None		MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland	Open, semi-arid to arid habitats including woodlands, coastal scrub, grasslands, and chaparral.	Roosts in crevices in cliff faces, high buildings, trees and tunnels.	No suitable habitat occurs on site. This species is not present.
Euphydryas editha quino	quino checkerspot butterfly	Insects	Endangered	None		MSHCP Covered Species	Chaparral | Coastal scrub	Sunny openings within chaparral and coastal sage shrublands in Riverside and San Diego counties.	Hills and mesas; needs high densities of food plants Plantago erecta, P. insularis, and Orthocarpus	No suitable habitat occurs on site. This species is not present.
Haliaeetus leucocephalus	bald eagle	Birds	Delisted	Endangered		MSHCP Covered Species	Lower montane coniferous forest | Oldgrowth	Ocean shore, lake margins, and rivers for nesting and wintering; nests usually within 1 mile of water.	Nests in large old-growth or dominant live trees with open branches; winter communal roosts.	No suitable habitat occurs on site. This species is not present.
Icteria virens	yellow-breasted chat	Birds	None	None		Not an MSHCP Covered Species	Riparian forest | Riparian scrub | Riparian woodland	Summer resident in riparian thickets of willow and brushy tangles near watercourses.	Nests in low, dense riparian vegetation; forages and nests within 10 ft of ground.	No suitable habitat occurs on site. This species is not present.
Lanius ludovicianus	loggerhead shrike	Birds	None	None		MSHCP Covered Species	Broadleaved upland forest | Desert wash | Joshua tree woodland | Mojavean desert scrub | Pinon & juniper	Broken woodlands, savannah, pinyon-juniper, Joshua tree and riparian woodlands, desert	Open country for hunting with perches and dense shrubs/brush for nesting.	No suitable habitat occurs on site. This species is not present.
Lasiurus xanthinus	western yellow bat	Mammals	None	None		Not an MSHCP Covered Species	Desert wash	Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats.	Roosts in trees, particularly palms; forages over water and among trees.	No suitable habitat occurs on site. This species is not present.
Laterallus jamaicensis coturniculus	California black rail	Birds	None	Threatened		MSHCP Covered Species	Brackish marsh | Freshwater marsh | Marsh & swamp | Salt marsh | Wetland	Freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering bays.	Needs shallow stable water and dense vegetation for nesting habitat.	No suitable habitat occurs on site. This species is not present.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Mammals	None	None		Not an MSHCP Covered Species	Coastal scrub	Intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous	Coastal sage scrub habitats in Southern California.	No suitable habitat occurs on site. This species is not present.
Neolarra alba	white cuckoo bee	Insects	None	None		Not an MSHCP Covered Species	Southern California localities	Known only from localities in Southern California.	Cleptoparasitic in the nests of perdita bees.	No suitable habitat occurs on site. This species is not present.
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	None	None		MSHCP Covered Species	Coastal scrub	Coastal scrub of Southern California from San Diego County to San Luis Obispo County.	Moderate to dense canopies preferred; abundant in rock outcrops, rocky cliffs, and slopes.	No suitable habitat occurs on site. This species is not present.
Nyctinomops femorosaccus	pocketed free-tailed bat	Mammals	None	None		MSHCP Covered Species	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub	Variety of arid areas in Southern California including pine-juniper woodlands, desert scrub, palm oasis.	Rocky areas with high cliffs.	No suitable habitat occurs on site. This species is not present.
Onychomys torridus ramona	southern grasshopper mouse	Mammals	None	None		Not an MSHCP Covered Species	Chenopod scrub	Desert areas, especially scrub habitats with friable soils for digging; low to moderate shrub cover.	Feeds mostly on arthropods, especially scorpions and orthopteran insects.	No suitable habitat occurs on site. This species is not present.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	Mammals	None	None		MSHCP Covered Species	Coastal scrub	Lower elevation grasslands and coastal sage communities in and around Los Angeles Basin.	Open ground with fine, sandy soils; may hide under weeds and dead leaves.	No suitable habitat occurs on site. This species is not present.
Phrynosoma blainvillii	coast horned lizard	Reptiles	None	None		MSHCP Covered Species	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper	Wide variety of habitats; common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, loose soil for burial, and abundant ants/insects.	No suitable habitat occurs on site. This species is not present.
Plegadis chihi	white-faced ibis	Birds	None	None		Not an MSHCP Covered Species	Marsh & swamp | Wetland	Shallow freshwater marsh.	Dense tule thickets for nesting, interspersed with shallow water for foraging.	No suitable habitat occurs on site. This species is not present.
Polioptila californica californica	coastal California gnatcatcher	Birds	Threatened	None		MSHCP Covered Species	Coastal bluff scrub | Coastal scrub	Obligate permanent resident of coastal sage scrub below 2500 ft in Southern California.	Low coastal sage scrub in arid washes, on mesas and slopes.	No suitable habitat occurs on site. This species is not present.

Salvadora hexalepis virgultea	coast patch-nosed snake	Reptiles	None	None		Not an MSHCP Covered Species	Coastal scrub	Brushy or shrubby vegetation in coastal Southern California.	Requires small mammal burrows for refuge and overwintering sites.	No suitable habitat occurs on site. This species is not present.
Setophaga petechia	yellow warbler	Birds	None	None		Not an MSHCP Covered Species	Riparian forest | Riparian scrub | Riparian woodland	Riparian plant associations near water; also montane shrubbery in open conifer forests.	Nesting and foraging in willow shrubs and thickets, cottonwoods, sycamores, ash, and alders.	No suitable habitat occurs on site. This species is not present.
Socalchemmis icenoglei	Icenogle's socalchemmis spider	Arachnids	None	None		Not an MSHCP Covered Species	Coastal scrub	Known only from type locality near Winchester, Riverside County.		No suitable habitat occurs on site. This species is not present.
Spea hammondii	western spadefoot	Amphibians	Proposed Threatened	None		MSHCP Covered Species	Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland	Primarily grassland habitats; also valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg-laying.	Suitable habitat occurs on site. This species has the potential to be present.
Spinus lawrencei	Lawrence's goldfinch	Birds	None	None		Not an MSHCP Covered Species	Broadleaved upland forest | Chaparral | Pinon & juniper woodlands | Riparian woodland	Nests in open oak or other arid woodland and chaparral near water; herbaceous habitats used for	Closely associated with oaks.	No suitable habitat occurs on site. This species is not present.
Streptocephalus woottoni	Riverside fairy shrimp	Crustaceans	Endangered	None		MSHCP Covered Species	Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland	Endemic to western Riverside, Orange, and San Diego counties in tectonic swales/earth slump basins.	Seasonally astatic pools filled by winter/spring rains; hatch in warm water later in season.	Suitable habitat occurs on site. **This species has the potential to be present.**
Taxidea taxus	American badger	Mammals	None	None		MSHCP Covered Species	Many open habitats including grassland, scrub, forest, marsh, and desert wash	Most abundant in drier open stages of shrub, forest, and herbaceous habitats with friable soils.	Needs sufficient food, friable soils, open uncultivated ground; preys on burrowing rodents; digs burrows.	No suitable habitat occurs on site. This species is not present.
Vireo bellii pusillus	least Bell's vireo	Birds	Endangered	Endangered		MSHCP Covered Species	Riparian forest | Riparian scrub | Riparian woodland	Summer resident of Southern California in low riparian near water or dry river bottoms below 2000 ft.	Nests placed along margins of bushes or twigs, usually willow, Baccharis, mesquite.	No suitable habitat occurs on site. This species is not present.
Xanthocephalus xanthocephalus	yellow-headed blackbird	Birds	None	None		Not an MSHCP Covered Species	Marsh & swamp | Wetland	Freshwater emergent wetlands with dense vegetation and deep water, often borders of lakes or ponds.	Nests where large aquatic insects are abundant; nesting timed with aquatic insect emergence.	No suitable habitat occurs on site. This species is not present.

APPENDIX C



View of site entrance at the corner of Mapes Road and Tradewinds Drive. View looking southwest.



View of ruderal habitat onsite where impacts will occur. View looking northeast.



View of ruderal habitat followed by disturbed coastal sage scrub habitat in the southeast portion of the site. View looking south.

Hernandez Environmental Services



View of ruderal habitat and disturbed areas on site followed by rural residential development in the distance. View looking north.



View of disturbed coastal sage scrub in the northeast corner of the site followed by ruderal habitat and disturbed areas onsite. View looking west.



View of riparian area on site followed by residential area along Tradewinds Drive in the distance. View looking west.

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APPENDIX D

Soil Map—Western Riverside Area, California
(Property Line)



Map Scale: 1:3,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 17, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded	0.1	0.3%
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded	23.1	59.3%
EpC2	Exeter sandy loam, deep, 2 to 8 percent slopes, eroded	2.6	6.7%
FfC2	Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded	4.5	11.6%
GyA	Greenfield sandy loam, 0 to 2 percent slopes	0.0	0.0%
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	5.2	13.4%
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, eroded	0.8	2.1%
MmB	Monserate sandy loam, 0 to 5 percent slopes	2.5	6.5%
RaA	Ramona sandy loam, 0 to 2 percent slopes, MLRA 19	0.0	0.1%
Totals for Area of Interest		**38.9**	**100.0%**

APPENDIX E

Memorandum

County Case No. PPT250045

Date: August 10th, 2026 (Revised)

To: Jeremy Krout EPD Solutions, Inc.

From: Juan J. Hernandez, Principal Biologist

Subject: Focused Burrowing Owl Survey Report for Assessor's Parcel Numbers 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 located in Riverside County, California.

This memorandum provides the methods and results of a Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) burrowing owl (*Athene cunicularia*) (BUOW) survey for Assessor's Parcel Numbers (APNs) 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 located at the northeast corner of Mapes Road and Tradewinds Drive in the census designated area of Romoland, Riverside County, California The project proposes the construction of a single-family residential development including 157 single-family residential lots (Figure 3).

Project Location

The approximately 39.9-acre project site is located at the northeast corner of Mapes Road and Tradewinds Drive in the census designated area of Romoland, Riverside County, California. The site consists of Riverside County APNs 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018. Specifically, the project site is located within Township 5 South, Range 3 West in Section 2 of the *Perris* United States Geological Survey (USGS) 7.5' topographic quadrangle. The center point latitude and longitude coordinates for the project site are 33° 45' 34.1246" North, 117° 09' 54.2262" West. Refer to Figures 1 and 2. The study area included APNs 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 and a 150-meter (500-foot) buffer around the site, where accessible (Figure 4).

Project Contact Information

Owner/Applicant: EPD Solutions, Inc.
2355 Main Street, Suite 100
Irvine, CA 92614

Principal Investigator: Juan J. Hernandez
Hernandez Environmental Services

Field Survey Methods

HES implemented the three steps as described in the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area*. The "General Biological Assessment and Western Riverside MSHCP Consistency Analysis" prepared for the project, determined that focused surveys for BUOW would be required due to recorded historic observations near the site and the presence of suitable habitat documented during the March 24, 2025 habitat assessment. In accordance with the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area*, focused burrow and focused BUOW surveys (Part A and Part B, respectively) were conducted on four separate days during the breeding season: March 24, April 15, May 12, and June 30. Survey times, weather, and sunrise/sunset information are described in Table 1 below.

Table 1. Survey Information

Survey	Date	Survey Start Time	Survey End Time	Sunrise/Sunset	Weather
1	March 24, 2025	0720 hours	O830 hours	0645 hours 1903 hours	53-59 degrees Fahrenheit, clear skies, winds 0- 2 miles per hour from the south
2	April 15, 2025	0700 hours	O815 hours	0616 hours 1920 hours	50-53 degrees Fahrenheit, 100% cloudy, winds 0-2 miles per hour from the northeast
3	May 12, 2025	O643 hours	O745 hours	0549 hours 1940 hours	58-61 degrees Fahrenheit, 40% cloudy, winds 0-8 miles per hour from the north
4	June 30, 2025	O640 hours	O740 hours	O542 hours 2003 hours	66-70 degrees Fahrenheit, clear skies, winds 0-3 miles per hour from the northwest

Surveys were conducted from one hour before sunrise to two hours after sunrise or two hours before sunset to one hour after sunset and during weather that was conducive to observing owls outside their burrows and detecting BUOW sign. The surveys were not conducted during rain, high winds (> 20 miles per hour), dense fog, or temperatures above 90 degrees Fahrenheit. Surveys involved walking through potentially suitable habitat within the survey area. The

pedestrian survey transects were spaced approximately 30 to 50 feet apart to allow 100 percent visual coverage of the ground surface. Special attention was paid to those habitat areas that appeared to provide suitable habitat for BUOW. Where permission to access the buffer areas could not be obtained, the biologist visually inspects adjacent habitats with binoculars.

All encountered burrows or structure entrances were checked for the presence of BUOW, molted feathers, cast pellets, prey remains, eggshell fragments, tracks, or excrement. Natural or man-made structures and debris piles that could support BUOW were also surveyed. The locations of all suitable BUOW habitat, potential burrows, BUOW sign, and any BUOW observed were recorded and mapped with a handheld Global Positioning System (GPS) unit.

All wildlife species encountered visually or audibly during the field survey were identified and recorded in field notes. Binoculars were used to aid in the identification of observed wildlife. Photographs were taken to document existing conditions within the survey area.

