

Appendix D

Biological Resources



UPPER PLATEAU PROJECT BIOLOGICAL RESOURCES REPORT

Riverside County, California

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DRAFT

1 INTRODUCTION

Meridian Park West, LLC proposes to construct the Upper Plateau Project, which includes the Specific Plan Area and the Conservation Easement, within the March Joint Powers Authority (JPA) jurisdiction in unincorporated Riverside County, California (Figure 1). This Biological Technical Report (BTR) analyses only the development associated with the Specific Plan Area (project), which includes business parks, industrial buildings, mixed-use development, facilities to support utilities, and a recreational park. Analysis of the Conservation Easement is not included.

The project site is located in the western portion of the March JPA planning area, west of the current terminus of Cactus Avenue, east and south of the Mission Grove neighborhood, and north of the Orangecrest neighborhood. Interstate 215 (I-215) is located approximately half a mile east of the project site (Figure 1). The project site is located within eight parcels, designated as Assessor's Parcel Numbers (APNs) 276-170-07, 94-020-001, 297-080-002/-003, 297-090-001/-002/-008/-009. The project site is located within Township 3 South, Range 4 West, Sections 15 and 22 within the Riverside East 7.5-minute quadrangle, as mapped by the U.S. Geological Survey (USGS 2021a, USGS 2021b).

The project site encompasses a relatively flat 379.22-acre area that primarily supports non-native grassland vegetation (Figure 1). Surrounding land uses include industrial development and residential development. Redevelopment of the area proposes a buffer of undisturbed land between the project site and the industrial and residential development, which will serve as a conservation area.

This BTR includes a description of the existing biological resources within and adjacent to the proposed development area; details the methods used to assess existing conditions and potential impacts on sensitive habitats and species; and presents potential avoidance, minimization, and mitigation measures to reduce potential project impacts.

1.1 SITE BACKGROUND AND PLANNING CONTEXT

The project occurs within an area identified for future development as a part of the larger 'Disposal and Reuse of March Air Force Base'. Reuse of the entire base was planned under the *March AFB Master Reuse Plan*, and that document served as the basis for the *March Joint Powers Authority (JPA) General Plan* (March JPA 1999a). Environmental review of the general plan was performed in 1999 under the *Master Environmental Impact Report for the General Plan of the March Joint Powers Authority* (March JPA 1999b; SCH No. 97071095).

As part of that process, a Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) was pursued for Stephens' kangaroo rat (*Dipodomys stephensi*), least Bell's vireo (*Vireo bellii pusillus*), mountain plover (*Charadrius montanus*), coastal California gnatcatcher (*Polioptila californica californica*), Quino checkerspot butterfly (*Euphydryas editha quino*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Riverside fairy shrimp (*Streptocephalus woottoni*).

The project also occurs within the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) area (Dudek 2003). The MSHCP is a regional effort to preserve sensitive habitats and species, and to ensure that all development in the region permitted through the County of Riverside complies with the larger planning goals of the MSHCP. The goal of such regional biological planning efforts is to preserve sufficient native habitats such that special-status species are also conserved. Though the March JPA is an independent agency and therefore not a participating agency that receives take coverage under the MSHCP, project mitigation will be pursued in a manner consistent with the MSHCP, further off-setting potential minor impacts on special-status species that could occur with project implementation.

As part of the section 7 Biological Opinion (BO) and Habitat Conservation Plan (HCP), a Stephens' kangaroo rat management area was established. In 2003, the USFWS agreed to the release of the original 1,178-acre preserve in exchange for the acquisition of an approximately 1,300 acre Stephens' kangaroo rat preserve in Potrero (USFWS 2003). The Center for Biological Diversity (CBD) and Audubon Society challenged the USFWS decision, and a settlement agreement was issued in 2012 (*Center for Biological Diversity v. Jim Bartel, et. al.* S.D. Cal. No. 09-cv-1854-JAH-POR; 'CBD Settlement Agreement'). Pursuant to the CBD Settlement Agreement, 664 acres of the former management area lands were re-instated as Stephens' kangaroo rat management area (i.e., lands to the east of the project site). The BO (1-6-99-F-13) and subsequent CBD Settlement Agreement have been incorporated into this report where applicable.

1.2 PROJECT DESCRIPTION

The project site (e.g., Specific Plan Area plus grading limits) consists of approximately 379.22 acres within March JPA land use jurisdiction. North and west of the project site is a residential area that is part of the Mission Grove neighborhood in the City of Riverside, north and east of the project site are two new industrial buildings built by Exeter, south of the project site is a residential area that is part of the Orangecrest neighborhood, which is unincorporated in the City of Riverside, and east of the project site is the recently constructed Meridian West industrial project in the March JPA. The nearest residences are over 1,000 feet from the nearest proposed industrial building.

Prior to development of the proposed uses, the project would conduct an extensive remediation effort to remove 14 bunkers that were formally used for munitions storage by the Air Force, leaving two existing bunkers. These two bunkers, located southeast of the development, would be preserved for potential historical preservation or ongoing reuse.

The proposed project consists of development of six land use components, 65.32 acres of Business Park in seven parcels, 143.31 acres of Industrial in three parcels, 42.22 acres of Mixed Use in six parcels, 2.84 acres of Public Facilities in two parcels, 78 acres Open Space in four parcels, and six Streets totaling 37.91 acres.

The project redevelopment proposes to leave a buffer of undisturbed land surrounding the development area, consistent with prior determinations made as part of the CBD Settlement Agreement (Conservation Area). This Conservation Area leaves a buffer of at least 300 feet on all sides with a larger buffer to the south and east. This area includes the two remaining bunkers. To

further protect the Conservation Easement and the surrounding communities, the project proposes three open space areas, including an additional 30-foot-wide landscaped buffer on the proposed parcels to the north, west, south, and southeast of the Specific Plan Area.

The following approvals would be required for the proposed project:

General Plan Amendment: The project proposes to amend the site's General Plan Land Use designations as follows:

- Increase Parks/Recreation and Open Space (P/R/OS) from approximately 122 gross acres to 523.43 gross acres.
- Eliminate approximately 622.5 gross acres of Business Park designated property
- Eliminate approximately 63 gross acres of Industrial designated property.
- Adopt the Meridian West Upper Plateau Specific Plan (SP-9) on approximately 369.60 gross acres, approving a mix of Business Park, Industrial, Mixed Use, Public Facility, Streets, Parks, and Open Space land uses.
- Amend the General Plan from Business Park to Public Facility on 2.87 acres to accommodate an existing water storage tank operated by Eastern Municipal Water District (EMWD).

In addition, the approximately 445-acre Conservation Area will be recorded as a permanent Conservation Easement. The amendment would modify the General Plan Land Use Plan, Table 1-1 (March JPA Planning Build Out); Exhibit 2-1, Transportation Plan; and Exhibit 2-3, Transportation Road Systems (March JPA 1999). The amendment to the Transportation Element of the General Plan will incorporate the following changes:

- Extend Cactus Avenue west to Airman Drive, with a gated emergency vehicle access roadway extending to Barton Street¹.
- Extend Barton Street from Alessandro Boulevard to Grove Community Drive.
- Extend Brown Street from Alessandro Boulevard to Cactus Avenue².
- Add Arclight Drive, Linebacker Drive, Bunker Hill Drive, and Airman Drive.

Specific Plan 21-01 (SP-9): The project proposes adoption of Specific Plan SP-9 consistent with applicable requirements in California Government Code Sections 65450–65457 and March JPA Development Code Chapter 9.13 containing development standards, design guidelines, infrastructure master plans, maintenance responsibilities, phasing schedule, and implementation procedures necessary to develop the project site consistent with the requested General Plan Amendment designations. The proposed Specific Plan will address land uses, zoning, and design guidelines.

¹ The extension of Cactus Avenue bisects the undeveloped corridor; however, two wildlife crossings under the road, each approximately 240 feet in length, are planned to facilitate wildlife movement.

² The extension of Brown Street bisects the undeveloped corridor; however, one wildlife crossing, under the road, approximately 150 feet in length, is planned to facilitate wildlife movement.

The proposed land uses within Specific Plan SP-9 include the following:

- 42.22 acres of Mixed Use
- 65.32 acres of Business Park
- 143.31 acres of Industrial
- 37.91 acres of streets and roadways³
- 78 acres of undeveloped Parks/Recreation/Open Space
- 2.84 acres of Public Facility

Total gross acreage = 369.60⁴

Zoning Amendment: The project site, including both the Specific Plan Area and Conservation Easement, has not previously been given a zoning designation. The project proposes zoning consistent with the requested Specific Plan designations of Mixed Use (MU), Business Park (BP), Industrial (IND), Parks/Recreation/Open Space (P/R/OS), and Public Facility (PF) for the Specific Plan Area, P/R/OS for the Conservation Easement, and PF for the existing EMWD water tank.

Tentative Parcel Map 38063: Concurrent with the General Plan and Zoning Amendments, the Specific Plan, and the Plot Plans, approval of a Tentative Parcel Map is required for the Specific Plan boundaries. Following the approval of the Tentative Parcel Map, a Final Map would become the legal document that identifies developable parcels within the Specific Plan area.

Plot Plans 21-03 and 21-04: Concurrent with the General Plan and Zoning Amendments, the Specific Plan, and the Tentative Parcel Map, plot plan approvals are required to construct an approximately 1,250,000-square-foot industrial building on 59.55 acres at 20133 Cactus Avenue and a 587,000-square-foot industrial building on 27.49 acres at 20600 Cactus Avenue.

Development Agreement 21-01: Due to the scale and complexity of the proposed Project, a Development Agreement is proposed to vest the Project entitlements and fees, ensure financing of public improvements required by the conditions of approval, and provide certain Community Benefits including compliance with the terms of the CBD Settlement Agreement, and provision of new public benefits, including, but not limited to, expansion of employment opportunities for area residents. The Development Agreement is proposed between March JPA and Meridian Park, LLC with a 15-year term and two potential 5-year extensions.

Conservation Easement: Under the CBD Settlement Agreement, March JPA and Master Developer are required to place approximately 649 acres into conservation via easement to be managed for its wildlife habitat value for sensitive species. In 2014, March JPA placed the southern 141.237 acres (located north of Van Buren Boulevard) under a conservation easement currently managed by the Rivers and Lands Conservancy. Under this project, approximately 445.43 acres of undisturbed land surrounding the Specific Plan Area, referred to as the Conservation Easement,

³ Included in this area are 8.62 acres of streets and roadways that are within the Conservation Area.

⁴ Please note that the acreage studied in this BTR was slightly higher than the developed project components to account for impacts related to grading limits.

would be placed under a conservation easement, consistent with prior determinations made as part of the CBD Settlement Agreement.⁵

The Conservation Easement would provide a buffer of at least 300 feet on all sides of the Specific Plan Area, with a larger buffer to the south and east of the Specific Plan Area. In addition, the Conservation Easement would include two bunkers that would be retained for potential ongoing historical preservation. As previously noted, to further protect the Conservation Easement and the surrounding communities, the project proposes three open space areas, including an additional 30-foot-wide landscaped buffer on the proposed parcels to the north, west, south, and southeast of the Specific Plan Area. The currently existing service roads and trails are utilized by the public for passive recreation within the Conservation Easement consistent with the terms outlined in the 2012 Settlement Agreement. Under the proposed project, access to these would remain.

1.3 REGULATORY FRAMEWORK

Federal, state, and local agencies have established several regulations to protect and conserve biological resources. The descriptions below provide a brief overview of agency regulations that may be applicable to the project. The regulating agencies make the final determination as to what types of permits are required.

1.3.1 FEDERAL REGULATIONS

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA; 16 U.S.C. § 1531 et seq.), as amended, provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed species. The ESA regulates the “take” of any endangered fish or wildlife species, per Section 9. As development is proposed, the responsible agency or individual landowner is required to consult with the USFWS to assess potential impacts on listed species (including plants) or their critical habitat, pursuant to Sections 7 and 10 of the ESA. USFWS is required to make a determination as to the extent of impact a project would have on a particular species. If it is determined that potential impacts on a species would likely occur, measures to avoid or reduce such impacts must be identified. USFWS may issue an incidental take statement, following consultation and the issuance of a BO. This allows for take of the species that is incidental to another authorized activity, provided that the action will not adversely affect the existence of the species. Section 10 of the ESA provides for issuance of incidental take permits to non-federal parties with the development of a habitat conservation plan (HCP); Section 7 provides for permitting of federal projects.

⁵ For informational purposes, in order to provide the minimum 649 acres of conservation area, the Applicant and March JPA identified an additional 87.7 acres of open space available for the dedication of a conservation easement located between the project site’s southern boundary and Van Buren Boulevard that was not included in the 2014 open space dedication. This is occurring as a separate action and not part of this project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S.C. § 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and listed at 50 Code of Federal Regulations (CFR) 10.13. The USFWS enforces the MBTA, which prohibits “by any means or in any manner, to pursue, hunt, take, capture, [or] kill” any migratory bird, or attempt such actions, except as permitted by regulation.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.) prohibits discharge of any material into navigable waters, or tributaries thereof, of the United States without a permit. The act also makes it a misdemeanor to excavate, fill, or alter the course, condition, or capacity of any port, harbor, or channel; or to dam navigable streams without a permit.

Many activities originally covered by the Rivers and Harbors Act are now regulated under the Clean Water Act of 1972 (CWA; 33 U.S.C. § 1251 et seq.), discussed below. However, the 1899 act retains relevance and created the structure under which the U.S. Army Corps of Engineers (Corps) oversees CWA Section 404 permitting.

Clean Water Act

Pursuant to Section 404 of the CWA (33 U.S. Code § 1344), the Corps is authorized to regulate any activity that would result in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 CFR 328.3 (51 Federal Register [FR] 41217, November 13, 1983; 53 FR 20764, June 6, 1988) and further defined by the 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC; 531 U.S. 159) decision and the 2006 *Rapanos v. United States* (547 U.S. 715) decision. The Corps, with oversight from the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 permits. Substantial impacts on waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits.

A water quality certification or waiver pursuant to Section 401 of the CWA (33 U.S. Code § 1341) is required for all Section 404 permitted actions. The Regional Water Quality Control Board (RWQCB), a division of the State Water Resources Control Board, provides oversight of the 401 permit process in California. The RWQCB is required to provide “certification that there is reasonable assurance that an activity that may result in the discharge to waters of the United States will not violate water quality standards.” A Section 401 water quality certification must be based on the finding that a proposed discharge will comply with applicable water quality standards.

The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the U.S. under Section 402 of the CWA (33 U.S. Code § 1342).

1.3.2 STATE REGULATIONS

California Environmental Quality Act

The California Environmental Quality Act (CEQA; California Public Resources Code § 21000 et seq.) was established in 1970 as California's counterpart to NEPA. CEQA requires state and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts, where feasible.

CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." A project is an activity undertaken by a public agency or a private activity, which must receive some discretionary approval (meaning that the agency has the authority to deny the requested permit or approval) from a government agency that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

California Endangered Species Act and Natural Community Conservation Planning Act

The California Endangered Species Act of 1984 (CESA; California Fish and Game Code [CFGF] § 2050 et seq.), in combination with the California Native Plant Protection Act of 1977 (CFGF § 1900 et seq.), regulates the listing and take of plant and animal species designated as endangered, threatened, or rare within the state. California also lists species of special concern based on limited distribution; declining populations; diminishing habitat; or unusual scientific, recreational, or educational value. The California Department of Fish and Wildlife (CDFW) is responsible for assessing development projects for their potential to impact listed species and their habitats. State-listed special-status species are addressed through the issuance of a 2081 permit (Memorandum of Understanding).

In 1991, the California Natural Community Conservation Planning (NCCP) Act (CFGF § 2800 et seq.) was approved and the NCCP Coastal Sage Scrub program was initiated in Southern California. The NCCP program was established "to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." The NCCP Act encourages preparation of plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time.

California Fish and Game Code Sections 1600-1602

Pursuant to Division 2, Chapter 6, Section 1602 of the CFGF, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Lake or Streambed Alteration Agreement Application must be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" (CFGF § 1602). CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes

measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alteration Agreement.

California Fish and Game Code Sections 3503, 3511, 3513, 3801, 4700, 5050, and 5515

CDFW protects and manages fish, wildlife, and native plant resources within California. The California Fish and Game Commission and/or CDFW are responsible for issuing permits for the take or possession of protected species. The following sections of the CFGC address protected species: Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish). In addition, the protection of birds of prey is provided for in Sections 3503, 3513, and 3800 of the CFGC.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) provides for statewide coordination of water quality regulations. The State Water Resources Control Board was established as the statewide authority and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis.

The RWQCBs have primary responsibility for protecting water quality in California. As discussed above, the RWQCBs regulate discharges to surface waters under the CWA. In addition, the RWQCBs are responsible for administering the Porter-Cologne Water Quality Control Act.

Pursuant to the Porter-Cologne Water Quality Control Act, the state is given authority to regulate waters of the state, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 permit is not required for the activity. "Waste" is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

1.3.3 REGIONAL AND LOCAL PLANS

Western Riverside Multiple Species Habitat Conservation Plan (MSHCP)

The project occurs within an area covered by the Western Riverside MSHCP (Dudek & Associates, Inc. 2003). Projects are covered under the MSHCP if the lead agency is signatory to the MSHCP. However, the March Joint Powers Authority is the lead agency for the project and is not a signatory to the MSHCP. As such, the project is not subject to MSHCP regulations, nor does it receive take authority granted under the MSHCP.

Riverside County Ordinance Nos. 499 and 559- Tree Removal

Chapter 12.08 of the Riverside County Code of Ordinances provides regulations regarding roadside tree removal and trimming activities (County of Riverside 2003). In accordance with Unincorporated Riverside County Ordinance No. 499 (as amended through 499.11), a person or entity must obtain a permit from the County Transportation Director prior to removing trees or trimming any tree planted in the right of way of a County highway. If such removals are proposed, the County Transportation Director may impose conditions such as requirements for use of a

qualified tree surgeon or trimmer; bond, insurance, or security to protect from damage; and relocation and/or replacement of one or more other trees.

Chapter 12.24 of the Riverside County Code of Ordinances also includes regulations related to tree removal (County of Riverside 2000). According to the Unincorporated Riverside County Ordinance No. 559 (as amended through 559.7), the removal of living native trees on parcels or property greater than 0.5 acre in size, located in the unincorporated Riverside County, and above 5,000 feet in elevation requires a permit. The project site elevation is below 5,000 feet and is not located within or propose any new County highways; as such, this ordinance is not applicable.

Riverside County Oak Tree Management Guidelines

Riverside County Oak Tree Management Guidelines address oak woodlands in areas where zoning and/or general plan density restrictions will allow the effective use of clustering (County of Riverside 1999). A biological study is required for properties that support oak trees on a lot size of 2.5 acres or greater. Protected oaks include any individual tree larger than 2 inches in diameter at breast height (DBH) or the sum of the DBH of multiple trunks. Protected species include *Quercus agrifolia*, *Q. chrysolepis*, *Q. engelmannii*, *Q. kelloggii*, *Q. morehus*, and *Q. wislizenii* (County of Riverside 1999). Though these guidelines are not applicable to projects in which the JPA is the lead agency, the JPA chooses to follow the intent of the ordinance with the JPA Agency Civil Engineer assuming the role of the County Transportation Director.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Stephens' Kangaroo Rat Habitat Conservation Plan (HCP) was completed in 1996 by the Riverside County Habitat Conservation Agency, the CDFW, and the USFWS. The HCP was created as a region-wide plan for species permitting and conservation so that individual projects could receive ESA take authority for the species through the County, rather than individually. The HCP established 7 "core reserves," totaling more than 41,000 acres, within a planning area of 533,000 acres. The Riverside County Habitat Conservation Agency is responsible for "completing" the reserves through the addition of land in fee simple or through the acquisition of easements. The HCP also calls for the addition of 2,500 acres of occupied Stephens' kangaroo rat habitat into the reserves, for a total of 15,000 acres of occupied Stephens' kangaroo rat habitat within core reserves (Chamberlin 1998). A portion of the reserves occur within the former MARB. In 2003, the USFWS agreed to the release of the original 1,178-acre preserve in exchange for the acquisition of an approximately 1,300 acre Stephens' kangaroo rat preserve in Potrero (USFWS 2003). The Center for Biological Diversity (CBD) and Audubon Society challenged the USFWS decision, and a settlement agreement was issued in 2012 (*Center for Biological Diversity v. Jim Bartel, et. al.* S.D. Cal. No. 09-cv-1854-JAH-POR; 'CBD Settlement Agreement'). Pursuant to the CBD Settlement Agreement, 664 acres of the former management area lands were re-instated as conservation land suitable for Stephens' kangaroo rat (i.e., lands to the east of the project site); however, these lands are not considered to be Stephens' kangaroo rat core reserves.

General Plan of the March Joint Powers Authority.

As part of the base re-alignment, the March JPA General Plan was created as a guiding tool for development within the former MARB. The general plan is designed to implement the March Air Force Base Master Reuse Plan, which included disposal and redevelopment of approximately 4,400 acres of the approximately 6,500 acres of the former Air Base. The General Plan serves as a blueprint for future growth and development (March JPA 1999a). General plan provisions identify that the project site was planned the following land uses: business park and park/recreation/open space.

2 METHODS

Rocks Biological Consulting (RBC) biologists conducted vegetation mapping; habitat assessments for special-status species, including Riverside fairy shrimp, vernal pool fairy shrimp (*Branchinecta lynchi*), least Bell's vireo, southwestern willow flycatcher, coastal California gnatcatcher, and burrowing owl (*Athene cunicularia*); and a general biological survey. Following the general biological survey, RBC biologists conducted USFWS protocol non-breeding season surveys for coastal California gnatcatcher, USFWS protocol surveys for listed large branchiopods (fairy shrimp), USFWS protocol surveys for least Bell's vireo, and focused surveys for summer-blooming rare plant species. Additionally, RBC regulatory specialists conducted a formal aquatic resources delineation to identify areas that may be considered jurisdictional under the Corps pursuant to Section 404 of the CWA, under the RWQCB pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act, and under the CDFW pursuant to Section 1602 of the CFGC.

The general biological survey, vegetation mapping, and habitat assessments, and formal aquatic resources delineation were conducted within the 514.69-acre survey area, which included the 379.22-acre project site and an approximately 200-foot survey buffer. However, only the project site information is included in report impact calculations and tables, while the buffer is illustrated within the figures for informational purposes and edge effects analysis. Please note that due to project changes following the general biological survey, the buffer is slightly less than 200-feet in some areas. Despite these changes, the surveyed buffer area remains adequate for assessing potential adjacency impacts because all surrounding vegetation communities and land uses were accounted for within the surveyed buffer area.

Note that survey buffer areas are included in this analysis in order to assess the potential for special-status species or resources in areas immediately adjacent the project site that could be impacted by the project analyzed herein. Such information should not be considered comprehensive for all biological resources or aquatic resources that may occur in buffer areas, and buffer mapping is intended only for the project analysis outlined herein; such information is not intended for impact analysis of any future projects within or adjacent to project buffer areas.

2.1 DATABASE SEARCH

Prior to conducting field surveys, existing information regarding biological resources present or potentially present within the project area was obtained through a review of pertinent literature and databases, including, but not limited to:

- CDFW California Natural Diversity Database (CNDDB; CDFW 2021a)
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2021)
- USFWS IPaC Database (USFWS 2021)
- National Wetlands Inventory (NWI) Database (USFWS 2021b)
- Natural Resources Conservation Service (NRCS) Soils Survey Database (NRCS 2019)
- USGS National Hydrography Dataset (NHD) Database (USGS 2020)

- Base re-alignment BO (USFWS 1999) and supporting information

A CNDDDB (CDFW 2021a) query was conducted for the project site plus a 3-mile radius. The CNPS Electronic Inventory (CNPS 2021) search was conducted for the nine USGS 7.5' quadrangles surrounding the project site for an elevation range of 1,561 to 1,778 feet above mean sea level (amsl). The potential for special-status species to occur within the survey area was refined by considering the habitat affinities of each species, field habitat assessments, vegetation mapping, and knowledge of local biological resources.

Database results, along with local biological knowledge, were utilized for assessment of special-status species' potential for occurrence on or adjacent the project site. The potential for occurrence tables created for the project (see section 3) includes all federally and state-listed species, candidate species, and other state-designated special-status species that have been reported within three miles of the project site (CNDDDB and iPaC/USFWS databases), as well as all California Rare Plant Rank (CRPR) listed species that occur within a nine-quadrangle search (CNPS 2021).

2.2 VEGETATION MAPPING AND GENERAL BIOLOGICAL SURVEYS

RBC biologists conducted vegetation mapping in the field to provide a baseline of the biological resources that occur or have the potential to occur within the survey area on July 28, 2021, and August 6, 2021. RBC conducted vegetation mapping by walking throughout the project site and mapping vegetation communities on aerial photographs at a 1:2400 scale (1 inch = 200 feet). Vegetation was identified in buffer areas via binoculars from the project site during the general biological survey.

The extent of each habitat type (delineated as a habitat polygon on the vegetation maps) was calculated using the ArcGIS Geographic Information System (GIS). Habitats were classified based on the dominant and characteristic plant species utilizing vegetation community classifications outlined in Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and consistent with MSHCP vegetation mapping classification; best professional judgement was used to determine the most appropriate vegetation community names for the project, which occasionally requires finer delineation of habitats than outlined Holland. The vegetation communities were also crosswalked with *The Manual of California Vegetation, 2nd Edition* (MCV2) (Sawyer et al. 2009), and the equivalent classification is provided in Section 3.

RBC biologists conducted a general biological survey for plants and wildlife concurrently with vegetation mapping on July 28, 2021, and August 6, 2021. Photos taken during the general biological survey are provided in Appendix A. Plant species encountered during the field survey were identified and recorded in field notebooks. Plant species that could not be identified were brought to the laboratory for identification using the dichotomous keys in the *Jepson Manual* (Baldwin et al. 2012) and following the taxonomic treatment of the *Jepson Manual* with input from the *Western Riverside County Annotated Checklist* (Roberts 2004). A compiled list of the vascular plant species observed in the survey area is presented in Appendix B.

Wildlife species were documented during the field survey by sight, calls, tracks, scat, or other signs, and were recorded in field notebooks. Binoculars (8X42 magnification) were used to aid in the identification of wildlife. In addition to species observed during the surveys, expected wildlife use of the project site was assessed based on known habitat preferences of local species and knowledge of their biogeographic distribution in the region. A compiled list of wildlife species observed in the study area is presented in Appendix C; scientific and common names of wildlife follow CDFW Special Animals List (2021c).

The location of observed biological resources designated as special-status by the USFWS, CDFW, and/or CNPS, were recorded in field notebooks, on aerial maps, and/or through the use of handheld Global Positioning System (GPS) devices. The project site and buffer were also surveyed for habitat with the potential to support special-status plant and wildlife species.

2.3 AQUATIC RESOURCES DELINEATION

RBC conducted a formal aquatic resources delineation within the survey area per the Corps guidelines on July 28, 2021, and August 6, 2021, to identify any areas that may be considered jurisdictional under the Corps pursuant to Section 404 of the CWA; the RWQCB pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act; and the CDFW pursuant to Section 1602 of the CFGC (Appendix E).

Prior to the on-site delineation, field maps were created using a Geographic Information System (GIS) and a color aerial photograph at a 1:200 scale. USGS NHD and topography data (USGS 2020), USFWS NWI data (USFWS 2021), and NRCS soils data (Appendix D) were also reviewed to further determine the potential locations of aquatic resources within the survey area. RBC also utilized Google Earth to assess current and historic presence or absence of flows and/or ponding in the review area (Google Earth Pro 2021). Staff evaluated areas with depressions, drainage patterns, and/or wetland vegetation were evaluated within the survey area, with focus on the presence of defined channels and/or wetland vegetation, soils, and hydrology. Field staff examined potential wetland waters of the U.S. using the routine determination methods set forth in Part IV, Section D, Subsection 2 of the Corps 1987 *Wetland Delineation Manual* (Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (Corps 2008). Complete methods are presented in the *Upper Plateau Aquatic Resources Delineation Report* (RBC 2021; Appendix E).

2.4 SPECIAL-STATUS SPECIES SURVEYS & ASSESSMENTS

2.4.1 SUMMER PLANT SURVEYS

RBC conducted surveys for summer-blooming plant species within the project site on June 6 and 7, 2022. The project site was surveyed for special-status plants, including smooth tarplant (*Centromadia pungens* ssp. *laevis*) and paniculate tarplant (*Deinandra paniculata*). All suitable habitat within the project site was walked and assessed for the presence of special-status floral species. The locations of any identified special-status plant species were recorded with estimated

population sizes. All vascular plant species observed on site were identified to species, subspecies, or varietal level and added to the project's plant compendium.

2.4.2 FAIRY SHRIMP SURVEYS

Federally and state-listed large branchiopods (fairy shrimp) are known to occur in the region. RBC conducted USFWS protocol wet season surveys for listed large branchiopods (fairy shrimp) within the project site during the 2021 – 2022 rain year. Wet season survey methodology is detailed in Appendix F. RBC conducted dry season sampling in July 2022, and samples were subsequently processed to separate and hatch fairy shrimp cysts. Dry season soil collection and processing; cyst identification and hydration; and fairy shrimp hatching, rearing, and identification methods are outlined in *90-Day Wet and Dry Season Vernal Pool Branchiopod Survey Results, Upper Plateau Development Project, Riverside County, California* (Appendix F).

2.4.3 COASTAL CALIFORNIA GNATCATCHER SURVEYS

The federally threatened coastal California gnatcatcher is known to occur within the region. RBC conducted USFWS protocol non-breeding surveys from November 8, 2021 to March 1, 2022, for coastal California gnatcatcher within and adjacent to the project site. Survey methodology is detailed in Appendix G.

2.4.4 LEAST BELL'S VIREO SURVEYS

Federally and state-endangered least Bell's vireo is known to occur in the region. USFWS protocol surveys for least Bell's vireo were conducted within and adjacent to the project site from April 13 to July 21, 2022. Survey methodology is detailed in Appendix H.

3 RESULTS

This section discusses the results of the literature review, vegetation mapping, general biological survey, the formal aquatic resource delineation, and special-status species surveys. Special-status biological resources are also discussed in this section and are defined as follows: 1) Species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened/endangered population sizes; 2) Species and their associated habitat types recognized by local and regional resource agencies as sensitive; 3) Habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; 4) Wildlife corridors and habitat linkages; and/or 5) Biological resources that may or may not be considered sensitive, but are regulated under local, state, and/or federal laws.

3.1 PHYSICAL SETTING

The project site is a relatively flat parcel that supports several upland vegetation communities, primarily dominated by non-native grassland, with smaller areas of scrub habitat and developed land. Several small areas of riparian habitats also occur on the project site. Surrounding land uses include industrial development and residential development. Vegetation mapping was performed based on conditions observed during the field visits on July 28, 2021, and August 6, 2021.

On-site elevations range from approximately 1,561 feet amsl to 1,778 feet amsl. Soils mapped on site include Cieneba rocky sandy loam, Fallbrook fine sandy loam, Fallbrook rocky sandy loam, Fallbrook sandy loam, Monserate sandy loam, and Vista coarse sandy loam (Appendix D).

3.2 VEGETATION COMMUNITIES AND LAND USES

The survey area, defined here as the project site plus the surrounding 100-foot buffer, supports 14 vegetation communities and other land covers that are generally defined here in accordance with *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and consistent with the MSHCP vegetation mapping classification. However, some of the vegetation community classes used within this analysis do not have an exact equivalent in the Holland classification system. When a vegetation community differed significantly from the Holland description, a qualifier was added to the description name. In addition, monotypic stands of species not typically dominant in any defined Holland vegetation community were mapped separately.

Vegetation within the survey area is predominantly comprised of non-native grassland, disturbed habitat, and developed land cover (i.e., roads and structures), as shown on Figure 2 and identified in Table 1. Several small areas of native upland vegetation occur within the survey area, including flat-topped buckwheat, encelia scrub, and Riversidian sage scrub. No large stands of riparian vegetation communities are present within the survey area, although small stands of southern riparian forest, southern willow scrub, and mulefat scrub are present; some small stands within the survey area are contiguous with larger areas of riparian habitat adjacent to the survey area, especially within the eastern portion of the project. Vegetation communities which are roughly

based on Holland (1986) were then crosswalked with MCV2 (Sawyer et al. 2009); Table 1 provides a summary of vegetation acreages for the survey area as well as the equivalent vegetation community in the MCV2 classification system.

Table 1. Summary of Vegetation within the Upper Plateau Project Survey Area

Vegetation	MCV2 Classification System ¹	Global/ State Rank	Upper Plateau Survey Area (acres)
UPLAND VEGETATION COMMUNITIES			
Encelia Scrub	<i>Encelia farinosa</i> Shrubland Alliance	G5/S4	3.64
Flat-Topped Buckwheat	<i>Eriogonum fasciculatum</i> Shrubland Alliance	G5/S5	5.33
Non-native Grassland	<i>Bromus rubens</i> – <i>Schismus (arabicus, barbatus)</i> Herbaceous Semi-Natural Alliance	No Rank	436.55
Non-native Grassland – Mustard Dominated	<i>Brassica nigra</i> – <i>Centaurea (solstitialis, melitensis)</i> Herbaceous Semi-Natural Alliance	No Rank	5.11
Ornamental	Developed/Disturbed	No Rank	0.53
Riversidian Sage Scrub	<i>Eriogonum fasciculatum</i> Shrubland Alliance	G5/S5	10.98
Riversidian Sage Scrub – Disturbed	<i>Eriogonum fasciculatum</i> Shrubland Alliance – Disturbed	G5/S5	5.47
Subtotal			467.61
RIPARIAN VEGETATION COMMUNITIES			
Hoary Nettle Monotypic Stand	<i>Urtica dioica</i> Alliance	No Rank	0.45
Mulefat Scrub	<i>Baccharis salicifolia</i> Shrubland Alliance	G4S4	0.09
Southern Riparian Forest	<i>Salix gooddingii</i> - <i>Salix laevigata</i> Forest & Woodland Alliance ²	G4S3	3.17
Southern Willow Scrub	<i>Salix lasiolepis</i> Shrubland Alliance	G4S4	0.21
Southern Willow Scrub – Disturbed	<i>Salix lasiolepis</i> Shrubland Alliance	G4S4	0.11
Subtotal			4.03

LAND COVERS			
Developed	Developed/Disturbed	No Rank	32.26
Disturbed Habitat	Developed/Disturbed	No Rank	10.80
<i>Subtotal</i>			43.06
Total			514.69

¹ Vegetation communities crosswalked to *The Manual of California Vegetation* (Sawyer et al. 2009)

² Considered special-status by California Department of Fish and Wildlife (CDFW 2021b).

Natural communities with ranks of S1 through S3 are considered sensitive natural communities by CDFW to be addressed in the environmental review processes of CEQA. Only one of the 14 vegetation communities and land covers identified within the survey area, southern riparian forest, is considered a sensitive vegetation community by CDFW due to its state ranking (2021b).

3.2.1 UPLAND VEGETATION COMMUNITIES

Encelia Scrub (Encelia farinosa Shrubland Alliance)

Encelia scrub is a low desert scrub community dominated by brittlebush (*Encelia farinosa*). Encelia scrub within the survey area (3.64 acres) supports a nearly monotype stand of brittlebush with scattered sand aster (*Corethrogyne filaginifolia*), thickbracted goldenbush (*Ericameria palmeri* var. *pachylepis*), short-pod mustard (*Hirschfeldia incana*), and non-native grasses. Encelia scrub is found in the western portion of the project site and buffer, adjacent to the buildings in the center of the project site, and also a swath of habitat in the eastern portion of the project site and buffer (Figure 2).

This vegetation community is ranked as G5/S4, meaning it is globally secure and “uncommon but not rare” in California; there is “some cause for long-term concern due to declines or other factors” (CNPS 2021). Due to its CNPS ranking, CDFW does not consider encelia scrub habitat as a sensitive natural community under CEQA (CDFW 2021b).

Flat-Topped Buckwheat (Eriogonum fasciculatum Shrubland Alliance)

Flat-topped buckwheat is a form of coastal sage scrub monotypically dominated by California buckwheat (*Eriogonum fasciculatum*) in the shrub strata and generally resulting from past disturbance. The flat-topped buckwheat within the survey area (5.33 acres) supports small to medium sized woody shrubs dominated by California buckwheat amongst areas of bare ground. Small and medium sized areas of flat-topped buckwheat are found throughout the northern and portions of the project site and as well as in the eastern buffer areas (Figure 2).