Results

The project site contains three types of habitats: ruderal/disturbed, disturbed coastal sage scrub, and ephemeral pools. Soils at the project site are classified as Cieneba rocky sandy loam (CkF2), 15 to 50 percent slopes, eroded; Exeter sandy loam (EnC2), 2 to 8 percent slopes, eroded; Exeter sandy loam (EpC2), deep, 2 to 8 percent slopes, eroded; Fallbrook fine sandy loam (FfC2), 2 to 8 percent slopes, eroded; Greenfield sandy loam (GyA), 0 to 2 percent slopes, eroded; Greenfield sandy loam (GyC2), 2 to 8 percent slopes, eroded; Hanford coarse sandy loam (HcD2), 8 to 15 percent slopes, eroded; Monserate sandy loam (MmB), 0 to 5 percent slopes; and Ramona sandy loam (RaA), 0 to 2 percent slopes, and MLRA 19. The project site is flat with elevation ranges from 1,456 feet above mean sea-level (AMSL) to 1,525 feet AMSL. The site contains primarily ruderal habitat and evidence of past anthropogenic activity is apparent. The dominant species on site are shortpod mustard (*Hirschfeldia incana*), fiddleneck (*Amsinckia* sp.), cheeseweed (*Malva parviflora*), mouse barley (*Hordeum murinum*), and stinknet (*Oncosiphon piluliferum)*.

The habitat assessment conducted on March 24, 2025, found that the project site provides suitable burrows/nesting opportunities for BUOW. Evidence of ground squirrels and ground squirrel activity was observed, and approximately 103 suitable burrows were identified and recorded on the project site (Figure 5). No BUOW signs including molted feathers, cast pellets, prey remains, whitewash, or excrement, were observed

Based on the absence of BUOW and BUOW evidence (i.e., scat, pellets, and feathers) within the study area, it can be concluded that the study area is not in use by BUOW.

Recommendations

Due to the fact that the project site is located within the Western Riverside County MSHCP burrowing owl survey area, a 30-day preconstruction survey is required prior to the commencement of project activities (e.g. vegetation clearing, clearing and grubbing, tree removal, site watering) to ensure that no owls have colonized the site in the days or weeks preceding project activities. If BUOW are found to have colonized the project site prior to the initiation of construction, the project proponent will immediately coordinate with CDFW and as directed by CDFW, prepare a Burrowing Owl Protection and Relocation Plan for CDFW review and approval prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure burrowing owl has not colonized the site since it was last disturbed. If burrowing owl is found, the same coordination described above will be required.

Certification

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



Date: August 18, 2025 Updated: August 10, 2026

Juan J. Hernandez
Principal Biologist

Enclosures:

Figure 1: Project Location Map
Figure 2: Project Vicinity Map
Figure 3: Project Plans
Figure 4: BUOW Survey Area Map
Figure 5: BUOW Survey Results Map
Appendix A: Site Photographs



Legend

Project Site

N

Hernandez Environmental Services

Figure 1

Location Map

Mapes and Tradewind

Romoland, Riverside County, CA

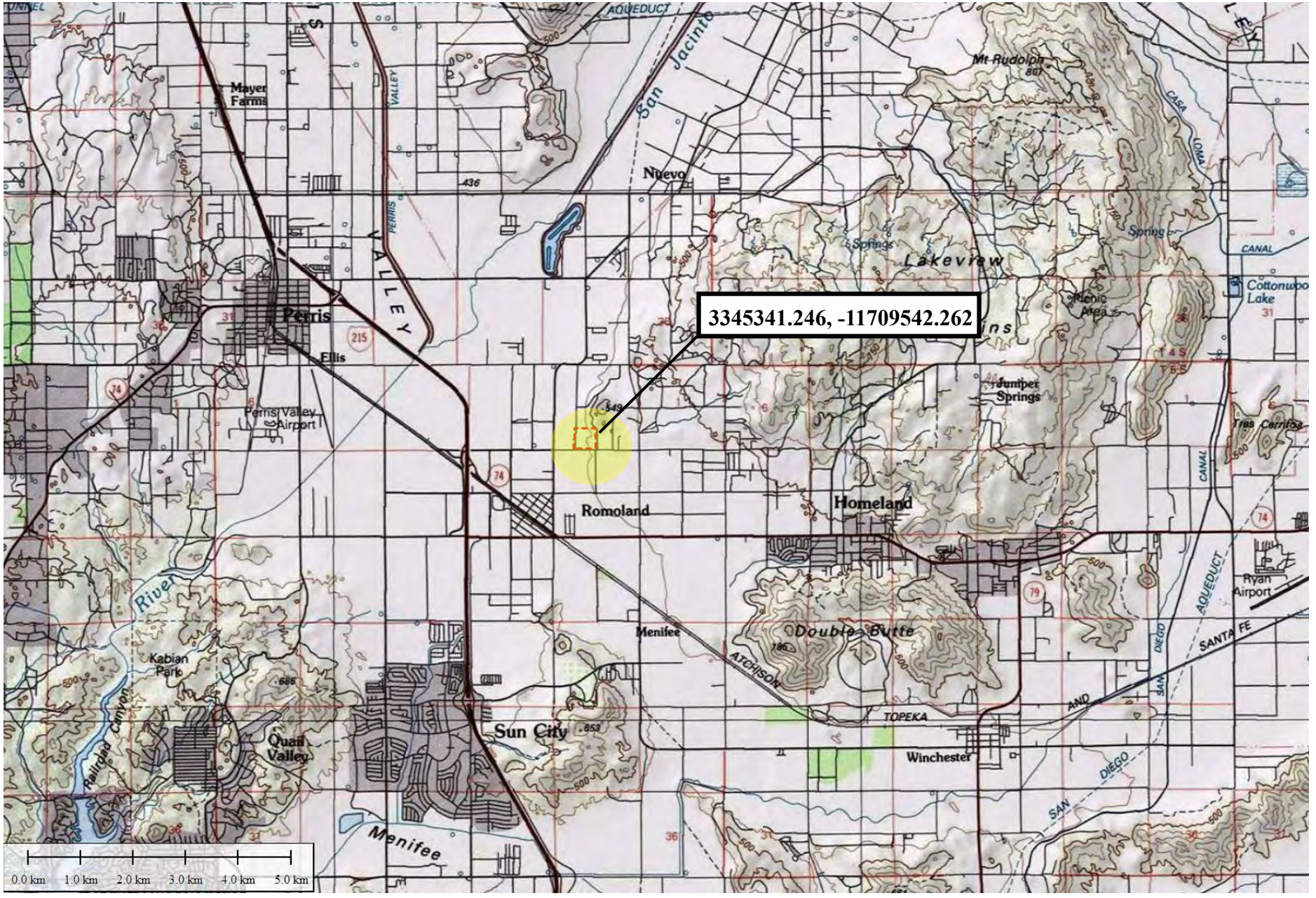


Figure 2

Vicinity Map

Mapes and Tradewind

Romoland, Riverside County, CA

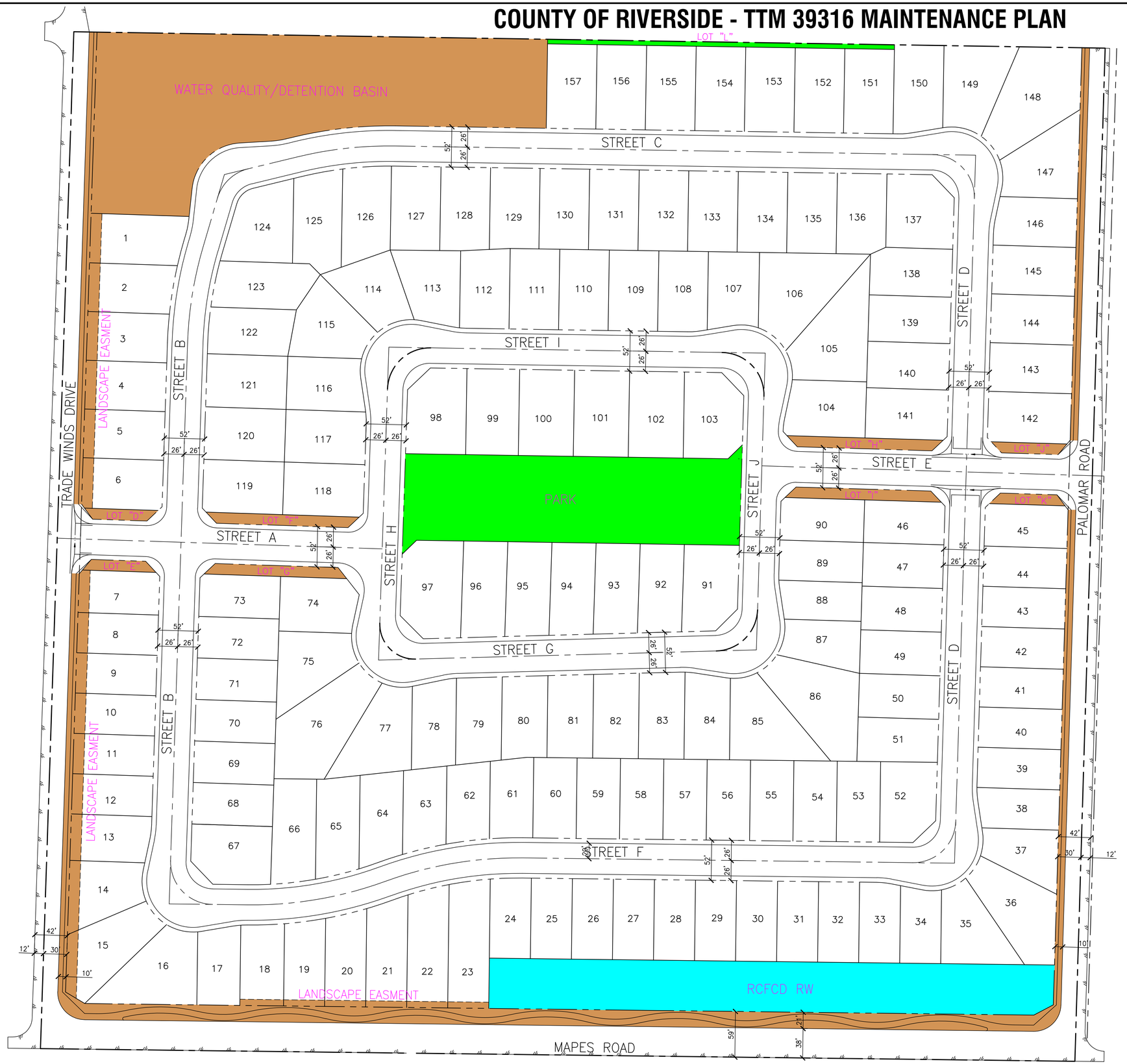
Legend

Project Site

N

Hernandez Environmental Services

COUNTY OF RIVERSIDE - TTM 39316 MAINTENANCE PLAN



LEGEND

AREA = 51,563 SF
HOA MAINTAINED

AREA = 47,245 SF
RCFCD MAINTAINED

AREA = 167,996 SF
COUNTY CFD MAINTAINED

60' 0' 60' 120' 180'
SCALE IN FEET

DATE OF EXHIBIT: 2/3/26

KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1181 CALIFORNIA AVENUE, SUITE 235 • CORONA, CA. 92881-3370 • 951-734-2130

PRINT: 02/03/2026
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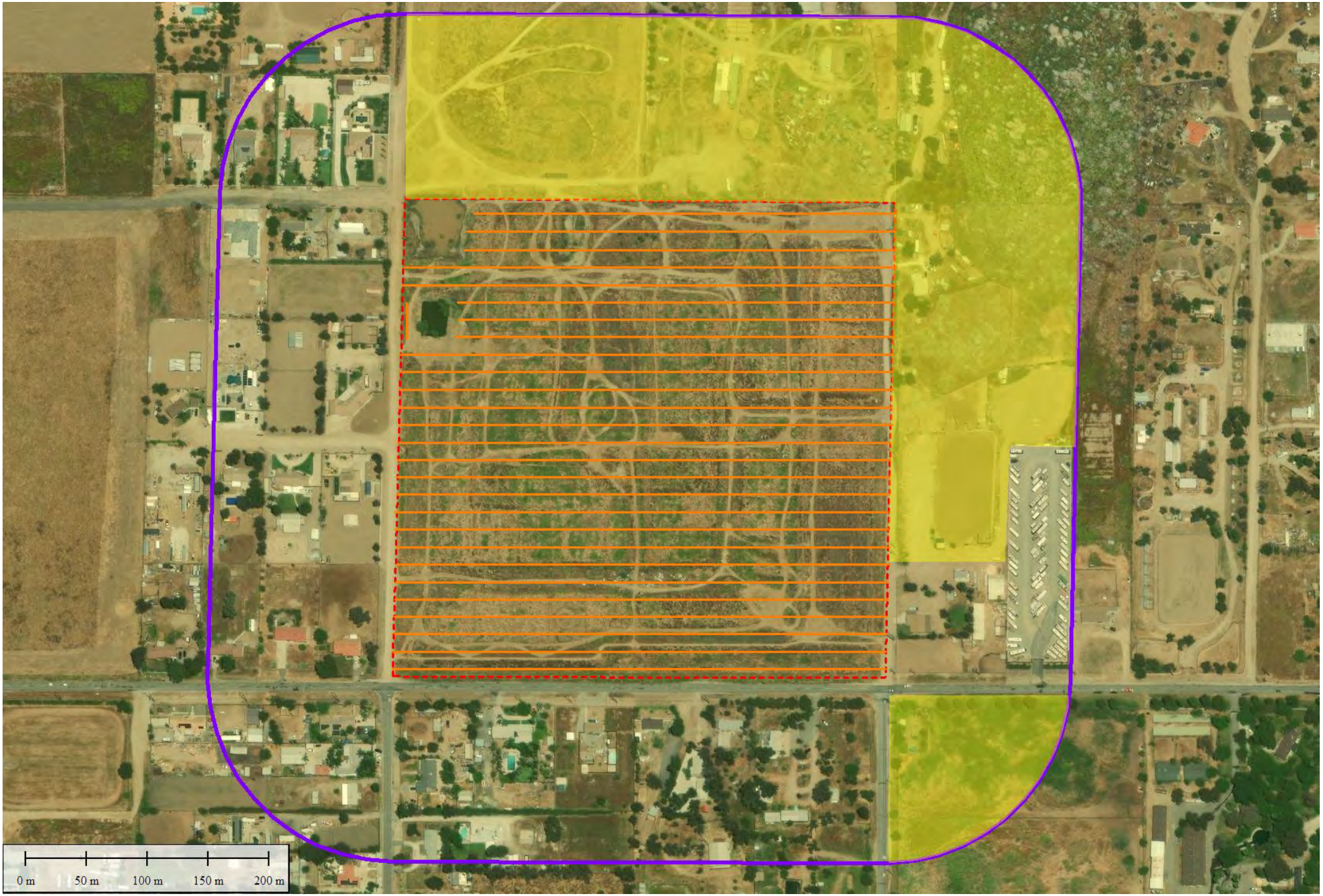