This vegetation community is ranked as G5/S5, meaning it is “demonstrably secure because of its worldwide/statewide abundance” (CNPS 2021). Due to its CNPS ranking, CDFW does not consider flat-topped buckwheat scrub habitat as a sensitive natural community under CEQA (CDFW 2021b).

Non-native Grassland (Bromus rubens – Schismus (arabicus, barbatus) Herbaceous Semi-Natural Alliance)

The non-native grassland within the survey area (436.55 acres) is dominated by non-native grass species such as slender wild oat (*Avena barbata*), riggut grass (*Bromus diandrus*), red brome (*Bromus rubens*), and rattail sixweeks grass (*Festuca myuros*), amongst lower numbers of short-pod mustard, sand aster, deerweed (*Acmispon glaber*), horehound (*Marrubium vulgare*), and vinegar weed (*Trichostema lanceolatum*). Paniculate tarplant was observed in the non-native grassland habitat within the southern part of the project site and just north of the survey area. Non-native grassland occurs throughout much of the project site (Figure 2).

CDFW does not consider any of the semi-natural stands, including non-native grasslands, as special-status biological resources under CEQA (CDFW 2021b).

Non-native Grassland – Mustard Dominated (Brassica nigra – Centaurea (solstitialis, melitensis) Herbaceous Semi-Natural Alliance)

Non-native grassland – mustard dominated within the survey area (5.11 acres) supports stands of black mustard (*Brassica nigra*) and short-pod mustard amongst lower numbers of non-native grass species. Non-native grassland – mustard dominated habitat occurs at the southwestern and the far eastern portions of the survey area (Figure 2). These areas were likely historically disturbed and subsequently colonized by ruderal mustard species.

CDFW does not consider any of the semi-natural stands, including non-native grasslands, as special-status biological resources under CEQA (CDFW 2021b).

Ornamental (Developed/Disturbed)

Ornamental vegetation is typically classified as an area containing planted ornamental, non-native plant species. One small patch of ornamental vegetation is found within the far east of the survey area (0.53 acre) and is associated with a developed road (Figure 2).

Ornamental land is not recognized by CDFW (2021b); therefore, it is not considered special-status under CEQA.

Riversidian Sage Scrub (Eriogonum fasciculatum Shrubland Alliance)

Riversidian sage scrub is a form of coastal sage scrub found in Riverside County. Riversidian sage scrub within the survey area (10.98 acres) is dominated by California buckwheat and also supports California sagebrush (*Artemisia californica*), brittlebush, thickbracted goldenbush, deerweed, cane/valley cholla (*Cylindropuntia californica* var. *parkeri*), and non-native grasses. Riversidian sage scrub is found near the edges of the survey area and in several small patches in the northern portion of the project site (Figure 2). Portions of this vegetation community are also dominated by deerweed; these deerweed-dominated patches of Riversidian sage scrub are found in the southeastern portion of the project site (Figure 2).

Riversidian sage scrub is ranked as G5/S5, meaning it is “demonstrably secure because of its worldwide/statewide abundance” (CNPS 2021). Due to its CNPS ranking, CDFW does not

consider Riversidean sage scrub habitat as a sensitive natural community under CEQA (CDFW 2021b).

Riversidian Sage Scrub – Disturbed (Eriogonum fasciculatum Shrubland Alliance – Disturbed)

Riversidian sage scrub – disturbed is a form of coastal sage scrub found in Riverside County characterized by heavy disturbance. Riversidean sage scrub – disturbed within the survey area (5.47 acres) supports species characteristic to Riversidean sage scrub, such as California buckwheat, California sagebrush, brittlebush, thickbracted goldenbush, and deerweed but has a marked disturbance that make the vegetation community atypical. Riversidean sage scrub – disturbed is found in the eastern portion of the project site and buffer and contains an overgrown understory of non-native grasses, which inhibits its function as a natural vegetation community (Figure 2).

Riversidian sage scrub is ranked as G5/S5, meaning it is “demonstrably secure because of its worldwide/statewide abundance” (CNPS 2021). Due to its CNPS ranking, CDFW does not consider Riversidean sage scrub – disturbed habitat as a sensitive natural community under CEQA (CDFW 2021b).

3.2.2 NATIVE RIPARIAN VEGETATION COMMUNITIES

Hoary Nettle Monotypic Stand (Urtica dioica Alliance)

The hoary nettle (*Urtica dioica*) monotypic stand (0.45 acre) occurs in one small area in the far southern portion of the survey area (Figure 2). Hoary nettle is a perennial herb native to California. It grows up to 3 to 8 feet in height during the summer and dies into the ground during the winter. Hoary nettle is equally likely to occur in wetland and non-wetland habitats. The monotypic stand of hoary nettle found within the survey area is distinct and from the surrounding vegetation communities, namely southern riparian forest and non-native grasslands – mustard dominated. However, it is considered a riparian community since it is located in an area that receives more moisture than the non-riparian areas immediately surrounding it.

Hoary nettle monotypic stand is not recognized by CDFW (2021b); therefore, it is not considered special-status under CEQA.

Mulefat Scrub (Baccharis salicifolia Shrubland Alliance)

The mulefat (*Baccharis salicifolia*) scrub within the survey area (0.09 acre) occurs in one small area in the eastern portion of the survey area; the mulefat scrub is also isolated from other areas of riparian habitat and is immediately surrounded by non-native grassland (Figure 2). Mulefat is an evergreen shrub with willow-like leaves. Mulefat scrub occurs in both seasonally or intermittently flooded habitat, and stands are variable depending on the amount of inundation and scouring. Stands usually form open shrublands or thickets in riparian corridors and along lake margins (CNPS 2021).

Mulefat scrub is ranked by CDFW (2021b) as G4/S4. The ranking indicates that globally and statewide the alliance is considered apparently secure and “uncommon but not rare; some cause

for long-term concern due to declines or other factors” (CDFW n.d.); therefore, it is not considered special-status under CEQA.

Southern Riparian Forest (Salix gooddingi – Salix laevigata Forest & Woodland Alliance)

The southern riparian forest within the survey area (3.17 acres) is dominated by both Goodding’s black willow (*Salix gooddingii*) and red willow (*S. laevigata*) and also supports a small number of mulefat. Other species present include hoary nettle, broom baccharis (*Baccharis sarothroides*), seaside heliotrope (*Heliotropium curassavicum* var. *oculatum*), and blue elderberry (*Sambucus nigra* subsp. *caerulea*). Southern riparian forest within the survey area occurs primarily along the southern boundary in three main drainages, as well as within the southwestern portion of the project (Figure 2). Additionally, the composition of the southern riparian habitat may differ across the survey area; the eastern portion of the southern riparian forest occurring in the easternmost drainage is dominated by Goodding’s black willow as it transitions eastward.

With the survey area, the southern riparian forest is relatively small and either occurs in isolated patches or is contiguous with small isolated riparian corridors located outside the survey area, such as the southwestern riparian areas.

Southern riparian forest is ranked by CDFW (2021b) as G4/S3. The ranking indicates that globally the alliance is considered apparently secure and “uncommon but not rare; some cause for long-term concern due to declines or other factors” (CDFW n.d.). This ranking also indicates that within California the alliance is considered sensitive by CDFW, as it is vulnerable “due to a restricted range, relatively few populations [often 80 or fewer], recent and widespread declines, or other factors making it vulnerable to extirpation” (CDFW n.d.).

Southern Willow Scrub (Salix lasiolepis Shrubland Alliance)

Southern willow scrub consists of dense, broadleaved, winter-deciduous riparian thickets dominated by several *Salix* species with mulefat. Southern willow scrub within the survey area (0.21 acre) occurs as two isolated patches in the northern and western portions of the survey area. While the westernmost patch is dominated by Goodding’s black willow, arroyo willow, and red willow and also supports broom baccharis and mulefat, the northernmost patch of southern willow scrub occurs along the northern boundary of the project site and is dominated by arroyo willow (Figure 2).

Southern willow scrub is ranked by CDFW (2021b) as G4/S4. The ranking indicates that globally and statewide the alliance is considered apparently secure and “uncommon but not rare; some cause for long-term concern due to declines or other factors” (CDFW n.d.); therefore, it is not considered special-status under CEQA.

Southern Willow Scrub – Disturbed (Salix lasiolepis Shrubland Alliance)

Southern willow scrub – disturbed within the survey area (0.11 acre) is has a similar plant composition as southern willow scrub with marked disturbance that make the vegetation community atypical, such as the high cover of non-native species within the understory. One

isolated patch of southern willow scrub – disturbed occurs in the northern portion of the project buffer (Figure 2).

Southern willow scrub – disturbed is ranked by CDFW (2021b) as G4/S4. The ranking indicates that globally and statewide the alliance is considered apparently secure and “uncommon but not rare; some cause for long-term concern due to declines or other factors” (CDFW n.d.). Therefore, it is not considered special-status under CEQA.

3.2.3 LAND COVERS

Developed (Developed/Disturbed)

Developed areas within the survey area total 32.26 acres. Developed land supports little to no native vegetation and are comprised of human-made structures (buildings, pavement, etc.). Areas mapped as developed occur throughout the entire project site in the form of roads and buildings historically used for military activities. Developed areas also occur within the project buffer in the form of housing and industrial development (Figure 2).

Developed land is not recognized by CDFW (2021b); therefore, it is not considered special-status under CEQA. However, the abandoned buildings within the project site are known to support nests and roosts for raptors, such as barn owls (*Tyto alba*), as documented during field surveys on September 1, 2021.

Disturbed (Developed/Disturbed)

Disturbed land supports little to no native vegetation and is typified by human-made disturbances (vegetation clearing, mowing, vehicle disturbance, etc.). Disturbed lands are present throughout the entire survey area (10.80 acres) and consist of bare dirt roads.

Disturbed land is not recognized by CDFW (2021b); therefore, it is not considered special-status under CEQA.

3.3 JURISDICTIONAL AQUATIC RESOURCES

Based on the formal aquatic resources delineation, the survey area supports approximately 0.54 acre (8,626 linear feet) of potential non-wetland waters of the U.S. jurisdictional by the Corps (Table 2 and Figure 3a); 0.43 acre (8,201 linear feet) of non-wetland waters of the State and 0.11 acre (425 linear feet) of wetland waters of the State jurisdictional by the RWQCB (Table 3 and Figure 3b); and approximately 1.24 acres (8,263 linear feet) of vegetated streambed, 0.03 acre (363 linear feet) of unvegetated streambed, and 3.07 acres of riparian habitat jurisdictional by CDFW (Table 4 and Figure 3c).

Table 2. Aquatic Resource Summary Table: Corps

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Feet)	Presence of OHWM/ Wetland	Dominant Vegetation ¹	Location (lat, long)	Acre(s) ²	Linear Feet
NWW-1	R6	2 – 2	Yes/No	Riversidean Sage Scrub	33.911494, -117.304933	0.04	821
NWW-2	R6	2 – 2	Yes/No	Riversidean Sage Scrub	33.911516, -117.306580	0.03	753
NWW-3	R6	1 – 2	Yes/No	Non-native Grassland	33.909152, -117.312802	0.03	813
NWW-4	R6	2 – 2	Yes/No	Non-native Grassland	33.905922, -117.312596	0.05	995
NWW-5	R6	1 – 5	Yes/No	Non-native Grassland	33.904494, -117.316792	0.12	2,159
NWW-6	R6	1 – 10	Yes/No	Southern Riparian Forest	33.900933, -117.312589	0.04	373
NWW-7	R6	3 – 3	Yes/No	Southern Riparian Forest	33.899747, -117.313461	0.02	236
NWW-7A	R6	2 – 2	Yes/No	Non-native Grassland – Mustard Dominated	33.899104, -117.313655	0.02	512
NWW-7A1	R6	1 – 1	Yes/No	Developed (Concrete-lined)	33.898410, -117.313369	<0.01	146
NWW-7A2	R6	1 – 1	Yes/No	Developed (Concrete-lined)	33.898233, -117.313761	0.01	216
NWW-8	R5	10 – 15	Yes/Yes	Southern Riparian Forest	33.902621, -117.318620	0.11	425
NWW-9	R6	2 – 3	Yes/No	Southern Riparian Forest	33.907245, -117.294771	0.05	974
NWW-10	R6	2 – 5	Yes/No	Southern Riparian Forest	33.907086, -117.291994	0.01	202
Total						0.54	8,626

OHWM = Ordinary High Water Mark

¹ See Figure 2 for all vegetation communities present within each aquatic resource.

² Acreages summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

Table 3. Aquatic Resource Summary Table: RWQCB

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Feet)	Presence of OHWM/Wetland	Dominant Vegetation ¹	Location (lat, long)	Acre(s) ²	Linear Feet
NWW-1	R6	2 – 2	Yes/No	Riversidean Sage Scrub	33.911494, -117.304933	0.04	821
NWW-2	R6	2 – 2	Yes/No	Riversidean Sage Scrub	33.911516, -117.306580	0.03	753
NWW-3	R6	1 – 2	Yes/No	Non-native Grassland	33.909152, -117.312802	0.03	813
NWW-4	R6	2 – 2	Yes/No	Non-native Grassland	33.905922, -117.312596	0.05	995
NWW-5	R6	1 – 5	Yes/No	Non-native Grassland	33.904494, -117.316792	0.12	2,159
NWW-6	R6	1 – 10	Yes/No	Southern Riparian Forest	33.900933, -117.312589	0.04	373
NWW-7	R6	3 – 3	Yes/No	Southern Riparian Forest	33.899747, -117.313461	0.02	236
NWW-7A	R6	2 – 2	Yes/No	Non-native Grassland – Mustard Dominated	33.899104, -117.313655	0.02	512
NWW-7A1	R6	1 – 1	Yes/No	Developed (Concrete-lined)	33.898410, -117.313369	<0.01	146
NWW-7A2	R6	1 – 1	Yes/No	Developed (Concrete-lined)	33.898233, -117.313761	0.01	216
NWW-8	R6	2 – 3	Yes/No	Southern Riparian Forest	33.907245, -117.294771	0.05	974
NWW-9	R6	2 – 5	Yes/No	Southern Riparian Forest	33.907086, -117.291994	0.01	202
WW-1	R5	10 – 15	Yes/Yes	Southern Riparian Forest	33.902621, -117.318620	0.11	425
Total						0.54	8,626

OHWM = Ordinary High Water Mark

¹ See Figure 2 for all vegetation communities present within each aquatic resource.

² Acres summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

Table 4. Aquatic Resource Summary Table: CDFW

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
NWW-1	Vegetated Streambed	Non-native Grassland	2 – 2	33.912243, -117.305090	<0.01	821
		Riversidean Sage Scrub		33.911293, -117.304889	0.03	
		Southern Willow Scrub – Disturbed		33.912318, -117.305115	0.01	
	Riparian Habitat ³	Southern Willow Scrub – Disturbed	N/A	33.912304, -117.305131	0.11	–
NWW-2	Vegetated Streambed	Non-native Grassland	2 – 2	33.911592, -117.306630	0.01	753
		Riversidean Sage Scrub		33.911400, -117.306598	0.02	
		Southern Willow Scrub		33.912106, -117.306343	<0.01	
	Riparian Habitat ³	Southern Willow Scrub	N/A	33.912105, -117.306351	0.06	–
NWW-3	Vegetated Streambed	Non-native Grassland	1 – 6	33.909215, -117.312858	0.09	813
NWW-4	Vegetated Streambed	Non-native Grassland	2 – 5	33.905680, -117.312424	0.07	995
NWW-5	Vegetated Streambed	Non-native Grassland	2 – 10	33.904596, -117.316928	0.13	2,159
		Southern Riparian Forest		33.905635, -117.318069	<0.01	
		Southern Willow Scrub		33.904950, -117.317527	0.04	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.905637, -117.318042	0.02	–
		Southern Willow Scrub		33.904920, -117.317499	0.10	

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
NWW-6	Vegetated Streambed	Disturbed Habitat	1 – 15	33.900947, -117.312342	<0.01	373
		Non-native Grassland		33.901001, -117.312045	0.01	
		Non-native Grassland – Mustard Dominated		33.900735, -117.313709	<0.01	
		Southern Riparian Forest		33.900887, -117.312964	0.06	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.900874, -117.313157	0.22	–
NWW-7	Vegetated Streambed	Disturbed Habitat	2 – 12	33.899868, -117.313731	<0.01	241
		Hoary Nettle Monotypic Stand		33.899657, -117.313302	<0.01	
		Non-native Grassland		33.899883, -117.313776	0.01	
		Non-native Grassland – Mustard Dominated		33.899639, -117.313161	0.01	
		Southern Riparian Forest		33.899740, -117.313455	0.04	
	Riparian Habitat ³	Hoary Nettle Monotypic Stand	N/A	33.899615, -117.313299	0.04	–
		Southern Riparian Forest		33.899761, -117.313501	0.13	
NWW-7A	Vegetated Streambed	Disturbed Habitat	2 – 2	33.898453, -117.313611	<0.01	505
		Non-native Grassland		33.898423, -117.313610	<0.01	
		Non-native Grassland – Mustard Dominated		33.899018, -117.313678	0.01	
		Southern Riparian Forest		33.899201, -117.313645	0.01	
	Riparian Habitat ³	Hoary Nettle Monotypic Stand	N/A	33.899363, -117.313434	0.41	–
		Southern Riparian Forest		33.899153, -117.313653	0.21	
NWW-7A1	Unvegetated Streambed	Developed (Concrete-lined)	3 – 3	33.898410, -117.313369	0.01	147

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
NWW-7A2	Unvegetated Streambed	Developed (Concrete-lined)	3 – 3	33.898232, -117.313762	0.02	216
NWW-8	Vegetated Streambed	Southern Riparian Forest	10 – 30	33.902627, -117.318642	0.43	425
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.902603, -117.318539	0.33	–
NWW-9	Vegetated Streambed	Non-native Grassland	2 – 30	33.907754, -117.293851	0.02	974
		Southern Riparian Forest		33.906867, -117.295421	0.23	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.907200, -117.294796	1.24	–
NWW-10	Vegetated Streambed	Southern Riparian Forest	2 – 5	33.907086, -117.291994	0.01	202
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.907173, -117.291772	0.20	–
Total⁴					4.33	8,626

¹ Corresponds with the approximate stream bank widths observed during delineation. Width range accounts for entirety of streambed delineated, not individual vegetation communities.

² Linear feet not calculated for individual aquatic resource type and vegetation community (including riparian habitat that occurs outside of delineated streambed) to avoid redundant linear foot calculation where such areas overlap.

³ Occurs outside of delineated streambed.

⁴ Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table

The survey area supports two abandoned drainages (AD-1 and AD-2) that are not expected to be jurisdictional by the Corps, RWQCB, or CDFW since they did not display an observable ordinary high-water mark (OHWM) or bed and bank and appeared to no longer convey regular flows on site. The survey area also supports one swale (S-1) that is not expected to be jurisdictional by the Corps, RWQCB, or CDFW since it has no observable OHWM, bed and bank, or other evidence of conveying regular flows on site or from the surrounding areas.

Finally, the survey area supports a concrete-lined ditch/stormwater conveyance feature (D-1) that is not expected to be jurisdictional by the Corps, RWQCB, or CDFW since it has an artificial break in bank slope but does not have any other OHWM indicators, did not have an observable bed and bank, lacked association with a natural feature/streambed, and did not support wildlife habitat. D-1 appeared to be a maintained artificial structure, which functions as localized stormwater runoff conveyance with no downstream connectivity and which does not provide/has no impact on beneficial uses (e.g., agricultural supply, freshwater supply, or groundwater recharge). Complete results are presented under separate cover in the *Upper Plateau Aquatic Resources Delineation Report* (RBC 2021; Appendix E).

3.4 PLANTS AND WILDLIFE

The project area supports a low diversity of vegetation communities and plant species. A total of 75 plant species (60 percent native, 40 percent non-native) were observed during project biological surveys, including rare plant surveys (Appendix B). A total of two amphibian species, 65 bird species, four mammal species, three reptile species, and seven invertebrate species were observed during project surveys, including protocol special-status species surveys, or presumed present based on track and/or scat (Appendix C). Twilight/nighttime surveys were not conducted, therefore crepuscular and nocturnal animals are likely under-represented in the project species list; however, habitat assessments were performed for all special-status species to ensure that any potentially present rare species are adequately addressed herein.

For the purposes of this report, species are considered to have special-status if they meet one or more of the following criteria:

- Listed or considered for listing or proposed for listing under the ESA or CESA (CDFW 2021a; USFWS 2021)
- CDFW Species of Special Concern (CDFW 2021a)
- CDFW Fully Protected Species (CDFW 2021a)
- CDFW Watch List Species (CDFW 2021a)
- Listed as having a California Rare Plant Rank (CRPR; formerly CNPS List, CNPS 2021)

3.4.1 SPECIAL-STATUS PLANT SPECIES

As mentioned above and clarified in this section, special-status plant species include those that are: 1) Listed or proposed for listing by federal or state agencies as threatened or endangered; 2) CRPR List 1 through 4 species (CNPS 2021); or 3) Considered rare, endangered, or threatened by the CDFW (CDFW 2021a) or other local conservation organizations or specialists.

In the state of California, CNPS is a statewide resource conservation organization that has developed an inventory of California's sensitive plant species. The CRPR system is recognized by the CDFW and essentially serves as an early warning list of potential candidate species for threatened or endangered status. The CRPR system is categorized as outlined in Table 5.

Table 5. California Rare Plant Rank (CRPR) Definitions

California Rare Plant Rank (CRPR)	1A	presumed extirpated in California and rare or extinct elsewhere
	1B	rare, threatened, or endangered in California and elsewhere
	2A	presumed extirpated in California but more common elsewhere
	2B	rare, threatened, or endangered in California but more common elsewhere
	3	plants for which more information needed

	4	plants of limited distribution
CRPR Threat Ranks	0.1	Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
	0.2	Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
	0.3	Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Paniculate tarplant was observed on the project site during 2021 general biological surveys and 2022 summer-blooming rare plant surveys. No other rare plant species were observed during general biological surveys in 2021 or focused summer-blooming rare plant surveys in 2022. Special-status plants and their potential to occur within the survey area are assessed in Table 6. Please note that species with low potential to occur or not expected to occur are not addressed further in this report; because these species have low or no potential for occurrence, no impacts are anticipated on these species.

Some trees within Riverside County are protected under local tree protection ordinances. Small areas of southern riparian forest and southern riparian scrub containing native trees occur throughout the project site (Figure 2); however, no oak trees or other specimen protected by local ordinances and/or policies occur on site.

Table 6. Special-Status Plant Species with Potential to Occur Within the Upper Plateau Project Survey Area

Species	Status	Habitat Description	Potential to Occur
Bristly sedge (<i>Carex comosa</i>)	CRPR 2B.1	Perennial rhizomatous herb. Blooms May-September. Coastal prairie, marshes and swamps, valley and foothill grassland. Elevation 0-2,050 feet.	None. Suitable coastal prairies, marshes and swamps not present. Grassland habitat on site is disturbed.
California satintail (<i>Imperata brevifolia</i>)	CRPR 2B.1	Perennial rhizomatous herb. Blooms September-May. Chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, and riparian scrub. Elevation 0-3,986 feet.	Very low. No chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, and limited riparian scrub habitat present.
California screw-moss (<i>Tortula californica</i>)	CRPR 1B.2	Moss. Sandy soils within chenopod scrub, valley and foothill grassland. Elevation 35-4,790 feet.	None. Suitable chenopod scrub not present. Grassland habitat on site is disturbed.
Chaparral ragwort (<i>Senecio aphanactis</i>)	CRPR 2B.2	Annual herb. Blooms January-April/May. Chaparral, cismontane woodland, and coastal scrub. Elevation 50-2,625 feet.	Very low. No chaparral, cismontane woodland or coastal scrub habitat present.

Species	Status	Habitat Description	Potential to Occur
Chaparral sand-verbena (<i>Abronia villosa</i> var. <i>aurita</i>)	CRPR 1B.1	Annual herb. Blooms (January)March-September. Sandy chaparral, coastal scrub and desert dunes. Elevation 245-5,250 feet.	None. Suitable sandy chaparral, coastal scrub and desert dunes habitat not present.
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	CRPR 1B.1	Annual herb. Blooms February-June. Coastal salt marshes and swamps, playas, and vernal pools. Elevation 5-4,005 feet.	None. Suitable habitat not present.
Coulter's matilija poppy (<i>Romneya coulteri</i>)	CRPR 4.2	Perennial rhizomatous herb. Blooms March-July/August. Chaparral and coastal scrub. Elevation 65-3,935 feet.	None. Suitable chaparral and coastal scrub habitat not present.
Deep Canyon snapdragon (<i>Pseudorontium cyathiferum</i>)	CRPR 2B.3	Annual herb. Blooms February-April. Sonoran desert scrub. Elevation 0-2,625 feet.	None. Sonoran desert scrub habitat not present.
Engelmann oak (<i>Quercus engelmannii</i>)	CRPR 4.2	Perennial deciduous tree. Blooms March-June. Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland. Elevation 165-4264 feet.	None. Suitable chaparral, cismontane woodland, and riparian woodland habitat not present. Grassland habitat on site is disturbed. This species would have been observed if present.
Horn's milk-vetch (<i>Astragalus hornii</i> var. <i>hornii</i>)	CRPR 1B.1	Annual herb. Blooms May-October. Meadows and seeps, and playas. Elevation 195-2,790 feet.	None. Suitable meadows and seeps, and playa habitats not present.
Little mouse-tail (<i>Myosurus minimus</i> ssp. <i>apus</i>)	CRPR 3.1	Annual herb. Blooms Mar-June. Valley and foothill grassland, and vernal pools. Elevation 65-2,100 feet.	Very low. Grassland habitat on site is disturbed and vernal pools not documented at site.
Long-spined spineflower (<i>Chorizanthe polygonoides</i> var. <i>longispina</i>)	CRPR 1B.2	Annual herb. Blooms April-July. Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation 100-5,020 feet.	Very low. Suitable habitat not present; grassland habitat on site is disturbed.
Los Angeles sunflower (<i>Helianthus nuttallii</i> ssp. <i>parishii</i>)	CRPR 1A	Perennial rhizomatous herb. Blooms August-October. Marshes and swamps. Elevation 35-5,005 feet.	None. Suitable marsh and swamp habitat not present.
Many-stemmed dudleya (<i>Dudleya multicaulis</i>)	CRPR 1B.2	Perennial herb. Blooms April-July. Chaparral, coastal scrub, and valley and foothill grassland. Elevation 50-2,590 feet.	Very low. Suitable chaparral, coastal scrub habitat not present. Grassland habitat on site is disturbed.

Species	Status	Habitat Description	Potential to Occur
Mesa horkelia (<i>Horkelia cuneata</i> var. <i>puberula</i>)	CRPR 1B.1	Perennial herb. Blooms February-July. Chaparral, cismontane woodland, and coastal scrub. Elevation 230-2,660 feet.	Very low. Suitable chaparral, cismontane woodland, or coastal scrub not present.
Munz's onion (<i>Allium munzii</i>)	FE; ST; CRPR 1B.1	Perennial bulbiferous herb. Blooms March-May. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. Clay and mesic microhabitat. Elevation 975-3,510 feet.	Very low. Suitable chaparral, cismontane woodland, coastal scrub, or pinyon and juniper woodland not present. Grassland habitat on site is disturbed.
Nevin's barberry (<i>Berberis nevini</i>)	FE; SE; CRPR 1B.1	Perennial evergreen shrub. Blooms (February)March-June. Chaparral, cismontane woodland, coastal scrub, and riparian scrub. Elevation 230-2,705 feet.	None. Species is visible year-round and was not detected during surveys.
Palmer's grapplinghook (<i>Harpagonella palmeri</i>)	CRPR 4.2	Annual herb. Blooms March-May. Chaparral, coastal scrub, and valley and foothill grassland. Elevation 65-3135 feet.	Low potential. Suitable chaparral and coastal scrub not present. Grassland habitat on site is disturbed.
Paniculate tarplant (<i>Deinandra aniculate</i>)	CRPR 4.2	Annual herb. Blooms (March)April-November. Coastal scrub, valley and foothill grassland, and vernal pools. Elevation 80-3,085 feet.	Present. Species observed during 2021 general biological surveys and 2022 summer-blooming rare plant surveys.
Parish's brittlescale (<i>Atriplex parishii</i>)	CRPR 1B.1	Annual herb. Blooms June-October. Chenopod scrub, playas, and vernal pools. Elevation 80-6,235 feet.	None. Suitable habitat not present.
Parish's desert-thorn (<i>Lycium parishii</i>)	CRPR 2B.3	Perennial shrub. Blooms April-June. Coastal scrub and Sonoran desert scrub. Elevation 445-3,280 feet.	None. Suitable chaparral and Sonoran desert scrub habitat not present.
Parry's spineflower (<i>Chorizanthe parryi</i> var. <i>parryi</i>)	CRPR 1B.1	Annual herb. Blooms April-June. Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevation 900-4005 feet.	Very low. Suitable chaparral, cismontane woodland, or coastal scrub not present. Grassland habitat on site is disturbed.
Payson's jewelflower (<i>Caulanthus simulans</i>)	CRPR 4.2	Annual herb. Blooms (February/March-May/June). Chaparral and coastal scrub. Elevation 295-7,220 feet.	Low. Suitable chaparral and coastal scrub habitat not present.
Peninsular spineflower (<i>Chorizanthe leptotheca</i>)	CRPR 4.2	Annual herb. Blooms May-August. Chaparral, coastal scrub, and lower montane coniferous forest. Elevation 985-6,235 feet.	Low. Suitable chaparral, coastal scrub, or lower montane coniferous forest habitat not present.

Species	Status	Habitat Description	Potential to Occur
Plummer's mariposa-lily (<i>Calochortus plummerae</i>)	CRPR 4.2	Perennial bulbiferous herb. Blooms May-July. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Elevation 330-5,580 feet.	Low. Suitable chaparral, cismontane woodland, coastal scrub, or lower montane coniferous forest habitat not present. Grassland habitat on site is disturbed.
Prairie wedge grass (<i>Sphenopholis obtusata</i>)	CRPR 2B.2	Perennial herb. Blooms April-July. Cismontane woodland, and meadows and seeps. Elevation 985-6,560 feet.	None. No cismontane woodland, or meadow and seep habitat present.
Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)	CRPR 4.3	Annual herb. Blooms January-July. Chaparral and coastal scrub. Elevation 5-2,905 feet.	Low. Suitable chaparral and coastal scrub habitat not present.
Salt spring checkerbloom (<i>Sidalcea neomexicana</i>)	CRPR 2B.2	Perennial herb. Blooms March-June. Chaparral, coastal scrub, lower montane coniferous forests, Mojavean desert scrub, and playas. Elevation 50-5,020 feet.	Low. Suitable chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, or playa habitat not present.
San Bernardino aster (<i>Symphotrichum defoliatum</i>)	CRPR 1B.2	Perennial rhizomatous herb. Blooms July-November. Cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, meadows and seeps, and valley and foothill grassland. Elevation 7-6,690 feet.	Very low. Suitable cismontane woodland, coastal scrub, lower montane coniferous forest, or marsh and swamp habitat not present. Grassland habitat on site is disturbed.
San Diego sagewort (<i>Artemisia palmeri</i>)	CRPR 4.2	Perennial deciduous shrub. Blooms (February)May-September. Chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland. Elevation 50-3,000 feet.	Low-to-moderate. Suitable chaparral, coastal scrub, riparian forest, or riparian woodland habitat not present. Suitable riparian scrub habitat present but limited.
San Jacinto Valley crownscale (<i>Atriplex panicula</i> var. <i>notatior</i>)	FE; CRPR 1B.1	Annual herb. Blooms April-August. Playas, valley and foothill grassland, and vernal pools. Elevation 455-1,640 feet.	None. Suitable playa habitat not present. Grassland habitat on site is disturbed. Suitable vernal pool habitat not observed on site.
Santa Ana River woollystar (<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>)	FE; SE; CRPR 1B.1	Perennial herb. Blooms April-September. Chaparral and coastal scrub. Elevation 300-2,000 feet.	None. Suitable chaparral or coastal scrub habitat not present.
Slender-horned spineflower (<i>Dodecahema leptoceras</i>)	FE; SE; CRPR 1B.1	Annual herb. Blooms April-June. Chaparral, cismontane woodland, and coastal scrub. Elevation 655-2,495 feet.	None. Suitable chaparral, cismontane woodland, or coastal scrub habitat not present.

Species	Status	Habitat Description	Potential to Occur
Small-flowered microseris (<i>Microseris douglasii</i> ssp. <i>platycarpha</i>)	CRPR 4.2	Annual herb. Blooms March-May. Cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Elevations 50-3510 feet.	Low. Suitable cismontane woodland or coastal scrub habitat not present. Grassland habitat on site is disturbed. Suitable vernal pool habitat not documented on site.
Small-flowered morning-glory (<i>Convolvulus simulans</i>)	CRPR 4.2	Annual herb. Blooms March-July. Chaparral, coastal scrub, and valley and foothill grassland. Elevation 100-2,430 feet.	Low. Suitable chaparral or coastal scrub not present. Grassland habitat on site is disturbed.
Smooth tarplant (<i>Centromadia pungens</i> ssp. <i>laevis</i>)	CRPR 1B.1	Annual herb. Blooms April-September. Chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland. Elevation 0-2,100 feet.	Moderate. Suitable habitat present, and species is known from the area. Focused rare plant surveys in June 2022 were negative for smooth tarplant.
Southern California black walnut (<i>Juglans californica</i>)	CRPR 4.2	Perennial deciduous tree. Blooms March-August. Chaparral, cismontane woodland, coastal scrub, and riparian woodland. Elevation 165-2,955 feet.	None. Suitable habitat not present. This species would have been observed if present.
Spreading navarretia (<i>Navarretia fossalis</i>)	FT; CRPR 1B.1	Annual herb. Blooms April-June. Chenopod scrub, marshes and swamps, playas, and vernal pools. Elevation 98-2,150 feet.	None. Suitable habitat not present.
Thread-leaved brodiaea (<i>Brodiaea filifolia</i>)	FT; SE; CRPR 1B.1	Perennial bulbiferous herb. Blooms March-June. Chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools. Elevation 82-3,675 feet.	Low. Suitable habitat present, however grassland habitat on site is disturbed and the species is not known from the general project area.
Vernal barley (<i>Hordeum intercedens</i>)	CRPR 3.2	Annual herb. Blooms March-June. Coastal dunes, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 15-3,280 feet.	Low. Species would have been detectable during 2021 general biological surveys if present.
Western spleenwort (<i>Asplenium vespertinum</i>)	CRPR 4.2	Perennial rhizomatous herb. Blooms February-January. Chaparral, cismontane woodland, and coastal scrub. Elevation 590-3,280 feet.	Low. Suitable chaparral, cismontane woodland, or coastal scrub habitat not present.

Species	Status	Habitat Description	Potential to Occur
White rabbit-tobacco (<i>Pseudognaphalium leucocephalum</i>)	CRPR 2B.2	Perennial herb. Blooms (July/August-November/December). Chaparral, cismontane woodland, coastal scrub, and riparian woodland. Elevation 0-6,890 feet.	Low. Chaparral, cismontane woodland, coastal scrub, or riparian woodland habitat not present.
White-bracted spineflower (<i>Chorizanthe xanti</i> var. <i>leucotheca</i>)	CRPR 1B.2	Annual herb. Blooms April-June. Coastal scrub, Mojavean desert scrub, and pinyon and juniper woodland. Elevation 985-3,935 feet.	Low. Suitable coastal scrub, Mojavean desert scrub, or pinyon and juniper woodland not present.
Woven-spored lichen (<i>Texosporium sancti-jacobi</i>)	CRPR 3	Crustose lichen (terricolous). Chaparral. Elevation 195-2,165 feet.	Low. Chaparral habitat not present.
FE: Federally Endangered (FE) FT: Federally Threatened (FT) SE: State Endangered (SE) ST: State Threatened (ST)			

3.4.1.1 Threatened and Endangered Plant Species

No federally or state-listed as threatened or endangered plant species were observed during the general field survey and none have a moderate or high potential to occur based on the disturbed nature of the site and lack of suitable habitats (Table 6).

3.4.1.2 Other Special-Status Plant Species

One CRPR 4.2 list plant, paniculate tarplant, was observed during general biological surveys and focused rare plant surveys. No other CRPR plant species were observed during the general biological surveys or focused rare plant surveys, including smooth tarplant, which has a moderate potential to occur. No other CRPR plant species have a moderate or high potential to occur on site based on the disturbed nature of the site and lack of suitable habitats (Table 6).

Smooth Tarplant

Smooth tarplant is an annual herb in the sunflower family (Asteraceae) with small yellow flowers that bloom from April to September. Smooth tarplant is native and endemic to California, occurring in San Diego, Los Angeles, Riverside, and San Bernardino Counties at elevations ranging from 82 to 3,084 feet amsl. This species is commonly found in coastal scrub, valley and foothill grassland, and vernal pool habitats (CNPS 2021).

Smooth tarplant is a CRPR rank 1B.1 species, meaning it is rare, threatened, or endangered in California and elsewhere, and seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat). Smooth tarplant is also a State Rank S2, meaning it is imperiled in the state because of rarity due to very restricted range, very few

populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province (CNPS 2021).

The site supports suitable habitat and smooth tarplant was reported in the immediate project area in 1995 (CDFW 2021b; Figure 4A); however, focused surveys conducted in June 2022 were negative for smooth tarplant on the project site.

Paniculate Tarplant

Paniculate tarplant is an annual herb in the sunflower family (Asteraceae) with small yellow flowers that bloom from March to November. Paniculate tarplant is native to California and Baja California and occurs in the U.S. from San Diego County to Santa Barbara County at elevations less than 3,000 feet amsl. This species is commonly found in coastal scrub, valley and foothill grassland, and vernal pool habitats (CNPS 2021). Paniculate tarplant is a CRPR rank 4.2 species, meaning it is of limited distribution and moderately threatened in California (20-80% of occurrences threatened). Paniculate tarplant is also a State Rank S4, meaning it is “apparently secure within California.”

Paniculate tarplant was observed along the access roads as well as within the southern portion of the project during 2021 general biological surveys. RBC surveyors observed paniculate tarplant throughout nearly the entire project site during 2022 summer-blooming rare plant surveys, with notably dense populations located in the northern portion of the site and along access roads. It was estimated that over 100,000 individuals occur within the project site.

3.4.2 SPECIAL-STATUS WILDLIFE SPECIES AND CRITICAL HABITATS

One federally and state-listed as endangered species, least Bell’s vireo, was detected approximately 200-300 feet southwest of the project boundary during general biological surveys. Five species designated as SSC including coastal whiptail (*Aspidoscelis tigris stejnegeri*), northern harrier (*Circus hudsonius*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), western spadefoot (*Spea hammondi*), and yellow warbler (*Setophaga petechia*), and two CDFW Watch List species, Cooper’s hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*), were also observed in the survey area during the biological surveys.

Although not documented on site during the general biological surveys, eight listed species, Riverside fairy shrimp, vernal pool fairy shrimp, coastal California gnatcatcher, least Bell’s vireo, southwestern willow flycatcher, tricolored blackbird (*Agelaius tricolor*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and Stephens’ kangaroo rat, have been documented within 3 miles of the project site, along with numerous other non-listed special-status wildlife species (Figure 4a and Figure 4b). An analysis of the potential for sensitive wildlife to occur on the project site is provided in Table 7. Please note that wildlife species with low potential to occur or not expected to occur are not addressed further in this report; because these species have low or no potential for occurrence, no impacts are anticipated on these species.

Table 7. Special-Status Wildlife Species with Potential to Occur Within the Upper Plateau Project Survey Area

Species	Status	Habitat Description	Potential to Occur
INVERTEBRATES			
Riverside fairy shrimp (<i>Streptocephalus woottoni</i>)	FE	Vernal pools or other seasonal pools with a depth greater than 30 cm.	Absent. Limited ponding features observed during project surveys that appear to be deep enough for this species, which typically occurs in pools greater than 30 cm in depth. USFWS protocol surveys were negative for Riverside fairy shrimp.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Natural vernal pools or other seasonal pools.	Absent. Potential ponding features observed on site may be suitable for this species, which is typically found in deep, naturally occurring vernal pools. USFWS protocol surveys were negative for vernal pool fairy shrimp.
AMPHIBIANS			
Western spadefoot (<i>Spea hammondi</i>)	SSC	Temporary ponds, vernal pools, and backwaters of flowing creeks, as well as adjacent upland habitats such as grasslands and coastal sage scrub for burrowing.	Present. Species detected in project site buffer incidentally during 2021 coastal California gnatcatcher surveys. Low potential to occur on site. Suitable vernal pool habitats and adjacent upland habitats are limited. Flowing creeks not present.

Species	Status	Habitat Description	Potential to Occur
REPTILES			
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	SSC	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	Low. Suitable sage scrub present on site is limited. Suitable chaparral or coniferous and broadleaf woodland habitats are not present on site; this species is more common near the coast.
Coastal whiptail (<i>Aspidoscelis tigris stejnegeri</i>)	SSC	A variety of rocky, sandy, dry habitats including sage scrub, chaparral, woodlands on friable loose soil.	Present. Species observed within project site buffer during 2021 surveys.
Orange-throated whiptail (<i>Aspidoscelis hyperythra</i>)	WL	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub.	Moderate. Suitable sage scrub habitat on site is limited. Suitable chaparral or coniferous and broadleaf woodland habitat not present.
Red-diamond rattlesnake (<i>Crotalus ruber</i>)	SSC	Chaparral, coastal sage scrub, along creek banks, and in rock outcrops or piles of debris. Often associated with dense vegetation in rocky areas.	Low. Suitable chaparral, coastal sage scrub, or creek bank habitats are limited or not present.
BIRDS			
Burrowing owl (<i>Athene cunicularia</i>)	SSC (at burrowing sites & some wintering sites)	Found in grasslands and open scrub from the coast to foothills. Strongly associated with California ground squirrel (<i>Otospermophilus beecheyi</i>) and other fossorial mammal burrows.	High/Presumed Present. Unoccupied burrows with sign observed on site during 2021 surveys. Suitable grassland habitat with California ground squirrel and other fossorial mammal burrows present throughout site.
California horned lark (<i>Eremophila alpestris actia</i>)	WL	Found from coastal deserts and grasslands to alpine dwarf-shrub habitat above treeline. Also seen in coniferous or chaparral habitats.	High. Suitable grassland habitat is present throughout site.
Coastal California gnatcatcher (<i>Polioptila californica californica</i>)	FT, SSC	Found in sage scrub and adjacent chaparral habitats often containing buckwheat or sagebrush.	Absent. Suitable sage scrub habitat exists on site; however, is isolated and disturbed. USFWS protocol surveys were negative for coastal California gnatcatcher.

Species	Status	Habitat Description	Potential to Occur
Cooper's hawk (<i>Accipiter cooperii</i>)	WL (when nesting)	Usually found in oak woodlands but occasionally in willow or eucalyptus woodlands.	Present. Species observed in project site buffer during 2021 surveys. Suitable nesting habitat exists in the project buffer in southern riparian forest and ornamental trees associated with the adjacent residential development. Suitable nesting habitat is not present on the project site.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE (when nesting); SE (when nesting)	Riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian thickets.	Present. Species observed approximately 200-300 feet southwest of the project site during 2021 general biological survey and is known to occur in areas east and southeast of the site. Protocol surveys documented least Bell's vireo in several locations adjacent to the project site but species was not documented on site.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	SSC (when nesting)	Found within grassland, chaparral, desert, and desert edge scrub, particularly near dense vegetation used for nesting.	Low. Suitable foraging habitat is present, but dense nesting habitat is not present.
Northern harrier (<i>Circus hudsonius</i>)	SSC (when nesting)	Found in meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. Nests on the ground, usually near marsh edge, but may also nest in grasslands, grain fields, or sagebrush flats several miles from water.	Present. Species observed in project survey buffer incidentally during 2021 coastal California gnatcatcher surveys. Small areas of standing water occur approximately 0.5-mile northeast and 1-mile southeast of the project site; however, suitable nesting habitat on site is limited.
Sharp-shinned hawk (<i>Accipiter striatus</i>)	WL (when nesting)	Found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats.	Present. Species observed in project site buffer during 2022 surveys. Suitable nesting habitat exists in the project buffer in southern riparian forest. Suitable nesting habitat is not present on the project site.

Species	Status	Habitat Description	Potential to Occur
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	FE, SE	Dense riparian woodlands comprised of willows and cottonwoods.	Low. Riparian habitat within project site is relatively isolated and lacks dense cover suitable for this species.
Tricolored blackbird (<i>Agelaius tricolor</i>)	ST (nesting colony)	Found nesting in wetlands with cattails, bulrushes, and willows. Forages in cultivated fields, feedlots associated with dairy farms, and wetlands.	None. Suitable wetland habitat not present.
Yellow Warbler (<i>Setophaga petechia</i>)	SSC	Found within riparian woodlands, including disturbed habitats, and are associated with streamside cottonwood, willow, alder, and ash trees.	Present. Species observed within project site buffer during 2021 surveys.
MAMMALS			
Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	SSC	Found in low elevation grassland, alluvial sage scrub, and coastal sage scrub.	Low. Suitable alluvial sage scrub and native grassland habitat not present and coastal sage scrub on site is isolated and disturbed.
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	SSC	Found in shrublands that vary from sparse desert shrubland to dense coastal sage scrub.	Low. Suitable sage scrub habitat exists on site; however, is isolated and disturbed.
Pocketed free-tailed bat (<i>Nyctinomops femorosaccus</i>)	SSC	Found in pinyon-juniper woodlands, desert scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis habitats. Roosts in rock crevices in cliffs and must drop from the roost to gain flight speed.	Low. Suitable rocky outcrops and abundant foraging habitat are present on the project site.
San Bernardino kangaroo rat (<i>Dipodomys merriami parvus</i>)	FE, SSC	Primarily found in alluvial scrub and floodplain habitats containing sandy loam substrate and open vegetative cover.	None. Suitable alluvial scrub and floodplain habitat not present.
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	SSC	Habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush. Uses open land but requires some shrubs for cover.	Present. Species observed on site during 2021 surveys.

Species	Status	Habitat Description	Potential to Occur
Southern grasshopper mouse (<i>Onychomys torridus ramona</i>)	SSC	Occurs primarily in desert scrub habitats. Habitats with low open and semi-open scrubs habitats including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub. Annual grassland with scattered shrubs, are less frequently inhabited by this species.	Low. Suitable desert scrub habitats not present.
Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	FE; ST	Habitats include annual grassland and coastal sage scrub with sparse shrub cover. Commonly in association with <i>Eriogonum fasciculatum</i> , <i>Artemisia californica</i> , and <i>Erodium cicutarium</i> , in areas with loose, friable, well-drained soil, and flat or gently rolling terrain.	High/Presumed Present. Suitable grassland habitat, <i>Eriogonum fasciculatum</i> , and friable soils present. Species has been reported on site historically (USFWS, CNDDDB).
Western yellow bat (<i>Lasiurus xanthinus</i>)	SSC	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees.	Moderate. Suitable southern riparian forest provides roosting and foraging habitat.
FE: Federally Endangered (FE) FT: Federally Threatened (FT) SE: State Endangered (SE) ST: State Threatened (ST) SSC: California Department of Fish and Wildlife (CDFW) Species of Special Concern WL: (CDFW) Watch List Species			

3.4.2.1 Threatened and Endangered Wildlife Species

This section presents information about all threatened and endangered wildlife species assessed for potential to occur on the project site.

Coastal California Gnatcatcher

The coastal California gnatcatcher is federally listed as threatened and is considered an SSC. This species is a year-round resident of southern California and is found in the six southernmost California counties located within the coastal plain (San Bernardino, Ventura, Los Angeles, Orange, San Diego, and Riverside).

The primary cause of this species' decline is conversion of coastal sage scrub vegetation to urban and agricultural uses. USFWS has estimated that coastal sage scrub habitat has been reduced by 70 to 90 percent of its historical extent (USFWS 1993). Coastal California gnatcatcher generally inhabit Diegan coastal sage scrub and Riversidian coastal sage scrub dominated by California sagebrush and flat-topped buckwheat, generally below 1,500 feet in elevation along the coastal slope. When nesting, this species typically avoids slopes greater than 25% with dense, tall vegetation. Gnatcatcher pairs will attempt several nests each year (average of four), each placed in a different location inside their breeding territory, but most nest attempts are unsuccessful due to

depredation by a variety of species (Grishaver et al. 1998; Atwood and Bontrager 2001). Clutch size ranges from one to five eggs, with three or four eggs most common. Males and females will remain paired through the non-breeding season and will often expand their home range when not breeding.

This species is particularly vulnerable to habitat destruction and fragmentation because of their low dispersal rate, reliance on a specific habitat type, and low breeding success. Coastal California gnatcatcher has been described as “an obligate resident of coastal sage scrub” (Atwood and Bontrager 2001), a vegetation community that is vulnerable to urban pressures. The destruction of coastal sage scrub by wildfire also has a detrimental effect on local populations. This species also inhabits chaparral vegetation where adjacent to coastal sage scrub.

Coastal California gnatcatcher have been observed at Sycamore Canyon Wilderness Park, located about half a mile north of the project site. Although suitable habitat occurs as patches within the survey area, coastal California gnatcatcher was not documented during general biological surveys or during USFWS protocol surveys.

Least Bell's Vireo

Least Bell's vireo is federally and state-listed as endangered. Historically, this species was a common summer visitor to riparian habitat throughout much of California. The species is now found only in riparian woodlands in southern California, with the majority of breeding pairs in San Diego, Santa Barbara, and Riverside Counties. Least Bell's vireo is a migratory species, which typically arrives in southern California in late March or early April and leaves for its wintering ground in September.

This species is restricted to riparian woodland and is most frequent in areas that include an understory of dense young willows or mulefat with a canopy of tall willows. Least Bell's vireo typically builds its nests along edges of riparian thickets (Unitt 2004) approximately three feet above the ground.

The decline of Least Bell's vireo has been attributed primarily to habitat loss, degradation, and fragmentation combined with brood and nest parasitism by brown-headed cowbird (*Molothrus ater*). Significant effort has been focused on preserving, enhancing, and creating suitable nesting habitat for the species, and extensive cowbird control programs have helped this species' populations rebound along several of its breeding drainages in southern California (Durst et al. 2006).

Least Bell's vireo was detected off-site approximately 200-300 feet southwest of the project site during general biological surveys (Figure 2). The species is also known from the Meridian West Campus project site to the east, and to the southeast of the site within Meridian Conservation Area 1 and Conservation Area 2 (RBC 2014).

Several small drainages occur on-site; however, most do not support suitable habitat for the species. Drainages on the west and north ends of the site are very small and isolated, with only one supporting southern willow scrub but the habitat is extremely small in size; as such, these areas are not expected to support least Bell's vireo. The drainage on the eastern end of the project

site (which bisects the proposed Cactus Street extension), does support suitable least Bell's vireo habitat. Much of this drainage was surveyed during focused surveys from the adjacent Meridian West Campus project in 2016 and vireo was not documented within the drainage. Vireo were documented in the drainage immediately south of the proposed Cactus Avenue extension, however. This drainage is just south of the survey buffer for the Upper Plateau project (Figure 2; the drainage can be seen on the aerial as an unmapped drainage south of mapped southern riparian forest and Riversidean sage scrub). Though not documented in the on-site drainage during 2016 surveys, the species does have potential for occurrence within the on-site southern riparian forest.

USFWS protocol surveys for least Bell's vireo were conducted on the project site plus a 200-foot buffer between April 13 and July 21, 2022. During surveys, RBC observed three least Bell's vireo individuals, all of which were documented off site within adjacent riparian habitat. Two individuals were observed within the southwestern corner of the survey area, approximately 200-300 feet from the project boundary. Behaviors of these individuals were consistent with males patrolling individual territories though no breeding behavior was observed. The third individual was documented after the fourth survey in the southern riparian forest approximately 750 feet southeast of the project site. The linear riparian corridors in which least Bell's vireo was observed do not extend onto the project site. No least Bell's vireo were documented on the project site.

Riverside Fairy Shrimp

Riverside fairy shrimp is federally listed as endangered (USFWS 2011). This species is the biotic foundation of the food web for a diverse range of aquatic and terrestrial predators. Riverside fairy shrimp has adapted and evolved to endure dry seasons when vernal pools are not ponded, by lying dormant in cysts (dormant eggs) until environmental conditions are optimal for the Riverside fairy shrimp life cycle. Hatching and observation periods are variable based on annual and seasonal precipitation levels. Riverside fairy shrimp hatch and mature within 48 to 56 days, depending on environmental variables such as water temperature. Since Riverside fairy shrimp matures slowly (as compared to seven to 14 days for San Diego fairy shrimp), it is generally restricted to the cooler water temperatures of deep (greater than 12 inches or 30 centimeters) vernal pools (USFWS 2011).

Riverside fairy shrimp is considered to have one of the most limited distributions among west coast-endemic fairy shrimps, found in California only in Ventura, Orange, Riverside, and San Diego Counties (and is also known to occur in Baja California). The extent of the Riverside fairy shrimp range in California spans 163 miles north-south and all populations, with the exception of the Riverside population, are found within 15 miles of the coast (USFWS 2011).

Riverside fairy shrimp's restricted distribution and requirement for deep vernal pools that pond for a minimum of six weeks is attributed to the species substantial development period. Riverside fairy shrimp takes approximately 48 to 56 days to carry out its lifecycle. The species is typically observed from mid-March to April; however, the species may hatch outside of its characteristic season due to early or late precipitation. Riverside fairy shrimp is relatively sedentary and does not possess a strong ability to disperse (USFWS 2011).

Based on the 2008 5-year review for Riverside fairy shrimp, there are 45 known extant or presumed extant occurrences in approximately 200 vernal pools and vernal pool complexes. CNDDDB (2021) and USFWS (2021a) queries shows two historical occurrences of Riverside fairy shrimp within three miles of the project site at March Air Reserve Base (Figure 4b).

The project site supports potential ponding features that may be inundated for periods greater than 120 days or pond at a depth greater than 30 centimeters. As such, focused surveys for Riverside fairy shrimp were conducted during the 2021 – 2022 rain year and the 2022 dry season. Both wet and dry season surveys were negative for Riverside fairy shrimp.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp is federally listed as threatened. This species occurs from Jackson County near Medford, Oregon, throughout the Central Valley, and west to the central Coast Ranges. Isolated southern populations occur on the Santa Rosa Plateau and near Rancho California in Riverside County (Eng et al. 1990). This species is more typical of natural vernal pools, not riverine or other systems. In its southernmost range, e.g., Riverside County, this species tends to occur in pools that pond for long periods of time (USFWS 2007).

This species has not been reported in the immediate project area (CNDDDB 2021). However, on-site ponding features support potentially suitable habitat for vernal pool fairy shrimp. Vernal pool fairy shrimp require a long ponding period that deeper pools, such as those at the Santa Rosa Plateau with depths up to 16 inches, provide (Chester 2007).

The project site supports features that remain inundated for long periods, and therefore may be suitable for vernal pool fairy shrimp. As such, focused surveys for vernal pool fairy shrimp were conducted during the 2021 – 2022 rain year and the 2022 dry season as part of this analysis. Both wet and dry season surveys were negative for vernal pool fairy shrimp.

Southwestern Willow Flycatcher

Southwestern willow flycatcher is a state and federally listed endangered species. This subspecies of the willow flycatcher is one of southern California's rarest birds, restricted to riparian forest and woodland (Unitt 2004). The breeding range of the southwestern willow flycatcher includes southern California, Arizona, New Mexico, southwestern Colorado, and extreme southern portions of Nevada and Utah.

Subspecies of willow flycatcher are very similar in appearance and can be differentiated using specialized equipment (for example, an electronic colorimeter) to identify subtle differences in color and morphology (Unitt 1984). The southwestern willow flycatcher generally is paler than other willow flycatcher subspecies (Sogge, et. al 2010). Additionally, breeding locale can be used to help differentiate subspecies. In San Diego County, Southwestern willow flycatcher is confirmed only when evidence of breeding is observed (Unitt 2004). Despite the subtle level of differences, the taxonomic status of *E. t. extimus* has been critically reviewed and confirmed multiple times based on morphological, genetic, and song data (Hubbard, 1987; Unitt, 1987; Paxton, 2000; Sedgwick, 2001).

The project site has low potential to support southwestern willow flycatcher. Small patches of marginally suitable habitat for this species occur along the eastern drainage where southern riparian forest is present. These patches lack a well-developed understory, natural openings, and the presence of surface water that is typical of southwestern willow flycatcher habitat, however. Additionally, the patch of riparian forest on-site is relatively small and isolated by urban and industrial development. Occupied southwestern willow flycatcher habitat at low and mid-elevation sites typically includes dense willows and native broadleaf trees with a “height from 3 to 15 m; characterized by trees of different size classes; often a distinct overstory of cottonwood, willow or other broadleaf tree, with recognizable subcanopy layers and a dense understory of mixed species; exotic/introduced species may be a rare component, particularly in the understory” (Sogge et. al 2010). The project site, by contrast, does not support this kind of species and canopy diversity.

In addition, it appears that the riparian habitat on the site developed into its current capacity in the last 20 years and is likely taking advantage of the runoff associated with the large housing development to the east. Historic aerial photos from 1994 (Google Earth Pro 2021) do not show any easily discernable riparian scrub habitat, only washes with no discernable canopy or associated wetland habitat. The adjacent housing development at this time appears to be in the initial grading stage. Subsequent historic photos show the riparian habitat developing after the housing development was completed. Based on the site’s relatively recent habitat development, it is not likely part of the southwestern willow flycatcher’s historic range. The general southwestern willow flycatcher population is likely not robust enough to colonize new, marginal habitat. Though willow flycatchers could use the area during migration and, if the habitat continues to develop, has some potential to support breeding southwestern willow flycatcher in the distant future, the current population is probably not robust enough to colonize new, marginal habitats. As such, southwestern willow flycatcher has a low probability to occur at the site.

Stephens’ Kangaroo Rat

Stephens’ kangaroo rat is federally listed as endangered and state-listed as threatened. There are three distinct regions with Stephens’ kangaroo rat populations: western Riverside County, western San Diego County, and central San Diego County. Stephens’ kangaroo rat historically occurred in southwestern San Bernardino County but is believed to be extirpated from that area (USFWS 1997).

Habitat for Stephens’ kangaroo rat includes open grasslands, fallow agricultural fields, and sparse coastal sage scrub in areas with penetrable soils and flat to fairly steep sloping topography (USFWS 1997). Stephens’ kangaroo rat is found at elevations of 180 to 4,100 feet amsl, with most populations located at elevations below 2,000 feet amsl (USFWS 1997). Habitat for Stephens’ kangaroo rat varies in composition and density from place to place and season to season. Filaree (*Erodium* spp.) frequently dominates the best Stephens’ kangaroo rat habitat areas, especially during and shortly after the rainy season (RECON 1989). Areas with dense grass cover are typically not suitable for Stephens’ kangaroo rat (USFWS 1997). A nocturnal species, Stephens’ kangaroo rat consumes a diet primarily of seeds. The decline of this species is attributed in large part to

habitat loss and fragmentation due to urban development and agriculture. Other factors contributing to the loss of the species include off-road vehicles, rodent control, and predation by feral and domestic cats (USFWS 1997).

Stephens' kangaroo rat has been reported extensively on the project site and in immediately surrounding areas (USFWS 2021a; Figure 4b). Suitable grassland habitat, *Eriogonum fasciculatum*, and friable soils are present in the survey area. This species is assumed to occur on site.

3.4.2.2 Species of Special Concern and Watch List Wildlife Species

This section presents information about SSC and CDFW Watch List wildlife species that may occur in the survey area or are present in the survey area.

Burrowing Owl

Burrowing owl is designated an SSC at nesting sites and is federally protected by the MBTA. The western subspecies of burrowing owl (*A. c. hypugaea*) breeds from southern Canada to the western half of the United States and into Baja California and central Mexico. In California, suitable habitat for burrowing owl is generally characterized by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils, such as naturally occurring grassland, shrub steppe, and desert habitats (Haug et al. 1993). Burrowing owl may also occur in agricultural areas, ruderal grassy fields, vacant lots, and pastures containing suitable vegetation structure and useable burrows with foraging habitat in proximity (Gervais et al. 2008). Burrowing owl usually use burrows dug by California ground squirrel (*Otospermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) and dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox [*Vulpes macrotis mutica*]) (Ronan 2002). Burrowing owl also frequently use natural rock cavities, debris piles, culverts, and pipes for nesting and roosting (Rosenberg et al. 2004) and have been documented using artificial burrows for nesting and cover (Smith and Belthoff 2001).

Burrowing owls have declined throughout much of their range because of habitat loss due to urbanization, agricultural conversion, and destruction of ground squirrel colonies (Remsen 1978). The incidental poisoning of burrowing owls and the destruction of their burrows during eradication programs aimed at rodent colonies have also caused their decline (Collins 1979; Remsen 1978). Although burrowing owl are relatively tolerant of lower levels of human activity, human-related impacts such as shooting and introduction of non-native predators have negative population impacts. Burrowing owl often nest and perch near roads where they are vulnerable to roadside shooting, fatal car strikes, and general harassment (Remsen 1978).

Burrowing owls were not documented during the general biological survey; however, unoccupied burrows with sign (pellet) were observed in the southern portion of the project site. Burrowing owl have also been documented within less than one mile to the west of the project site (Figure 4a). Suitable grassland habitat with California ground squirrel and other fossorial mammal burrows is consistent throughout the site. As such, burrowing owl has high potential to occur on the project site and is assumed to occur on site.

California Horned Lark

California horned lark (*Eremophila alpestris actia*) is designated a CDFW Watch List species, which is found from coastal deserts and grasslands to alpine dwarf-shrub habitat above treeline, and in coniferous or chaparral habitats. It is a common to abundant resident in a variety of open habitats, usually found in habitats where trees and large shrubs are absent. Within southern California, California horned larks nest on the ground in open fields, grasslands, and rangelands. Horned larks forage in areas with low-growing vegetation and feed primarily on grains and other seeds, shifting to mostly insects in the summer months. California horned lark breeds from March through July, with a peak in activity in May. Pairs do not maintain territories outside of the breeding season and instead form large gregarious, somewhat nomadic flocks.

Threats to California horned lark include habitat destruction and fragmentation. Habitats preferred by California horned lark are easily converted to other landscapes and human uses such as farmland and development. Pesticides have also been shown to poison and kill horned larks (Beason 1995). As a ground nester, California horned lark is vulnerable to mowing in a variety of habitats and pesticide use in agricultural fields.

California horned lark was not observed during general biological surveys. However, suitable grassland habitat is widespread throughout project site. As such, California horned lark has high potential to occur within the project site.

Coastal Whiptail

Coastal whiptail (*Aspidoscelis tigris stejnegeri*), also known as San Diego tiger whiptail, is a subspecies of the tiger whiptail and is designated an SSC. They are found in a variety of rocky, sandy, dry habitats including sage scrub, chaparral, woodlands on friable loose soil (Morey 2000). This species is wary, very active, and difficult to approach, typically foraging near cover and capable of quick bursts of speed into brush or holes. Coastal whiptails prey upon small invertebrates, especially spiders, scorpions, centipedes, and termites, and small lizards. Females lay one clutch of eggs per year and eggs hatch from May to August (Stebbins et al. 2012). The coastal whiptail is threatened by habitat loss and fragmentation due to development.

Coastal whiptail was documented in the scrub habitat within the eastern project site buffer during 2021 general biological surveys (Figure 2). Suitable habitat for this species occurs throughout the project site.

Cooper's Hawk

Cooper's hawk is a CDFW Watch List species when nesting. Cooper's hawk breeds throughout the United States and into Canada and Mexico. In California, Cooper's hawk nests in live oak, riparian, and other forest habitats from sea level to 9,000 feet. The Cooper's hawk is tolerant of human disturbance and habitat fragmentation and nests in suburban and urban settings (Murphy et al. 1988). Cooper's hawk hunt in open woodland and habitat edges, catching avian prey in the air, on the ground, and in vegetation. The Cooper's hawk hunts a variety of small birds and may also hunt small mammals, reptiles, and amphibians. Their nest is typically a platform of sticks and

twigs lined with bark (Call 1978) and eggs are laid in February through June with the clutch size of 4 to 5 eggs (Brown and Amadon 1968).

Habitat loss, especially in riparian areas, is attributed to declining populations of Cooper's hawk in Southern California. Other threats include direct or indirect human disturbance at nest sites, and eggshell thinning from pesticide use, although this threat is largely abated through the change in pesticide chemicals used after the 1970's (Terres 1980).

Cooper's hawk was documented flying over the eastern project site buffer during 2021 general biological surveys (Figure 2).

Orange-Throated Whiptail

The orange-throated whiptail (*Aspidoscelis hyperythra*) is a CDFW Watch List species that inhabits chaparral, non-native grassland, coastal sage scrub, juniper woodland, and oak woodland in southwestern California and Baja California from sea level to 3,400 feet. Its diet consists primarily of the termite (*Reticulitermes hesperus*) so it is tied to perennial vegetation (Bostic 1966) including California buckwheat (McGurty 1981). Orange-throated whiptails are diurnal but spend the hottest part of the day in the shade (Pianka 1986). The orange-throated whiptail does not reproduce parthenogenetically and mates from April to July with a clutch size of around 2 eggs. Hibernation for adults takes place in late July to September with juveniles hibernating all the way to December (Bostic 1966).

The orange throated-whiptail is threatened by habitat loss and conversion of shrub-dominated habitats to non-native grassland. Additionally, non-native Argentine ants (*Irdomyrmex humilis*) are an invasive species known to displace many native insects and may influence the food base the orange-throated whiptail (Jennings and Hayes 1994).

Orange-throated whiptail was not observed during the general biological surveys but has moderate potential to occur within the project site based on the presence of suitable sage scrub habitat.

Northern Harrier

Northern harrier is an SSC when nesting. It breeds from sea level to 5,700 feet amsl in California's central valley. Typical habitats include meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. They are found in flat, open areas with tall dense grasses, shrubs, and edges used for nesting, cover, and foraging. Their nests are placed on the ground, usually at a marsh edge (Brown and Amadon 1968). While they usually nest in emergent wetlands or along rivers or lakes, they can nest in grasslands, grainfields, and sagebrush flats several miles from water; however, their home range usually includes fresh water (Zeiner et al. 1988-1990).

Populations of northern harrier, including breeding populations in southern California, have been in decline since the mid-1900s (Grinnell and Miller 1944, Remsen 1978). Major threats include destruction of wetland habitat, native grassland, and moist meadows, and burning and plowing of nesting areas during the beginning for breeding season.

One individual northern harrier was observed incidentally during USFWS protocol coastal California gnatcatcher surveys. The individual was seen in the project site buffer in the northeast portion of the survey area (Figure 2).

San Diego Black-Tailed Jackrabbit

San Diego black-tailed jackrabbit is an SSC. San Diego black-tailed jackrabbit is found from the coast to the western slope of the coastal mountains, up to 6,000 feet amsl. It inhabits open land but requires some shrubs for cover. Typical habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush. Their preferred foods are grasses and forbs, with a reported diet of 65% shrub browse and 35% herbage (Chew and Chew 1970). Breeding occurs throughout the year, and young are born under shrubs with no special nest structure. Home ranges averaging 45 acres have been recorded in California (Lechleitner 1958).

Population declines threaten this subspecies with extinction in the state. It is currently considered vulnerable due to a restricted range and small number of populations. Major threats to black-tailed jackrabbit include habitat loss and fragmentation due to agriculture and urban development.

One individual San Diego black-tailed jackrabbit was observed during project general biological surveys in the northern portion of the project site (Figure 2). An individual was also observed in the project site buffer along the eastern portion of the project during coastal California gnatcatcher surveys (Figure 2).

Sharp-Shinned Hawk

Sharp-shinned hawk is a CDFW Watch List species when nesting. This species breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats in California. Sharp-shinned hawks prefer riparian habitats but are not restricted to these areas. North facing slopes with perches are critical habitat requirements for this species (Zeiner et al. 1988-1900). Nests are generally located near water in a dense, even-aged, single-layered forest canopy (Zeiner et al. 1988-1900). They are considered the least common breeding accipiter in California.

One individual sharp-shinned hawk was observed in the project site buffer in the southwest portion of the survey area (Figure 2).

Western Spadefoot

Western spadefoot is an SSC. It is found from sea level to 4,460 feet amsl in California. Typical habitats include temporary ponds, vernal pools, and backwaters of flowing creeks, as well as adjacent upland habitats such as grasslands and coastal sage scrub for burrowing. This species of amphibian remains in underground burrows most of the year and is active on the surface at night during and following rain. Breeding and egg laying occur in ephemeral pools formed by rain; they begin after the first rains in winter and conclude at the end of March (Zeiner et al. 1988-1990). Tadpoles transform and disperse in the late spring.

Western spadefoot was heard calling incidentally during USFWS protocol non-breeding season coastal California gnatcatcher surveys in a riparian drainage within the southwestern project site buffer (Figure 2). The finding occurred during daylight hours following significant rain events. The

habitat where detected is somewhat atypical of preferred breeding habitat as the riparian drainage has dense understory and canopy vegetation.

Western Yellow Bat

Western yellow bat (*Lasiurus xanthinus*) is an SSC. In California, western yellow bat is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats below 2,000 feet. This species roosts in trees including cottonwoods and palm trees. Western yellow bats are aerial insectivores and forage over water and among trees and are nocturnal, emerging at dusk. Western yellow bat in California is migratory (Zeiner et al. 1988-1990).

Western yellow bats are threatened by habitat destruction and fragmentation especially of riparian habitats and broadcast application of pesticides. Increased protection of riparian areas and planting of ornamental fan palms have had recent positive effects on western yellow bat (Ammerman et al. 2012).

Western yellow bat was not observed during the general biological surveys, although no nocturnal surveys were conducted for the survey area. However, suitable roosting habitat in the form of riparian habitat for this species occurs within the survey area. As such, western yellow bat has a moderate potential to occur.

Yellow Warbler

Yellow warbler is an SSC when nesting. In southern California, yellow warblers nest in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs in open-canopy riparian woodland up to 8,000 feet. The species arrives in California in April and leaves by October and holds a small territory for nesting and foraging. The yellow warbler forages for insects and spiders in the upper canopy of deciduous trees and shrubs. It builds a cup nest 2-16 feet off the ground in in alders, cottonwoods, and willows and usually lays 4-5 eggs (Garrett and Dunn 1981). Yellow warblers are threatened by habitat destruction and fragmentation especially of riparian habitats and brood-parasitism by brown-headed cowbirds.

Yellow warbler was observed in the southern riparian forest within the project buffer along the western boundary (Figure 2).

3.4.2.3 Critical Habitat

The ESA defines critical habitat as a specific geographic area, or areas, that contains features essential for the survival and recovery of endangered and threatened species. USFWS designates critical habitat for endangered and threatened species and may include sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Critical habitat may also include areas that are not currently occupied by the species, but that will be needed for its recovery. Special management of critical habitat, including measures for water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types is required to ensure the long-term survival and recovery of the identified species.

No USFWS-designated critical habitat or proposed critical habitat occurs within three miles of the project site (USFWS 2021a).

3.5 WILDLIFE CORRIDORS

A wildlife corridor can be defined as a physical feature that links wildlife habitat, often consisting of native vegetation that joins two or more larger areas of similar wildlife habitat (Ogden Environmental and Energy Services 1996). Corridors enable migration, colonization, and genetic diversity through interbreeding and are therefore critical for the movement of animals and the continuation of viable populations. Corridors can consist of large, linear stretches of connected habitat (such as riparian vegetation) or as a sequence of stepping-stones across the landscape (discontinuous areas of habitat such as wetlands and ornamental vegetation), or corridors can be larger habitat areas with known or likely importance to local fauna.

Regional corridors are defined as those linking two or more large patches of habitat, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development (Ogden Environmental and Energy Services 1996). A viable wildlife migration corridor consists of more than an unobstructed path between habitat areas. Appropriate vegetation communities must be present to provide food and cover for both transient species and resident populations of less mobile animals. There must also be a sufficient lack of stressors and threats within and adjacent to the corridor for species to use it successfully.