Figure 4

BUOW Survey Area Map
Mapes and Tradewind
Romoland, Riverside County, California

Legend

- Project Site Boundary
- 500 Foot Buffer
- Area Viewed with Binoculars
- Transects

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Hernandez Environmental Services

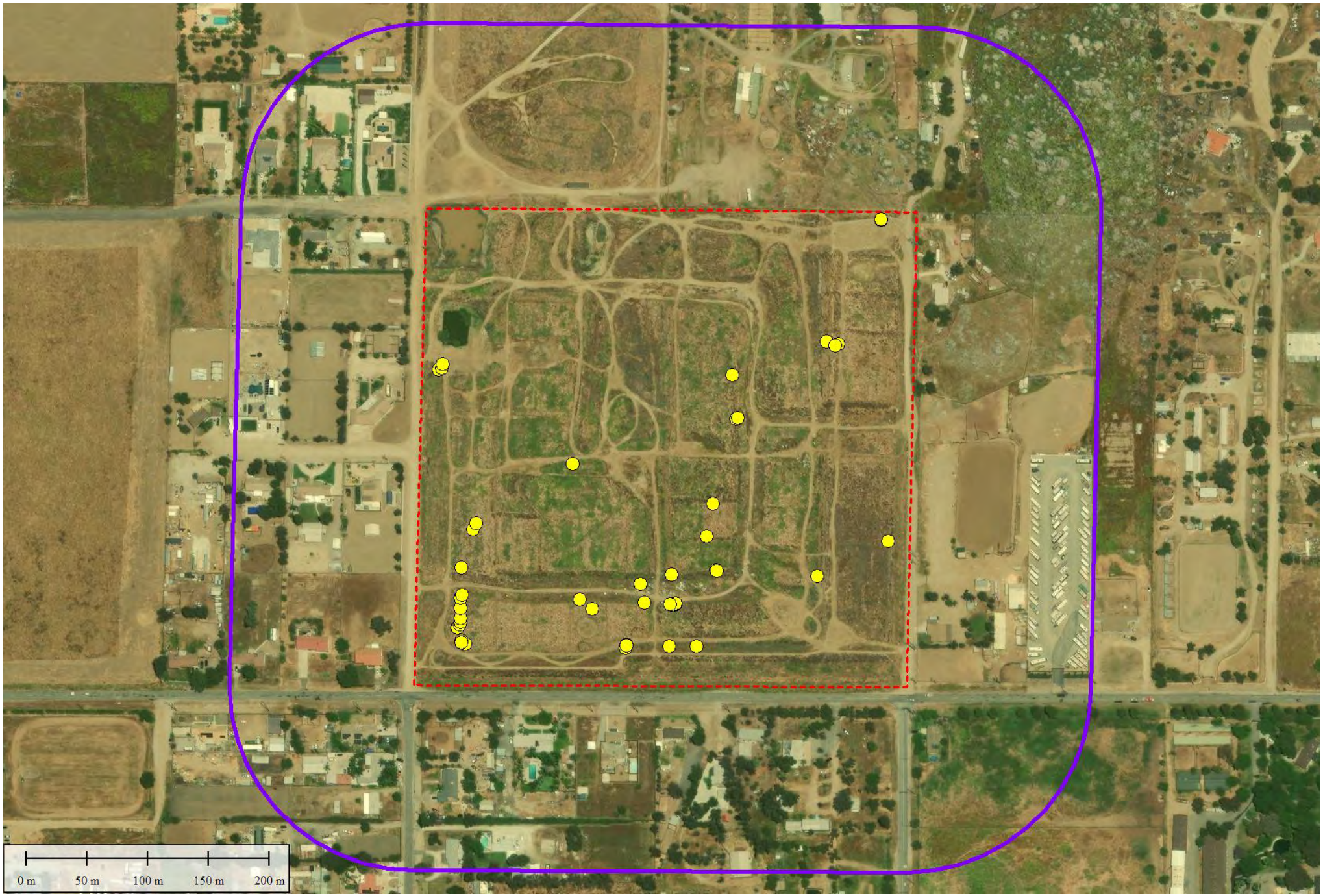


Figure 5

BUOW Survey Results Map
Mapes and Tradewind
Romoland, Riverside County, CA

Legend

Project Site Boundary

500-Foot Buffer

Suitable Burrows onsite (x103)

N

Hernandez Environmental Services



View of ruderal habitat and disturbed areas on. View looking northwest.



View of disturbed area throughout ruderal habitat on site followed by hillside containing rock outcrops. View looking north.



View of a potential burrow complex providing suitable BUOW habitat. No BUOW or BUOW sign was observed.

Hernandez Environmental Services

APPENDIX F

August 10, 2026 (Revised)

Hernandez Environmental Services

Jeremy Krout
EPD Solutions, Inc.
3333 Michelson Drive, Suite 500
Irvine, CA 92612

Subject: 2025 Presence/Absence Surveys Report for the Crotch's Bumble Bee for Assessor's Parcel Numbers 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 located in Riverside County, California.

Dear Mr. Krout:

This letter presents the results of a California Department of Fish and Wildlife (CDFW) presence/absence surveys for the Crotch's bumble bee (*Bombus crotchii*; CBB), a candidate species under the California Endangered Species Act (CESA), for Assessor's Parcel Numbers (APNs) 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490-001 to -018 located in Riverside County, California. Candidate species receive the same protections as listed species under CESA. This report describes the methods used to perform the survey and the results. CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species* recommends submittal of CBB survey results to CDFW prior to initiation of ground disturbing project activities (2023).

Project Location

The approximately 39.9-acre project site is located at the northeast corner of Mapes Road and Tradewinds Drive in the census designated area of Romoland, Riverside County, California. The site consists of Riverside County APNs 327-480-001 to -022, 327-481-001 to -011, 327-490-001 to -016, and 327-490- 001 to -018. Specifically, the project site is located within Township 5 South, Range 3 West in Section 2 of the *Perris* United States Geological Survey (USGS) 7.5' topographic quadrangle. The center point latitude and longitude coordinates for the project site are 33° 45' 34.1246" North, 117° 09' 54.2262" West. Refer to Figures 1 and 2.

Methodology

Literature Review

Prior to initiation of the presence/absence surveys, a literature review was conducted to identify special-status biological resources present or potentially present in the vicinity of the project area using the California Natural Diversity Database (CDFW 2024; CNDDB) and the U.S. Fish and Wildlife Service Critical Habitat and Occurrence Database (USFWS 2024). The *Perris* USGS 7.5' topographic quadrangle and the eight surrounding USGS 7.5' quadrangles were queried.

A review of available occurrence records from CNDDB and other public biodiversity databases, including iNaturalist identified no recent documented Crotch's bumble bee occurrences within the immediate project vicinity. Available records in the broader area are generally associated with less disturbed habitat.

Suitable foraging habitat for Crotch's bumble bee occurs primarily within disturbed coastal sage scrub patches and portions of ruderal habitat containing flowering resources such as California buckwheat (*Eriogonum fasciculatum*), fiddleneck (*Amsinckia* sp.), and shortpod mustard (*Hirschfeldia incana*). Unsuitable habitat includes heavily disturbed bare ground, compacted dirt paths, and developed/disturbed areas with limited nectar resources.

Field Surveys

Potential CBB habitat was identified within the project site during a habitat assessment. The project site includes approximately 1.68 acres of potential CBB habitat (Figure 3). CBB presence/absence surveys consisted of three site visits spaced at least two weeks apart, in accordance with the current CDFW survey guidelines (Table 1). All surveys were conducted within the CBB colony active period (April to August). CBB presence/absence surveys were conducted by walking line transects throughout and at the perimeter of the project site, accounting for suitable CBB nesting locations, pollen and nectar sources, and foraging bumble bee activity. The survey transects were arranged to ensure complete survey coverage of potential CBB habitat within the project site. Surveys covered approximately three acres per biologist per hour. Surveys were conducted with binoculars and a camera to aid in insect detection and later identification. Details of the survey dates, times, and conditions are described in Table 1. A list of plant species observed during the focused surveys is included in Appendix A. Representative site photographs were taken and are included within Appendix B. If detected, photographs were taken of *bombus* species encountered during the surveys.

Table 1. Survey Information

Survey	Date	Survey Start Time	Sunrise/Sunset	Weather
1	June 30, 2025	1000 hours	0542 hours 2330 hours	86 degrees Fahrenheit, clear skies, winds 0-4 miles per hour from the east.
2	July 18, 2025	1030 hours	0552 hours 1958 hours	82 degrees Fahrenheit, 40% cloud coverage, winds 0-4 miles per hour from east.
3	August 11, 2025	0930 hours	0608 hours 1938 hours	82 degrees Fahrenheit, clear skies, winds 0-6 miles per hour from the north.

Results

Biologists Cruz Hernandez and Sarah Vasquez conducted three CBB presence/absence surveys during the CBB's peak colony activity window (CDFW 2023). During all three surveys, common invertebrates were observed nectaring on California buckwheat (*Eriogonum fasciculatum*) and shortpod mustard (*Hirschfeldia incana*). Small mammal burrows were present but but no evidence of Crotch's bumble bee was observed. Substantial leaf litter, duff, or other suitable overwintering habitat also was not observed. Based on the limited habitat suitability and completed focused surveys, the likelihood of occurrence is very low. Common invertebrates observed on site included western honeybee (*Apis mellifera*), cabbage white butterfly (*Pieris rapae*), and scoliid wasp (*Scoliidae* sp.), as depicted in Table 2. No Crotch's bumble bees were observed during the presence/absence surveys.

Table 2. *Bombus* Species Detected During Each Survey

Date	Survey Round	Bombus crotchii	Bombus melanopygus	Bombus vosnesenskii	Bombus sonorus	Bombus californicus
June 30, 2025	1	0	0	0	0	0
July 18, 2025	2	0	0	0	0	0
August 11, 2025	3	0	0	0	0	0

Certification

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

Date: November 6, 2025

Shawn Gatchel-Hernandez
Principal Regulatory Specialist

Date 08-10-2026 Signed

PROJECT MANAGER

Enclosures:

Figure 1: Project Location Map
Figure 2: Project Vicinity Map
Figure 3: CBB Survey Results Map
Appendix A: Plant Species Observed
Appendix B: Site Photographs
Appendix C: Resume and Contact Information
(Huffman Biologists also confirmed on the findings)