The project area likely serves as a local corridor between undeveloped areas to the south of the site and the open space areas immediately north of the project site, north of Alessandro Avenue, which includes Sycamore Canyon approximately 4,000 feet to the northwest of the site (Google Earth Pro 2021). However, the corridor containing the project site is somewhat obstructed, due to the residential development abutting the northern portion of the project site. Additionally, the base re-alignment conservation area occurs to the southeast of the site and several small least Bell's vireo conservation areas associated with the Meridian Specific Plan Project occur to the southeast of the project site immediately north and south of Van Buren Boulevard. The site may be used as an avian stepping-stone corridor between those areas and other undeveloped areas to the north, Sycamore Canyon, and possibly Box Springs Mountain Park to the northeast.

The proposed project includes the extension of Cactus Avenue and Brown Street to provide vehicular access to the site, which would bifurcate the Conservation Easement. Three soft-bottomed culverts will be installed to maintain connectivity for land locomotive species across the Conservation Easement, specifically, two wildlife crossings under Cactus Avenue and one crossing under Brown Street. Please see Section 4.5 for additional details.

4 IMPACT ANALYSIS

Direct impacts are caused by the project and occur at the same time and place as the project. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Direct impacts would include direct losses to native habitats, potential jurisdictional waters, wetlands, and special-status species; and diverting natural surface water flows. Direct impacts could include injury, death, and/or harassment of listed and/or special-status species. Direct impacts could also include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts on plants can include crushing of adult plants, bulbs, or seeds.

Indirect impacts can result from project-related activities where biological resources are affected in a manner that is not direct. Indirect impacts may occur later in time or at a place that is farther removed in distance from the project than direct impacts, but indirect impacts are still reasonably foreseeable and attributable to project-related activities. Examples include habitat fragmentation; elevated noise, dust, and lighting levels; changes in hydrology, runoff, and sedimentation; decreased water quality; soil compaction; increased human activity; and the introduction of invasive wildlife (domestic cats and dogs) and plants.

Cumulative impacts refer to incremental individual environmental effects of two or more projects when considered together. Such impacts taken individually may be minor but are collectively significant in light of regional impacts.

March JPA's 2015 Local CEQA Guidelines Form J thresholds of significance have been used to determine whether project implementation would result in a significant direct, indirect, and/or cumulative impact. These thresholds are based on Appendix G of the state CEQA Guidelines (CCR Title 14, Division 6, Chapter 3, Sections 15000–15387). A significant biological resources impact would occur if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federal protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marshes, vernal pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy, or ordinance;

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

4.1 VEGETATION IMPACTS

The proposed project will result in permanent vegetation impacts, primarily on non-native upland vegetation communities and land uses such as non-native grassland, disturbed land, and developed land (Figure 5, Table 8). Impacts to isolated native upland habitats, including encelia scrub (1.53 acres), flat-topped buckwheat (4.56 acres), Riversidian sage scrub (5.54 acres), and Riversidian sage scrub – disturbed (4.05 acres), will occur with project implementation. Removal of native habitat resulting from the project may also result in potential impacts to the native wildlife and plant species they support. Impacts on these habitats may be considered potentially significant; however, habitat-based mitigation through the purchase of credits as outlined in Section 5.1, would adequately address these impacts. Note that mitigation for upland native habitats will be pursued in a manner consistent with the MSHCP. Though the March JPA is an independent agency and therefore not a participant under the MSHCP, significant cumulative biological impacts on vegetation communities in the region can be avoided when developments are pursued in compliance with the plan. As such, using the MSHCP as mitigation guidance allows the project to avoid significant impacts on vegetation communities. Therefore, impacts to native upland vegetation communities resulting from the project would be less than significant with the implementation of mitigation as proposed in Section 5.1.

Minor impacts to isolated native riparian habitats, including southern riparian forest (1.16 acres), southern willow scrub (0.20 acre), and mulefat scrub (0.01 acre) will also occur with project implementation. Southern willow scrub and mulefat scrub are native communities that are uncommon but not rare, while southern riparian forest is considered sensitive by CDFW. Regardless of their state sensitivity ranking, these riparian habitats are associated with jurisdictional wetlands as described in Section 3.3; therefore, impacts to jurisdictional wetlands discussed in Section 4.2 would result in potentially significant impacts on their associated riparian vegetation communities. However, mitigation for impacts to aquatic resources and their associated riparian communities is proposed in compliance with aquatic resource permitting as discussed in Section 5.9. Impacts to riparian vegetation communities would be less than significant with the implementation of mitigation measures resulting from the aquatics permitting process.

Non-native grassland is not a native habitat and is not considered a sensitive habitat by CDFW; however, it is considered to have some biological value for raptor foraging and other wildlife use. Several special-status species that utilize non-native grasslands are present or have high potential to occur on the project site. Potential impacts to avian species are addressed in Section 5.8; therefore, impacts to sensitive species using non-native grassland would be less than significant with the implementation of the appropriate mitigation.

Table 8. Upper Plateau Project Vegetation Communities/Land Cover Impacts

Vegetation	MCV2 Classification System ¹	Global/ State Rank	Project Site Impacts (acres)
UPLAND VEGETATION COMMUNITIES			
Encelia Scrub	<i>Encelia farinosa</i> Shrubland Alliance	G5/S4	1.53
Flat-Topped Buckwheat	<i>Eriogonum fasciculatum</i> Shrubland Alliance	G5/S5	4.56
Non-native Grassland	<i>Bromus rubens</i> – <i>Schismus (arabicus, barbatus)</i> Herbaceous Semi-Natural Alliance	No Rank	341.66
Non-native Grassland – Mustard Dominated	<i>Brassica nigra</i> – <i>Centaurea (solstitialis, melitensis)</i> Herbaceous Semi-Natural Alliance	No Rank	0.50
Ornamental	Developed/Disturbed	No Rank	0.12
Riversidian Sage Scrub	<i>Eriogonum fasciculatum</i> Shrubland Alliance	G5/S5	5.54
Riversidian Sage Scrub – Disturbed	<i>Eriogonum fasciculatum</i> Shrubland Alliance – Disturbed	G5/S5	4.05
Subtotal			357.96
RIPARIAN VEGETATION COMMUNITIES			
Mulefat Scrub	<i>Baccharis salicifolia</i> Shrubland Alliance	G4/S4	0.01
Southern Riparian Forest	<i>Salix gooddingii</i> - <i>Salix laevigata</i> Forest & Woodland Alliance ²	G4/S3	1.16
Southern Willow Scrub	<i>Salix lasiolepis</i> Shrubland Alliance	G4/S4	0.20
Subtotal			1.37
LAND COVERS			
Developed	Developed/Disturbed	No Rank	12.43
Disturbed Habitat	Developed/Disturbed	No Rank	7.45
Subtotal			19.88
Total			379.21

¹ Vegetation communities crosswalked to *The Manual of California Vegetation* (Sawyer et al. 2009)² Considered special-status by California Department of Fish and Wildlife (CDFW 2021b).

4.2 POTENTIAL JURISDICTIONAL AQUATIC RESOURCES IMPACTS

Based upon the results of the *Upper Plateau Aquatic Resources Delineation Report* (RBC 2021; Appendix E), RBC expects that the project would permanently impact 0.28 acre (5,303 linear feet) of non-wetland waters of the U.S. jurisdictional by the Corps (Table 9 and Figure 5; 0.28 acre

(5,304 linear feet) of non-wetland waters of the State jurisdictional by the RWQCB (Table 10 and Figure 5); and 0.59 acre (5,304 linear feet) of vegetated streambed and 1.09 acre of riparian habitat jurisdictional by the CDFW (Table 11 and Figure 5).

Permitting through the Corps, RWQCB, and CDFW would be required for impacts on non-wetland waters of the U.S. jurisdictional by the Corps; non-wetland and wetland waters of the State jurisdictional by the RWQCB; and vegetated and unvegetated streambed and riparian habitat jurisdictional by the CDFW. The project applicant will be responsible for acquiring the necessary authorizations required by the Corps, RWQCB, and CDFW and associated compensatory mitigation requirements, if applicable.

Table 9. Upper Plateau Potential Corps Aquatic Resource Impacts

Aquatic Resource Name	Project Site Impacts (acres) ¹	Project Site Impacts (linear feet)
NWW-1	0.03	603
NWW-2	0.03	658
NWW-3	0.03	813
NWW-4	0.05	995
NWW-5	0.11	1,745
NWW-6	<0.01	16
NWW-7	<0.01	16
NWW-9	0.03	458
Total	0.28	5,304

¹ Acreages rounded to the hundredths based on raw numbers provided during GIS analysis, which are available upon request.

Table 10. Upper Plateau Potential RWQCB Aquatic Resource Impacts

Aquatic Resource Name	Project Site Impacts (acres) ¹	Project Site Impacts (linear feet)
NWW-1	0.03	603
NWW-2	0.03	658
NWW-3	0.03	813
NWW-4	0.05	995
NWW-5	0.11	1,745
NWW-6	<0.01	16
NWW-7	<0.01	16
NWW-8	0.03	458
Total	0.28	5,304

¹ Acreages rounded to the hundredths based on raw numbers provided during GIS analysis, which are available upon request.

Table 11. Upper Plateau Potential CDFW Aquatic Resource Impacts

Aquatic Resource Name	Aquatic Resource Type	Acre(s)	Linear Feet ¹
NWW-1	Vegetated Streambed	0.03	603
NWW-2	Vegetated Streambed	0.03	658
	Riparian Habitat ²	0.06	–
NWW-3	Vegetated Streambed	0.09	813
NWW-4	Vegetated Streambed	0.07	995
NWW-5	Vegetated Streambed	0.15	1,745
	Riparian Habitat ²	0.12	–
NWW-6	Vegetated Streambed	<0.01	16
NWW-7	Vegetated Streambed	<0.01	16
NWW-7A	Riparian Habitat ²	0.01	–
NWW-9	Vegetated Streambed	0.22	458
	Riparian Habitat ²	0.90	–
Total³		1.68	5,304

¹ Linear foot not calculated for riparian habitat that occurs outside of delineated streambed to avoid redundant linear foot calculation.

² Occurs outside of delineated streambed.

³ Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

4.3 SPECIAL-STATUS PLANTS AND WILDLIFE IMPACTS

4.3.1 SPECIAL-STATUS PLANT SPECIES

4.3.1.1 Threatened and Endangered Plant Species

No federally or state-listed as endangered or threatened plant species have been detected on the project site, and none have moderate to high potential to occur within the survey area based on the lack of suitable habitat on-site. As such, no impacts on federally or state-listed endangered or threatened plant species are anticipated with project implementation.

4.3.1.2 CRPR Plant Species

One CRPR 4.2 species, paniculate tarplant, was observed on site, and a CRPR 1B.1 species, smooth tarplant has potential for occurrence on site. No additional CRPR plant species occur or have a moderate or high potential to occur on site based on the lack of suitable habitat.

Paniculate Tarplant

Paniculate tarplant is a CRPR rank 4.2 species and State Rank S4. Its CRPR 4.2 listing means it is of limited distribution and moderately threatened in California (20-80% of occurrences threatened). Paniculate tarplant State Rank S4 signifies the plant is apparently secure within California (CNPS 2021).

CRPR 4 plants “meet the definitions of the California Endangered Species Act of the California Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for impact significance during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines §15125 (c) and/or §15380” (CNPS 2021). Paniculate tarplant’s State Rank of S4 means that it is “apparently secure – uncommon but not rare; some cause for long-term concern due to declines or other factors.”

Paniculate tarplant was observed within the project site and would be permanently impacted with construction of the project. As part of the March Air Force Base closure process, 664 acres of lands were placed into conservation easement to offset species and habitat losses associated with base redevelopment, including development of the project site. Conserved areas occur adjacent to the project site and provide similar habitats to those that the project will impact, including non-native grasslands, with patches of Riversidian sage scrub and riparian areas (Center for Natural Lands Management 2012). It is also likely, given the habitats present within the conserved areas, that there are additional populations of paniculate tarplant within the conserved areas. As such, many habitat and species losses have already been addressed through preservation of the conserved areas, including paniculate tarplant and other CRPR species. Additionally, paniculate tarplant is still relatively common throughout its range and the small impact on suitable habitat within the project site would not cause a considerable decline in its numbers or distribution. Given

previous implementation of the habitat-based mitigation outlined in Section 5.1 and the relatively low-sensitivity of the species, impacts on paniculate tarplant would be less than significant.

Smooth Tarplant

Smooth tarplant is a CRPR rank 1B.1 species and State Rank S2. Its CRPR 1B.1 listing means it is considered rare, threatened, or endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat) and elsewhere. State Rank S2 means this species is considered imperiled and at a high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, and other factors. Due to its sensitivity, direct impacts to this species, if present, are potentially significant. Potential impacts on this species were adequately addressed through focused rare plant surveys which were negative for smooth tarplant on the project site. Therefore, impacts on this species would be less than significant.

4.3.2 SPECIAL-STATUS WILDLIFE SPECIES

4.3.2.1 Threatened and Endangered Wildlife Species

As discussed in Section 3.4.2, one federally and state listed species, least Bell's vireo, was detected adjacent to the project site during 2021 general biological surveys. An additional four federally and/or state-listed species, coastal California gnatcatcher, Riverside fairy shrimp, Stephens' kangaroo rat, and vernal pool fairy shrimp have potential to occur on the project site.

Coastal California Gnatcatcher

Coastal California gnatcatcher has some potential to occur on the project site. Isolated patches of sage scrub are present and have a low-to-moderate potential to support coastal California gnatcatcher. However, USFWS protocol surveys for coastal California gnatcatcher were conducted and found that this species is not present on the project site. Therefore, impacts on this species would be less than significant.

Least Bell's Vireo

Least Bell's vireo was observed offsite approximately 200-300 feet to the southwest and approximately 750 feet to the southeast within adjacent riparian vegetation. Suitable nesting habitat occurs on the project site on the eastern portion where the Cactus Avenue extension is proposed. This habitat is isolated and relatively small (0.89 acre); however, it was determined to have potential to support least Bell's vireo. Protocol USFWS surveys to determine presence/absence of this species on site were conducted from April to July 2022. Least Bell's vireo were not documented on the project site. Removal of occupied habitat will not occur with project implementation; therefore, direct impacts to this species would be less than significant.

Least Bell's vireo were documented off site within riparian corridors adjacent to the project site. Indirect impacts on nesting least Bell's vireo through project noise disturbance are potentially significant and should be mitigated. With the implementation of the appropriate mitigation as outlined in Section 5.4, impacts to least Bell's vireo would be less than significant.

Riverside Fairy Shrimp and Vernal Pool Fairy Shrimp

Riverside fairy shrimp and vernal pool fairy shrimp have potential to occur on the project site. Limited ponding features were observed during surveys that appear to be deep enough for these species as discussed in Section 3.4.2. However, USFWS protocol wet and dry season surveys for listed fairy shrimp were conducted and found that these species are not present on the project site. Therefore, impacts on these species would be less than significant.

Stephens' Kangaroo Rat

As described previously, Stephens' kangaroo rat has a high potential to occur within the project site due to the presence of moderate-quality habitat and it is assumed to occur on site.

Project impacts on this species were addressed as part of the March Air Force Base closure USFWS Section 7 consultation (BO 1-6-99-F-13) and CBD Settlement Agreement (S.D. Cal. No. 09-cv-1854-JAH-POR). Pursuant to those agreements, 664 acres of lands were placed into conservation easement to offset potential species habitat losses due to development of project site and other 'developable lands' (Figure 6). Additionally, the CDFW reviewed the USFWS BO decision and issued a consistency determination (2080-1999-056-6) stating that "Biological Opinion No. 1-6-99-F-13 is consistent with the California Endangered Species Act (CESA) as to anticipated take of the least Bell's vireo and Stephens' kangaroo rat" (CDFW 1999). Additionally, the USFWS and CDFW confirmed in 2006 that the areas taken out of the "Stephens' kangaroo rat management area" were no longer part of the core reserve and incidental take was authorized within these areas pursuant to the HCP (USFWS/CDFG WRIV-3259.5), and a Riverside County Habitat Conservation Agency (RCHCA) fee was paid.

Thus, incidental take of Stephens' kangaroo rat on the project site is permitted; however, there is a potential for off-site Stephens' kangaroo rat to come onto the site during project construction activities. If off-site Stephens' kangaroo rat were to enter the project site, incidental take beyond what was authorized in previous permits could occur, and such impacts are potentially significant. These potential impacts would need to be addressed through installation of exclosure fencing and other construction best management practices discussed in Section 5.5. Therefore, with the implementation of the mitigation measures described in Section 5.5, the project would not result in significant impacts to this species.

4.3.2.2 Species of Special Concern and Watch List Wildlife Species

Seven other special-status wildlife species were detected during general biological surveys and an additional four non-listed special-status wildlife species have moderate-to-high potential to occur on the project site.

Burrowing Owl

Burrowing owl (SSC) has a high potential to occur on the project site. With project implementation, direct impacts on burrowing owl could occur in the form of habitat destruction, and potentially death, injury, or harassment of nesting birds, their eggs, and their young. Injury or mortality occurs most frequently during the vegetation clearing stage of construction and affects eggs, nestlings,

and recently fledged young that cannot safely avoid equipment. Potential impacts on burrowing owl were identified in the *Master Environmental Impact Report for the General Plan of the March Joint Powers Authority* (March JPA 1999a). Project impacts on burrowing owls are potentially significant and would need to be addressed through preconstruction surveys, avoidance, and/or the preparation of a burrowing owl mitigation plan as discussed in Section 5.6. Therefore, impacts on this species would be less than significant with the implementation of the mitigation measures discussed in Section 5.6.

Western Spadefoot

Western spadefoot (SSC) was detected in the southwestern project buffer during USFWS protocol coastal California gnatcatcher surveys. As previously mentioned, an individual was heard calling from an area considered atypical of western spadefoot habitat due to the presence of a dense riparian understory and canopy. RBC biologists do not suspect that this riparian drainage plays a critical role in breeding for local spadefoot populations. In addition, the upland areas of the project site adjacent to this riparian corridor are compacted and unlikely to support significant numbers of burrowing western spadefoot.

Changes to project site may affect the hydrology of the adjacent riparian drainages (i.e., more runoff due to installation of impervious surfaces). This would potentially make the area less suitable for western spadefoot; however as previously mentioned, RBC biologists do not consider this to be highly valuable western spadefoot habitat. In addition, 664 acres of lands were placed into conservation easement to offset species and habitat losses associated with March Air Force Base closure and redevelopment. As such, loss of habitat for Species of Special Concern, including western spadefoot, have been offset. Therefore, habitat-based impacts on this species would be less than significant, conditional upon satisfaction of previous mitigation requirements. In addition, direct impacts on this species would be less than significant with the implementation of best management practices (MM-2).

Other Non-Listed Special-status Wildlife Species

Coastal whiptail (SSC), Cooper's hawk (CDFW Watch List), northern harrier (SSC), San Diego black-tailed jackrabbit (SSC), sharp-shinned hawk (CDFW Watch List), and yellow warbler (SSC) were also observed within the project site or buffer during 2021 and 2022 surveys (Appendix C). One additional SSC, California horned lark, has a high potential to occur on site. One additional Species of Special Concern, western yellow bat, and one additional Watch List Species, orange-throated whiptail, have a moderate potential to occur on site.

As previously discussed, as part of the March Air Force Base closure process, 664 acres of lands were placed into conservation easement to offset species and habitat losses associated with base redevelopment, including development of the project site. As such, loss of habitat for Species of Special Concern and Watch List species have been offset through conservation of 664 acres of habitat as part of the larger base closure efforts. Therefore, habitat-based impacts on these species would be less than significant, conditional upon satisfaction of previous mitigation requirements. Additionally, adult avian species would likely flush during initial project activities, and

with implementation of nesting bird protections (MM-8), potential impacts on nests would be avoided. Thus, direct avian impacts would be avoided.

However, potential direct mortality of coastal whiptail, orange-throated whiptail, San Diego black-tailed jackrabbit, and western yellow bat, if present, could occur during construction activities. Impacts on these species are potentially significant and mitigation as outlined in Section 5.2 and 5.7 is required to reduce impacts on the species to a level below significant.

4.4 NESTING BIRD AND GENERAL AVIAN IMPACTS

The project site has potential to support avian nests, which would be protected under the MBTA and/or CFGC §3503, which provides that it is unlawful to “take, possess, or needlessly destroy” avian nests or eggs. In addition, the project site has the potential to support nests, such as barn owl nests, in the abandoned buildings. These nests would also be protected under the MBTA if active. Thus, potential impacts could occur if construction, such as ground disturbing activities, vegetation clearing, or building removal is undertaken during the breeding season. To avoid potential impacts on nesting birds, removal of habitat should occur outside of the breeding season (February 1 to September 15). If vegetation/habitat removal cannot occur outside of the breeding season, a qualified biologist should survey the area prior to construction initiation. If active nests are found, active construction in that area plus an appropriate buffer (determined by the qualified biologist in consultation with CDFW) should be avoided until nestlings have fledged and the nest becomes inactive. Please refer to Section 5.8 for full nest protection requirements. With the implementation of the preconstruction nesting bird surveys and avoidance measures outlined in Section 5.8, potential impacts would be less than significant. A Bird Air Strike Hazard Study was conducted for the project site and found that no significant impacts would occur with project development. The details of this study are presented in Appendix I.

4.5 WILDLIFE CORRIDOR IMPACTS

The project area likely serves as a local wildlife corridor between undeveloped areas to the south of the site and the open space areas immediately north of the project site, north of Alessandro Avenue, which includes Sycamore Canyon approximately 4,000 feet to the northwest of the site (Google Earth Pro 2021). The project area also likely serves as a steppingstone corridor for avian species moving through this area, including least Bell’s vireo which occur in Meridian Conservation Areas 1 and 2 to the south of the site north and south of Van Buren Boulevard.

With full build-out of the development area (e.g., Specific Plan Area), an undeveloped corridor would be retained immediately east of the site as part of the 664 acres of land placed into conservation easement. This undeveloped land would maintain a corridor between site development and nearby residential development, including significant areas of riparian habitat (Figure 6).

The planned extension of Cactus Avenue bisects the undeveloped corridor; however, two wildlife crossings under the road are planned to mitigate for impacts to wildlife that rely on land locomotion. In addition, one wildlife crossing is planned under the Brown Street extension to

further facilitate wildlife movement. The crossings will consist of soft-bottomed culverts approximately 6 feet in height by 20 feet in width to allow for adequate passage of animals north to south under Cactus Avenue and east to west under Brown Street. The two Cactus Avenue wildlife crossings will be approximately 240 feet in length and the Brown Street wildlife crossing will be approximately 150 feet in length. These specifications follow the CBD Settlement Agreement, which prescribed design standards suitable to accommodate local land locomotive species.

Additionally, 60 acres of open space/park is planned for the western portion of the project that buffers the existing residential uses west of the site, which will be included within the project's General Plan Amendment. This western open space area will still allow for the movement of wildlife to the west of the project as well. As such, impacts on wildlife corridors would be less than significant.

4.6 LOCAL POLICIES & ORDINANCES IMPACTS

4.6.1 MARCH JPA GENERAL PLAN

The March JPA General Plan Resource Management Element provides for the conservation, development, and use of natural resources. It includes the following policies related to biological resources:

- **Policy 1.1** Where possible, retain local drainage courses, channels and creeks in their natural condition.
- **Policy 2.6** Open channels shall be encouraged, as appropriate, to maintain or enhance riparian habitat areas.
- **Policy 5.1** Where practical, conserve important plant communities and habitats such as riparian areas, wetlands, significant tree stands, and species by using buffers, creative site planning, revegetation, and open space easement/dedications.
- **Policy 5.4** In areas that may contain important plant and animal communities, require development to prepare biological assessments identifying species types and locations and develop measures to preserve recognized sensitive species, as appropriate.
- **Policy 5.5** Where practical, allow development to remove only the minimum natural vegetation and encourage the revegetation of graded areas with native plant species.
- **Policy 5.6** Work with state, federal and local agencies in the preservation and/or mitigation of recognized sensitive vegetation and wildlife in March JPA Planning Area.

The proposed project would impact aquatic resources and their associated riparian habitats (0.68 acre of southern riparian forest and 0.21 acre of southern willow scrub as discussed in Section 4.1 and 4.2 above; however, mitigation outlined in Section 5.2 and 5.9 would reduce impacts on aquatic resources and riparian habitat to a level below significant.

This BTR was prepared for the proposed project in conformance with policy 5.4 of the plan and includes measures to mitigate the project's potential impacts on those species.

Potential impacts on sensitive wildlife and associated habitats were addressed as part of the March Air Force Base closure USFWS Section 7 consultation (BO 1-6-99-F-13) and subsequent CBD Settlement Agreement.

As such, the project would be consistent with the March JPA General Plan Resource Management Element, and no related land use impacts would occur with project implementation.

4.6.2 RIVERSIDE COUNTY ORDINANCE NOS. 499 & 559 – TREE REMOVAL AND RIVERSIDE COUNTY OAK TREE MANAGEMENT POLICY

No native oaks occur within the project site; therefore, no impacts on oaks that are protected under the Riverside County Oak Tree Management Guidelines would occur with project implementation.

Pursuant to Unincorporated Riverside County Ordinance No. 499 (as amended though 499.11), “No person, firm, corporation, public district, public agency or political subdivision shall remove or severely trim any tree planted in the right of way of any County highway without first obtaining a permit from the County Transportation Director to do so”. The only street trees present within the project site are located at the current terminus of Cactus Avenue where a through road will be constructed. It is our understanding that this street is not considered a County highway or County road and therefore Ordinance No. 499.11 does not apply. As part of the project, new street trees will be planted and would replace the impacted street trees. As such, no impacts on trees protected under Ordinance No. 499.11 are expected to occur with project implementation.

Chapter 12.24 of the Riverside County Code of Ordinances also includes regulations related to tree removal (County of Riverside 2016). According to the Unincorporated Riverside County Ordinance No. 559 (as amended through 559.7), the removal of living native trees on parcels or property greater than 0.5 acre in size, located in the unincorporated Riverside County, and above 5,000 feet amsl requires a permit. The project site elevation is below 5,000 feet amsl; as such, this ordinance is not applicable and no impacts on trees protected under Riverside County Ordinance No. 559 would occur with project implementation.

4.7 HABITAT CONSERVATION PLAN; NATURAL COMMUNITY CONSERVATION PLAN; OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN IMPACTS

The project is physically located within the Western Riverside MSHCP area (Dudek 2003). However, March JPA is not a Permittee in the MSHCP, and therefore, projects under their authority are not subject to the MSHCP nor are they granted any take authorization unless they choose to apply for take under the Participating Special Entity process. Nevertheless, the Regional Conservation Authority *MSHCP Information Map* (RCA 2021) was reviewed for requirements that could result in a potential conflict between the proposed project and the MSHCP. The project area is not located within a Criteria Cell. The project area is within an area where burrowing owl surveys are required, but not in an area where surveys for narrow endemic criteria area plants, small mammals, and/or amphibians are required (RCA 2021). For plant and wildlife species that are covered under the MSHCP, impacts are fully mitigated for covered activities within Riverside

County by payment of the MSHCP fee and through consistency with MSHCP Section 6 policies and requirements. Though the March JPA is not a Permittee in the MSHCP and as such is not subject to MSHCP, regulations, project mitigation outlined herein is consistent with general MSHCP requirements.

The project is also located within Stephens' Kangaroo Rat HCP area (RCHCA 1996). March JPA is not a signatory this HCP, however, the JPA can participate in the plan for project mitigation. Mitigation for potentially significant impacts on Stephens' kangaroo rat are addressed in Section 5, and these mitigation measures are consistent with the goals and objectives of the Stephens' Kangaroo Rat HCP.

Because there would be no conflicts with the Stephens' Kangaroo Rat HCP nor the Western Riverside MSHCP, there would be no project impacts related to these plans and no mitigation specific to either of these plans is required.

4.8 CUMULATIVE IMPACTS

The project would result in impacts on potentially jurisdictional features, non-native grassland, encelia scrub, flat-topped buckwheat, Riversidian sage scrub, Riversidian sage scrub – disturbed, southern riparian forest, southern willow scrub, and paniculate tarplant as well as least Bell's vireo, Stephens' kangaroo rat, and species of special concern such as burrowing owl and San Diego black-tailed jackrabbit, if present.

Project biological impacts were previously analyzed under the larger March Air Force Base re-use EIR, and the project area is included in the regional MSHCP planning area. The MSHCP is a regional effort to offset significant cumulative biological impacts, and all development in the region that is permitted through the County of Riverside must comply with the MSHCP. Because of this regional biological planning, cumulative biological impacts on vegetation communities and most species in the region are not significant when developments are pursued in compliance with the plan. Though the March JPA is an independent agency and therefore not a participant under the MSHCP, project mitigation will be pursued in a manner consistent with the MSHCP. Impacts on paniculate tarplant, coastal whiptail, Cooper's hawk, horned lark, northern harrier, sharp-shinned hawk, orange-throated whiptail, western spadefoot, western yellow bat, and yellow warbler, if present, are not anticipated to be cumulatively significant. These species are covered under the regional MSHCP and are conserved on a regional basis under that plan. As such, cumulative impacts on vegetation communities and most species are considered less than significant.

Cumulative impacts to Stephens' kangaroo rat have been assessed during preparation of the Stephens' Kangaroo Rat HCP and the March Air Force Base closure USFWS Section 7 consultation and subsequent CBD Settlement Agreement. Incidental take of SKR on the project site is authorized and with implementation of MM-5, cumulative impacts on Stephens' kangaroo rat are considered less than significant.

Due to the regional scarcity of burrowing owls, however, cumulative impacts have the potential to be significant. Burrowing owl have not been documented on recent projects immediately surrounding the March Air Base, e.g., K4 Warehouse project (Rocks Biological Consulting 2019).

However, owls have been documented in nearby areas to the west of Interstate 15, including Meridian South Campus developments (Rocks Biological Consulting 2018) and Veteran's Industrial Park (Element Consulting 2018). Future growth in the area could result in additional impacts and potentially significant cumulative impacts on burrowing owls. Because the proposed project has a potential to result in significant impacts on burrowing owls, its contribution to cumulative burrowing owl impacts on burrowing owl in the region would be cumulatively considerable. However, with implementation of mitigation measure MM-6A and MM-6B, cumulative impacts would be reduced to less than significant.

5 MITIGATION

The following discussion provides project-specific mitigation/avoidance measures for potential impacts on biological resources.

5.1 UPLAND VEGETATION COMMUNITIES MITIGATION

MM-1: To mitigate potential impacts on upland vegetation, the following mitigation shall be completed by the applicant prior to issuance of grading permits. Note that upland native habitat mitigation outlined herein is consistent with the MSHCP requirements for these communities. Though the March JPA is an independent agency and not a participant under the MSHCP, performing mitigation in compliance with this regional conservation plan helps minimize and avoids significant cumulative biological impacts.

Project impacts on encelia scrub (1.53 acres) flat-topped buckwheat (4.56 acres), Riversidean sage scrub (5.54 acres) shall be mitigated at a 1:1 ratio, and project impacts on Riversidean sage scrub – disturbed (4.05 acres) will be mitigated at a 0.5:1 ratio through the purchase of 13.66 acres of coastal or Riversidean sage scrub credits at an approved mitigation bank, such as the Chiquita Canyon Conservation Bank, Soquel Canyon Mitigation Bank, Brook Forest Conservation Bank, or Daley Ranch Conservation Bank.

5.2 BEST MANAGEMENT PRACTICES

MM-2: To avoid impacts to special-status resources and inadvertent disturbance to areas outside the limits of the proposed project activities, the following monitoring requirements and BMPs shall be implemented:

- 1) A biologist shall be contracted to perform daily monitoring during initial vegetation removal and throughout ground-disturbing activities that result in the breaking of the ground surface. After initial vegetation removal and ground disturbance that results in breaking of the ground surface, a biologist shall be contracted to perform regular random checks (not less than once per week but could be increased depending on the presence of special-status species) to ensure that all mitigation and BMPs are implemented. In addition, monitoring reports and a post-construction monitoring report shall be prepared to document compliance with these mitigation measures and BMPs.
- 2) To prevent inadvertent disturbance to areas outside the limits of work, the construction limits shall be clearly demarcated (e.g., installation of flagging or temporary visibility construction fence) prior to ground-disturbance activities, and all construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits. The work limit delineation shall be maintained throughout project construction. Should construction fencing be installed to delineate the limits of work, adequate openings along the southern and eastern perimeters shall be established to allow for dispersal of wildlife into the adjacent undeveloped lands. The contractor shall consult

with the biological monitor to confirm that construction fencing will prevent unauthorized access beyond the limits of work while allowing wildlife to escape from active construction areas.

- 3) A biologist shall flush special-status species (i.e., avian or other mobile species) from suitable habitat areas within the project development footprint to the maximum extent practicable immediately (e.g., within 24 hours) prior to initial vegetation removal activities. The biologist shall flush wildlife by walking through habitat to be imminently removed.
- 4) Construction vehicles shall not exceed 15 miles per hour on unpaved roads adjacent to the project site or the right-of-way accessing the site.
- 5) Construction activities will occur during daytime hours.
- 6) If trash and debris need to be stored overnight during maintenance activities, fully covered trash receptacles that are animal-proof and weather-proof will be used by the maintenance contractor to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Alternatively, standard trash receptacles may be used during the day, but must be removed each night.
- 7) Cut vegetation shall be hauled out of any waterways and stored, if necessary, where it cannot be washed by rainfall or runoff into waterways. When maintenance activities are completed, any excess materials or debris shall be removed from the project site.
- 8) Temporary structures and storage of construction materials will not be located in jurisdictional waters, including wetlands or riparian areas.
- 9) Staging/storage areas for construction equipment and materials will not be located in jurisdictional waters, including wetland or riparian areas, or within buffer areas as determined by the agencies during aquatic resource permitting.
- 10) The operator will not permit pets on or adjacent to construction sites.
- 11) As per the Landscaping Guidelines of the Resource Management Element of the March Joint Powers Authority (JPA) General Plan (1999), drought-tolerant vegetation and native vegetation will be used to the extent feasible, consistent with March JPA Landscape Water Efficiency Ordinance #JPA 16-03, with the purpose of preserving existing mature trees and native vegetation. A qualified botanist shall review landscape plans to recommend appropriate provisions to minimize the spread of invasive plant species, as defined by the California Invasive Plant Council (www.cal-ipc.org) and California Native Plant Society (www.cnps.org), within the project site. Provisions may include a) installation of container plants and/or hydro-seeding areas adjacent to existing, undisturbed native vegetation areas with native plant species that are common within temporary impact areas; and b) review and screening of proposed plants to identify and avoid potential invasive species and weed removal during the initial planting of landscaped areas. Please note that this BMP is consistent with the requirements of the CBD Settlement Agreement, which states that “all lots within the Meridian development adjacent to the Conservation Easement Areas shall be landscaped with native and non-invasive plant materials to protect biological resources”.

5.3 LEAST BELL'S VIREO AVOIDANCE AND MITIGATION

MM-4: Protocol surveys were negative for least Bell's vireo on site; however, this species was documented into riparian vegetation adjacent to the project site. Although direct impacts will not occur with project implementation, potential indirect impacts require mitigation.

To avoid indirect impacts on least Bell's vireo inhabiting land adjacent to the project site, the following avoidance and minimization measures shall be implemented:

- 1) Environmental awareness training for all construction personnel to educate personnel about least Bell's vireo and protective status avoidance measures to be implemented by all personnel;
- 2) Demarcation of the extent of construction limits with temporary construction fencing to be maintained until construction is complete;
- 3) Construction noise levels shall not exceed a 60 dBA L_{eq} hourly average within in the riparian habitats occupied least Bell's vireo habitat located adjacent to the project site (see Appendix H) during least Bell's vireo nesting season (March 15 to September 15) unless authorized by the appropriate regulatory authorities (i.e., CDFW and USFWS). The 60 dBA L_{eq} hourly average limit has been established by USFWS. Noise testing will be conducted within suitable riparian habitat contiguous with occupied least Bell's vireo territories at the vegetation limit closest to the project site. Please note that noise limits are only applicable to the occupied habitat and suitable contiguous riparian vegetation; noise limits do not apply to a buffer around the habitat. At the onset of least Bell's vireo breeding season, biologists shall conduct non-protocol surveys to confirm the locations of vireo territories. Noise monitoring will be conducted by a biologist familiar with least Bell's vireo behavior. While conducting noise monitoring, the biologist will observe vireo to ensure normal breeding behaviors are not indirectly impacted by construction activities. The biologist shall be authorized to stop work if any adverse impacts on least Bell's vireo are detected. A noise level verification report shall be submitted to March JPA every two weeks during the duration of site grading and construction phases. If construction activities are found to result in average hourly noise levels greater than 60 dBA L_{eq} , noise attenuation measures shall be implemented to reduce noise within least Bell's vireo breeding habitat to below the 60 dBA L_{eq} limit. In such a case, construction activities may not resume until a reduction in noise within occupied least Bell's vireo habitat is documented.