FIGURES



Legend

Project Site

N

Hernandez Environmental Services

Figure 1

Location Map

Mapes and Tradewind

Romoland, Riverside County, CA

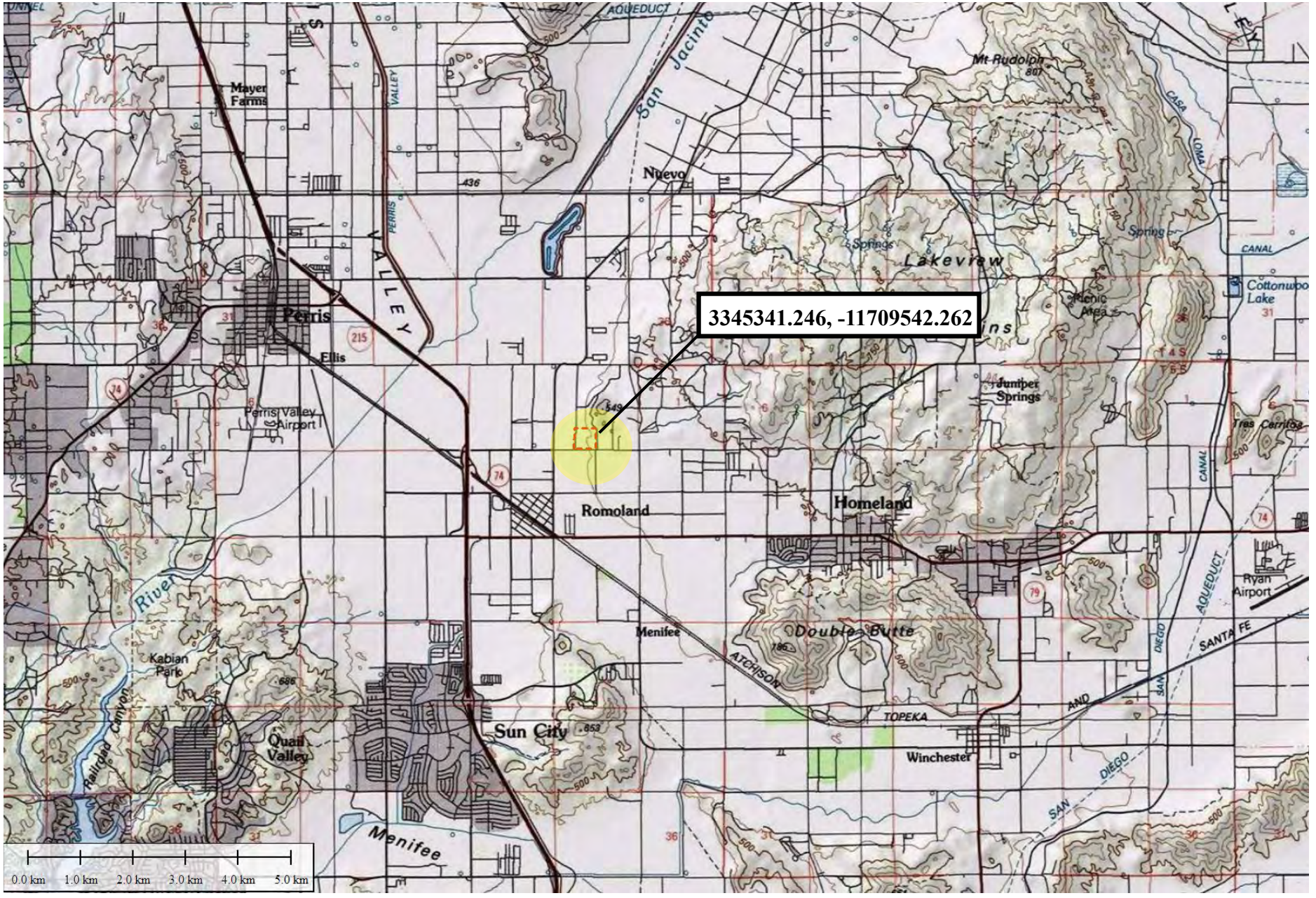


Figure 2

Vicinity Map

Mapes and Tradewind

Romoland, Riverside County, CA

Legend

Project Site

N

Hernandez Environmental Services

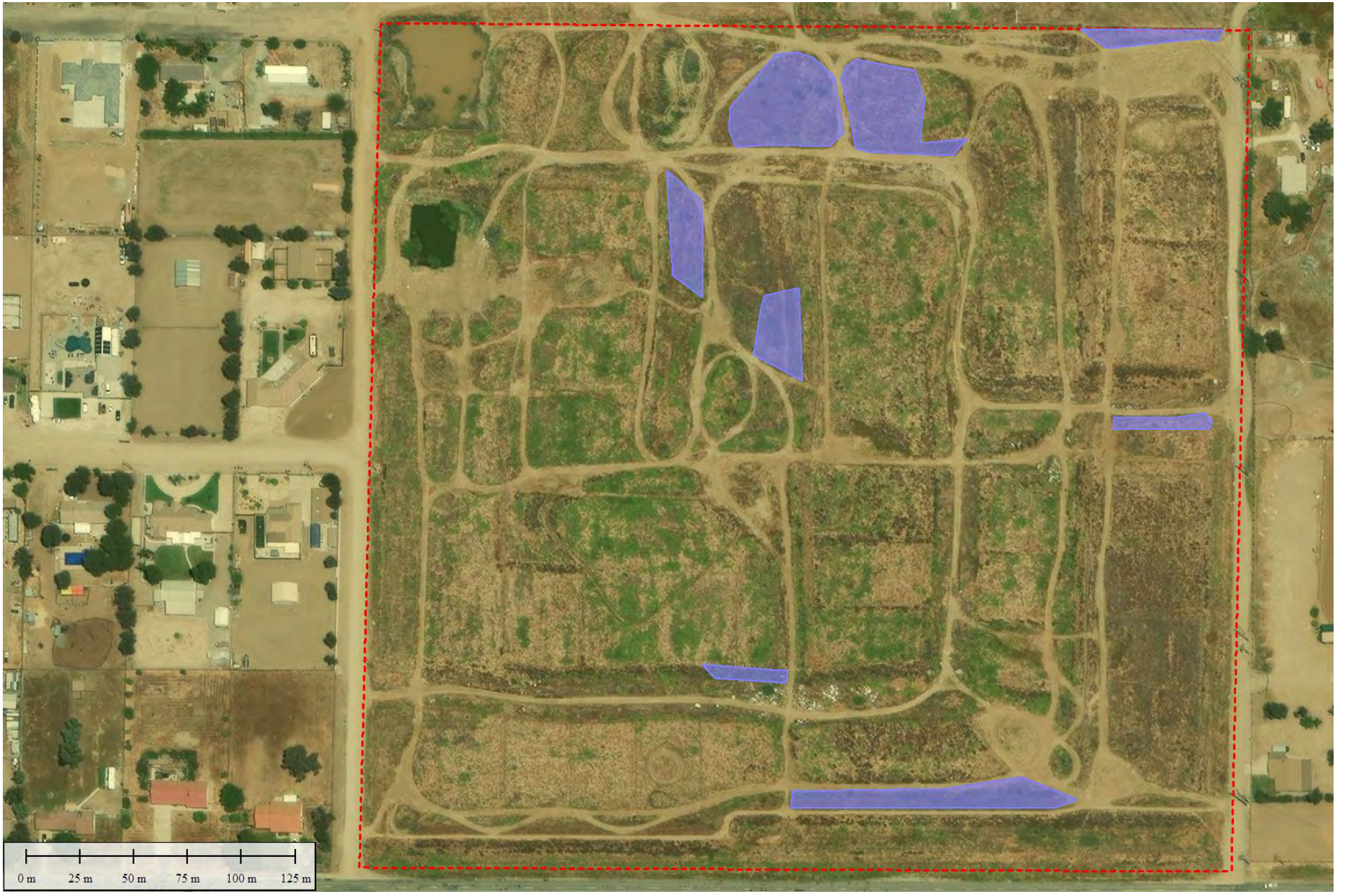


Figure 3

CBB Survey Results Map
Mapes and Tradewind
Romoland, Riverside County, California



View of honeybee (*Apis mellifera*) nectaring on California buckwheat (*Eriogonum fasciculatum*).



View of scoliid wasp (*Scoliidae sp.*) nectaring on California buckwheat.



View of ruderal habitat containing shortpod mustard (*Hirschfeldia incana*). View looking north.

Hernandez Environmental Services

SARAH VASQUEZ

BIOLOGIST

PROFESSIONAL SUMMARY

Senior biologist with experience in special-status species surveys, habitat assessments, biological monitoring, technical report preparation, environmental compliance, and regulatory support throughout Southern California. Experienced in coordinating field activities, documenting biological resources, evaluating habitat suitability, and preparing clear technical documentation for agency and client review.

CORE QUALIFICATIONS

- Special-status species presence/absence surveys, habitat assessments, preconstruction surveys, and biological monitoring.
- Technical report preparation for biological resources and focused species surveys, including burrowing owl, desert tortoise, nesting birds, Crotch's bumble bee, least Bell's vireo, rare plants, and other sensitive biological resources.
- Western Riverside County MSHCP consistency/compliance documentation, biological assessments, constraints analyses, and regulatory permitting support.
- Jurisdictional delineations, vegetation and habitat characterization, GPS-based field data collection, mapping support, and daily field reporting.
- Worker Environmental Awareness Program (WEAP) preparation, implementation of avoidance/minimization measures, and construction-compliance monitoring.
- Project coordination and management of biological field activities, schedules, documentation, and deliverables.

PROFESSIONAL EXPERIENCE

Hernandez Environmental Services | *August 2021 - February 2026*

- Senior Biologist, March 2025 - February 2026
- Biologist / Project Manager, prior role

onsulting experience included biological studies and monitoring in Riverside, Los Angeles, Imperial, Orange, and San Diego Counties; preparation of biological assessments and focused survey reports; MSHCP compliance documentation; jurisdictional evaluations; permitting support; mapping and field logs; and worker environmental awareness materials.

EDUCATION

- B.S., Biology, California State University, San Bernardino, 2021

SPECIALIZED TRAINING

- Introduction to Mojave Desert Tortoise, Desert Tortoise Council, 2021
- California Bumble Bee Atlas and Field Training, 2023
- Rare Plant Survey Protocols, 2024
- Wetland Delineation, 2022

Huffman

ENVIRONMENTAL

Qualified Biologist in various special-status species including but not limited to: Least Bell's Vireo, California Gnatcatcher, Bumblebee Special Status Species, Bat Special Status Species etc.

Please contact at

garrett@huffmanenvironmental.com

or 623-238-1545

APPENDIX G

Mapes Project

Fairy Shrimp Wet & Dry Season Surveys
Final Report

REVISED AUGUST 2026

County Case No. PPT250045

PREPARED BY

Huffman Environmental
PO Box 2024
Julian, CA 920'36

PREPARED FOR

Hernandez Environmental
17037 Lakeshore Drive
Lake Elsinore, CA 92530

Huffman
ENVIRONMENTAL

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2.2 Historical Occurrences 1
2.3 Natural History 1

3. Methods **2**

3.1 Habitat Assessment 2
3.2 Wet Season Survey Methodology 3
3.3 Dry Season Survey Methodology 3
3.4 Soil Processing for Cyst Presence 4

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Figures

Figure 1. Project Location
Figure 2. USGS Map Location
Figure 3. Wet & Dry Season Results

Appendices

Appendix A. Site Photos
Appendix B. Dry Season Sampling Results
Appendix C. Data Sheets

1. Summary

Huffman Environmental, LLC was contracted to conduct United States Fish and Wildlife Service (USFWS) Protocol-level 2025 wet- and dry-season vernal pool branchiopod surveys for the Mapes Project (herein Project) located in Riverside County, California. The Project site supports 27 ponding features capable of supporting vernal pool branchiopods (herein fairy shrimp).

Of the ponding features evaluated, all features testing positive for fairy shrimp contained Lindahl's fairy shrimp (*Branchinecta lindahli*). No federally listed Endangered or Threatened branchiopod species were detected during the processing of either wet- or dry-season samples.

2. Introduction

2.1 Project Location

The proposed 39.9-acre Project is in the U.S. Geological Survey Perris Quadrangle, County of Riverside, in the census-designated area of Romoland, California. The Project is east of the Eastern Municipal Water District and north of State Route 74 (Figures 1 and 2).

2.2 Historical Occurrences

No recorded sensitive fairy shrimp are within the Project boundaries per the California Natural Native Database (CNDDB) and United States Fish and Wildlife Services (USFWS) National GIS Database. The nearest recorded observation identified the vernal pool fairy shrimp (*Branchinecta lynchi*) occurring 7 miles southeast of the project site (CDFG, 2025).

2.3 Natural History

USFWS currently has listed six branchiopod species as Endangered or Threatened: Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynch*i), Riverside fairy shrimp (*Streptocephalus woottoni*), and the San Diego fairy shrimp (*Branchinecta sandiegonensis*). These species collectively are called the "Listed Large Branchiopods." These species have all been listed by USFWS primarily due to the acceleration of human expansion and urban construction in the vernal pool habitat. Additionally, vernal pool hydrology has been impacted through water flow alteration by various infrastructure developments, such as roads, trails, canals, and so forth (USFWS Oregon 2020).

In addition to federal protections under the Endangered Species Act, listed fairy shrimp species are protected by the California Endangered Species Act and are considered sensitive biological resources by the California Department of Fish and Wildlife. Riverside fairy shrimp (*Streptocephalus woottoni)* and vernal pool fairy shrimp (*Branchinecta lynchi*) are also covered under the Western Riverside County MSHCP.

Vernal pools are formed from restrictive substrate layers under the ground surface, reducing water percolation. Once these layers within the subsoil become inundated, the basin will begin to fill. This allows ponding, creating a habitat for fairy shrimp (CDFW 1998). Specific plant species have become endemic to these features and can be used to aid in the identification of vernal pools.

Habitat for fairy shrimp can naturally form or be created by other artificial, topographic features mimicking the aquatic habitat of the natural vernal pools (Sutter, 1998). These vernal pool mimics may include anthropogenic features such as tire ruts, agricultural and construction ditches, cement culverts, etc.

All of the branchiopods, as mentioned above, have limited life spans of no longer than 150 days and can be completed in as little as 20 days with a relatively quick reproduction rate between 20 to 60 days (USFWS 1994). These species will deposit their embryos into the substrate, enveloped by a protective shell known as cysts. These cysts protect the embryos during the dry seasons and are exposed to various elements. Cysts have been known to be viable for up to 15 years (Eriksen & Belk, 1999). Given the appropriate conditions, these cysts will break dormancy after environmental stimuli, such as precipitation, and restart the life cycle.

3. Methods

3.1 Habitat Assessment

Huffman Environmental conducted a wet season survey assessment of the Project site with over 15 visits between February 21 and May 23, 2025, and concluding when all ponding features had dried for the remainder of the season. These surveys were conducted to determine habitat suitability for supporting fairy shrimp. The Project site consists of multiple constructed basins and an extensive network of access roads traversing undeveloped, ruderal vegetation communities that have been subjected to substantial off-road vehicle disturbance. A total of 27 topographic depressions (Features M-01 through M-27) exhibited evidence of prior ponding, indicating the potential to support fairy shrimp life cycles under suitable hydrologic conditions. These were mapped using the Geographical Information Systems (GIS) ArcGIS mobile application, Field Maps.

.

3.2 Wet Season Survey Methodology

Survey methodology was conducted in accordance with the USFWS Survey Guidelines for Listed Large Branchiopods revised November 13, 2017 for wet season vernal pool branchiopod surveys. Per the Guidelines, the wet season generally occurs in California between October and June. Surveys commenced on February 21, 2025, and concluded May 23, 2025. Each feature was sampled at seven-day intervals until dry, and sampling was re-initiated within seven days if the feature became inundated again. Sampling at a feature is discontinued if it went dry for the season or reached 120 days of continuous inundation. Huffman Environmental biologist, Garrett Huffman and Ryan Meszaros (under TE-20186A-3.4), conducted all wet season sampling in the survey area.

Data collected for each feature included the average and maximum water depth, water and air temperature, length and width, type of disturbance (if applicable), presence of fairy shrimp, and detection of any other benthic macroinvertebrates. The feature was sampled using a standard 50 micron handheld net to sweep through the water and examine invertebrates. When present, representative quantities of fairy shrimp are collected and vouchered from each feature.

3.3 Dry Season Survey Methodology

Dry-season soil samples were collected from the Project site on June 10, 2025, in accordance with the the USFWS Survey Guidelines for Listed Large Branchiopods (USFWS 2017). The USFWS Survey Guidelines provide a formula recommending the number of samples collected per feature based on the approximate size of the feature in square meters. Due to many of the features being close in proximity and along the same access road, they were combined into a complex for soil processing. Two features were estimated to be less than 25 square meters each requiring a minimum of 10 collected soil samples. Eight features/complexes were estimated to be between 25 and 235 square meters (0.005 and 0.05 acres), each requiring a minimum of 25 collected soil samples. Regardless of feature size, all samples are recommended to be collected in volumes of 50 to 100 milliliters each. Each sample was collected from the lowest topographic areas within the pool to maximize the potential detection of fairy shrimp cysts.

Dry sample collections were conducted by biologist Garrett Huffman (TE-20186A-3.4) along with trainee Blanca Martinez and Ryan Meszaros. Biologist Chuck Black (TE-835549-8) conducted dry sample processing and cyst hatching. All data compiled during dry sample processing can be reviewed in Appendix B.

Table 1: **Dry Sample Quantities**

Mapes Project	Samples
M-01	25
M-02	25
M-03; M-07	25
M-04; M-10 to 12; M-18-20; M-22 to 24	25
M-05; M-13-17	25
M-06	10
M-08; M-09; M-21	25
M-22	10
M-25	25
M-26; M-27	25
Total	220

3.4 Soil Processing for Cyst Presence

Project samples were hydrated for approximately 1-2 hours in tap water and then washed through a set of sieves. The material was passed through a Number 45 (.0139") USA Standard Testing Sieve, A.S.T.M.E.-11 specification, and caught on a Number 70 (.0083") Sieve. The filtered material was then rinsed into a container with approximately 50 millimeters of a saturated brine solution to float organic material, including fairy shrimp cysts. The material floating on the brine was decanted onto a paper filter on a filter funnel, and water was removed through the filter paper by vacuum suction. A 6.3-570x power Olympus SZX9 Zoom Stereo Microscope was used to examine the remaining material. Distinctive fairy shrimp cysts, if present, were individually counted (if less than approximately 50) or estimated (for larger numbers) by examining ¼ or ½ subsections of the filter and multiplying the subset by the appropriate factor. The presence and number of ostracod shells and cladoceran ephippia were also noted in samples.

4. Results

As shown on the soil map included in GBA Appendix D, mapped soils within the project area include Cieneba rocky sandy loam (CkF2), 15 to 50 percent slopes, eroded, and Exeter sandy loam (EnC2), 2 to 8 percent slopes, eroded. These soil types can create localized depressions which retain water during winter and spring precipitation, creating seasonal ponding. During the 2025 wet-season surveys, ponding features were observed across the project area and retained water long enough to support fairy shrimp cyst hatching and development before drying by the end of the survey period.

Project samples were collected from 27 ponding features, which were combined into complexes where hydrologic connectivity was observed or functionally apparent. Fairy shrimp cysts were detected in all 27 features. All cysts that successfully hatched were cultured to maturity and subsequently identified as Lindahl's fairy shrimp (*Branchinecta lindahli*).

Over the course of 15 wet-season sampling visits, Lindahl's fairy shrimp was the only species detected across all sampled features (Figure 3).

Table 2: **Survey Results**

M-01	M-02	M-03	M-04	M-05	M-06	M-07	M-08	M-09	M-10	M-11
B. Lindahli	*B. Lindahli*	*B. Lindahli*	*B. lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*
M-12	**M-13**	**M-14**	**M-15**	**M-16**	**M-17**	**M-18**	**M-19**	**M-20**	**M-21**	**M-22**
B. Lindahli	*B. lindahli*	*B. Lindahli*	*B. lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*
M-23	**M-24**	**M-25**	**M-26**	**M-27**						
B. Lindahli	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*	*B. Lindahli*						

5. Conclusion

The wet- and dry-season surveys were conducted in full accordance with the USFWS Vernal Pool Branchiopod Survey Guidelines. No federally listed Endangered or Threatened fairy shrimp species were detected during wet and dry season sampling efforts. The survey design, field methods, and laboratory analyses are considered sufficient to accurately determine species presence or absence within the Project site. Accordingly, these results meet the USFWS criteria for a complete, protocol-level survey and represent a comprehensive assessment of vernal pool branchiopod occurrence on-site.

6. Certification

All biologists working under Huffman Environmental for the 2025 wet and dry season surveys for fairy shrimp on the Mapes Project were permitted to survey this species under Section 10(a)(1)(A) of the ESA.

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

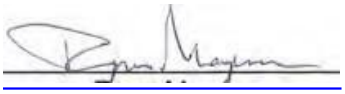
Please feel free to contact me at (623) 238-1545 or garrett@huffmanenvironmental.com if you have any questions regarding the contents of this report.

Cordially,



Garrett Huffman
Principal Biologist

Huffman Environmental, LLC
(623) 238-1545
garrett@huffmanenvironmental.com



Ryan Meszaros

Senior Biologist

7. References

California Department of Fish and Wildlife (CDFW). 2025a. California Native Diversity Database (CNDDB), RareFind 5. Commercial version, July 14, 2025. California Department of Fish and Wildlife, Sacramento, California. Available at: https://wildlife.ca.gov/Data/CNDDB.

California Department of Fish and Wildlife (CDFW). 2025b. Biogeographic Information and Observation System (BIOS). California Department of Fish and Wildlife, Sacramento, California. Available at: https://wildlife.ca.gov/Data/BIOS.

C. W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). *Ecology,Conservation, Management of Vernal Pool Ecosystems* – Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA, 1998

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

Keeler-Wolf, T., D. R. Elam, K. Lewis, and S. A. Flint. 1998. California Vernal Pool Assessment Preliminary Report. California Department of Fish and Game, State of California. 159 pp.

Keeley, J.E. and P.H. Zedler. *Characterization and Global Distribution of Vernal Pools*. Pp 1-14

U.S. Fish and Wildlife Service. 2017. *Survey Guidelines for Listed Large Branchiopods*. November 13, 2017.

Oregon Fish and Wildlife. *Vernal Pool Fairy Shrimp.* December 2019. https://www.fws.gov/oregonfwo/articles.cfm?id=149489448

U.S. Fish and Wildlife Service. 1994. *Endangered and Threatened Wildlife and Plants;Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp*. Federal Register 59 (180): 48136-48152.