5.4 STEPHENS' KANGAROO RAT AVOIDANCE AND MITIGATION

MM-5: Stephens' kangaroo rat has a high potential to occur within the project site and is assumed present. The project site does not occur within the Stephens' Kangaroo Rat 'core reserves' and incidental take of Stephens' kangaroo rat is permitted within the project site, as previously mentioned in Section 4.3.2.

Additionally, the following measures to reduce the potential for direct impacts on the species shall be adhered to during construction:

- 1) The perimeter of construction will be delineated with enclosure fencing. The installation and removal of fencing will avoid direct impacts to existing Stephens' kangaroo rat burrows. Enclosure fencing will have the following specifications:
 - a) Chain link fence with an erect height of 3 feet.
 - b) The bottom 2 feet of the erect portion of the fencing needs to be covered in a material that cannot be climbed or chewed through by Stephens' kangaroo rat; metal flash or similar material is recommended.
 - c) The bottom 2 feet of fencing must be buried two feet underground.
 - d) The fence must be installed under the supervision of a qualified biologist with Stephens' kangaroo rat experience to oversee installation. This biologist will inspect the fence before leaving the job site in the evening and repair any opening in the fencing. The fence removal will also require the supervision of a qualified biologist.
- 2) A Worker Environmental Awareness Program (WEAP) will be developed and implemented prior to the start of excavation. The WEAP will be presented by the qualified biologist(s) and will cover the sensitive resources found on-site, flagging/fencing of exclusion areas, permit requirements, trash and debris collection and disposal, spill avoidance and clean-up, and other environmental issues.
- 3) Spoils, trash, and any excavation-generated debris will be removed to an approved off-site disposal facility. Trash and food items will be contained in closed containers and removed daily to reduce the attraction of opportunistic predators to the site, such as common ravens, coyotes, and feral cats and dogs that may prey on listed species.
- 4) Construction activities will be limited to daylight hours to the extent feasible. If nighttime work is necessary, lighting will be shielded away from surrounding natural areas. Fixtures will be shielded to downcast below the horizontal plane of the fixture height and mounted as low as possible.
- 5) Permanent lighting will be shielded away from surrounding natural areas. Fixtures will be shielded to downcast below the horizontal plane of the fixture height and mounted as low as possible.

5.5 BURROWING OWL MITIGATION

5.5.1 BURROWING OWL AVOIDANCE AND MITIGATION MEASURES

MM-6A: No less than 14 days prior to the onset of construction activities, a qualified biologist shall survey the construction limits of the project area and a 500-foot buffer for the presence of burrowing owls and occupied nest burrows. A second survey shall be conducted within 24 hours prior to the onset of construction activities. The surveys shall be conducted in accordance with the most current CDFW survey methods. If burrowing owls are not detected during the clearance survey, no additional conditions may be required to avoid impacts to burrowing owl.

If burrowing owl is documented on site, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through non-invasive methods that either the birds have not begun egg laying and incubation, or that juveniles from the occupied burrows are foraging independently and capable of independent survival. Disturbance buffers shall be implemented by a qualified biologist in accordance with the recommendations included in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). A biologist shall be contracted to perform monitoring during all construction activities approximately every other day. The definitive frequency and duration of monitoring shall be dependent on whether it is the breeding versus non-breeding season and the efficacy of the exclusion buffers, as determined by a qualified biologist and in coordination with CDFW.

If burrowing owl is detected during the non-breeding season (September 1 through January 31) or confirmed to not be nesting, a non-disturbance buffer between the project activities and the occupied burrow shall be installed by a qualified biologist in accordance with the recommendations included in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

5.5.2 BURROWING OWL RELOCATION AND MITIGATION PLAN

MM-6B: If avoidance is not possible, either directly or indirectly, a Burrowing Owl Relocation and Mitigation Plan (Plan) shall be prepared and submitted for approval by CDFW. Once approved, the Plan would be implemented to relocate non-breeding burrowing owls from the project site. The Plan shall detail methods for relocation of burrowing owls from the project site, provide guidance for monitoring and management of the replacement burrow sites and associated reporting requirements, and ensure that a minimum of two suitable, unoccupied burrows are available off site for every burrowing owl or pair of burrowing owls to be relocated. Compensatory mitigation of habitat would be required if occupied burrows or territories occur within the permanent impact footprint. Habitat compensation shall be approved by CDFW and detailed in the Burrowing Owl Relocation and Mitigation Plan.

The project applicant shall submit at least one burrowing owl pre-construction survey report to the satisfaction of the JPA and CDFW to document compliance with this mitigation/avoidance measure. For the purposes of this mitigation measure, 'qualified biologist' is a biologist who meets the requirements set forth in the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

5.6 SAN DIEGO BLACK-TAILED JACKRABBIT AVOIDANCE AND MITIGATION

MM-7: Thirty days prior to construction, a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for San Diego black-tailed jackrabbit. If San Diego black-tailed jackrabbits are present, non-breeding rabbits shall be flushed from areas to be

disturbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged and ground-disturbing activities avoided within a minimum of 200 feet during the pup-rearing season (February 15 through July 1). This buffer may be reduced based on the location of the den upon consultation with CDFW. Occupied maternity dens, depressions, nests, and burrows shall be flagged for avoidance. A biologist shall be contracted to perform daily monitoring during initial vegetation removal and throughout ground-disturbing activities that result in the breaking of the ground surface, as further described in MM-2. If construction fencing is installed, the contractor shall establish adequate openings within the southern and eastern fence perimeters to allow for passive dispersal into adjacent undeveloped lands during construction. If unattended young are discovered, they shall be relocated to suitable habitat by a qualified biologist. The qualified biologist shall document all San Diego black-tailed jackrabbits identified, avoided, and/or moved, and provide a written report to CDFW within 72 hours. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.

5.7 NESTING BIRD AVOIDANCE AND MINIMIZATION MEASURES

MM-8: The project site supports suitable habitat for nesting birds. As such, the following mitigation is required to reduce impacts on nesting birds: To avoid direct impacts to raptors and/or native/migratory birds (including California horned lark, Cooper's hawk, northern harrier, sharp-shinned hawk, and yellow warbler), vegetation removal and grading activities should occur outside of the breeding season for these species (February 1 through September 15). If removal of habitat in the proposed area of disturbance or building demolition must occur during the breeding season, a qualified biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds in the proposed area of disturbance and within a 100-foot buffer for general avian species and a 500-foot buffer for raptor species. The pre-construction survey shall be conducted within three (3) calendar days prior to the start of construction activities (including removal of vegetation) or building demolition.

If nesting birds are observed, a letter report or mitigation plan in conformance with applicable state and federal law (i.e., appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the CDFW and/or USFWS as applicable for review and approval and implemented to the measures identified in the report or mitigation plan are in place prior to and/or during construction. If nesting birds are not detected during the pre-construction survey, no further mitigation is required.

5.8 AQUATIC RESOURCES MITIGATION

MM-9: The project site supports aquatic resources that are considered jurisdictional under the ACOE, RWQCB and CDFW. Prior to ground-disturbing activities, the applicant shall coordinate with the ACOE, Los Angeles District to assure conformance with the requirements of Section 404 of the Clean Water Act and with the Santa Ana RWQCB (Region 8) to assure conformance with the requirements of Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Prior to activity within CDFW-jurisdictional streambed or associated riparian habitat, the applicant shall coordinate with CDFW (Eastern Sierra and Inland Desert Region 6) relative to conformance to the Lake and Streambed Alteration permit requirements.

The project shall mitigate at not less than 1:1 with re-establishment credits (0.28 acres ACOE/0.28 acres RWQCB/1.68 acres CDFW) for impacts on aquatic resources as a part of an overall strategy to ensure no net loss. Mitigation shall be completed through use of a mitigation bank (e.g., Riverpark Mitigation Bank) or other applicant-sponsored mitigation. Final mitigation ratios and credits shall be determined in consultation with the ACOE, RWQCB, and/or CDFW based on agency evaluation of current resource functions and values and through each agency's respective permitting process.

Should applicant-sponsored mitigation be implemented, a Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared in accordance with State Water Resources Control Board guidelines and approved by the agencies in accordance with the proposed program permits. The HMMP will include but is not limited to: a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual planting plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; and proposed success criteria. Any off-site applicant sponsored mitigation shall be conserved and managed in perpetuity.

Best management practices (BMPs) shall be implemented to avoid any indirect impacts on jurisdictional waters, including the following:

- 1) Vehicles and equipment will not be operated in ponded or flowing water or within buffer areas as determined by the agencies during aquatic resource permitting except as described in permits.
- 2) Water containing mud, silt, or other pollutants from grading or other activities will not be allowed to enter jurisdictional waters or be placed in locations that may be subjected to high storm flows.
- 3) Spoil sites will not be located within 30 feet from the boundaries of jurisdictional waters or in locations that may be subject to high storm flows, where spoils might be washed back into drainages.
- 4) Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil, or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, will be prevented from

contaminating the soil and/or entering avoided jurisdictional waters and buffer areas as determined by the agencies during aquatic resource permitting.

- 5) No equipment maintenance will be performed within jurisdictional waters or within buffer areas as determined by the agencies during aquatic resource permitting, including wetlands and riparian areas, where petroleum products or other pollutants from the equipment may enter these areas. Fueling of equipment will not occur on the project site.

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 Survey Area
 Project Boundary

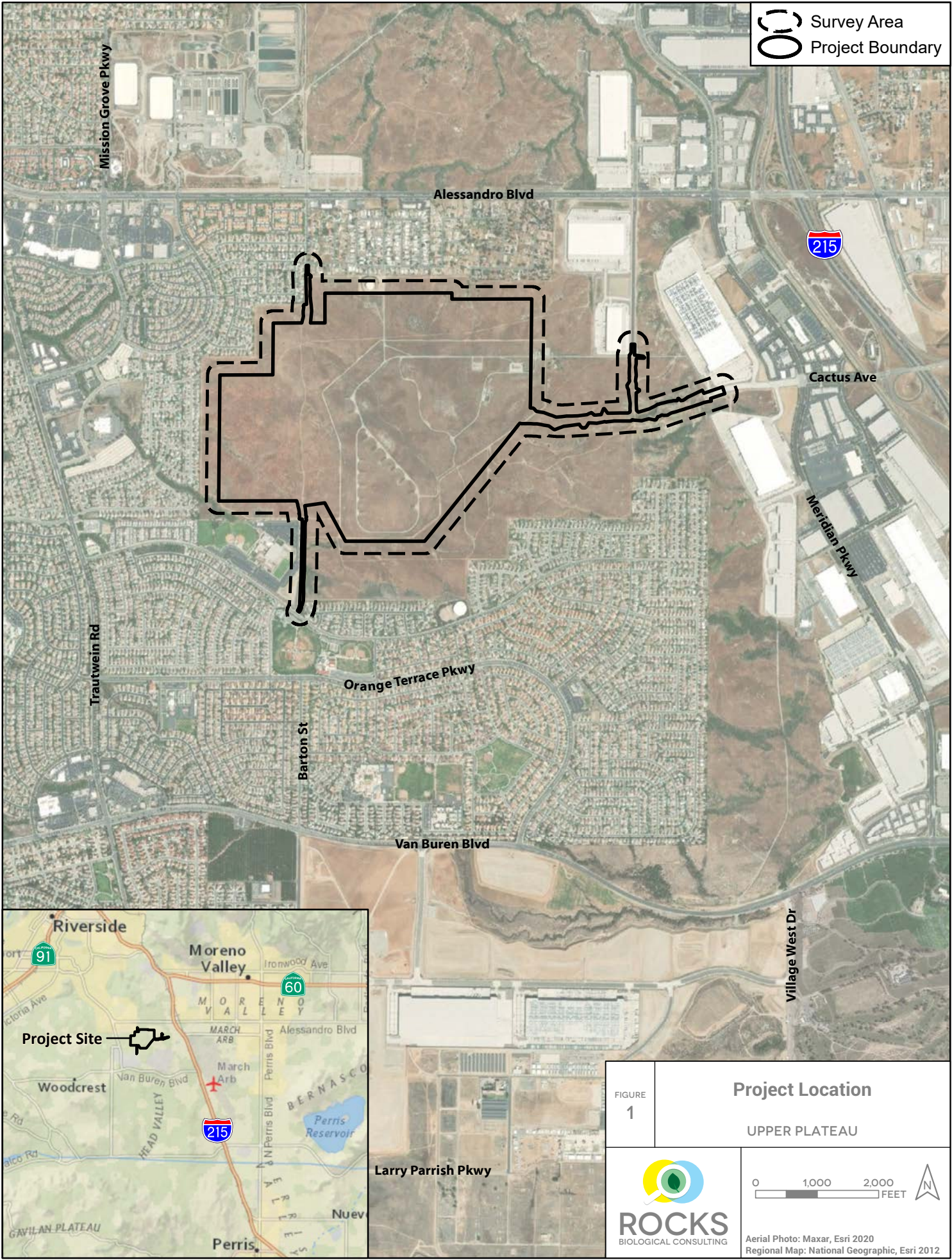



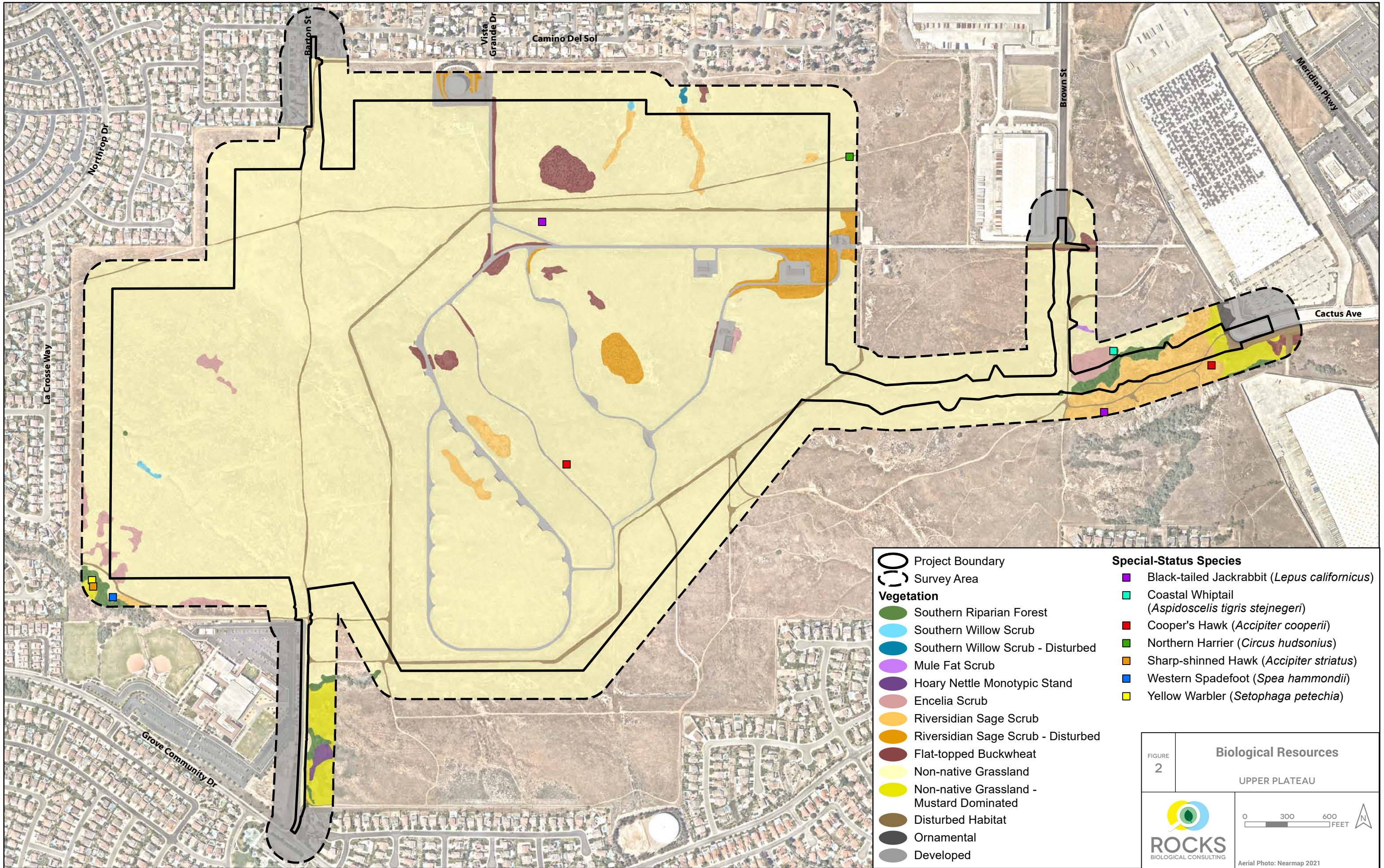
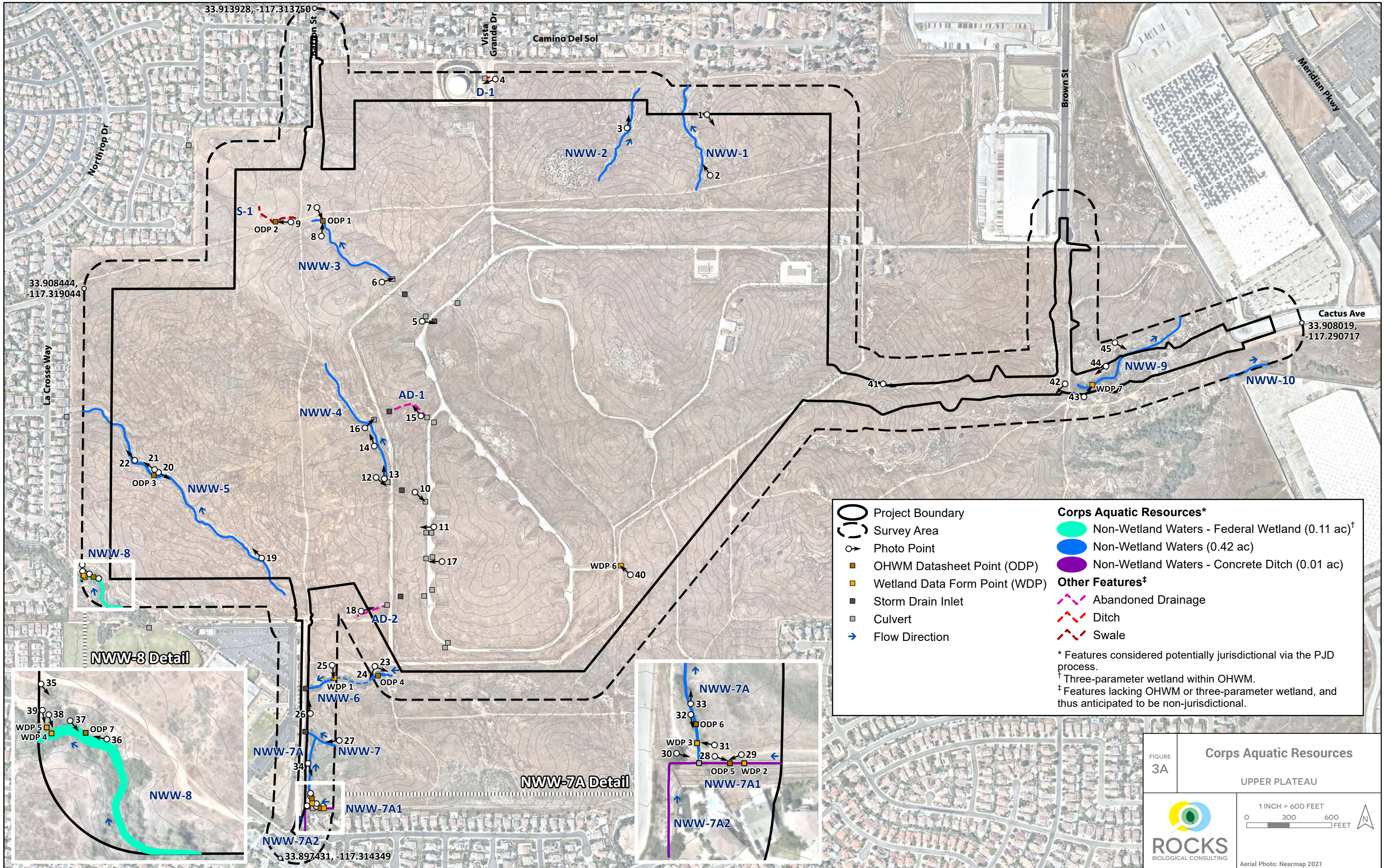


FIGURE 1	<h3>Project Location</h3> <p>UPPER PLATEAU</p>
	  <p> <small>Aerial Photo: Maxar, Esri 2020 Regional Map: National Geographic, Esri 2012</small> </p>





Project Boundary	Corps Aquatic Resources*
Survey Area	Non-Wetland Waters - Federal Wetland (0.11 ac) [†]
Photo Point	Non-Wetland Waters (0.42 ac)
OHWM Datasheet Point (ODP)	Non-Wetland Waters - Concrete Ditch (0.01 ac)
Wetland Data Form Point (WDP)	Other Features[‡]
Storm Drain Inlet	Abandoned Drainage
Culvert	Ditch
Flow Direction	Swale

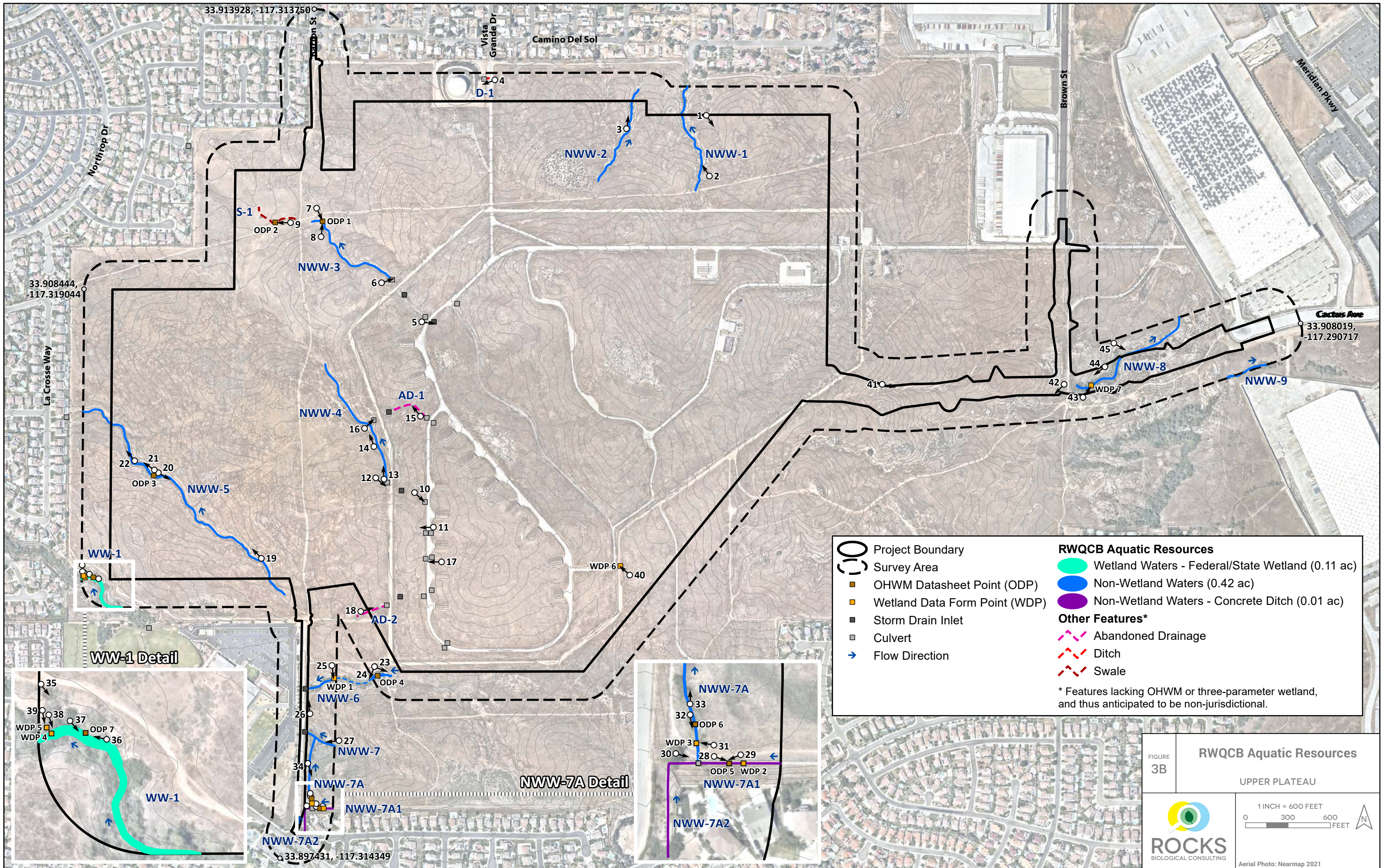
* Features considered potentially jurisdictional via the PJD process.
[†] Three-parameter wetland within OHWM.
[‡] Features lacking OHWM or three-parameter wetland, and thus anticipated to be non-jurisdictional.

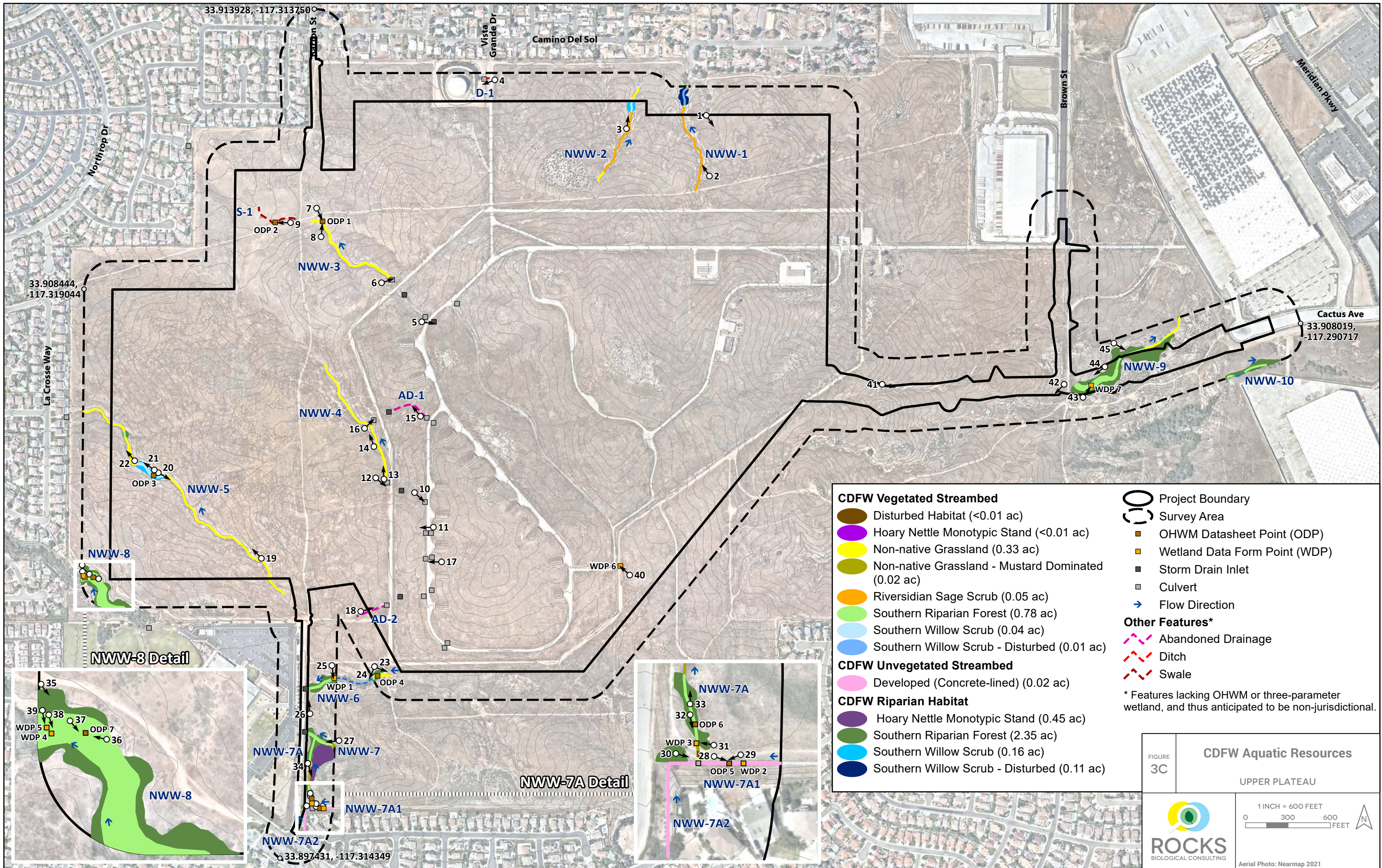
FIGURE 3A
Corps Aquatic Resources
 UPPER PLATEAU

1 INCH = 600 FEET

ROCKS
 BIOLOGICAL CONSULTING

Aerial Photo: Nearmap 2021





- CDFW Vegetated Streambed**
- Disturbed Habitat (<0.01 ac)
 - Hoary Nettle Monotypic Stand (<0.01 ac)
 - Non-native Grassland (0.33 ac)
 - Non-native Grassland - Mustard Dominated (0.02 ac)
 - Riversidian Sage Scrub (0.05 ac)
 - Southern Riparian Forest (0.78 ac)
 - Southern Willow Scrub (0.04 ac)
 - Southern Willow Scrub - Disturbed (0.01 ac)
- CDFW Unvegetated Streambed**
- Developed (Concrete-lined) (0.02 ac)
- CDFW Riparian Habitat**
- Hoary Nettle Monotypic Stand (0.45 ac)
 - Southern Riparian Forest (2.35 ac)
 - Southern Willow Scrub (0.16 ac)
 - Southern Willow Scrub - Disturbed (0.11 ac)

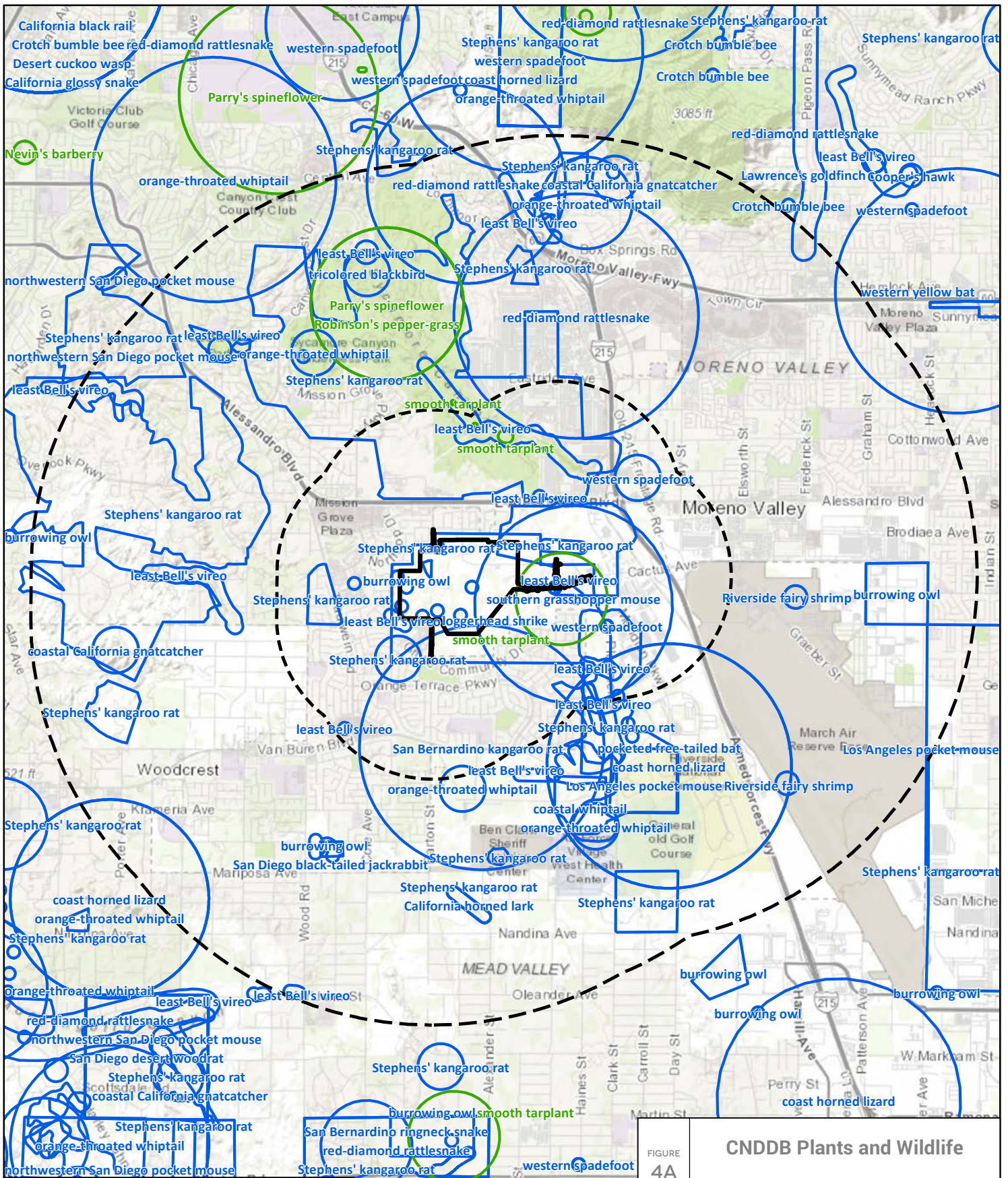
- Project Boundary
 - Survey Area
 - OHPM Datasheet Point (ODP)
 - Wetland Data Form Point (WDP)
 - Storm Drain Inlet
 - Culvert
 - Flow Direction
- Other Features***
- Abandoned Drainage
 - Ditch
 - Swale
- * Features lacking OHPM or three-parameter wetland, and thus anticipated to be non-jurisdictional.