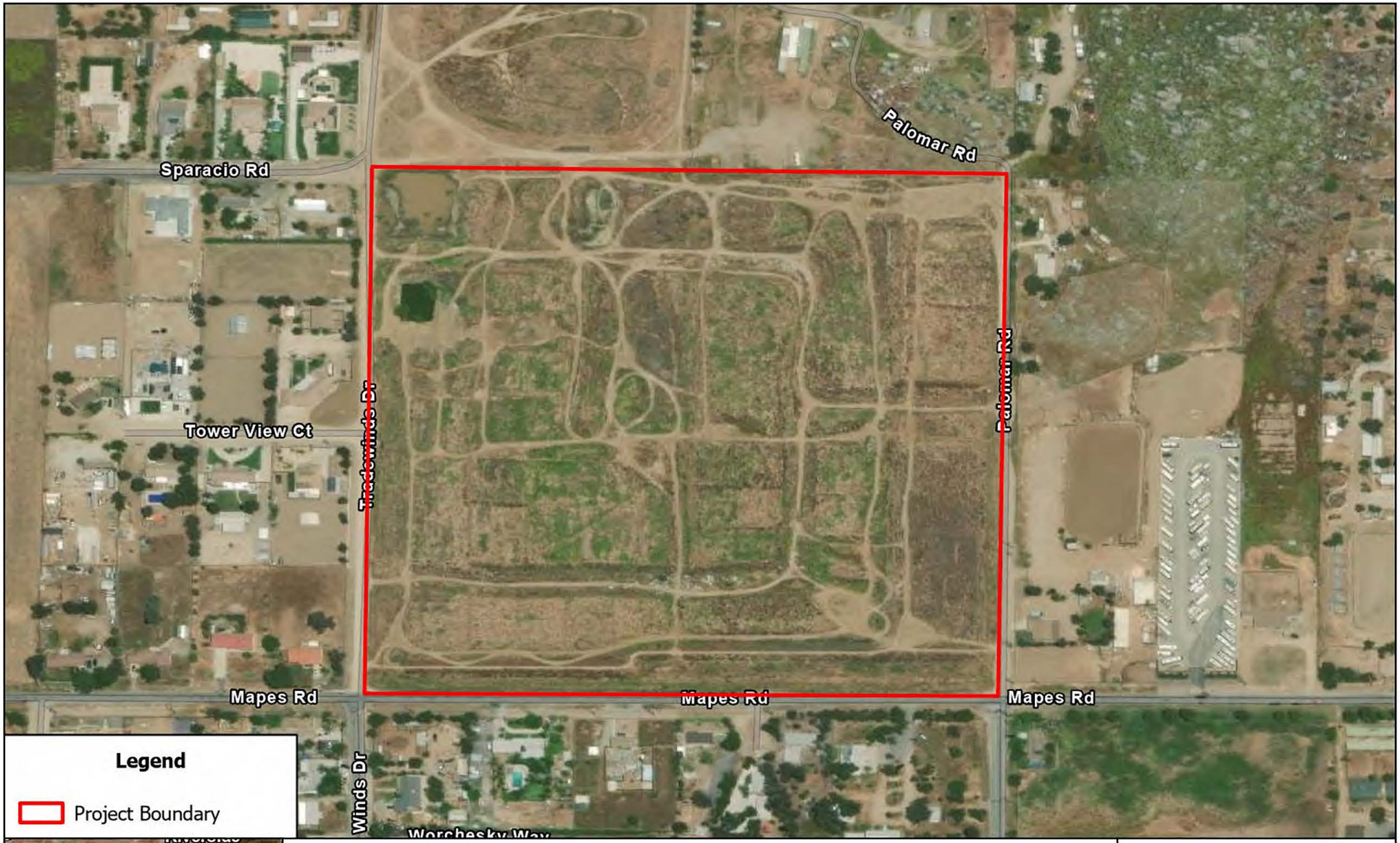


Figure 1: Project Location

Mapes Road Project Site
Fairy Shrimp Wet and Dry Season Surveys

2025

Coordinate System: GCS WGS 1984

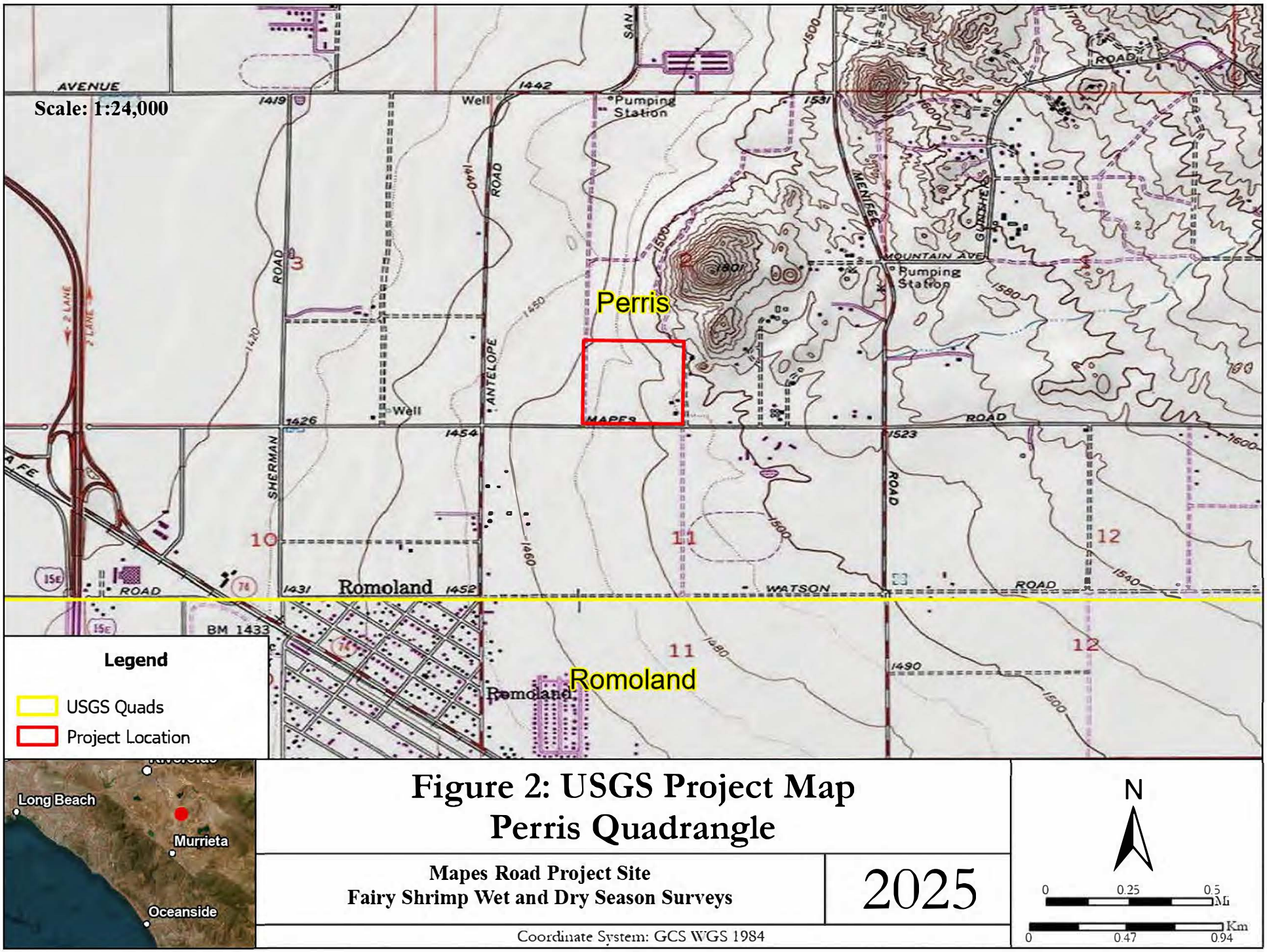


Figure 2: USGS Project Map
Perris Quadrangle

Mapes Road Project Site
Fairy Shrimp Wet and Dry Season Surveys

2025

Coordinate System: GCS WGS 1984

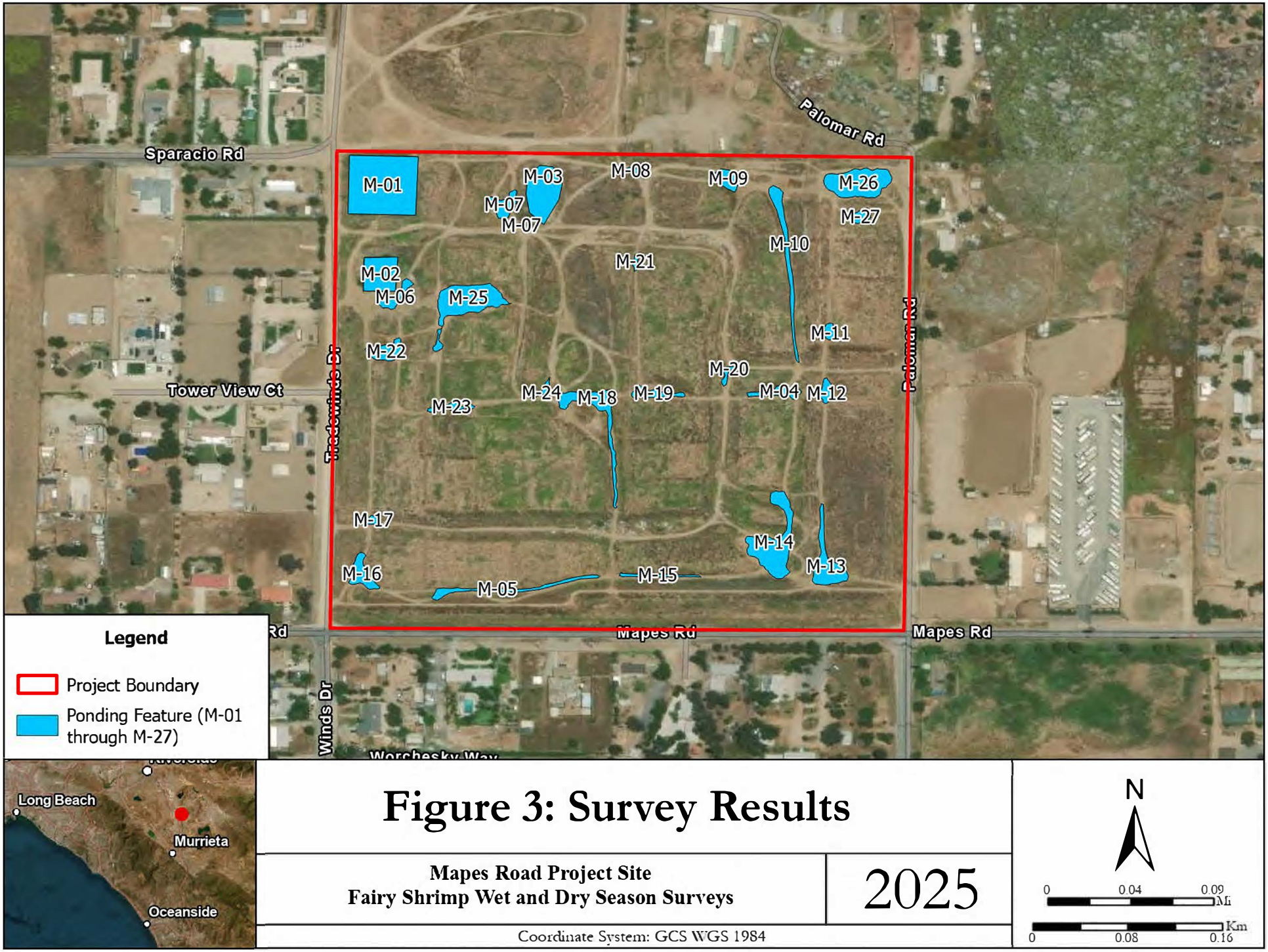


Figure 3: Survey Results

Mapes Road Project Site
Fairy Shrimp Wet and Dry Season Surveys

2025

Coordinate System: GCS WGS 1984

Appendix A
Site Photos



Photo 1: Feature M-02 was inundated for 120 days straight and positive for *B. lindahli.*



Photo 2: Feature M-01 also inundated for 120 days straight with a high density population of *B. lindahil.*



Photo 3: One of the many road ruts impacted from off-road activity creating habitat for fairy shrimp.

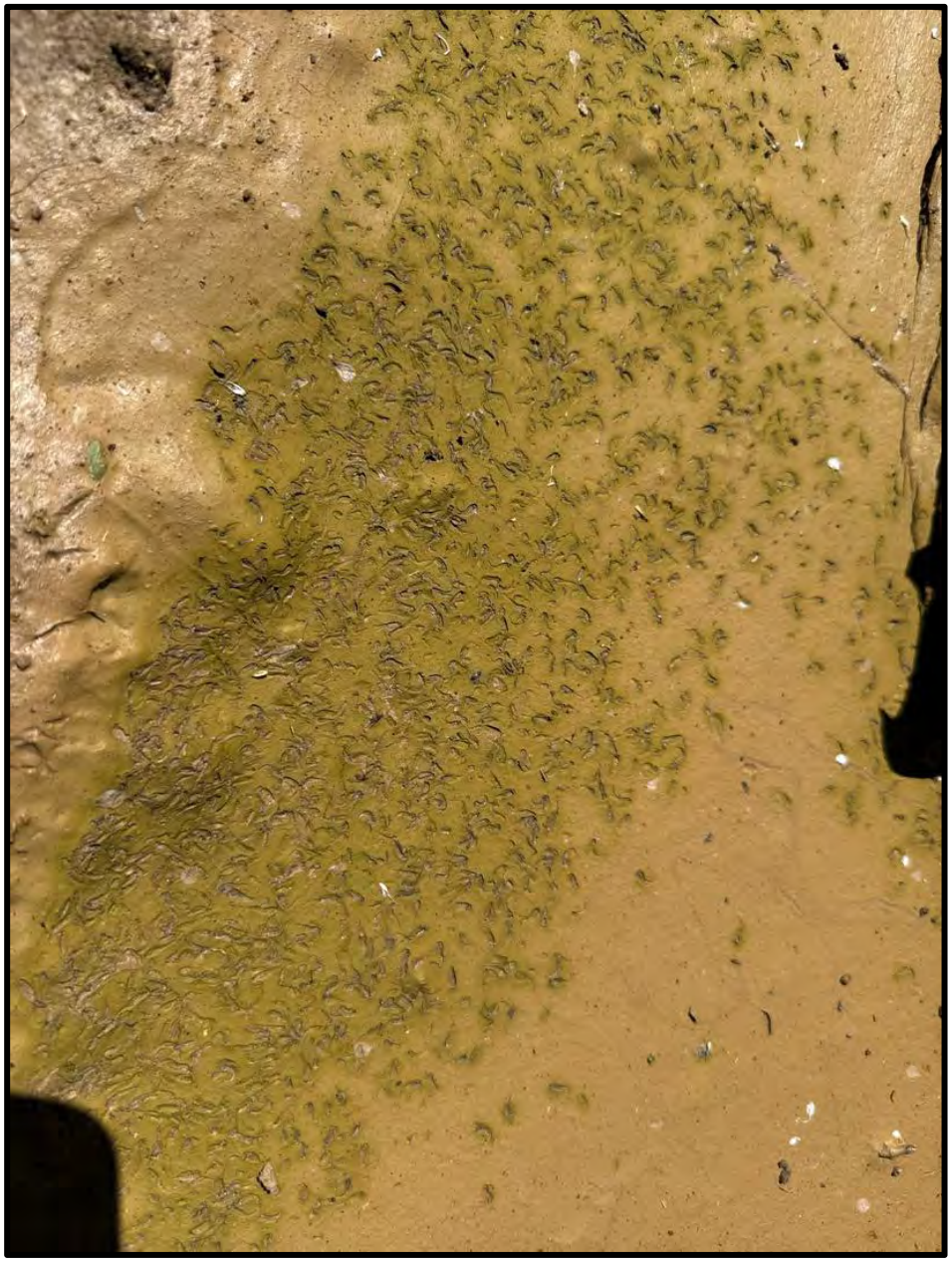


Photo 4: High concentration of *B. linadhli* in a road rut feature dyring up.

Appendix B
Dry Season Sampling Results

Processing of Dry Samples from Basins at the Mapes Project Site for the Presence of Fairy Shrimp Cysts.

20 July, 2025

Chuck Black
Ecological Restoration Service
San Diego, CA 92103
(619) 944-1964

10(a)(1)(A) permit
ES835549-9
Good through 2030-02-27

Introduction

Ecological Restoration Service was contracted in July 2025 by Garrett Huffman of Huffman Biological, Julian, CA. for processing of dry samples for the determination of the presence of fairy shrimp cysts, and for culturing of *Branchinecta* cysts for identification to the species level of any cysts found for dry samples from the Mapes Project site.

Soil Processing for Cyst Presence

Methods

Samples collected by Garrett Huffman (permit number TE-20186A-3.2) were processed by Charles Black of Ecological Restoration Service, who is authorized by the U.S. fish and Wildlife Service to process dry samples for the presence of fairy shrimp cysts and to culture cysts to identify to species level as special conditions of his 10(a)(1)(A) permit. Samples were hydrated for approximately 1-2 hours in tap water, then washed through a set of sieves. Material passing through a Number 45 (.0139") USA Standard Testing Sieve, A.S.T.M.E.-11 specification and caught on a Number 70 (.0083") Sieve was rinsed into a container with approximately 50 ml of a saturated brine solution to float organic material, including fairy shrimp cysts. The material floating on the brine was decanted onto a paper filter on a filter funnel, and water was removed through the filter paper by vacuum suction. The material left on the paper was examined under a 6.3-570x power Olympus SZX9 Zoom Stereo Microscope. Distinctive fairy shrimp cysts, if present, were individually counted (if less than approximately 50) or estimated (for larger numbers) by examining ¼ or ½ subsections of the filter and multiplying the subset by the appropriate factor. The presences and approximate numbers of ostracod shells and cladoceran ephippia were also noted in samples.

Cyst Culturing for Species Identification

Methods

Cysts from the samples were hydrated in approximately 500 ml of Arrowhead Mountain Spring Water in food grade plastic containers and placed in an environmental chamber at 55 degrees F.

for four days. After this time the cultures were placed in a partially shaded location. During culturing at this site daytime highs were in the low to mid 70s, lows in the low to mid 60s F. When hatched nauplii were observed in the cultures, a 2-3 ml portion of a solution made by dissolving 4-5 grams of instant dried yeast in 40-50 ml of warm water was added to the culture and stirred in gently with a spoon. Fairy shrimp were removed and identified as they became mature.

Results

Soil Processing

Branchinecta cysts were observed in small to high numbers from samples from all 11 features (Table 1).

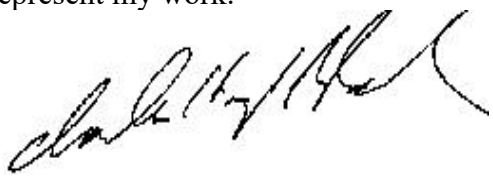
Table 1 - Soil processing and cyst culturing results

Feature Name	Number of 50 ml samples	Total of Branchinecta cysts in all samples	Cysts/liter soil	*B. lindahli* identified (m:f)
M-01	25	2555	2044	8:3
M-02	25	122	98	7:1
M-03; M-07	25	447	358	7:5
M-04; M-10 to 12; M-18-20; M-22 to 24	25	359	287	5:5
M-05; M-13-17	25	328	262	3:2
M-06	10	22	44	2:0
M-08; M-09; M-21	25	51	41	2:1
M-22	10	280	560	3:1
M-25	25	139	111	3:1
M-26; M-27	25	468	374	8:10

Cyst Culture

All fairy shrimp identified were *Branchinecta lindahli* (Table 1).