FIGURE 3C **CDFW Aquatic Resources**
UPPER PLATEAU

1 INCH = 600 FEET
0 300 600 FEET

ROCKS
BIOLOGICAL CONSULTING

Aerial Photo: Nearmap 2021



- Project Boundary
- 1-mile Buffer
- 3-mile Buffer
- CNDDB Plant Species Locations
- CNDDB Wildlife Species Locations

FIGURE 4A

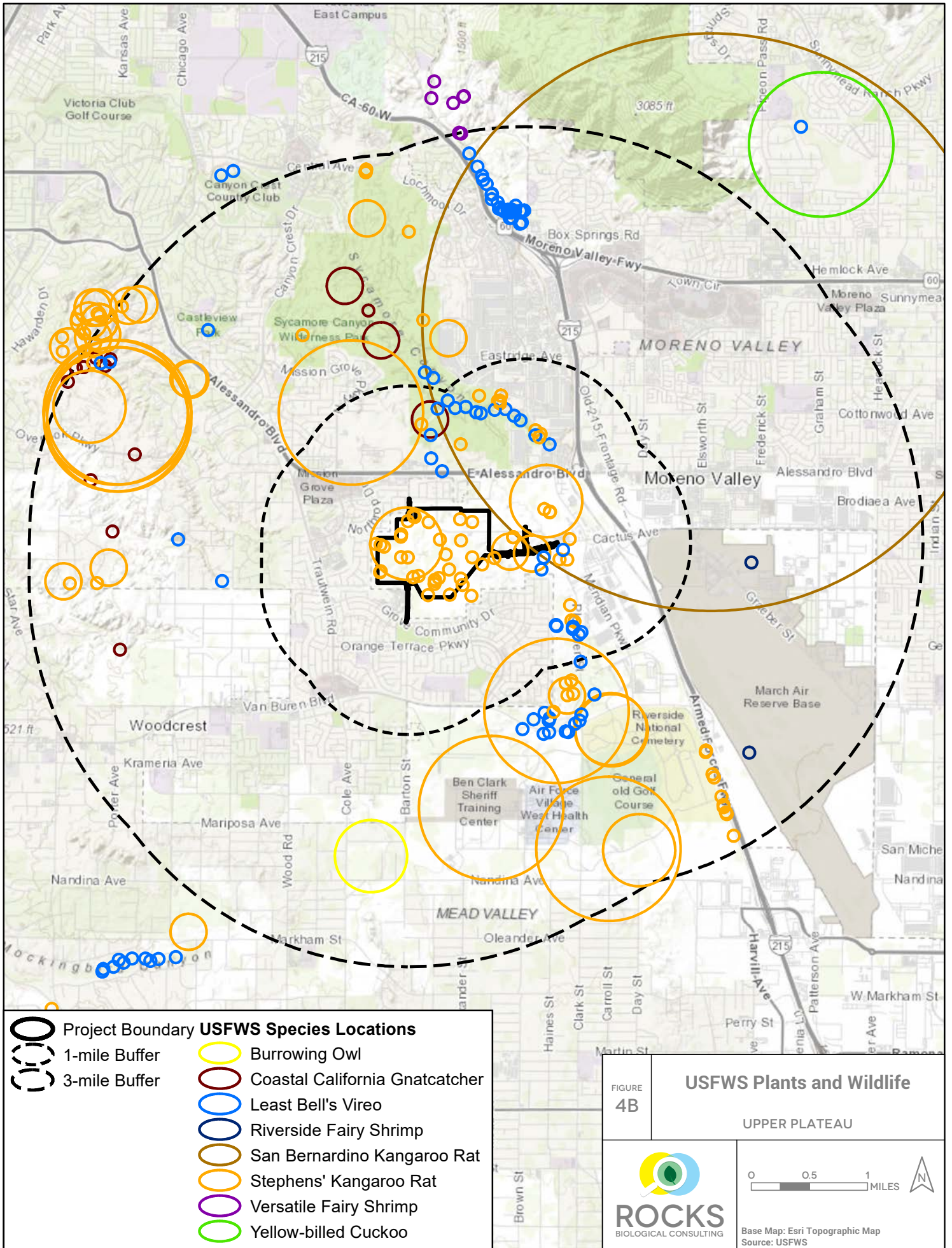
CNDDB Plants and Wildlife

UPPER PLATEAU

0 0.5 1 MILES

Base Map: Esri Topographic Map
Source: CDFW

San Bernardino ringneck snake
 red-diamond rattlesnake
 western spadefoot
 eastern ringneck snake
 diamond rattlesnake
 blue-crowned sparrow
 white-crowned sparrow
 southern grasshopper mouse
 burrowing owl
 smooth tarplant

















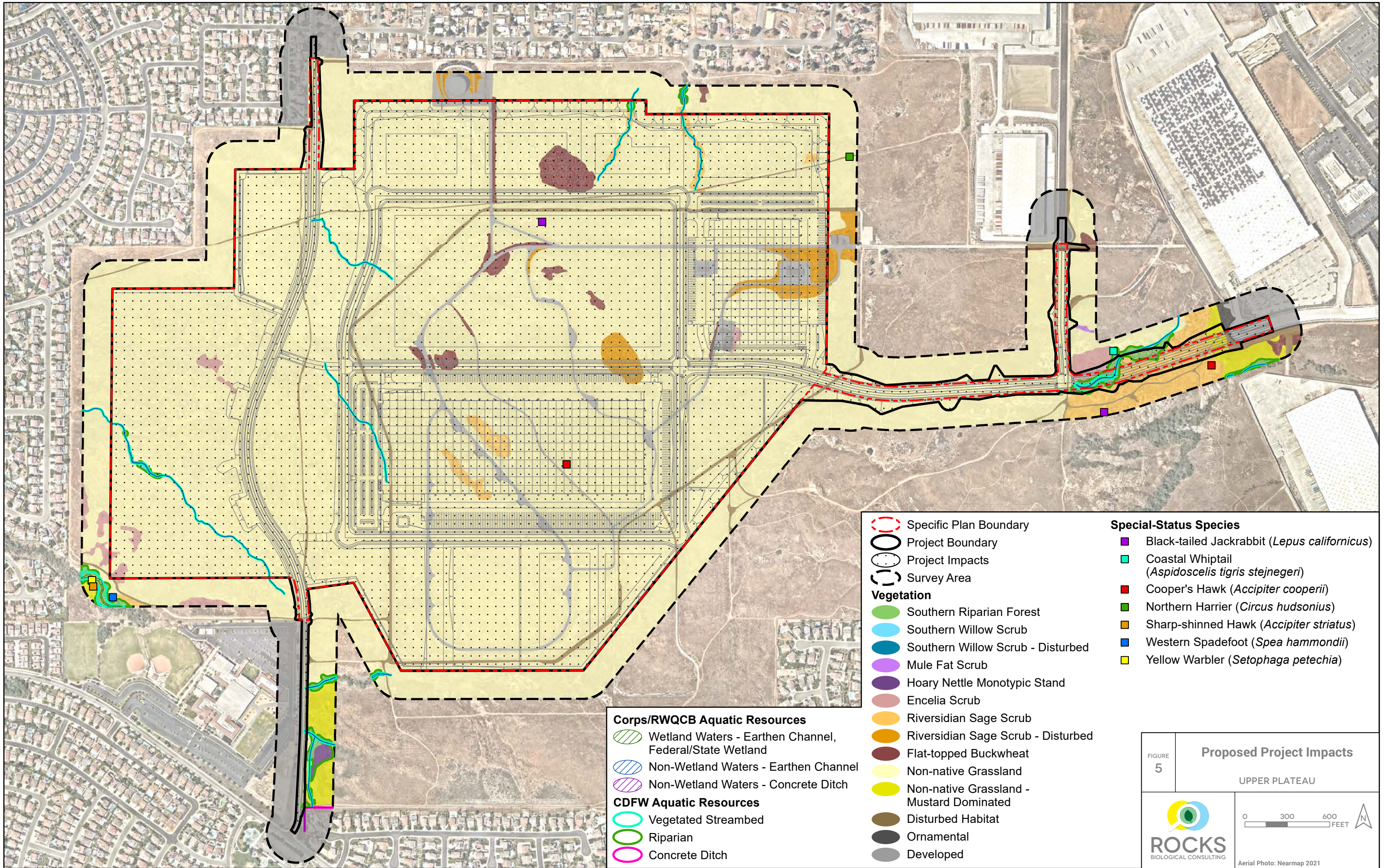
- | | | | |
|--|------------------|---|--------------------------------|
|  | Project Boundary |  | USFWS Species Locations |
|  | 1-mile Buffer |  | Burrowing Owl |
|  | 3-mile Buffer |  | Coastal California Gnatcatcher |
| | |  | Least Bell's Vireo |
| | |  | Riverside Fairy Shrimp |
| | |  | San Bernardino Kangaroo Rat |
| | |  | Stephens' Kangaroo Rat |
| | |  | Versatile Fairy Shrimp |
| | | | Yellow-billed Cuckoo |

FIGURE 4B	USFWS Plants and Wildlife	
	UPPER PLATEAU	
 ROCKS BIOLOGICAL CONSULTING	 	
	Base Map: Esri Topographic Map Source: USFWS	



- Corps/RWQCB Aquatic Resources**
- Wetland Waters - Earthen Channel, Federal/State Wetland
 - Non-Wetland Waters - Earthen Channel
 - Non-Wetland Waters - Concrete Ditch
- CDFW Aquatic Resources**
- Vegetated Streambed
 - Riparian
 - Concrete Ditch

- Specific Plan Boundary
 - Project Boundary
 - Project Impacts
 - Survey Area
- Vegetation**
- Southern Riparian Forest
 - Southern Willow Scrub
 - Southern Willow Scrub - Disturbed
 - Mule Fat Scrub
 - Hoary Nettle Monotypic Stand
 - Encelia Scrub
 - Riversidian Sage Scrub
 - Riversidian Sage Scrub - Disturbed
 - Flat-topped Buckwheat
 - Non-native Grassland
 - Non-native Grassland - Mustard Dominated
 - Disturbed Habitat
 - Ornamental
 - Developed

- Special-Status Species**
- Black-tailed Jackrabbit (*Lepus californicus*)
 - Coastal Whiptail (*Aspidoscelis tigris stejnegeri*)
 - Cooper's Hawk (*Accipiter cooperii*)
 - Northern Harrier (*Circus hudsonius*)
 - Sharp-shinned Hawk (*Accipiter striatus*)
 - Western Spadefoot (*Spea hammondi*)
 - Yellow Warbler (*Setophaga petechia*)

FIGURE 5

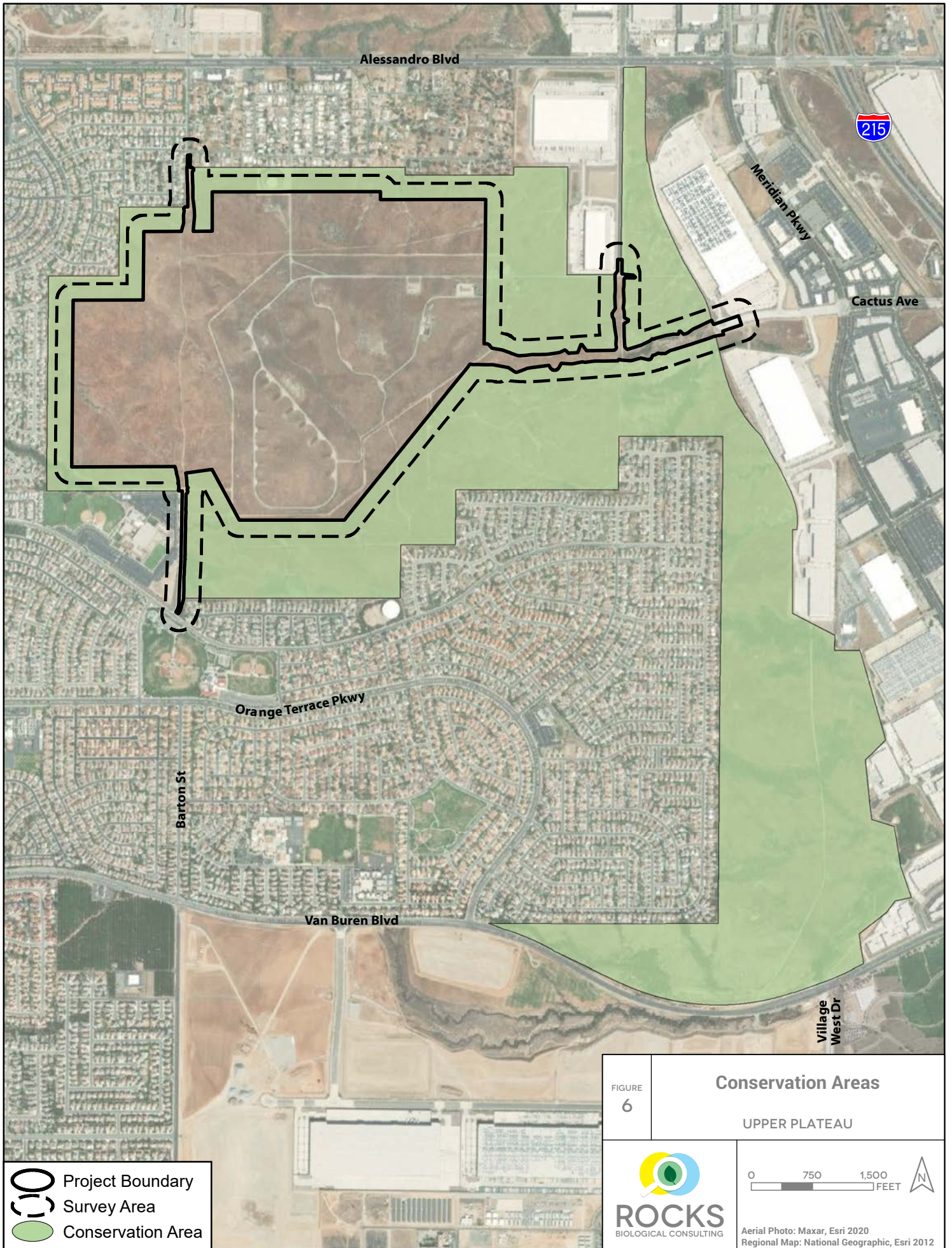
Proposed Project Impacts

UPPER PLATEAU

0 300 600 FEET

ROCKS
BIOLOGICAL CONSULTING

Aerial Photo: Nearmap 2021



Alessandro Blvd



Meridian Pkwy

Cactus Ave

Orange Terrace Pkwy

Barton St

Van Buren Blvd

Village West Dr

FIGURE
6

Conservation Areas




UPPER PLATEAU



ROCKS
BIOLOGICAL CONSULTING



Aerial Photo: Maxar, Esri 2020
Regional Map: National Geographic, Esri 2012

-  Project Boundary
-  Survey Area
-  Conservation Area

APPENDIX A

**UPPER PLATEAU PROJECT
SURVEY AREA SITE PHOTOGRAPHS**

Appendix A

Upper Plateau Project Survey Area Site Photographs



Photo 1. View of southern riparian forest, facing southeast. July 28, 2021.



Photo 2. View of California buckwheat scrub, facing northwest. July 28, 2021.



Photo 3. View of brittlebush scrub in the foreground and southern riparian forest in the background, facing southeast. July 28, 2021.



Photo 4. View of disturbed southern willow scrub facing west. July 28, 2021.



Photo 5. View of nonnative grassland and hoary nettle scrub in the foreground and southern riparian forest in the background, facing northwest. July 28, 2021.



Photo 6. View facing northwest of Riverside sage scrub along channel. July 28, 2021.



Photo 7. View northeast of Riversidian sage scrub in the easternmost portion of the project boundary. July 28, 2021.



Photo 8. View facing northwest of nonnative grassland across bunkers. August 6, 2021.



Photo 9. View facing southeast of deerweed scrub. August 6, 2021.



Photo 10. View facing northwest of abandoned development with active barn owl roost. September 1, 2021.

APPENDIX B

PLANT SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

APPENDIX B

PLANT SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

Family	Common Name	Scientific Name
Plants		
Adoxaceae	blue elderberry	<i>Sambucus nigra</i> subsp. <i>caerulea</i>
Amaranthaceae	white tumbleweed	<i>Amaranthus albus</i> *
Anacardiaceae	Peruvian pepper tree	<i>Schinus molle</i> *
Apocynaceae	narrow-leaf milkweed	<i>Asclepias fascicularis</i>
Apocynaceae	climbing milkweed	<i>Funastrum cynanchooides</i> var. <i>hartwegii</i>
Arecaceae	Mexican fan palm	<i>Washingtonia robusta</i> *
Asteraceae	annual bur-sage	<i>Ambrosia acanthicarpa</i>
Asteraceae	California sagebrush	<i>Artemisia californica</i>
Asteraceae	tarragon, dragon sagewort	<i>Artemisia dracunculus</i>
Asteraceae	mule-fat, seep-willow	<i>Baccharis salicifolia</i> subsp. <i>salicifolia</i>
Asteraceae	willow baccharis	<i>Baccharis salicina</i>
Asteraceae	broom baccharis	<i>Baccharis sarothroides</i>
Asteraceae	totalote	<i>Centaurea melitensis</i> *
Asteraceae	California sand-aster	<i>Corethrogyne filaginifolia</i> var. <i>filaginifolia</i>
Asteraceae	paniculate tarplant	<i>Deinandra paniculata</i>
Asteraceae	brittlebush, incienso	<i>Encelia farinosa</i> var. <i>farinosa</i>
Asteraceae	thickbracted goldenbush	<i>Ericameria palmeri</i> var. <i>pachylepis</i>
Asteraceae	horseweed	<i>Erigeron canadensis</i>
Asteraceae	asthmaweed	<i>Erigeron sumatrensis</i> *
Asteraceae	western sunflower	<i>Helianthus annuus</i>
Asteraceae	telegraph weed	<i>Heterotheca grandiflora</i>
Asteraceae	goldenbush	<i>Isocoma menziesii</i>
Asteraceae	prickly lettuce	<i>Lactuca serriola</i> *
Asteraceae	stinknet	<i>Oncosiphon piluliferum</i> *
Asteraceae	California goldenrod	<i>Solidago velutina</i> subsp. <i>californica</i>
Asteraceae	small wreath-plant	<i>Stephanomeria exigua</i>
Boraginaceae	rancher's fiddleneck	<i>Amsinckia intermedia</i>
Boraginaceae	salt heliotrope	<i>Heliotropium curassavicum</i> var. <i>oculatum</i>
Boraginaceae	branching phacelia	<i>Phacelia ramosissima</i> var. <i>latifolia</i>
Brassicaceae	black mustard	<i>Brassica nigra</i> *
Brassicaceae	short-pod mustard	<i>Hirschfeldia incana</i> *
Brassicaceae	London rocket	<i>Sisymbrium irio</i> *

Family	Common Name	Scientific Name
Cactaceae	snake cholla	<i>Cylindropuntia californica</i> var. <i>californica</i>
Cactaceae	prickly pear	<i>Opuntia</i> sp.
Chenopodiaceae	bractscale	<i>Atriplex serenana</i> var. <i>serenana</i>
Chenopodiaceae	Australian tumbleweed	<i>Salsola australis</i> *
Euphorbiaceae	doveweed	<i>Croton setiger</i>
Euphorbiaceae	white-margin sandmat	<i>Euphorbia albomarginata</i>
Fabaceae	silver-leaf lotus	<i>Acmispon argophyllus</i> var. <i>argophyllus</i>
Fabaceae	short-wing deerweed	<i>Acmispon glaber</i> var. <i>brevialatus</i>
Fabaceae	Pomona locoweed	<i>Astragalus pomonensis</i>
Fabaceae	Indian sweetclover	<i>Melilotus indicus</i> *
Fabaceae	yellow sweetclover	<i>Melilotus officinalis</i> *
Fabaceae	Mexican palo verde	<i>Parkinsonia aculeata</i> *
Geraniaceae	long-beak filaree/storksbill	<i>Erodium botrys</i> *
Geraniaceae	red-stem filaree/storksbill	<i>Erodium cicutarium</i> *
Lamiaceae	horehound	<i>Marrubium vulgare</i> *
Lamiaceae	vinegar weed	<i>Trichostema lanceolatum</i>
Nyctaginaceae	coastal wishbone plant	<i>Mirabilis laevis</i> var. <i>crassifolia</i>
Papaveraceae	California poppy	<i>Eschscholzia californica</i>
Phrymaceae	coast monkey flower	<i>Diplacus puniceus</i>
Poaceae	slender wild oat	<i>Avena barbata</i> *
Poaceae	wild oat	<i>Avena fatua</i> *
Poaceae	ripgut grass	<i>Bromus diandrus</i> *
Poaceae	soft chess	<i>Bromus hordeaceus</i> *
Poaceae	foxtail chess, red brome	<i>Bromus rubens</i> *
Poaceae	rat-tail fescue	<i>Festuca myuros</i> *
Poaceae	hare barley	<i>Hordeum murinum</i> subsp. <i>leporinum</i> *
Poaceae	golden-top	<i>Lamarckia aurea</i> *
Poaceae	annual beard grass	<i>Polypogon monspeliensis</i> *
Poaceae	Mediterranean schismus	<i>Schismus barbatus</i> *
Polygonaceae	coast California buckwheat	<i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i>
Polygonaceae	inland California buckwheat	<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>
Polygonaceae	mountain California buckwheat	<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>
Polygonaceae	slender buckwheat	<i>Eriogonum gracile</i> var. <i>gracile</i>
Polygonaceae	curly dock	<i>Rumex crispus</i> *

Family	Common Name	Scientific Name
Salicaceae	western cottonwood	<i>Populus fremontii</i> subsp. <i>fremontii</i>
Salicaceae	Goodding's black willow	<i>Salix gooddingii</i>
Salicaceae	red willow	<i>Salix laevigata</i>
Salicaceae	arroyo willow	<i>Salix lasiolepis</i>
Scrophulariaceae	California bee plant/figwort	<i>Scrophularia californica</i>
Solanaceae	western jimson weed	<i>Datura wrightii</i>
Solanaceae	tree tobacco	<i>Nicotiana glauca</i> *
Tamaricaceae	saltceder	<i>Tamarix ramosissima</i> *
Urticaceae	hoary nettle	<i>Urtica dioica</i> subsp. <i>holosericea</i>

*Non-native species

APPENDIX C

WILDLIFE SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

APPENDIX C

WILDLIFE SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

Family	Common Name	Scientific Name
Birds		
Accipitridae	Cooper's hawk (WL when nesting)	<i>Accipiter cooperii</i>
Accipitridae	northern harrier	<i>Circus hudsonius</i>
Accipitridae	red-tailed hawk	<i>Buteo jamaicensis</i>
Accipitridae	sharp-shinned hawk (WL when nesting)	<i>Accipiter striatus</i>
Aegithalidae	bushtit	<i>Psaltriparus minimus</i>
Alaudidae	California horned lark (WL)	<i>Eremophila alpestris actia</i>
Apodidae	white-throated swift	<i>Aeronautes saxatalis</i>
Ardeidae	great egret	<i>Ardea alba</i>
Cardinalidae	blue grosbeak	<i>Passerina caerulea</i>
Cardinalidae	western tanager	<i>Piranga ludoviciana</i>
Cathartidae	turkey vulture	<i>Cathartes aura</i>
Charadriidae	killdeer	<i>Charadrius vociferus</i>
Columbidae	Eurasian collared dove*	<i>Streptopelia decaocto</i>
Columbidae	mourning dove	<i>Zenaida macroura</i>
Columbidae	rock pigeon*	<i>Columba livia</i>
Corvidae	American crow	<i>Corvus brachyrhynchos</i>
Corvidae	common raven	<i>Corvus corax</i>
Cuculidae	greater roadrunner	<i>Geococcyx californianus</i>
Estrildidae	scaly-breasted munia*	<i>Lonchura punctulata</i>
Falconidae	American kestrel	<i>Falco sparverius</i>
Fringillidae	house finch	<i>Haemorhous mexicanus</i>
Fringillidae	Lawrence's goldfinch	<i>Spinus lawrencei</i>
Fringillidae	lesser goldfinch	<i>Spinus psaltria</i>
Hirundinidae	barn swallow	<i>Hirundo rustica</i>
Hirundinidae	northern-rough winged swallow	<i>Stelgidopteryx serripennis</i>
Icteridae	brown-headed cowbird	<i>Molothrus ater</i>
Icteridae	hooded oriole	<i>Icterus cucullatus</i>
Icteridae	red-winged blackbird	<i>Agelaius phoeniceus</i>
Icteridae	Western meadowlark	<i>Sturnella neglecta</i>
Laridae	California gull	<i>Larus californicus</i>
Laridae	western gull	<i>Larus occidentalis</i>
Mimidae	California thrasher	<i>Toxostoma redivivum</i>
Mimidae	northern mockingbird	<i>Mimus polyglottos</i>

APPENDIX C

WILDLIFE SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

Family	Common Name	Scientific Name
Parulidae	orange-crowned warbler	<i>Leiothlypis celata</i>
Parulidae	Wilson's warbler	<i>Cardellina pusilla</i>
Parulidae	yellow warbler (SSC)	<i>Setophaga petechia</i>
Parulidae	yellow-rumped warbler	<i>Setophaga coronata</i>
Passerellidae	California towhee	<i>Melospiza crissalis</i>
Passerellidae	lark sparrow	<i>Chondestes grammacus</i>
Passerellidae	Lincoln's sparrow	<i>Melospiza lincolni</i>
Passerellidae	savannah sparrow	<i>Passerculus sandwichensis</i>
Passerellidae	song sparrow	<i>Melospiza melodia</i>
Passerellidae	spotted towhee	<i>Pipilo maculatus</i>
Passerellidae	white-crowned sparrow	<i>Zonotrichia leucophrys</i>
Passeridae	house sparrow	<i>Passer domestic*</i>
Picidae	Northern flicker	<i>Colaptes auratus</i>
Picidae	Nuttall's woodpecker	<i>Dryobates nuttallii</i>
Poliophtilidae	blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
Regulidae	ruby-crowned kinglet	<i>Corthylio calendula</i>
Strigidae	great horned owl	<i>Bubo virginianus</i>
Sturnidae	European starling*	<i>Sturnus vulgaris</i>
Trochilidae	Allen's hummingbird	<i>Selasphorus sasin</i>
Trochilidae	Anna's hummingbird	<i>Calypte anna</i>
Trochilidae	black-chinned hummingbird	<i>Archilochus alexandri</i>
Troglodytidae	Bewick's wren	<i>Thryomanes bewickii</i>
Troglodytidae	house wren	<i>Troglodytes aedon</i>
Turdidae	western bluebird	<i>Sialia mexicana</i>
Tyrannidae	ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Tyrannidae	black phoebe	<i>Sayornis nigricans</i>
Tyrannidae	Cassin's kingbird	<i>Tyrannus vociferans</i>
Tyrannidae	Say's phoebe	<i>Sayornis saya</i>
Tyrannidae	western kingbird	<i>Tyrannus verticalis</i>
Tyrannidae	willow flycatcher	<i>Empidonax traillii</i>
Vireonidae	least Bell's vireo (FE, SE)	<i>Vireo bellii pusillus</i>
Vireonidae	warbling vireo	<i>Vireo gilvus</i>
Invertebrates		
Hesperiidae	fiery skipper	<i>Hylephila phyleus</i>

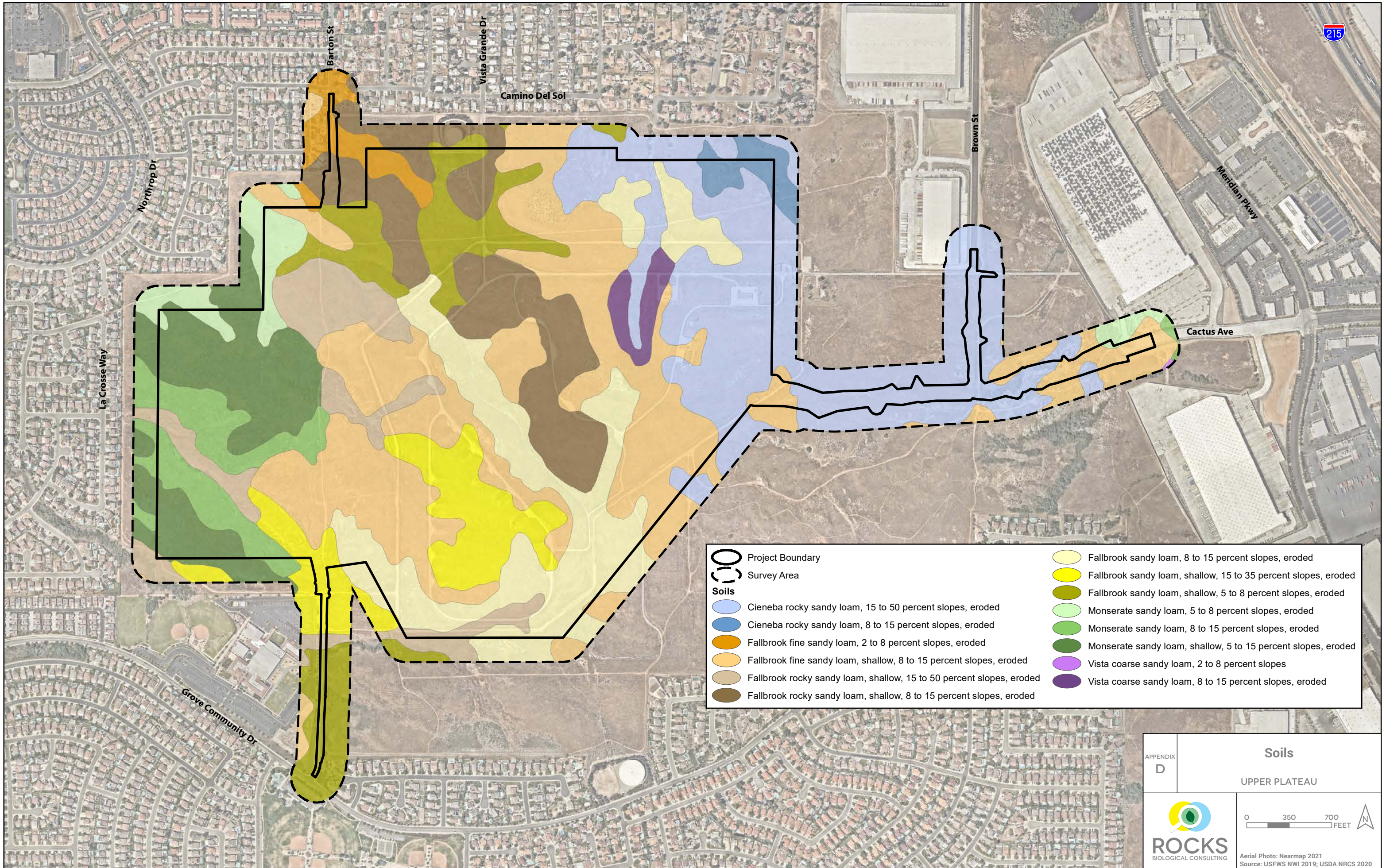
APPENDIX C

WILDLIFE SPECIES OBSERVED WITHIN THE UPPER PLATEAU PROJECT SURVEY AREA

Family	Common Name	Scientific Name
Lycaenidae	marine blue	<i>Leptotes marina</i>
Nymphalidae	gulf fritillary	<i>Agraulis vanillae</i>
Nymphalidae	red admiral	<i>Vanessa atalanta</i>
Pieridae	Harford's sulphur	<i>Colias harfordii</i>
Pieridae	checkered white	<i>Pontia protodice</i>
Riodinidae	Behr's metalmark	<i>Apodemia virgulti</i>
Amphibians		
Hylidae	Baja California treefrog	<i>Pseudacris hypochondriaca hypochondriaca</i>
Pelobatidae	western spadefoot	<i>Spea hammondi</i>
Reptiles		
Phrynosomatidae	common side-blotched lizard	<i>Uta stansburiana</i>
Phrynosomatidae	granite spiny lizard	<i>Sceloporus orcutti</i>
Teiidae	coastal whiptail (SSC)	<i>Aspidoscelis tigris stejnegeri</i>
Mammals		
Canidae	coyote	<i>Canis latrans</i>
Leporidae	black-tailed jackrabbit (SSC)	<i>Lepus californicus bennettii</i>
Leporidae	desert cottontail	<i>Sylvilagus audubonii</i>
Sciuridae	California ground squirrel	<i>Otospermophilus beecheyi</i>
FE: Federally Endangered (FE) SE: State Endangered (SE) SSC: California Department of Fish and Wildlife (CDFW) Species of Special Concern WL: CDFW Watch List Species *: Non-native species		

APPENDIX D

UPPER PLATEAU SOILS



	Project Boundary		Fallbrook sandy loam, 8 to 15 percent slopes, eroded
	Survey Area		Fallbrook sandy loam, shallow, 15 to 35 percent slopes, eroded
Soils			Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
	Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded		Monserate sandy loam, 5 to 8 percent slopes, eroded
	Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded		Monserate sandy loam, 8 to 15 percent slopes, eroded
	Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded		Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded
	Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded		Vista coarse sandy loam, 2 to 8 percent slopes
	Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded		Vista coarse sandy loam, 8 to 15 percent slopes, eroded
	Fallbrook rocky sandy loam, shallow, 8 to 15 percent slopes, eroded		

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	UPPER PLATEAU	
	<small>Aerial Photo: Nearmap 2021 Source: USFWS NWI 2019; USDA NRCS 2020</small>	

APPENDIX E

**UPPER PLATEAU
AQUATIC RESOURCES DELINEATION REPORT**



ROCKS

BIOLOGICAL CONSULTING



UPPER PLATEAU AQUATIC RESOURCES DELINEATION REPORT

Riverside County, California

November 12, 2021

Prepared for:
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1 INTRODUCTION

On behalf of Meridian Park, LLC, Rocks Biological Consulting (RBC) conducted a formal aquatic resources delineation for the Upper Plateau review area, composed of 514.69 acres (Figure 1), to identify areas that may be considered jurisdictional under the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act; the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act; and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. The information provided in this aquatic resources delineation report (ARDR) is necessary to define the presence or absence of aquatic resources within the review area. This ARDR can also be used by the agencies to inform the jurisdictional status of delineated aquatic resources and by the applicant and agencies to assess conformance with state and federal regulations and to estimate potential impacts and associated permitting requirements. Furthermore, the information contained in this report is in compliance with the Corps Los Angeles District's *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (Minimum Standards; Corps 2017). Appendix A provides a checklist to ensure compliance with the Minimum Standards.

This ARDR also serves as a request for the Corps to complete a Preliminary Jurisdictional Determination (PJD) based on the information provided in this report. Appendix C provides the required forms associated with the PJD request.

2 SITE DESCRIPTION, LANDSCAPE SETTING

2.1 LOCATION

The review area is located south of Alessandro Boulevard and west of Interstate (I)-215 in unincorporated Riverside County, California (Figure 1). The review area is bounded by undeveloped land to the south, some industrial development to the northeast, and residential development to the north, south, and west. The latitude and longitude of the approximate center of the review area is 33.906896, -117.308733. The review area sits on Township 3 South, Range 4 West, and Sections 9-10, 15-17, and 20-21 within the Riverside East 7.5-minute quadrangle, as mapped by the U.S. Geological Survey (USGS; Figure 2).

2.2 TOPOGRAPHY

The review area elevation ranges from approximately 1,588 to 1,778 feet above mean sea level (amsl), with the area of higher elevation in the central and southern portion of the review area (Figure 2). The drainages in the northern portion of the review area trend south to north, the drainages in the western portion of the review area generally trend east/southeast to west/northwest or south to north, and the drainages in the eastern portion of the review area trend west to east/northeast following a gradual decrease in elevation in the same direction.

2.3 WATERSHED

The review area is within the Santa Ana Hydrologic Unit Code (HUC) 8 (18070203), Middle Santa Ana River HUC 10 (1807020308), Tequesquite Arroyo HUC 12 (180702030802), and Hole Lake

HUC 12 (180702030803) watersheds (Figure 3). The headwaters of the Santa Ana River originate in the San Bernardino Mountains and flow northeast to southwest through San Bernardino County, Riverside County, and Orange County for nearly 100 miles before discharging into the Pacific Ocean (USGS 2020; Bureau of Reclamation 2013). The Middle Santa Ana River HUC 10 encompasses approximately 292 square miles and the Tequesquite Arroyo HUC 12 and Hole Lake HUC 12 encompass approximately 30 square miles, respectively (USGS 2020).

In addition to the watersheds defined by the USGS and commonly used by the Corps, the RWQCB also defines watershed boundaries by Hydrologic Units (HUs). The majority of the review area is within the Santa Ana Basin, the Santa Ana River HU, Middle Santa Ana River Hydrologic Area Split, the Arlington Hydrologic Subarea (HSA), and the Riverside HSA (Santa Ana Regional Water Quality Control Board [SARWQCB] 1986; SARWQCB 2019).

3 METHODS

3.1 PRE-FIELD REVIEW

Prior to the on-site delineation, field maps were created using a Geographic Information System (GIS) and a color aerial photograph at a 1:200 scale. RBC staff also reviewed USGS National Hydrography Dataset (NHD) and topography data (Figure 2), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data (Figure 4), and Natural Resources Conservation Service (NRCS) soils data (Figure 4) to further determine the potential locations of aquatic resources within the review area. RBC also utilized Google Earth to assess current and historic presence or absence of flows and/or ponding in the review area (Google Earth Pro 2021). RBC also reviewed the 2017 *West Campus Lower Plateau Project Jurisdictional Delineation Report* (West Campus JD Report; RBC 2017).

3.2 ON-SITE DELINEATION AND MAPPING

RBC regulatory specialists Sarah Krejca and Chelsea Poley conducted an aquatic resources delineation field visit on July 28, 2021. RBC regulatory specialist Sarah Krejca and RBC biologist Ian Hirschler conducted an additional aquatic resources field visit on August 6, 2021. Field conditions during these field visits are provided below in Table 1.