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



Appendix C
Data Sheets

Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	February 21, 2025
Round	1
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	11:13
Temperature	71
Wind	3-6
Cloud	0

End of Survey Data

Time	14:17
Temperature	73
Wind	2-5
Cloud	0

Wet Season Survey

Wet Season Survey (5 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	22
Water Temp (Celsius)	17
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Mosquito Larvae (Culicidae), Water Boatmen, etc (Hemiptera), Water Beetles (Coleoptera), Snails, Amphibian eggs
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	21
Water Temp (Celsius)	15
Average Depth (cm)	35
Max Depth (cm)	70
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Immature Fairy Shrimp, Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	Seed Shrimp (Ostracods), Water Boatmen, etc (Hemiptera)
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	21
Water Temp (Celsius)	18.2
Average Depth (cm)	10
Max Depth (cm)	15
Pool Length (m)	50
Pool Width (m)	20
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli, Immature Fairy Shrimp
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods)
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	21
Water Temp (Celsius)	18
Average Depth (cm)	3
Max Depth (cm)	8
Pool Length (m)	10
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli, Immature Fairy Shrimp
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	22
Water Temp (Celsius)	18
Average Depth (cm)	3
Max Depth (cm)	5
Pool Length (m)	4
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	March 1, 2025
Round	2
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	11:30
Temperature	62
Wind	0-2
Cloud	100

End of Survey Data

Time	12:45
Temperature	62
Wind	0-2
Cloud	100

Wet Season Survey

Wet Season Survey (5 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	17
Water Temp (Celsius)	16
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Mosquito Larvae (Culicidae), Water Boatmen, etc (Hemiptera), Water Beetles (Coleoptera)
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	17
Water Temp (Celsius)	16
Average Depth (cm)	35
Max Depth (cm)	70
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	Seed Shrimp (Ostracods), Water Boatmen, etc (Hemiptera)
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	17
Water Temp (Celsius)	16
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	15
Pool Width (m)	6
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	0
Males Collected	4
Population Estimates	1000's
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods
Notes	Could not find a single female

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

General Notes

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	March 7, 2025
Round	3
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	11:20
Temperature	53
Wind	0-2
Cloud	25

End of Survey Data

Time	12:45
Temperature	56
Wind	0-2
Cloud	100

Wet Season Survey

Wet Season Survey (6 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	18.4
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Amphibian eggs
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	18.9
Average Depth (cm)	35
Max Depth (cm)	70
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	
Other Species	Seed Shrimp (Ostracods), Water Boatmen, etc (Hemiptera)
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	21.3
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	15
Pool Width (m)	6
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	100's

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods, Tadpoles
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04

Photos



Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	21
Average Depth (cm)	6
Max Depth (cm)	12
Pool Length (m)	8
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05

Photos

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	20.8
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	8
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	Part of a complex of road ruts

Wet Season Survey - 6. M-06

Pool or Area ID	M-06

Photos



POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	21.5
Average Depth (cm)	8
Max Depth (cm)	15
Pool Length (m)	30
Pool Width (m)	12
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	Recently ponded

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	March 16, 2025
Round	4
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	10:31
Temperature	59
Wind	0-2
Cloud	20

End of Survey Data

Time	16:33
Temperature	70
Wind	0-2
Cloud	2

Wet Season Survey

Wet Season Survey (25 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	19.8
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles, Snails, Mosquito Larvae (Culicidae)
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



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Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	18.8
Average Depth (cm)	40
Max Depth (cm)	80
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Mosquito Larvae (Culicidae), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	19.1
Average Depth (cm)	12
Max Depth (cm)	20
Pool Length (m)	45
Pool Width (m)	15
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods, Mosquito Larvae (Culicidae)
Notes	

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Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Wet
Air Temp (Celsius)	12
Water Temp (Celsius)	21
Average Depth (cm)	6
Max Depth (cm)	12
Pool Length (m)	8
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05

Photos





Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	25.4
Average Depth (cm)	8
Max Depth (cm)	15
Pool Length (m)	110

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Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	A series of road ruts of various sizes along 110 meters stretch of road

Wet Season Survey - 6. M-06

Pool or Area ID	M-06

Photos



Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	23.2
Average Depth (cm)	7
Max Depth (cm)	13
Pool Length (m)	8
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	Water Beetles (Coleoptera)
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07

Photos

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Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	21.5
Average Depth (cm)	10
Max Depth (cm)	20
Pool Length (m)	25
Pool Width (m)	18
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Mosquito Larvae (Culicidae), Water Beetles (Coleoptera)
Notes	

Wet Season Survey - 8. M-08

Pool or Area ID	M-08

Photos



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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.3
Average Depth (cm)	5
Max Depth (cm)	8
Pool Length (m)	3
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.2
Average Depth (cm)	10
Max Depth (cm)	12
Pool Length (m)	18
Pool Width (m)	12
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2

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Males Collected	3
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10

Photos





Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	23.9
Average Depth (cm)	6
Max Depth (cm)	8
Pool Length (m)	140
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp, Branchinecta lindahli
Voucher	Yes
Females Collected	3
Males Collected	4
Population Estimates	100's
Other Species	
Notes	A series of road ruts of various sizes along 140 meters stretch of road

Wet Season Survey - 11. M-11

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Pool or Area ID	M-11

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.2
Average Depth (cm)	6
Max Depth (cm)	12
Pool Length (m)	13
Pool Width (m)	8
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	

Wet Season Survey - 12. M-12

Pool or Area ID	M-12

Photos

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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.2
Average Depth (cm)	8
Max Depth (cm)	18
Pool Length (m)	20
Pool Width (m)	10
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13

Photos





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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	25.4
Average Depth (cm)	10
Max Depth (cm)	15
Pool Length (m)	70
Pool Width (m)	25
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	

Wet Season Survey - 14. M-14

Pool or Area ID	M-14

Photos



Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	23.8
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	70
Pool Width (m)	25
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	

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Wet Season Survey - 15. M-15

Pool or Area ID	M-15

Photos



Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	22.6
Average Depth (cm)	6
Max Depth (cm)	12
Pool Length (m)	55
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	A series of road ruts of various sizes along 55 meters stretch of road

Wet Season Survey - 16. M-16

Pool or Area ID	M-16

Photos

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Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	26
Average Depth (cm)	10
Max Depth (cm)	15
Pool Length (m)	30
Pool Width (m)	10
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	

Wet Season Survey - 17. M-17

Pool or Area ID	M-17

Photos



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Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	26.9
Average Depth (cm)	8
Max Depth (cm)	10
Pool Length (m)	5
Pool Width (m)	5
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 18. M-18

Pool or Area ID	M-18

Photos



Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	28.3
Average Depth (cm)	8
Max Depth (cm)	10
Pool Length (m)	130
Pool Width (m)	10
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	A series of road ruts of various sizes along 130 meters stretch of road

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Wet Season Survey - 19. M-19

Pool or Area ID	M-19

Photos



Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	26.4
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	35
Pool Width (m)	8
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20

Photos

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Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	27.2
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	15
Pool Width (m)	4
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	
Notes	

Wet Season Survey - 21. M-21

Pool or Area ID	M-21

Photos



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Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	26.7
Average Depth (cm)	8
Max Depth (cm)	10
Pool Length (m)	13
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	None
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22

Photos



Status	Wet
Air Temp (Celsius)	17.2
Water Temp (Celsius)	23.5
Average Depth (cm)	8
Max Depth (cm)	15
Pool Length (m)	25
Pool Width (m)	15
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Immature Fairy Shrimp
Other Species	Water Beetles (Coleoptera)
Notes	

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Wet Season Survey - 23. M-23

Pool or Area ID	M-23

Photos



Status	Wet
Air Temp (Celsius)	17.2
Water Temp (Celsius)	23.9
Average Depth (cm)	6
Max Depth (cm)	10
Pool Length (m)	30
Pool Width (m)	8
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	3
Males Collected	3
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 24. M-24

Pool or Area ID	M-24

Photos

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Status	Wet
Air Temp (Celsius)	17.2
Water Temp (Celsius)	24.7
Average Depth (cm)	8
Max Depth (cm)	10
Pool Length (m)	20
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 25. M-25

Pool or Area ID	M-25

Photos

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Status	Wet
Air Temp (Celsius)	17.2
Water Temp (Celsius)	25.9
Average Depth (cm)	10
Max Depth (cm)	15
Pool Length (m)	50
Pool Width (m)	25
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	March 23, 2025
Round	5
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	10:15
Temperature	74
Wind	0-2
Cloud	0

End of Survey Data

Time	16:33
Temperature	78
Wind	0-2
Cloud	0

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	27.4
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles, Snails
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



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Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	29.7
Average Depth (cm)	40
Max Depth (cm)	80
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	28.7
Average Depth (cm)	10
Max Depth (cm)	15
Pool Length (m)	15
Pool Width (m)	12
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2

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Males Collected	2
Population Estimates	10's
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04

Photos



Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	28.9
Average Depth (cm)	7
Max Depth (cm)	10
Pool Length (m)	10
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	
Notes	

Wet Season Survey - 5. M-05

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Pool or Area ID	M-05

Photos



Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.5
Average Depth (cm)	5
Max Depth (cm)	8
Pool Length (m)	10
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 6. M-06

Pool or Area ID	M-06

Photos

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Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	30.8
Average Depth (cm)	3
Max Depth (cm)	5
Pool Length (m)	4
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	10's
Other Species	Water Beetles (Coleoptera), Copepods
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	

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Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	31.1
Average Depth (cm)	8
Max Depth (cm)	10
Pool Length (m)	5
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	100's
Other Species	Seed Shrimp (Ostracods), Water Beetles (Coleoptera), Copepods
Notes	

Wet Season Survey - 8. M-08

Pool or Area ID	M-08

Photos

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

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Pool or Area ID	M-10

Photos



Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	30.7
Average Depth (cm)	2
Max Depth (cm)	2
Pool Length (m)	1
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11

Photos

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.7
Average Depth (cm)	5
Max Depth (cm)	7
Pool Length (m)	8
Pool Width (m)	5
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	
Notes	

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	28.1
Average Depth (cm)	7
Max Depth (cm)	10
Pool Length (m)	15
Pool Width (m)	4
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.9
Average Depth (cm)	5
Max Depth (cm)	7
Pool Length (m)	4
Pool Width (m)	4
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.0
Average Depth (cm)	7
Max Depth (cm)	10
Pool Length (m)	20
Pool Width (m)	15
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	
Notes	

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	25.0
Average Depth (cm)	1
Max Depth (cm)	1
Pool Length (m)	0.25
Pool Width (m)	0.1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	3
Males Collected	2
Population Estimates	10's
Other Species	
Notes	

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.4
Average Depth (cm)	5
Max Depth (cm)	7
Pool Length (m)	25
Pool Width (m)	8
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	1000's
Other Species	
Notes	

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	26.9
Average Depth (cm)	1
Max Depth (cm)	1
Pool Length (m)	0.25
Pool Width (m)	0.25
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	3
Population Estimates	10's
Other Species	
Notes	

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	

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Status	Wet
Air Temp (Celsius)	18.9
Water Temp (Celsius)	28.3
Average Depth (cm)	3
Max Depth (cm)	5
Pool Length (m)	3
Pool Width (m)	0.5
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	1000's
Other Species	
Notes	

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20

Photos



Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.2
Average Depth (cm)	4
Max Depth (cm)	6
Pool Length (m)	6
Pool Width (m)	1

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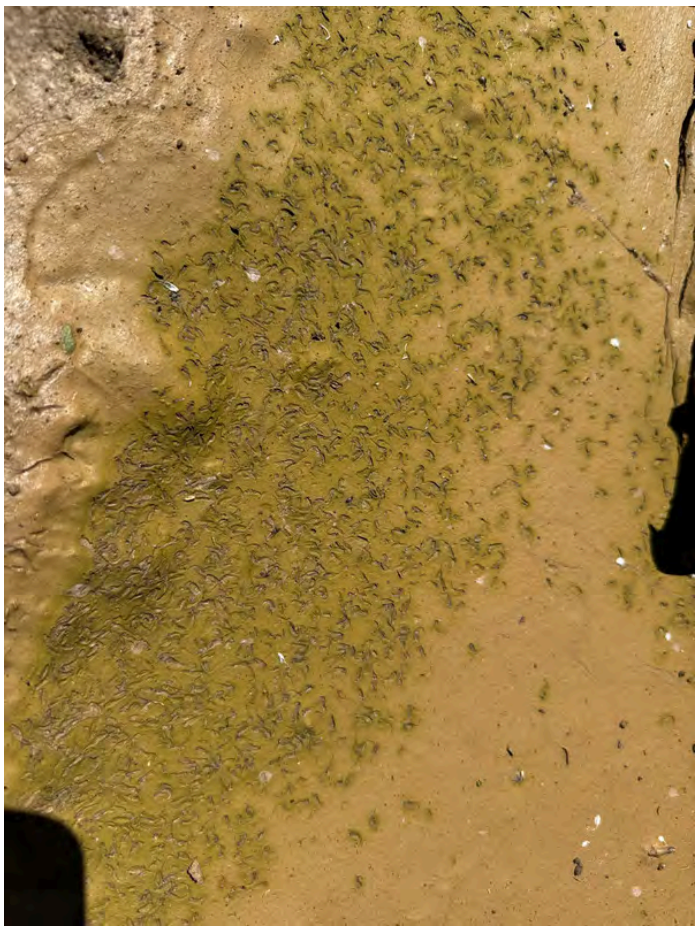
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 21. M-21

Pool or Area ID	M-21

Photos





Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Dead B. lindahli observed in dry rut bottom

Wet Season Survey - 22. M-22

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Pool or Area ID	M-22

Photos



Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.7
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	6
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	Water Beetles (Coleoptera)
Notes	

Wet Season Survey - 23. M-23

Pool or Area ID	M-23

Photos

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	28.2
Average Depth (cm)	5
Max Depth (cm)	7
Pool Length (m)	5
Pool Width (m)	3
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	100's
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.8
Average Depth (cm)	6
Max Depth (cm)	8
Pool Length (m)	5
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	

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Status	Wet
Air Temp (Celsius)	25.6
Water Temp (Celsius)	27.0
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	30
Pool Width (m)	20
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	1000's
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	

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Status	Wet
Air Temp (Celsius)	25
Water Temp (Celsius)	31.5
Average Depth (cm)	4
Max Depth (cm)	6
Pool Length (m)	3
Pool Width (m)	2
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	Yes
Females Collected	2
Males Collected	4
Population Estimates	100's
Other Species	
Notes	