Table 1. Field Conditions

Date	Survey Time Start – End	Temperature (°F) Start – End	Wind Speed Range (miles per hour) Start – End	Cloud Cover (%) Start – End
7/28/2021	0645 – 1515	70 – 92	0 to 1 – 1 to 3	5 – 5
8/06/2021	0715 – 1500	66 – 92	0 to 1 – 5 to 10	0 – 0

Figure 1 and Figures 5A-5C depict the 514.69-acre review area.

Areas with depressions, drainage patterns, and/or wetland vegetation within the review area were evaluated, with focus on the presence of defined channels and/or wetland vegetation, soils, and hydrology.

While in the field, potential aquatic resources were recorded using a hand-held Global Positioning System (GPS) unit with a level of accuracy ranging from 8 to 24 feet. RBC staff refined the data using aerial photographs and topographic maps with one-foot contours to ensure accuracy.

All figures generated for this ARDR follow the Corps' Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (Corps 2016).

The below subsections provide the aquatic resources delineation methods used per agency; Appendix B provides additional details regarding the agencies' applicable regulations and guidance associated with this ARDR.

3.2.1 CORPS

Ordinary High Water Mark Delineation

Aquatic resources with a defined ordinary high water mark (OHWM) would be considered potential non-wetland waters of the U.S. Corps regulations at 33 Code of Federal Regulations (CFR) 329.11 define an OHWM as "the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (51 Federal Register [FR] 41251, November 13, 1986). RBC staff used guidance provided in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Field Guide; Corps 2008a) and Regulatory Guidance Letter (RGL) 05-05 to estimate the extent of an OHWM in the field. For each feature exhibiting the potential presence of an OHWM, RBC completed a 2010 Arid West Ephemeral and Intermittent Streams OHWM Datasheet following the guidance provided in the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Datasheet; Corps 2010). Per the 2010 OHWM Datasheet, common indicators of an OHWM include a break in slope (i.e., abrupt cut in bank slope created by hydrogeomorphic processes across the landscape), changes in average sediment texture between floodplain units (i.e., low-flow, active floodplain, low terrace), and changes in vegetation species and/or cover between floodplain units.

Wetland Delineation

Field staff examined potential wetland waters of the U.S. using the routine determination methods set forth in Part IV, Section D, Subsection 2 of the Corps 1987 *Wetland Delineation Manual* (Wetland Manual; Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (Arid West Supplement; Corps 2008b). Areas that met the three parameters per the Arid West Supplement (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology, following methods set forth in the Wetland Manual and Arid West Supplement) were considered wetland waters of the U.S. RBC staff based wetland plant indicator status (i.e., Obligate [OBL], occurs 99+% in wetlands; Facultative Wetland [FACW], occurs 67-99% in wetlands; Facultative [FAC], occurs 34-66% in wetlands; Facultative Upland [FACU], occurs 1-33% in wetlands; Upland [UPL], occurs 99+% in uplands; and Not Listed [NL], considered UPL for wetland delineation purposes) on the *National Wetland Plant List* (NWPL; Corps 2018) and hydric soils indicators on *Field Indicators of Hydric Soils in the United*

States, Version 8.2 (NRCS 2018a). Soil chromas were identified in the field according to *Munsell Soil-Color Charts with Genuine Munsell Color Chips* (Munsell Color 2015) and per the Wetland Manual and Arid West Supplement. Plants were identified according to *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin et al. 2012) and nomenclature follows Jepson eFlora (Jepson Flora Project 2019).

3.2.2 RWQCB

Ordinary High Water Mark Delineation

The State Water Resources Control Board (SWRCB) and RWQCBs do not have regulations or guidance on defining the extent of non-wetland waters of the State. As such, field staff identified the lateral limits of potential non-wetland waters of the State using the same methods for determining an OHWM per the Corps as described in Section 3.2.1. as they have generally been considered coincident.

Wetland Delineation

The State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (the Procedures; SWRCB 2021) defines wetland waters of the State. The Procedures were adopted on April 2, 2019; went into effect on May 28, 2020; and were revised on April 6, 2021. As detailed in the Procedures, the SWRCB and RWQCBs define a wetland as follows: “An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation” (SWRCB 2021).

The Procedures provide that RWQCBs shall rely on a wetland delineation from a final ARDR verified by the Corps to determine the extent of wetland waters of the State. If any potential wetland areas have not been delineated in a final ARDR verified by the Corps, the limits of such potential wetland waters of the State shall be identified using the same wetland delineation methods per the Corps as described in Section 3.2.1, except that a lack of vegetation (i.e., less than 5 percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of a wetland waters of the State (SWRCB 2021).

3.2.3 CDFW

Lake, Streambed, and Associated Riparian and Wetland Habitat Delineation

CDFW jurisdiction relies on the presence of a lake and/or streambed and associated riparian or wetland habitat. Lakes include “natural lakes or man-made reservoirs” (14 California Code of Regulations [CCR] § 1.56). CDFW regulations define a streambed as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation” (14 CCR § 1.72). The 1987 *Rutherford* decision (*Rutherford v. State of California*, 1987) further provided that a streambed is the “channel of a water course; the depression between the banks worn by the regular and usual flow of the water.” A streambed includes the “[a]rea extending between the opposing banks measured from the foot of the banks

from the top of the water at its ordinary stage, including sand bars which may exist between the foot of said banks...” (*Rutherford v. State of California*, 1987). The bank is defined as “the slope or elevation of land that bounds the bed of the stream in a permanent or long-standing way, and that confines the stream water up to its highest level” (*The People v. Phillip Wright Osborn*, 2004).

Riparian habitat refers to vegetation and habitat associated with a stream. CDFW-jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. Isolated riparian habitat (i.e., where riparian vegetation does not appear associated with an ephemeral wash) is not considered CDFW-jurisdictional.

CDFW follows the USFWS wetland definition and classification system, which defines a wetland as transitional land between terrestrial and aquatic systems having one or more of the following attributes: “(1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year” (USFWS 1979). A wetland is presumed when all three attributes are present; if less than three attributes are present the presumption of a wetland must be supported by “the demonstrable use of wetland areas by wetland associated fish or wildlife resources, related biological activity, and wetland habitat values” (California Fish and Game Commission [CFGF] 1994).

Potential CDFW-jurisdictional wetland boundaries were determined based on the presence of wetland areas supported by a lake or streambed. Wetland delineation methods to determine the presence of one or more wetland attributes included the same methods per the Corps as described in Section 3.2.1.

Based on the above, potential CDFW-jurisdictional aquatic resources delineated included lakes and/or streambeds and their associated riparian and wetland habitats. Field staff delineated the lateral extent of potential CDFW jurisdiction to be “bank to bank” for a streambed or to the “dripline” of riparian habitat and/or wetland boundary, if present.

4 SITE ALTERATIONS, CURRENT AND PAST LAND USE

RBC staff reviewed Google Earth Pro (Google Earth 2021), the University of California – Santa Barbara (UCSB; UCSB n.d.) database, and the West Campus JD Report (RBC 2017) to assess historic and ongoing land uses within the review area. Based on a review of Google Earth Pro and the UCSB database, various potentially jurisdictional features (e.g., Non-Wetland Water [NWW-] 1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-8, and NWW-9 per Section 6 below) occurred within portions of their current locations in the review area at least as far back as September 1931 (i.e., the earliest aerial image available; Appendix D). The review area was heavily manipulated between September 1931 and January 1967 with construction of a large military/bunker installation in the central and southeastern portion of the review area (UCSB n.d.; Appendix D). Based on communications with Meridian Park, LLC, various culverts and storm drain inlets were also constructed within the review area near the bunker installation to ensure large military transport vehicles would have clear access to the bunkers (i.e., roadways would not flood) in the event of large storm events. Per historic aerials, the constructed inlets and outlets may have channelized runoff from the bunker installation, further defining several features (e.g., NWW-3 and NWW-4 per Section 6 below) and creating temporary features that previously managed localized

runoff from the abandoned bunker installation (Abandoned Drainage [AD-] 1 and AD-2 per Section 6 below) (UCSB n.d.; Appendix D). Per Meridian Park, LLC, these culverts historically received flows from the bunker installation; however, they are no longer maintained, as was evidenced by the accumulation of sediment within a number of culverts (Photos 10 and 16, Appendix G). Other culverts were also installed along the perimeter roads of the base to allow military security vehicles clear access for patrolling the base and to ensure the roads were not undermined during storm events. Additionally, per historic aerials, construction of housing and commercial developments near, but outside of, the review area between May 1994 and November 2009 redirected features and constructed drainages and/or further defined already present features (e.g., NWW-7, NWW-7A, NWW-7A1, NWW-7A2, and Ditch [D-] 1 per Section 6 below). Normal circumstances were assumed to be present within the review area.

The West Campus JD Report determined one drainage within the review area to be Corps-, RWQCB-, and CDFW-jurisdictional (RBC 2017) within the general location of NWW-10, per Section 6 below. The associated West Campus Lower Plateau Project was previously permitted and mitigated under various regulatory approvals in 2018-2019 (CWA Section 404 Nationwide Permit 39 [File No. SPL-2017-00744-TKD]; CWA Section 401 Water Quality Certification [SARWQCB Project No. 332017-24]; and CDFW SAA No. 1600-2017-0192-R6); however, the West Campus Lower Plateau Project did not propose or result in impacts to NWW-10.

The following sections provide additional details regarding site alterations and land use specific to on-site soils, hydrology, and vegetation based on available data and the site visit.

4.1 SOILS

Based on the NRCS soils data map (Figure 4), seven soil map units, outlined below in Table 2, occur within the review area:

Table 2. Soil Mapped within Review Area

Soil Map Unit	Soil Series/Unit	Geomorphic Surface	Taxonomic Class	NRCS Hydric Status
Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Fallbrook rocky sandy loam, shallow, 8 to 15 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Fallbrook sandy loam, 8 to 15 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No

Soil Map Unit	Soil Series/Unit	Geomorphic Surface	Taxonomic Class	NRCS Hydric Status
Fallbrook sandy loam, shallow, 15 to 35 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded	Fallbrook	Hills	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs	No
Gravel pits	N/A	N/A	N/A	No
Hanford coarse sandy loam, 2 to 8 percent slopes	Hanford	Alluvial fans	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerorthents	No
Monserate sandy loam, 5 to 8 percent slopes, eroded	Monserate	Alluvial fans	Fine-loamy, mixed, superactive, thermix Typic Durixeralfs	No
Monserate sandy loam, 8 to 15 percent slopes, eroded	Monserate	Alluvial fans	Fine-loamy, mixed, superactive, thermix Typic Durixeralfs	No
Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded	Monserate	Alluvial fans	Fine-loamy, mixed, superactive, thermix Typic Durixeralfs	No
Vista coarse sandy loam, 2 to 8 percent slopes	Vista	Hills	Coarse-loamy, mixed, superactive, thermic Typic Haploxerepts	No
Vista coarse sandy loam, 8 to 15 percent slopes, eroded	Vista	Hills	Coarse-loamy, mixed, superactive, thermic Typic Haploxerepts	No

The National Technical Committee for Hydric Soils defines hydric soils; *Changes in Hydric Soils Database Selection Criteria* (77 FR 12234) outlines the current four hydric soil criteria. The NRCS does not list any of the soil map units within the review area as hydric (NRCS n.d.).

The soils outlined above in Table 2 are further described below per the USDA's *NRCS Official Soil Series Description and Series Classification* database (NRCS 2018b) and the USDA's *Soil Survey Manual* (Soil Science Division Staff 2017):

Fallbrook series – The Fallbrook series consists of moderately deep, well-drained soils that are found on hills and mountainous uplands. Fallbrook soils are found in subhumid mesothermal climates, retain slow to rapid runoff, and have moderately rapid permeability. Fallbrook soil is used for grazing and the production of irrigated truck crops and nonirrigated small grain and hay. Uncultivated areas consist of annual grasses and forbs including chaparral, flattop buckwheat and other shrubs.

Gravel pits – Pits are open excavations from which soil and other associated underlying material has been removed and results in the exposition of rock or other material, such as gravel.

Handford series – The Handford series consists of very deep, well-drained soils that are found on stream bottoms, floodplains, and alluvial fans. Handford soils are found in dry subhumid

mesothermal climates, retain negligible to low runoff, and have moderately rapid permeability. Handford soil is used for urban development and growing general farm crops. Uncultivated areas consist of annual grasses and herbaceous plants.

Monserate series – The Monserate series consists of moderately well to well-drained soils that are found on nearly level to moderately steep old dissected terraces and fans. Monserate soils are found in dry subhumid mesothermal climates and retain slow to rapid runoff. Monserate soil is primarily used for growing irrigated grain, citrus, and field and truck crops. Uncultivated areas consist of annual grasses, forbs, and shrubs on eroded slopes.

Vista series – The Vista series consists of moderately deep, well-drained soils that are found on hills and mountainous uplands. Vista soils are found in subhumid mesothermal climates, retain slow to rapid runoff, and have moderately rapid permeability. Vista soils are typically used as rangeland in uncultivated areas and can also be used for growing irrigated avocados and citrus. Vista soil is typically vegetated with annual grasses, forbs, and shrubs such as California sagebrush, scrub oak, and flattop buckwheat.

As stated in the Arid West Supplement, RBC used the hydric soils list as a tool and made final hydric soils determinations based on field-collected data at representative wetland delineation sample points deemed appropriate on site as recorded on the attached Arid West Wetland Determination Data Forms (Appendix D) discussed further in Section 6.1.

4.2 HYDROLOGY

Per the review of on-line data sources, USGS NHD maps four “Stream/River” (ephemeral) and one “Connector” feature in the western portion of the review area (Figure 2; USGS 2020). Additionally, USGS NHD maps five “Stream/River” (ephemeral) in the eastern portion of the review area (Figure 2; USGS 2020). Various “Stream/River” (ephemeral) features in the eastern portion of the review area travel in and out of the review area boundary (Figure 2). USFWS NWI maps three features with a designation of “Riverine” in the review area, one in the southern, northern, and northwestern portion of the review area, respectively (Figure 4). USFWS NWI classifies these features as Riverine, R4SBA, indicating that the features are intermittent (R4) streambeds (SB) that temporarily flood (A) (USFWS 2019). Additionally, USFWS NWI and USGS NHD map one feature with a designation of “Riverine” and “Stream/River” (ephemeral), respectively, along the review area boundary in the eastern portion of the review area (Figure 2; Figure 4). USFWS NWI classifies this feature as Riverine, R4SBC, indicating that the feature is an intermittent (R4) streambed (SB) that seasonally floods (C) (USFWS 2019). However, based on field observations in July and August 2021, all but one of the on-site features are expected to convey ephemeral flows (i.e., only in direct response to precipitation).

The primary known hydrologic source for the observed on-site drainages, discussed further below, are direct precipitation and road runoff from established dirt roads within the review area. The southernmost drainages also receive runoff from the residential developments south of the review area. Based on the USGS NHD database, any features delineated within the western portion of the review area travel west/northwest, then may continue off site into various adjacent residential developments, either through a culverted storm drain system or a natural drainage. The USGS NHD maps features that continue downstream/off site as converging just east of Trautwein Road

and continuing as an ephemeral stream for approximately 2.5 miles until transitioning to a reservoir at the Alessandro Dam (USGS 2020). From the Alessandro Dam, an ephemeral stream flows west for approximately 1.20 miles and, per USGS NHD maps, ends near the corner of Victoria Avenue and Mary Street in the City of Riverside (USGS 2020). Additionally, based on the USGS NHD database, any features delineated within the eastern portion of the review area travel north or northeast, and may continue off site. The USGS NHD maps features that continue downstream/off site as converging approximately 0.5 mile north of Alessandro Boulevard and continuing as an ephemeral stream for approximately 2.8 miles until transitioning to an inundated area and lake/pond at the Sycamore Dam (USGS 2020). From the Sycamore Dam, USGS NHD maps an ephemeral stream flowing northwest and connecting with the intermittent Tequesquite Arroyo (USGS 2020). The Tequesquite Arroyo then continues west for approximately 2.2 miles and, per USGS NHD maps, undergrounds just north of Riverside City College and resurfaces approximately 1.75 miles farther west before outletting into the Santa Ana River, which ultimately discharges into the Pacific Ocean (USGS 2020).

The field assessment detailed in Section 6 provides additional information about whether flows from the delineated features were presumed to continue off site and downstream.

4.3 VEGETATION

Table 3 provides vegetation community acreages within the review area based on vegetation mapping conducted by RBC biologists on July 28, 2021 and August 6, 2021 (Figure 6). The review area primarily consists of non-native grassland. The vegetation community classifications are roughly in accordance with *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Further details are provided in the *Upper Plateau Project Biological Technical Report* (RBC 2021).

Table 3. Vegetation Communities within Review Area

Vegetation Community/Land Cover Type	Acre(s) ¹
Developed	32.26
Disturbed Habitat	10.80
Encelia Scrub	3.64
Flat-Topped Buckwheat	5.33
Hoary Nettle Monotypic Stand	0.45
Mule Fat Scrub	0.09
Non-native Grassland	436.55
Non-native Grassland – Mustard Dominated	5.11
Ornamental	0.53
Riversidian Sage Scrub	10.98
Riversidian Sage Scrub – Disturbed	5.47

Vegetation Community/Land Cover Type	Acre(s) ¹
Southern Riparian Forest	3.17
Southern Willow Scrub	0.20
Southern Willow Scrub – Disturbed	0.11
Total	514.69

¹ Acreages summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

Developed

Developed land supports little to no native vegetation and is comprised of human-made structures (buildings, pavement, etc.). Developed areas within the review area (32.26 acres) consist of roads and buildings historically used for military activities, housing, and industrial development.

Disturbed Habitat

Disturbed land supports little to no native vegetation and are comprised of human-made disturbances (vegetation clearing, mowing, vehicle disturbance, etc.). Disturbed lands are present throughout the review area (10.80 acres) and consist of bare dirt roads.

Encelia Scrub

Encelia scrub is a low desert scrub community dominated by brittlebush (*Encelia farinosa*). Encelia scrub within the review area (3.64 acres) supports a nearly monotypic stand of brittlebush with scattered sand aster (*Corethrogyne filaginifolia*), thickbracted goldenbush (*Ericameria palmeri* var. *pachylepis*), short-pod mustard (*Hirschfeldia incana*), and non-native grasses. Encelia scrub is found in the western portion of the review area, adjacent to a building in the center of the review area, and in a swath of habitat in the eastern portion of the review area.

Flat-Topped Buckwheat

Flat-topped buckwheat is a form of coastal sage scrub dominated by California buckwheat (*Eriogonum fasciculatum*) in the shrub strata and generally resulting from past disturbance. The flat-topped buckwheat within the review area (5.33 acres) supports small to medium-sized woody shrubs dominated by California buckwheat amongst areas of bare ground. Small and medium sized areas of flat-topped buckwheat are found throughout the northern and eastern portions of the review area.

Hoary Nettle Monotypic Stand

The hoary nettle (*Urtica dioica*) monotypic stand (0.45 acre) occurs in one small area in the far southern portion of the review area. Hoary nettle is a perennial herb native to California. It grows up to 3 to 8 feet in height during the summer and dies into the ground during the winter. Hoary nettle is equally likely to occur in wetland and non-wetland habitats. The monotypic stand of hoary nettle found within the review area is distinct from the surrounding vegetation communities, namely southern riparian forest and non-native grasslands – mustard dominated.

Mule Fat Scrub

The mule fat (*Baccharis salicifolia*) scrub within the review area (0.09 acre) occurs in one small area in the eastern portion of the review area. Mule fat is an evergreen shrub with willow-like leaves. Mule fat scrub occurs in both seasonally or intermittently flooded habitat, and stands are variable depending on the amount of inundation and scouring. Stands usually form open shrublands or thickets in riparian corridors and along lake margins (CNPS 2021).

Non-native Grassland

The non-native grassland within the review area (436.55 acres) is dominated by non-native grass species such as slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), red brome (*Bromus rubens*), and rattail sixweeks grass (*Festuca myuros*), amongst lower numbers of short-pod mustard, sand aster, deerweed (*Acmispon glaber*), horehound (*Marrubium vulgare*), and vinegar weed (*Trichostema lanceolatum*). Non-native grassland occurs throughout much of the review area.

Non-native Grassland – Mustard Dominated

Non-native grassland – mustard dominated within the review area (5.11 acres) supports stands of black mustard (*Brassica nigra*) and short-pod mustard amongst lower numbers of non-native grass species. Non-native grassland – mustard dominated habitat occurs at the southwestern and the far eastern portions of the review area. These areas were likely historically disturbed and subsequently colonized by ruderal mustard species.

Ornamental

Ornamental vegetation is typically classified as an area containing planted ornamental, non-native plant species. One small patch of ornamental vegetation is found within the far eastern portion of the review area (0.53 acre) along a developed road.

Riversidian Sage Scrub

Riversidian sage scrub is a form of coastal sage scrub found in Riverside County. Riversidian sage scrub within the review area (10.98 acres) is dominated by California buckwheat and also supports California sagebrush (*Artemisia californica*), brittlebush, thickbracted goldenbush, deerweed, cane/valley cholla (*Cylindropuntia californica* var. *parkeri*), and non-native grasses. Riversidian sage scrub is found near the edges of and in several small patches in the northern portion of the review area. Portions of this vegetation community are also dominated by deerweed; these deerweed-dominated patches of Riversidian sage scrub are found in the southeastern portion of the review area.

Riversidian Sage Scrub – Disturbed

Riversidian sage scrub – disturbed is a form of coastal sage scrub found in Riverside County characterized by heavy disturbance. Riversidian sage scrub – disturbed within the review area (5.47 acres) supports species characteristic to Riversidian sage scrub, such as California buckwheat, California sagebrush, brittlebush, thickbracted goldenbush, and deerweed but has a

marked disturbance that makes the vegetation community atypical. Riversidian sage scrub – disturbed is found in the eastern portion of the review area and contains an overgrown understory of non-native grasses.

Southern Riparian Forest

The southern riparian forest within the review area (3.17 acres) is dominated by both Goodding's black willow (*Salix gooddingii*) and red willow (*S. laevigata*) and also supports a small number of mule fat. Other species present include hoary nettle, broom baccharis (*Baccharis sarothroides*), seaside heliotrope (*Heliotropium curassavicum* var. *oculatum*), and blue elderberry (*Sambucus nigra* subsp. *caerulea*). Southern riparian forest occurs within the southwestern and far eastern portions of the review area.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous riparian thickets dominated by several *Salix* species with mule fat. Southern willow scrub within the review area (0.20 acre) occurs as two isolated patches in the northern and western portions of the review area. The westernmost patch is dominated by Goodding's black willow, arroyo willow, and red willow and also supports broom baccharis and mule fat; the northernmost patch is dominated by arroyo willow.

Southern Willow Scrub – Disturbed

Southern willow scrub – disturbed within the review area (0.11 acre) has a similar plant composition as southern willow scrub with marked disturbance that makes the vegetation community atypical, such as a high cover of non-native species within the understory. One isolated patch of southern willow scrub – disturbed occurs in the northern portion of the review area.

5 PRECIPITATION DATA AND ANALYSIS

RBC utilized the NRCS Agricultural Applied Climate Information System (AgACIS) database for the March Air Force Base (AFB) station (approximately 3.35 miles southeast) to access pre-site visit precipitation data (NRCS 2021), as shown in Table 4.

RBC also utilized the Corps' Antecedent Precipitation Tool (APT) to assess whether or not the delineation date occurred in a drier, average, or wetter than normal period for the review area (Corps 2020). The Corps created the APT to assist with determining the normal periodic range of precipitation and other climate variables for the waterbody or waterbodies within a review area. Additionally, the APT can also generally inform the regulatory agencies whether or not normal hydrologic/climatic conditions were on site at the time of the site visit and assist with completion of the Wetland Determination Data Forms (Appendix D).

5.1 PRECIPITATION SUMMARY

Table 4 describes the estimated monthly total precipitation for the review area from August 2020 to July 2021 to provide the pertinent pre-site visit precipitation data from the NRCS database for the March AFB station (NRCS 2021).

Table 4. Precipitation Data for August 2020 to July 2021

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Monthly Total Precip. (inch[es])	0.00	0.00	T*	0.15	1.08	1.35	0.01	1.44	T*	T*	0.06	0.08

*Per AgACIS database: "Values of 'M' indicate missing data and 'T' indicates a trace."

5.2 ANTECEDENT PRECIPITATION TOOL DATA

The APT provides three climatological parameters: Palmer Drought Severity Index (PDSI), season, and antecedent precipitation condition. The PDSI is a standardized index calculated on a monthly basis with PDSI value outputs ranging from -10 (extremely dry) to +10 (extremely wet) (National Oceanic and Atmospheric Administration [NOAA] 2020) to assess drought conditions (i.e., PDSI Class). The APT determines wet vs. dry season based on related procedures provided in the applicable regional supplement for the review area (i.e., Arid West Supplement). The antecedent precipitation condition is classified as drier than normal with an antecedent runoff condition (ARC) score less than 10; normal with an ARC score between 10 to 14; or wetter than normal with an ARC score greater than 14 (Corps 2000).

Table 5 summarizes the key data extrapolated from the APT output to compare the current year 30-day rolling total to the averaged 30-year normal for the weather stations with comprehensive historical data within 30 miles of the review area: estimated drought conditions, wet or dry season determination, ARC score, and antecedent precipitation condition. The APT output provided in Appendix F and summarized in Table 5, noted a PDSI Class of "extreme drought" for the review area; the precipitation and climatic conditions were "wetter than normal" for the review area based on the 30-day rolling totals for the three months preceding the field survey date. Field staff considered the "extreme drought" conditions during the field delineation, evaluated how the drought conditions could affect the data collected on the Arid West Wetland Determination Data Forms and Ephemeral and Intermittent Streams OHWM Datasheets (Appendix D), and used recent and historic aerials to ensure appropriate representation of the extent of the on-site aquatic features for this ARDR considering the 2021 drought conditions.

Table 5. Antecedent Precipitation Tool Data for the Review Area

Field Survey Date	PDSI Value	PDSI Class	Season	ARC Score	Antecedent Precipitation Condition
7/28/2021	-5.87	Extreme drought	Dry season	16	Wetter than normal
8/06/2021	-5.95	Extreme drought	Dry season	15	Wetter than normal

6 DESCRIPTION OF OBSERVED POTENTIAL AQUATIC RESOURCES

The following descriptions of observed potential aquatic resources within the review area document the presence or absence of aquatic resource indicators per the methods discussed in

Section 3. The subsections below are intended to be reviewed independently under each agency's purview unless otherwise directed in the text (i.e., the aquatic resource description is the same between two or more agencies) given the various regulatory definitions and standards per each agency.

Names of the observed aquatic resources in this ARDR also vary depending on the agency to align with agency aquatic resource definitions and standards.

For the Corps, the observed aquatic resources were delineated into 13 separate aquatic resources as follows: Non-Wetland Water (NWW-) 1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 (Figure 5A).

Similarly, for the RWQCB, the aquatic resources were delineated into the same 13 separate features; however, based on agency-specific guidance as described further below in the agency's respective section, those features are labeled and classified as follows: Wetland Water (WW-) 1, NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, and NWW-9.

For the CDFW, the aquatic resources were delineated into 13 separate features and their associated riparian/wetland habitats and are labeled and classified as follows, similar to the Corps: NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10.

Appendix G provides site photographs of the features within the review area; all figures in the Figure 5 series display representative photo points.

6.1 CORPS WETLAND WATERS OF THE U.S.

RBC collected data at seven representative Wetland Data Form Points (WDP) within the review area, to determine the presence or absence of jurisdictional wetland waters of the U.S./State (Figures 5A and 5B; Appendix D). All three federal wetland parameters were observed at one of the seven WDP locations. Despite meeting the definition of a federal wetland, waters occurring within a defined OHWM are classified as non-wetland waters of the U.S. per Corps' protocols (i.e., wetlands occurring within the OHWM are non-wetland waters by regulation and guidance). As such, see *Non-Wetland Water 8* in Section 6.2 below for further discussion of a three-parameter wetland observed within the OHWM.

6.2 CORPS NON-WETLAND WATERS OF THE U.S.

Non-Wetland Water 1

NWW-1 is a small ephemeral drainage feature primarily composed of patches of non-native grasses within Riversidean sage scrub with a minimally defined OHWM and bed and bank (Figure 5A; Table 6; Appendix G, Photo 2). NWW-1 occurs within the northern portion of the review area, as shown on Figure 5A, generally flows north, and travels for approximately 821 linear feet before continuing off site.

OHWM Datasheet Point (ODP) 1 (see *Non-Wetland Water 3* below) represents the OHWM within NWW-1 given the similar conditions observed within NWW-3; similarly, WDP 3 (see *Non-Wetland Water 7A* below) provides representative wetland delineation data for NWW-1 given the similar

conditions observed within NWW-7A. The estimated OHWM within NWW-1 measured approximately 2 feet wide throughout the extent of NWW-1.

Non-Wetland Water 2

NWW-2 is a small ephemeral drainage feature primarily composed of patches of non-native grasses within Riversidean sage scrub with a minimally defined OHWM and bed and bank (Figure 5A; Table 6; Appendix G, Photo 3). NWW-2 occurs within the northern portion of the review area, just west of NWW-1, as shown on Figure 5A, generally flows northeast, and travels for approximately 753 linear feet before dissipating.

ODP 1 (see *Non-Wetland Water 3* below) represents the OHWM within NWW-2 given the similar conditions observed within NWW-3; similarly, WDP 3 (see *Non-Wetland Water 7A* below) provides representative wetland delineation data for NWW-2 given the similar conditions observed within NWW-7A. The estimated OHWM within NWW-2 measured approximately 2 feet wide throughout the extent of NWW-2.

Non-Wetland Water 3

NWW-3 is a small ephemeral drainage feature primarily composed of non-native grasses with a minimally defined OHWM and bed and bank (Figure 5A; Table 6; Appendix G, Photos 6 – 8). NWW-3 occurs within the northwestern portion of the review area, as shown on Figure 5A, generally flows northwest, and travels for approximately 813 linear feet before dissipating. NWW-3 originates at a single culvert that historically drained flows from the abandoned bunker installation.

An OHWM delineation was conducted within the drainage to confirm the presence or absence of OHWM indicators. ODP 1 confirmed the presence of OHWM indicators within NWW-3 (Figure 5A; Table 6; Appendix D, ODP 1). WDP 3 (see *Non-Wetland Water 7A* below) provides representative wetland delineation data for NWW-3 given the similar conditions observed within NWW-7A. Based on the data collected, the estimated OHWM measured approximately 1 foot to 2 feet wide throughout the extent of NWW-3.

Non-Wetland Water 4

NWW-4 is a small ephemeral drainage feature primarily composed of non-native grasses with a minimally defined OHWM and bed and bank (Figure 5A; Table 6; Appendix G, Photos 12 – 14, 16). NWW-4 occurs within the western portion of the review area, as shown on Figure 5A, generally flows northwest, and travels for approximately 995 linear feet before dissipating. NWW-4 originates at a single culvert that historically drained flows from the abandoned bunker installation (See AD-1 under *Abandoned Drainages 1 – 2* below).

ODP 1 (see *Non-Wetland Water 3* above) represents the OHWM within NWW-4 given the similar conditions observed within NWW-3; similarly, WDP 3 (see *Non-Wetland Water 7A* below) provides representative wetland delineation data for NWW-4 given the similar conditions observed within NWW-7A. Based on the data collected, the estimated OHWM measured approximately 2 feet wide throughout the extent of NWW-4.

Non-Wetland Water 5

NWW-5 is an ephemeral drainage feature primarily composed of patches of non-native grasses with a minimally defined OHWM and bed and bank within portions of the upstream and

downstream extents (Figure 5A; Table 6; Appendix G, Photos 19 – 22). NWW-5 occurs within the western portion of the review area, as shown on Figure 5A, generally flows northwest, and travels for approximately 2,159 linear feet before continuing off site.

An OHWM delineation was conducted within the drainage to confirm the presence or absence of OHWM indicators. ODP 3 confirmed the presence of OHWM indicators within NWW-5 (Figure 5A; Table 6; Appendix D, ODP 3). WDP 1 (see *Non-Wetland Water 6* below) provides representative wetland delineation data for NWW-5 given the similar conditions observed within NWW-6. Based on the data collected, the estimated OHWM measured approximately 1 foot to 5 feet wide throughout the extent of NWW-5.

Non-Wetland Water 6

NWW-6 is an ephemeral drainage feature primarily composed of southern riparian forest vegetation (Figure 5A; Table 6; Appendix G, Photos 23 – 25). NWW-6 occurs within the southwestern portion of the review area, as shown on Figure 5A, and generally flows west. NWW-6 travels for approximately 130 linear feet before it continues off site for a brief distance then re-enters the review area and travels for approximately 243 linear feet before continuing over a dirt road and into a storm drain inlet.

A wetland and OHWM delineation were conducted within NWW-6 to confirm the presence or absence of wetland parameters and/or OHWM indicators. ODP 4 confirmed the presence of OHWM indicators within NWW-6 (Figure 5A; Table 6; Appendix D, ODP 4). Based on the data collected, the estimated OHWM ranged from 1 foot to 10 feet wide throughout the extent of NWW-6. WDP 1 confirmed NWW-6 did not meet all three federal wetland parameters (Figures 5A and 5B; Tables 6 and 7; Appendix D, WDP 1).

Non-Wetland Water 7

NWW-7 is an ephemeral drainage feature primarily composed of southern riparian forest vegetation (Figure 5A; Table 6; Appendix G, Photo 27). NWW-7 occurs within the southwestern portion of the review area, just south of NWW-6, as shown on Figure 5A, generally flows west/northwest, and travels for approximately 236 linear feet before continuing over a dirt road and into a storm drain inlet.

ODP 4 (see *Non-Wetland Water 6* above) represents the OHWM within NWW-7 given the similar conditions observed within NWW-6; similarly, WDP 1 (see *Non-Wetland Water 6* above) provides representative wetland delineation data for NWW-7 given the similar conditions observed within NWW-6. The estimated OHWM measured approximately 3 feet wide throughout the extent of NWW-7.

Non-Wetland Water 7A

NWW-7A is an ephemeral drainage feature primarily composed of southern riparian forest vegetation with a minimally defined OHWM and bed and bank (Figure 5A; Table 6; Appendix G, Photos 30 – 34). NWW-7A occurs within the southwestern portion of the review area, as shown on Figure 5A, is a tributary to NWW-7, generally flows north, and travels for approximately 512 linear feet before converging with NWW-7.

A wetland and OHWM delineation were conducted within NWW-7A to confirm the presence or

absence of wetland parameters and/or OHWM indicators. ODP 6 confirmed the presence of OHWM indicators within NWW-7A (Figure 5A; Table 6; Appendix D, ODP 6). Based on the data collected, the estimated OHWM measured approximately 2 feet wide throughout the extent of NWW-7A. WDP 3 confirmed NWW-7A did not meet all three federal wetland parameters (Figure 5A; Tables 6; Appendix D, WDP 3).

Non-Wetland Water 7A1

NWW-7A1 is a concrete v-ditch that occurs within the southwestern portion of the review area, and is a tributary to NWW-7A (Figure 5A; Table 6; Appendix G, Photos 28 – 29). NWW-7A1, as shown on Figure 5A, generally flows west for approximately 146 linear feet before traveling through a culvert and converging with NWW-7A.

A wetland and OHWM delineation were conducted within NWW-7A1 to confirm the presence or absence of wetland parameters and/or OHWM indicators. ODP 5 confirmed the presence of OHWM indicators within NWW-7A1 (Figure 5A; Table 6; Appendix D, ODP 5). Based on the data collected, the estimated OHWM measured approximately 1 foot wide throughout the extent of NWW-7A1. WDP 2 confirmed NWW-7A1 did not meet all three federal wetland parameters (Figure 5A; Table 6; Appendix D, WDP 2).

Non-Wetland Water 7A2

NWW-7A2 is a concrete v-ditch that occurs within the southwestern portion of the review area, and is a tributary to NWW-7A (Figure 5A; Table 6). NWW-7A2, as shown on Figure 5A, generally flows north then turns east for approximately 216 linear feet before traveling through a culvert and converging with NWW-7A.

ODP 5 (see *Non-Wetland Water 7A1* above) represents the OHWM within NWW-7A2 given the similar conditions observed within NWW-7A1; similarly, WDP 2 (see *Non-Wetland Water 7A1* above) provides representative wetland delineation data for NWW-7A2 given the similar conditions observed within NWW-7A1. The estimated OHWM measured approximately 1 foot wide throughout the extent of NWW-7A2.