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	

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Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	March 30, 2025
Round	6
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	10:40
Temperature	60
Wind	2-4
Cloud	40

End of Survey Data

Time	12:40
Temperature	65
Wind	0-2
Cloud	40

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	17.9
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	20.9
Average Depth (cm)	40
Max Depth (cm)	80
Pool Length (m)	50
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	28.7
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	15
Pool Width (m)	12
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's

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Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods, Tadpoles
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05

Photos



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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07

Photos

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Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.8
Average Depth (cm)	3
Max Depth (cm)	5
Pool Length (m)	3
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	100's
Other Species	Seed Shrimp (Ostracods), Water Beetles (Coleoptera), Copepods
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

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Pool or Area ID	M-10

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	24.4
Average Depth (cm)	1
Max Depth (cm)	1

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Pool Length (m)	1
Pool Width (m)	0.25
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's
Other Species	Seed Shrimp (Ostracods)
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13

Photos

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	25.9
Average Depth (cm)	1
Max Depth (cm)	3
Pool Length (m)	4
Pool Width (m)	2

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Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16

Photos

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

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Pool or Area ID	M-18

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

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Wet Season Survey - 20. M-20

Pool or Area ID	M-20

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	25.2
Average Depth (cm)	3
Max Depth (cm)	5
Pool Length (m)	2
Pool Width (m)	1
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods)
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23

Photos

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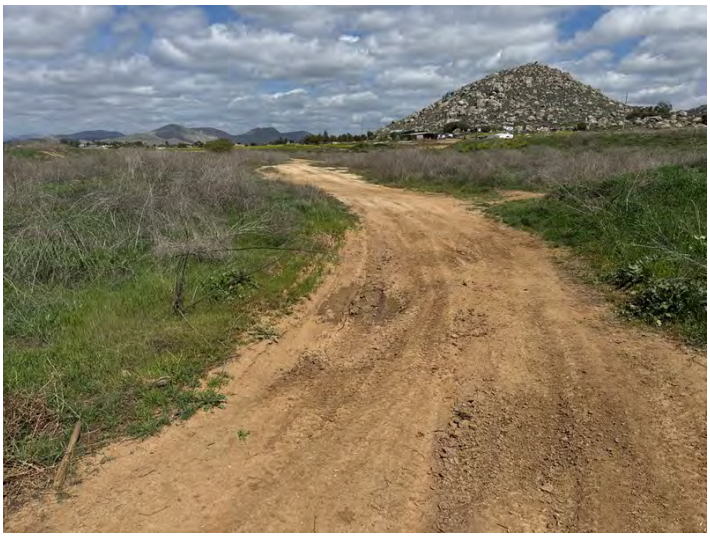


Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

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Pool or Area ID	M-25

Photos



Status	Wet
Air Temp (Celsius)	15.6
Water Temp (Celsius)	22.3
Average Depth (cm)	8
Max Depth (cm)	12
Pool Length (m)	15
Pool Width (m)	15
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	1000's
Other Species	Copepods
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26

Photos

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27

Photos



Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	April 4, 2025
Round	7
Surveyor	Ryan Meszaros
Trainee	

Environmental Data

Start of Survey Data

Time	11:31
Temperature	61
Wind	2-4
Cloud	10

End of Survey Data

Time	12:33
Temperature	65
Wind	0-2
Cloud	10

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	16.1
Water Temp (Celsius)	20.9
Average Depth (cm)	100
Max Depth (cm)	150
Pool Length (m)	27
Pool Width (m)	20
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



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Status	Wet
Air Temp (Celsius)	16.1
Water Temp (Celsius)	21.7
Average Depth (cm)	30
Max Depth (cm)	60
Pool Length (m)	45
Pool Width (m)	40
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Wet
Air Temp (Celsius)	16.1
Water Temp (Celsius)	21.7
Average Depth (cm)	5
Max Depth (cm)	12
Pool Length (m)	10
Pool Width (m)	8
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Water Beetles (Coleoptera), Seed Shrimp (Ostracods), Copepods, Tadpoles
Notes	

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Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	

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Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10

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Photos

Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12

Photos

Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 13. M-13

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Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

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Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

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Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22

Photos



Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

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Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25

Photos



Status	Wet
Air Temp (Celsius)	16.1
Water Temp (Celsius)	23.8
Average Depth (cm)	6
Max Depth (cm)	12
Pool Length (m)	6

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Pool Width (m)	5
Feature Condition	Disturbed (tire tracks, etc)
Fairy Shrimp Species	Branchinecta lindahli
Voucher	No
Population Estimates	10's
Other Species	Copepods, Seed Shrimp (Ostracods), Water Beetles (Coleoptera)
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	April 11, 2025
Round	8
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data

Time	12:20
Temperature	75
Wind	3-6
Cloud	15

End of Survey Data

Time	14:40
Temperature	77
Wind	3-6
Cloud	15

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02

Photos

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Status	Wet
Air Temp (Celsius)	15.5
Water Temp (Celsius)	21.5
Average Depth (cm)	70
Max Depth (cm)	120
Pool Length (m)	23
Pool Width (m)	16
Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01

Photos



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Status	Wet
Air Temp (Celsius)	15.5
Water Temp (Celsius)	19.5
Average Depth (cm)	25
Max Depth (cm)	50
Pool Length (m)	35
Pool Width (m)	35
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03

Photos



Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04

Photos

Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms

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Other Species	
Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)

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Other Species	
Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)

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Other Species	
Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms

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Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)

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Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)

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Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25

Photos



Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26

Photos

Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27

Photos

Status	Dry

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	April 18, 2025
Round	9
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data	
Time	11:31
Temperature	75
Wind	3-6
Cloud	15
End of Survey Data	
Time	13:33
Temperature	77
Wind	3-6
Cloud	15

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02
Photos	
Status	Wet
Air Temp (Celsius)	16.5
Water Temp (Celsius)	19.2
Average Depth (cm)	60
Max Depth (cm)	110
Pool Length (m)	20
Pool Width (m)	15

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Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	
Status	Wet
Air Temp (Celsius)	16.5
Water Temp (Celsius)	22.3
Average Depth (cm)	20
Max Depth (cm)	40
Pool Length (m)	30
Pool Width (m)	30
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	April 25, 2025
Round	10
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data

Time	10:45
Temperature	70
Wind	0-4
Cloud	0

End of Survey Data

Time	13:50
Temperature	82
Wind	3-6
Cloud	0

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02
Photos	
Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	22
Average Depth (cm)	50
Max Depth (cm)	100
Pool Length (m)	17
Pool Width (m)	12

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Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	
Status	Wet
Air Temp (Celsius)	14.5
Water Temp (Celsius)	20.5
Average Depth (cm)	15
Max Depth (cm)	35
Pool Length (m)	40
Pool Width (m)	35
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	May 2, 2025
Round	11
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data	
Time	12:31
Temperature	75
Wind	3-6
Cloud	0
End of Survey Data	
Time	13:33
Temperature	83
Wind	4-8
Cloud	0

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02
Photos	
Status	Wet
Air Temp (Celsius)	14.5
Water Temp (Celsius)	18
Average Depth (cm)	40
Max Depth (cm)	80
Pool Length (m)	15
Pool Width (m)	10

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Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	
Status	Wet
Air Temp (Celsius)	17
Water Temp (Celsius)	23-5
Average Depth (cm)	11
Max Depth (cm)	30
Pool Length (m)	35
Pool Width (m)	25
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	May 9, 2025
Round	12
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data

Time	12:18
Temperature	80
Wind	2-8
Cloud	20

End of Survey Data

Time	13:51
Temperature	82
Wind	0-3
Cloud	10

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02
Photos	
Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	18
Average Depth (cm)	30
Max Depth (cm)	70
Pool Length (m)	10
Pool Width (m)	10

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Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	
Status	Wet
Air Temp (Celsius)	19.4
Water Temp (Celsius)	32.4
Average Depth (cm)	10
Max Depth (cm)	25
Pool Length (m)	30
Pool Width (m)	20
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Wet Season
Project	Mapes
Date	May 23, 2025
Round	14
Surveyor	Garrett Huffman
Trainee	Blanca Martinez

Environmental Data

Start of Survey Data

Time	10:24
Temperature	73
Wind	3-7
Cloud	0

End of Survey Data

Time	12:27
Temperature	80
Wind	1-5
Cloud	0

Wet Season Survey

Wet Season Survey (27 Items)

Wet Season Survey - 1. M-02

Pool or Area ID	M-02
Photos	
Status	Wet
Air Temp (Celsius)	14.5
Water Temp (Celsius)	19.5
Average Depth (cm)	15
Max Depth (cm)	Ñ35
Pool Length (m)	5
Pool Width (m)	5

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Feature Condition	Algae Blooms, Trash
Fairy Shrimp Species	None
Other Species	Copepods, Water Boatmen, etc (Hemiptera), Tadpoles
Notes	

Wet Season Survey - 2. M-01

Pool or Area ID	M-01
Photos	
Status	Wet
Air Temp (Celsius)	15
Water Temp (Celsius)	21
Average Depth (cm)	5
Max Depth (cm)	15
Pool Length (m)	10
Pool Width (m)	10
Feature Condition	Trash, Algae Blooms
Fairy Shrimp Species	None
Other Species	Seed Shrimp (Ostracods), Tadpoles, Copepods
Notes	

Wet Season Survey - 3. M-03

Pool or Area ID	M-03
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

Wet Season Survey - 4. M-04

Pool or Area ID	M-04
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	

Wet Season Survey - 5. M-05

Pool or Area ID	M-05
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 6. M-06

Pool or Area ID	M-06
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 7. M-07

Pool or Area ID	M-07
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 8. M-08

Pool or Area ID	M-08
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 9. M-09

Pool or Area ID	M-09
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 10. M-10

Pool or Area ID	M-10
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/16/2025

Wet Season Survey - 11. M-11

Pool or Area ID	M-11
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered on 3/23/2025

Wet Season Survey - 12. M-12

Pool or Area ID	M-12
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	

Wet Season Survey - 13. M-13

Pool or Area ID	M-13
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 14. M-14

Pool or Area ID	M-14
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 15. M-15

Pool or Area ID	M-15
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 16. M-16

Pool or Area ID	M-16
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 17. M-17

Pool or Area ID	M-17
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 18. M-18

Pool or Area ID	M-18
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 19. M-19

Pool or Area ID	M-19
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 20. M-20

Pool or Area ID	M-20
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 21. M-21

Pool or Area ID	M-21
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	

Wet Season Survey - 22. M-22

Pool or Area ID	M-22
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 23. M-23

Pool or Area ID	M-23
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc), Algae Blooms
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 24. M-24

Pool or Area ID	M-24
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	

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Notes	Vouchered 3/23/2025

Wet Season Survey - 25. M-25

Pool or Area ID	M-25
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	Vouchered 3/16/2025

Wet Season Survey - 26. M-26

Pool or Area ID	M-26
Photos	
Status	Dry
Feature Condition	Disturbed (tire tracks, etc)
Other Species	
Notes	Vouchered 3/23/2025

Wet Season Survey - 27. M-27

Pool or Area ID	M-27
Photos	
Status	Dry
Feature Condition	
Other Species	
Notes	

General Notes

Notes	

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Survey Data

Survey Type	Fairy Shrimp Dry Season
Project	Mapes
Date	June 10, 2025
Round	1
Surveyor	Garrett Huffman
Trainee	

Environmental Data

Start of Survey Data

Time	12:51
Temperature	87
Wind	2-5
Cloud	0

End of Survey Data

Time	17:19
Temperature	82
Wind	2-5
Cloud	0

Dry Season

Pond Feature (10 Items)

Pond Feature - 1. M-22

Pool or Area ID	M-22
Samples	10
Photos	

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Pool Length (m)	5
Pool Width (m)	5
Notes	

Pond Feature - 2. M-01

Pool or Area ID	M-01
Samples	50
Photos	
Pool Length (m)	20
Pool Width (m)	20
Notes	

Pond Feature - 3. M-02

Pool or Area ID	M-02
Samples	50
Photos	
Pool Length (m)	20
Pool Width (m)	10
Notes	

Pond Feature - 4. M-06

Pool or Area ID	M-06
Samples	10

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Photos

Pool Length (m)	4
Pool Width (m)	3
Notes	

Pond Feature - 5. M-25

Pool or Area ID	M-25
Samples	25

Photos



Pool Length (m)	30
Pool Width (m)	10
Notes	

Pond Feature - 6. M-03; M-07

Pool or Area ID	M-03; M-07
Samples	25

Photos

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Pool Length (m)	30
Pool Width (m)	20
Notes	Combined features

Pond Feature - 7. M-08; M-09; M-21

Pool or Area ID	M-08; M-09; M-21
Samples	25

Photos



Pool Length (m)	10
Pool Width (m)	10
Notes	

Pond Feature - 8. M-26; M-27

Pool or Area ID	M-26; M-27

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Samples	25

Photos



Pool Length (m)	30
Pool Width (m)	30
Notes	Combined M-26; M-27

Pond Feature - 9. M-04; M-10 to 12; M-18-20; M-22 to 24

Pool or Area ID	M-04; M-10 to 12; M-18-20; M-22 to 24
Samples	25

Photos





Pool Length (m)	X
Pool Width (m)	X
Notes	Combination of multiple features where there are a series of connected depressions via dirt access road ruts created from off roading vehicles.

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Pond Feature - 10. M-05; M-13-17

Pool or Area ID	M-05; M-13-17
Samples	25

Photos





Pool Length (m)	X
Pool Width (m)	X
Notes	Combination of multiple features where there are a series of connected depressions via dirt access road ruts created from off roading vehicles.

Dry Season

Total Samples Collected	270

General Notes

Notes	

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