Non-Wetland Water 8

NWW-8 is an intermittent drainage feature primarily composed of southern riparian forest vegetation (Figure 5A; Table 6; Appendix G, Photos 35 – 39). NWW-8 occurs within the southwestern portion of the review area, as shown on Figure 5A, commences off site at a culvert, and generally flows northwest for approximately 425 linear feet before continuing off site. Based on a review of historic aerials (Appendix D), prior to development of the land to the south/southeast of NWW-8 around September 2004, NWW-6 (and at times NWW-7) had a direct, surface hydrological connection to NWW-8.

A wetland and OHWM delineation were conducted within NWW-8 to confirm the presence or absence of wetland parameters and/or OHWM indicators. ODP 7 confirmed the presence of OHWM indicators within NWW-8 (Figure 5A; Table 6; Appendix D, ODP 7). Based on the data collected, the estimated OHWM ranged from 10 feet to 15 feet wide throughout the extent of NWW-8.

WDP 4 confirmed NWW-8 met all three federal wetland parameters (Figure 5A; Table 6; Appendix

D, WDP 4). WDP 5 was taken in the adjacent uplands of WDP 4 to help determine the wetland boundary; WDP 5 did not meet all three federal wetland parameters (Figures 5A and 5B; Tables 6 and 7; Appendix D, WDP 5).

WDP 4 was representative of the wetland conditions throughout NWW-8 since vegetation, topography, and hydrology indicators within NWW-8 remained fairly consistent. Despite meeting the definition of a federal wetland, waters occurring within a defined OHWM are classified as non-wetland waters of the U.S. per Corps protocol.

Non-Wetland Water 9

NWW-9 is an ephemeral drainage feature primarily composed of patches of non-native grasses within southern riparian forest with a minimally defined OHWM and bed and bank within the downstream extent (Figure 5A; Table 6; Appendix G, Photos 43 – 45). NWW-9 occurs within the southeastern portion of the review area, as shown on Figure 5A, generally flows northeast, and travels for approximately 974 linear feet before continuing off site.

ODP 4 (see *Non-Wetland Water 6* above) represents the OHWM within NWW-9 given the similar conditions observed within NWW-6. Based on the data collected, the estimated OHWM ranged from 2 feet to 3 feet wide throughout the extent of NWW-9. A wetland delineation was conducted within NWW-9 to confirm the presence or absence of wetland parameters. WDP 7 confirmed NWW-9 did not meet all three federal wetland parameters (Figure 5A; Table 6; Appendix D, WDP 7).

Non-Wetland Water 10

NWW-10 is an ephemeral drainage feature primarily composed of patches of non-native grasses within southern riparian forest (Figure 5A; Table 6). NWW-10 occurs within the southeastern portion of the review area, east of NWW-9, as shown on Figure 5A, generally flows east/northeast, and travels in and out of the review area for approximately 202 linear feet.

ODP 4 (see *Non-Wetland Water 6* above) represents the OHWM within NWW-10 given the similar conditions observed within NWW-6; similarly, WDP 7 (see *Non-Wetland Water 9* above) provides representative wetland delineation data for NWW-10 given the similar conditions observed within NWW-9. The estimated OHWM measured approximately 2 feet to 5 feet wide throughout the extent of NWW-10.

6.3 RWQCB WETLAND WATERS OF THE STATE

Figure 5B displays the estimated extent of RWQCB wetlands within the review area based on the presence of all three federal wetland parameters; Table 7 provides additional details.

Wetland Water 1

RWQCB wetland boundaries (WW-1) are the same boundaries defined for NWW-8 described in Section 6.2 above.

6.4 RWQCB NON-WETLAND WATERS OF THE STATE

Figure 5B displays the estimated extent of RWQCB non-wetlands within the review area based on the presence of OHWM indicators; Table 7 provides additional details.

Non-Wetland Water 1

RWQCB non-wetland boundaries (NWW-1) are the same boundaries defined for NWW-1 described in Section 6.2 above.

Non-Wetland Water 2

RWQCB non-wetland boundaries (NWW-2) are the same boundaries defined for NWW-2 described in Section 6.2 above.

Non-Wetland Water 3

RWQCB non-wetland boundaries (NWW-3) are the same boundaries defined for NWW-3 described in Section 6.2 above.

Non-Wetland Water 4

RWQCB non-wetland boundaries (NWW-4) are the same boundaries defined for NWW-4 described in Section 6.2 above.

Non-Wetland Water 5

RWQCB non-wetland boundaries (NWW-5) are the same boundaries defined for NWW-5 described in Section 6.2 above.

Non-Wetland Water 6

RWQCB non-wetland boundaries (NWW-6) are the same boundaries defined for NWW-6 described in Section 6.2 above.

Non-Wetland Water 7

RWQCB non-wetland boundaries (NWW-7) are the same boundaries defined for NWW-7 described in Section 6.2 above.

Non-Wetland Water 7A

RWQCB non-wetland boundaries (NWW-7A) are the same boundaries defined for NWW-7A described in Section 6.2 above.

Non-Wetland Water 7A1

RWQCB non-wetland boundaries (NWW-7A1) are the same boundaries defined for NWW-7A1 described in Section 6.2 above.

Non-Wetland Water 7A2

RWQCB non-wetland boundaries (NWW-7A2) are the same boundaries defined for NWW-7A2 described in Section 6.2 above.

Non-Wetland Water 8

RWQCB non-wetland boundaries (NWW-8) are the same boundaries defined for NWW-9 described in Section 6.2 above.

Non-Wetland Water 9

RWQCB non-wetland boundaries (NWW-9) are the same boundaries defined for NWW-10

described in Section 6.2 above.

6.5 CDFW STREAMBED AND ASSOCIATED RIPARIAN AND WETLAND HABITATS

Figure 5C displays the estimated extent of streambed within the review area, delineated based on the top of the channel banks; Table 8 provides additional details.

Non-Wetland Water 1: Vegetated Streambed and Associated Riparian Habitat

NWW-1 is a vegetated streambed with a minimally defined bed and bank that occurs within the northern portion of the review area (Figure 5C; Table 8; Appendix G, Photo 2). Specifically, NWW-1 is an approximately 821-linear foot feature measuring approximately 2 feet wide from bank to bank, generally within an area of Riversidean sage scrub. Riparian habitat observed as directly associated with the delineated NWW-1 streambed includes southern willow scrub - disturbed (Figure 5C).

Non-Wetland Water 2: Vegetated Streambed and Associated Riparian Habitat

NWW-2 is a vegetated streambed with a minimally defined bed and bank that occurs within the northern portion of the review area, just west of NWW-1 (Figure 5C; Table 8; Appendix G, Photo 3). Specifically, NWW-2 is an approximately 753-linear foot feature ranging from approximately 1 foot wide to 6 feet wide from bank to bank, generally within an area of Riversidean sage scrub. Riparian habitat observed as directly associated with the delineated NWW-2 streambed includes southern willow scrub (Figure 5C).

Non-Wetland Water 3: Vegetated Streambed

NWW-3 is a vegetated streambed with a minimally defined bed and bank that occurs within the northwestern portion of the review area (Figure 5C; Table 8; Appendix G, Photo 6 – 8). Specifically, NWW-3 is an approximately 813-linear foot feature ranging from approximately 1 foot wide to 6 feet wide from bank to bank, within an area of non-native grassland.

Non-Wetland Water 4: Vegetated Streambed

NWW-4 is a vegetated streambed with a minimally defined bed and bank that occurs within the western portion of the review area (Figure 5C; Table 8; Appendix G, Photos 12 – 14, 16). Specifically, NWW-4 is an approximately 995-linear foot feature ranging from approximately 2 feet wide to 5 feet wide from bank to bank, within an area of non-native grassland.

Non-Wetland Water 5: Vegetated Streambed and Associated Riparian Habitat

NWW-5 is a vegetated streambed with a minimally defined bed and bank within portions of the upstream and downstream extents that occurs within the western portion of the review area (Figure 5C; Table 8; Appendix G, Photos 19 – 22). Specifically, NWW-5 is an approximately 2,159-linear foot feature ranging from approximately 2 feet wide to 10 feet wide from bank to bank, generally within an area of non-native grassland. Riparian habitat observed as directly associated with the delineated NWW-5 streambed includes southern willow scrub and southern riparian forest (Figure 5C).

Non-Wetland Water 6: Vegetated Streambed and Associated Riparian Habitat

NWW-6 is a vegetated streambed that occurs within the southwestern portion of the review area (Figure 5C; Table 8; Appendix G, Photos 23 – 25). Specifically, NWW-6 is an approximately 373-linear foot feature ranging from approximately 1 foot wide to 15 feet wide from bank to bank, generally within an area of southern riparian forest. Riparian habitat observed as directly associated with the delineated NWW-6 streambed includes southern riparian forest (Figure 5C).

Non-Wetland Water 7: Vegetated Streambed and Associated Riparian Habitat

NWW-7 is a vegetated streambed that occurs within the southwestern portion of the review area, just south of NWW-6 (Figure 5C; Table 8; Appendix G, Photo 27). Specifically, NWW-7 is an approximately 236-linear foot feature ranging from approximately 2 feet wide to 12 feet wide from bank to bank, generally within an area of southern riparian forest. Riparian habitat observed as directly associated with the delineated NWW-7 streambed includes southern riparian forest and hoary nettle monotypic stand (Figure 5C).

Non-Wetland Water 7A: Vegetated Streambed and Associated Riparian Habitat

NWW-7A is a vegetated streambed with a minimally defined bed and bank that occurs within the southwestern portion of the review area, and is a tributary to NWW-7 (Figure 5C; Table 8; Appendix G, Photos 30 – 34). Specifically, NWW-7A is an approximately 512-linear foot feature measuring approximately 2 feet wide from bank to bank, generally within areas of non-native grassland – mustard dominated and southern riparian forest. Riparian habitat observed as directly associated with the delineated NWW-7A streambed includes southern riparian forest and hoary nettle monotypic stand (Figure 5C).

Non-Wetland Water 7A1: Unvegetated Streambed

NWW-7A1 is an unvegetated, concrete v-ditch that occurs within the southwestern portion of the review area, and is a tributary to NWW-7A (Figure 5C; Table 8; Appendix G, Photos 28 – 29). Specifically, NWW-7A1 is an approximately 146-linear foot feature measuring approximately 3 feet wide from bank to bank.

Non-Wetland Water 7A2: Unvegetated Streambed

NWW-7A2 is an unvegetated, concrete v-ditch that occurs within the southwestern portion of the review area, and is a tributary to NWW-7A (Figure 5C; Table 8). Specifically, NWW-7A2 is an approximately 216-linear foot feature measuring approximately 3 feet wide from bank to bank.

Non-Wetland Water 8: Vegetated Streambed and Associated Riparian Habitat

NWW-8 is a heavily vegetated streambed that occurs within the southwestern portion of the review area (Figure 5C; Table 8; Appendix G, Photos 35 – 39). Specifically, NWW-8 is an approximately 425-linear foot feature ranging from approximately 10 feet wide to 30 feet wide from bank to bank, within an area of southern riparian forest. A portion of NWW-8 met all three federal wetland parameters (See Section 6.5, *Non-Wetland Water 8*, above). Riparian habitat observed as directly associated with the delineated NWW-8 streambed includes southern riparian forest (Figure 5C).

Non-Wetland Water 9: Vegetated Streambed and Associated Riparian Habitat

NWW-9 is a vegetated streambed with a minimally defined bed and bank within the downstream

extent that occurs within the southeastern portion of the review area (Figure 5C; Table 8; Appendix G, Photos 43 – 45). Specifically, NWW-9 is an approximately 974-linear foot feature ranging from approximately 2 feet wide to 30 feet wide from bank to bank, within areas of southern riparian forest and non-native grassland. Riparian habitat observed as directly associated with the delineated NWW-9 streambed includes southern riparian forest (Figure 5C).

Non-Wetland Water 10: Vegetated Streambed and Associated Riparian Habitat

NWW-10 is a vegetated streambed that occurs within the southeastern portion of the review area, east of NWW-9 (Figure 5C; Table 8). Specifically, NWW-10 is an approximately 202-linear foot feature ranging from approximately 2 feet wide to 5 feet wide from bank to bank, within an area of southern riparian forest. Riparian habitat observed as directly associated with the delineated NWW-10 streambed includes southern riparian forest (Figure 5C).

6.6 OTHER FEATURES

Field staff further investigated several areas with potential aquatic resource indicators, including abandoned drainages, a ditch, and a swale as described below. Additionally, WDP 6 was taken within an area with cracked soils (Figures 5A – 5C; Appendix D, WDP 6). This small area of cracked soils did not meet all three federal wetland parameters, did not display an OHWM or exhibit bed and bank indicators, and did not appear to convey surface flows. As discussed in Section 4, the review area was heavily manipulated between 1931 and 1967 with construction of a large military/bunker installation, including various associated culverts and storm drain inlets, which is no longer used or maintained. The features discussed below are expected to be a result of the previous use and/or abandonment of the military/bunker installation.

Furthermore, the features discussed in this section are not discussed further in this ARDR as they are not anticipated to be jurisdictional under the Corps, RWQCB, or CDFW regulations, policy, and/or guidance based on the information provided in this section.

Abandoned Drainages 1-2

Two abandoned drainages (AD-1 and AD-2; Figures 5A – 5C) were observed during the field delineation that appeared to no longer convey regular flows on site.

AD-1 is a vegetated, earthen drainage that occurs within the western portion of the review area (Figures 5A – 5C; Appendix G, Photo 15). AD-1 originates at a single culvert that historically drained flows from the abandoned bunker installation. AD-1 appeared to no longer convey flows based on the lack of OHWM and bed and bank indicators and as evidenced by the single culvert located just west of AD-1, into which AD-1 likely previously contributed flows, that was blocked with sediment (Appendix G, Photo 16).

AD-2 is a vegetated, earthen drainage that occurs within the southwestern portion of the review area (Figure 5A – 5C; Appendix G, Photo 18). AD-2 originates at a single culvert that historically drained flows from the abandoned bunker installation. AD-2 appeared to no longer convey flows based on the lack of OHWM and bed and bank indicators.

Swale 1

One swale (S-1; Figures 5A – 5C) was observed during the field delineation that did not display an

observable OHWM, bed and bank, or other evidence of conveying regular flows on site. This disturbed swale feature also did not appear to convey flows to downstream aquatic resources via observed flow patterns, culverts, or other flow paths.

S-1 is a slightly concave drainage area located in the northwestern portion of the review area just northwest of the downstream extent of NWW-3 (Figures 5A – 5C; Appendix G, Photo 9). S-1 did not display an observable OHWM or bed and bank and instead appeared to convey surface flows as runoff from the adjacent dirt road. ODP 2, taken in an area of non-native grassland, did not show evidence of a break in slope or a defined bed and bank between the swale and adjacent uplands (Appendix E, ODP 2). Additionally, ODP 2 did not contain a change in sediment texture, change in vegetation species or cover, or any other OHWM indicators between the swale and the adjacent upland area. Thus, S-1 was determined to not have an OHWM or defined bed and bank.

Ditch 1

D-1 is a concrete-lined ditch/stormwater conveyance feature located within the northern portion of the review area (Figures 5A to 5C; Appendix G, Photo 4). Based on a review of historic aerials (Appendix D), D-1 was created in uplands (likely when the water tower was constructed between June 1980 and May 1994) to direct flows from a culvert outlet away from the developed area and onto the adjacent gravel road. D-1 displayed an artificial break in bank slope but did not exhibit any other OHWM indicators, did not display an observable bed and bank, lacked association with a natural feature/streambed, and did not support wildlife habitat. D-1 appeared to be a maintained artificial structure, which functions as localized stormwater runoff conveyance with no downstream connectivity and which does not provide/has no impact on beneficial uses (e.g., agricultural supply, freshwater supply, or groundwater recharge).

7 DEVIATION FROM NWI AND NHD

The delineated extent of NWW-1 generally occurs within the area mapped by USFWS NWI as “Riverine” and the area mapped by USGS NHD as “Stream/River” (ephemeral) in the northern portion of the review area; however, NWW-1 does not extend as far south as the areas mapped by USFWS NWI and USGS NHD. The delineated extents of NWW-3 and S-1 generally occur within the area mapped by USGS NHD as “Stream/River” (ephemeral) in the northwestern portion of the review area; however, NWW-3 and S-1 do not extend as far west/northwest as the area mapped by USGS NHD. The delineated extent of NWW-4 generally occurs within the area mapped by USFWS NWI as “Riverine” and the area mapped by USGS NHD as “Stream/River” (ephemeral) in the western and northwestern portions of the review area; however, NWW-4 does not extend as far west/northwest as the areas mapped by USFWS NWI and USGS NHD or as far southeast as the area mapped by USGS NHD. The delineated extents of NWW-5 and AD-2 generally occur within the area mapped by USGS NHD as “Stream/River” (ephemeral) in the southwestern and far western portions of the review area; however, AD-2 occurs only within the far eastern portion of and NWW-5 does not extend as far east as the USGS NHD mapped feature. The delineated extent of NWW-6 generally occurs within the area mapped by USFWS NWI as “Riverine” and the areas mapped by USGS NHD as “Stream/River” (ephemeral) and “Connector” in the far southern portion of the review area; however, NWW-6 does not extend as far east as the area mapped by USFWS NWI and the “Stream/River” (ephemeral) area mapped by USGS NHD or as far west as the area mapped by USFWS NWI and the “Connector” area mapped by USGS NHD. The delineated extent

of NWW-8 generally occurs within the area mapped by USFWS NWI as “Riverine” and the area mapped by the USGS NHD as “Stream/River” (ephemeral) in the far southwestern corner of the review area. The delineated extent of NWW-9 generally occurs within an area mapped by USGS NHD as “Stream/River” (ephemeral) in the eastern portion of the review area; however, NWW-9 does not extend as far west as the area mapped by USGS NHD. The delineated extent of NWW-10 generally occurs within another area mapped by USGS NHD as “Stream/River” (ephemeral) and the area mapped by USFWS NWI as “Riverine” in the far eastern portion of the review area. The delineated extents of NWW-2, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, AD-1, and D-1 do not occur within any areas mapped by USFWS NWI or USGS NHD. Three additional areas mapped by USGS NHD as “Riverine” within the eastern portion of the review area were inspected but did not display an OHWM, exhibit bed and bank indicators, or appear to convey surface flows. USFWS NWI and USGS NHD do not map any additional aquatic resources within the review area.

8 RESULTS AND CONCLUSIONS

The results provided in this section include the extent of delineated aquatic resources within the review area based on desktop analysis and observed field indicators of potential waters of the U.S., waters of the State, and CDFW streambed and associated wetland and/or riparian habitat per the methodologies discussed in Section 3.

This section, however, does not analyze the Corps’ jurisdictional status of the delineated features per the current regulations, guidance, and standard operating procedures. As stated in Section 1, Appendix C provides the required forms to officially request a PJD from the Corps for aquatic resources observed within the review area. An approved jurisdictional determination (AJD) will be provided (under separate cover) if additional data yields the necessary information to conclude that any of the potentially jurisdictional aquatic resources delineated on site do not meet the definition of waters of the U.S.

8.1 CORPS

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 displayed various indicators of an OHWM (Table 6). NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-9, and NWW-10 did not meet the three federal/state wetland parameters. NWW-8 did meet the three federal/state wetland parameters; however, based on guidance provided by the Corps, wetlands within an OHWM constitute potential non-wetland waters of the U.S. Therefore, NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 are potential non-wetland waters of the U.S.

Approximately 0.54 acre (8,626 linear feet) of potential non-wetland waters of the U.S. associated with NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 occur within the review area, as further detailed in Table 6 and as shown on Figure 5A. The ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet is included as Appendix I.

Table 6. Aquatic Resource Summary Table: Corps

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Feet)	Observed OHWM Indicators ¹	Observed Wetland Parameters ²	Presence of OHWM/Wetland	Dominant Vegetation ³	Location (lat, long)	Acre(s) ⁴	Linear Feet
NWW-1	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Riversidean Sage Scrub; See WDP 3	33.911494, -117.304933	0.04	821
NWW-2	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Riversidean Sage Scrub; See WDP 3	33.911516, -117.306580	0.03	753
NWW-3	R6	1 – 2	CVC, BBS	None; See NWW-7A ⁶	Yes/No	Non-native Grassland; See WDP 3	33.909152, -117.312802	0.03	813
NWW-4	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Non-native Grassland; See WDP 3	33.905922, -117.312596	0.05	995
NWW-5	R6	1 – 5	CVS, CVC, BBS	HV; See NWW-6 ⁶	Yes/No	Non-native Grassland; See WDP 1	33.904494, -117.316792	0.12	2,159
NWW-6	R6	1 – 10	CVS, CVC, BBS	HV	Yes/No	Southern Riparian Forest; See WDP 1	33.900933, -117.312589	0.04	373
NWW-7	R6	3 – 3	CVS, CVC, BBS; See NWW-6 ⁵	HV; See NWW-6 ⁶	Yes/No	Southern Riparian Forest; See WDP 1	33.899747, -117.313461	0.02	236
NWW-7A	R6	2 – 2	BBS	None	Yes/No	Non-native Grassland – Mustard Dominated; See WDP 3	33.899104, -117.313655	0.02	512
NWW-7A1	R6	1 – 1	WS	WH	Yes/No	Developed (Concrete-lined); See WDP 2	33.898410, -117.313369	<0.01	146
NWW-7A2	R6	1 – 1	WS; See NWW-7A1 ⁵	WH; See NWW-7A1 ⁶	Yes/No	Developed (Concrete-lined); See WDP 2	33.898233, -117.313761	0.01	216
NWW-8	R5	10 – 15	CAST, CVS, CVC, BBS	HV, HS, WH	Yes/Yes	Southern Riparian Forest; See WDP 4	33.902621, -117.318620	0.11	425
NWW-9	R6	2 – 3	CVS, CVC, BBS; See NWW-6 ⁵	HV	Yes/No	Southern Riparian Forest; See WDP 7	33.907245, -117.294771	0.05	974
NWW-10	R6	2 – 5	CVS, CVC, BBS; See NWW-6 ⁵	HV; See NWW-9 ⁶	Yes/No	Southern Riparian Forest; See WDP 7	33.907086, -117.291994	0.01	202
Total								0.54	8,626

¹ OHWM Indicators: CAST = Change in average sediment texture; CVS = Change in vegetation species; CVC = Change in vegetation cover; BBS = Break in bank slope; WS = Water staining

² Wetland Indicators: HV = Hydrophytic vegetation; HS = Hydric soil; WH = Wetland hydrology

³ See Figure 6 for all vegetation communities present within each aquatic resource.

⁴ Acreages summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

⁵ Based on a representative ODP taken within an aquatic resource with similar conditions.

⁶ Based on a representative WDP taken within an aquatic resource with similar conditions.

8.2 RWQCB

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, and NWW-9 displayed various indicators of an OHWM (Table 7). NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, and NWW-9 did not meet the three federal/state wetland parameters; however, WW-1 did meet the three federal/state wetland parameters. As such, NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, and NWW-9 are non-wetland waters of the State; WW-1 is a wetland waters of the State.

Approximately 0.43 acre (8,201 linear feet) of non-wetland waters of the State associated with NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, and NWW-9 and 0.11 acre (425 linear feet) of wetland waters of the State associated with WW-1 occur within the review area, as further detailed in Table 7 and as shown on Figure 5B.

Table 7. Aquatic Resource Summary Table: RWQCB

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Feet)	Observed OHWM Indicators ¹	Observed Wetland Parameters ²	Presence of OHWM/Wetland	Dominant Vegetation ³	Location (lat, long)	Acre(s) ⁴	Linear Feet
NWW-1	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Riversidean Sage Scrub; See WDP 3	33.911494, -117.304933	0.04	821
NWW-2	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Riversidean Sage Scrub; See WDP 3	33.911516, -117.306580	0.03	753
813NWW-3	R6	1 – 2	CVC, BBS	None; See NWW-7A ⁶	Yes/No	Non-native Grassland; See WDP 3	33.909152, -117.312802	0.03	813
2159NWW-4	R6	2 – 2	CVC, BBS; See NWW-3 ⁵	None; See NWW-7A ⁶	Yes/No	Non-native Grassland; See WDP 3	33.905922, -117.312596	0.05	995
NWW-5	R6	1 – 5	CVS, CVC, BBS	HV; See NWW-6 ⁶	Yes/No	Non-native Grassland; See WDP 1	33.904494, -117.316792	0.12	2,159
NWW-6	R6	1 – 10	CVS, CVC, BBS	HV	Yes/No	Southern Riparian Forest; See WDP 1	33.900933, -117.312589	0.04	373
NWW-7	R6	3 – 3	CVS, CVC, BBS; See NWW-6 ⁵	HV; See NWW-6 ⁶	Yes/No	Southern Riparian Forest; See WDP 1	33.899747, -117.313461	0.02	236
NWW-7A	R6	2 – 2	BBS	None	Yes/No	Non-native Grassland – Mustard Dominated; See WDP 3	33.899104, -117.313655	0.02	512
NWW-7A1	R6	1 – 1	WS	WH	Yes/No	Developed (Concrete-	33.898410, -117.313369	<0.01	146

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Feet)	Observed OHWM Indicators ¹	Observed Wetland Parameters ²	Presence of OHWM/Wetland	Dominant Vegetation ³	Location (lat, long)	Acre(s) ⁴	Linear Feet
						lined); See WDP 2			
NWW-7A2	R6	1 – 1	WS; See NWW-7A1 ⁵	WH; See NWW-7A1 ⁶	Yes/No	Developed (Concrete-lined); See WDP 2	33.898233, -117.313761	0.01	216
NWW-8	R6	2 – 3	CVS, CVC, BBS; See NWW-6 ⁵	HV	Yes/No	Southern Riparian Forest; See WDP 7	33.907245, -117.294771	0.05	974
NWW-9	R6	2 – 5	CVS, CVC, BBS; See NWW-6 ⁵	HV; See NWW-9 ⁶	Yes/No	Southern Riparian Forest; See WDP 7	33.907086, -117.291994	0.01	202
WW-1	R5	10 – 15	CAST, CVS, CVC, BBS	HV, HS, WH	Yes/Yes	Southern Riparian Forest; See WDP 4	33.902621, -117.318620	0.11	425
Total								0.54	8,626

¹ OHWM Indicators: CAST = Change in average sediment texture; CVS = Change in vegetation species; CVC = Change in vegetation cover; BBS = Break in bank slope; WS = Water staining

² Wetland Indicators: HV = Hydrophytic vegetation; HS = Hydric soil; WH = Wetland hydrology

³ See Figure 6 for all vegetation communities present within each aquatic resource.

⁴ Acreages summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

⁵ Based on a representative ODP taken within an aquatic resource with similar conditions.

⁶ Based on a representative WDP taken within an aquatic resource with similar conditions.

8.3 CDFW

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 qualify as CDFW streambed with associated riparian habitat.

Approximately 1.24 acres (8,263 linear feet) of vegetated streambed, 0.03 acre (363 linear feet) of unvegetated streambed, and 3.07 acres of riparian habitat occur within the review area, as further detailed in Table 8 and as shown on Figure 5C.

Table 8. Aquatic Resource Summary Table: CDFW

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
NWW-1	Vegetated Streambed	Non-native Grassland	2 – 2	33.912243, -117.305090	<0.01	821
		Riversidean Sage Scrub		33.911293, -117.304889	0.03	
		Southern Willow Scrub – Disturbed		33.912318, -117.305115	0.01	
	Riparian Habitat ³	Southern Willow Scrub – Disturbed	N/A	33.912304, -117.305131	0.11	–

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
NWW-2	Vegetated Streambed	Non-native Grassland	2 – 2	33.911592, -117.306630	0.01	753
		Riversidean Sage Scrub		33.911400, -117.306598	0.02	
		Southern Willow Scrub		33.912106, -117.306343	<0.01	
	Riparian Habitat ³	Southern Willow Scrub	N/A	33.912105, -117.306351	0.06	–
NWW-3	Vegetated Streambed	Non-native Grassland	1 – 6	33.909215, -117.312858	0.09	813
NWW-4	Vegetated Streambed	Non-native Grassland	2 – 5	33.905680, -117.312424	0.07	995
NWW-5	Vegetated Streambed	Non-native Grassland	2 – 10	33.904596, -117.316928	0.13	2,159
		Southern Riparian Forest		33.905635, -117.318069	<0.01	
		Southern Willow Scrub		33.904950, -117.317527	0.04	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.905637, -117.318042	0.02	–
		Southern Willow Scrub		33.904920, -117.317499	0.10	
NWW-6	Vegetated Streambed	Disturbed Habitat	1 – 15	33.900947, -117.312342	<0.01	373
		Non-native Grassland		33.901001, -117.312045	0.01	
		Non-native Grassland – Mustard Dominated		33.900735, -117.313709	<0.01	
		Southern Riparian Forest		33.900887, -117.312964	0.06	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.900874, -117.313157	0.22	–
NWW-7	Vegetated Streambed	Disturbed Habitat	2 – 12	33.899868, -117.313731	<0.01	241
		Hoary Nettle Monotypic Stand		33.899657, -117.313302	<0.01	
		Non-native Grassland		33.899883, -117.313776	0.01	
		Non-native Grassland – Mustard Dominated		33.899639, -117.313161	0.01	

UPPER PLATEAU AQUATIC RESOURCES DELINEATION REPORT

Aquatic Resource Name	Aquatic Resource Type	Vegetation Community	Width Range ¹ (Feet)	Location (lat, long)	Acre(s)	Linear Feet ²
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.899740, -117.313455	0.04	-
		Hoary Nettle Monotypic Stand		33.899615, -117.313299	0.04	
		Southern Riparian Forest		33.899761, -117.313501	0.13	
NWW-7A	Vegetated Streambed	Disturbed Habitat	2 – 2	33.898453, -117.313611	<0.01	505
		Non-native Grassland		33.898423, -117.313610	<0.01	
		Non-native Grassland – Mustard Dominated		33.899018, -117.313678	0.01	
		Southern Riparian Forest		33.899201, -117.313645	0.01	
	Riparian Habitat ³	Hoary Nettle Monotypic Stand	N/A	33.899363, -117.313434	0.41	-
		Southern Riparian Forest		33.899153, -117.313653	0.21	
NWW-7A1	Unvegetated Streambed	Developed (Concrete-lined)	3 – 3	33.898410, -117.313369	0.01	147
NWW-7A2	Unvegetated Streambed	Developed (Concrete-lined)	3 – 3	33.898232, -117.313762	0.02	216
NWW-8	Vegetated Streambed	Southern Riparian Forest	10 – 30	33.902627, -117.318642	0.43	425
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.902603, -117.318539	0.33	-
NWW-9	Vegetated Streambed	Non-native Grassland	2 – 30	33.907754, -117.293851	0.02	974
		Southern Riparian Forest		33.906867, -117.295421	0.23	
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.907200, -117.294796	1.24	-
NWW-10	Vegetated Streambed	Southern Riparian Forest	2 – 5	33.907086, -117.291994	0.01	202
	Riparian Habitat ³	Southern Riparian Forest	N/A	33.907173, -117.291772	0.20	-
Total⁴					4.33	8,626

¹ Corresponds with the approximate stream bank widths observed during delineation. Width range accounts for entirety of streambed delineated, not individual vegetation communities.

² Linear feet not calculated for individual aquatic resource type and vegetation community (including riparian habitat that occurs outside of delineated streambed) to avoid redundant linear foot calculation where such areas overlap.

³ Occurs outside of delineated streambed.

⁴ Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

8.4 DISCLAIMER STATEMENT

The aquatic resources acreages and linear feet estimated in this section represent the existing conditions during the time of the field surveys. Please note that the applicable agencies will make final jurisdictional determinations. RBC recommends early coordination with the resource agencies to determine the final jurisdictional boundaries, applicable permitting processes, compensatory mitigation requirements, and other potential permitting issues specific to the proposed work within the review area. Agency representatives may request to access the site to field-verify the results of this ARDR with the applicant, or a designated representative.

The information provided in this report should remain valid for up to five years from the date of the field effort for the jurisdictional delineation unless site conditions change substantially, or a regulatory agency requires an updated report.

9 CONTACT INFORMATION

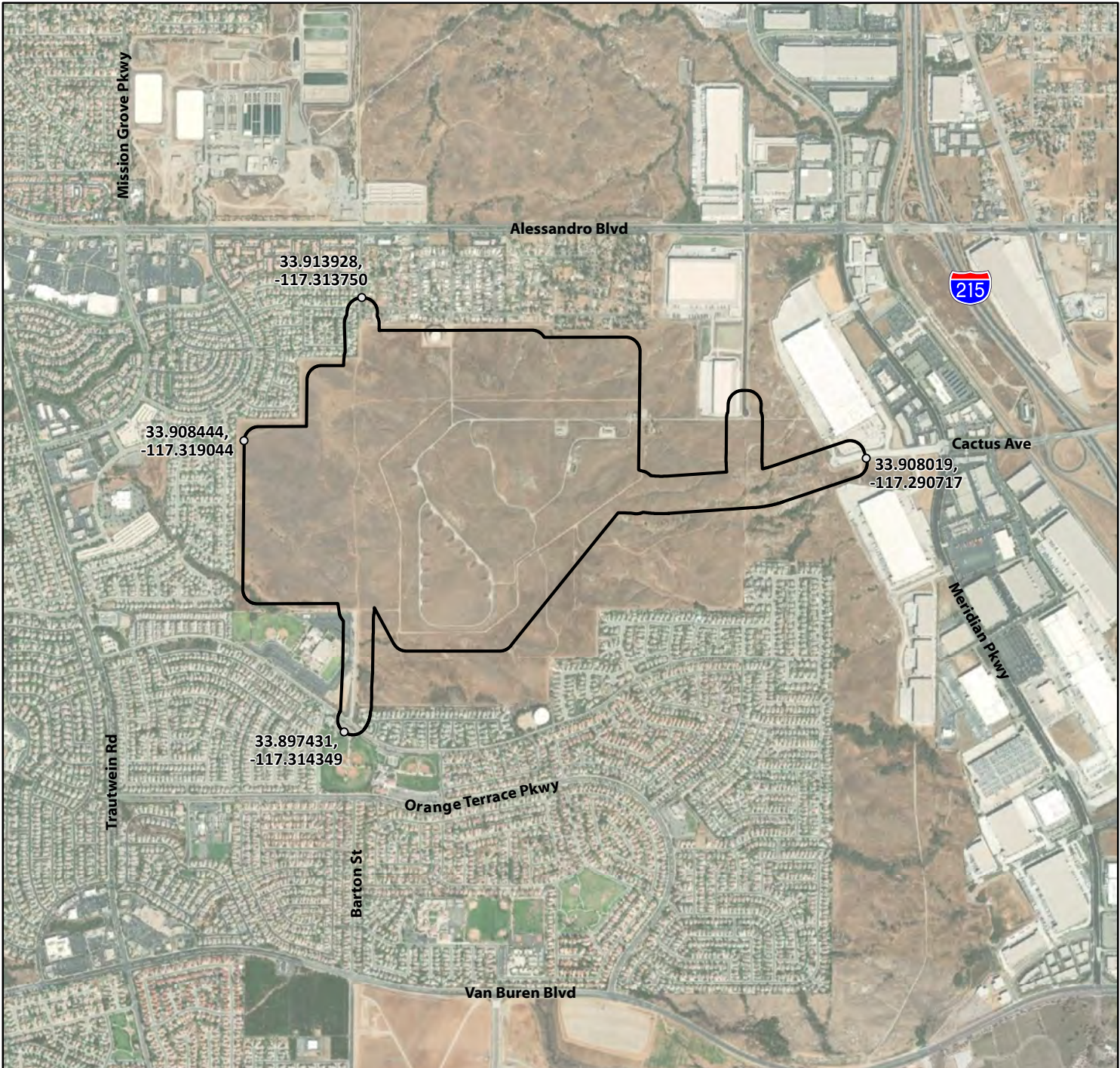
Applicant/Land Owner:

Timothy Reeves
Meridian Park, LLC
1156 North Mountain Avenue
Upland, CA 91786
timothy.reeves@lewismc.com
909-579-1294

Agent:

Shanti Santulli
Rocks Biological Consulting
4312 Rialto Street
San Diego, CA 92107
shanti@rocksbio.com
619-674-8067

Agency access to the review area can be coordinated with the applicant and/or agent upon request.



33.913928,
-117.313750

33.908444,
-117.319044

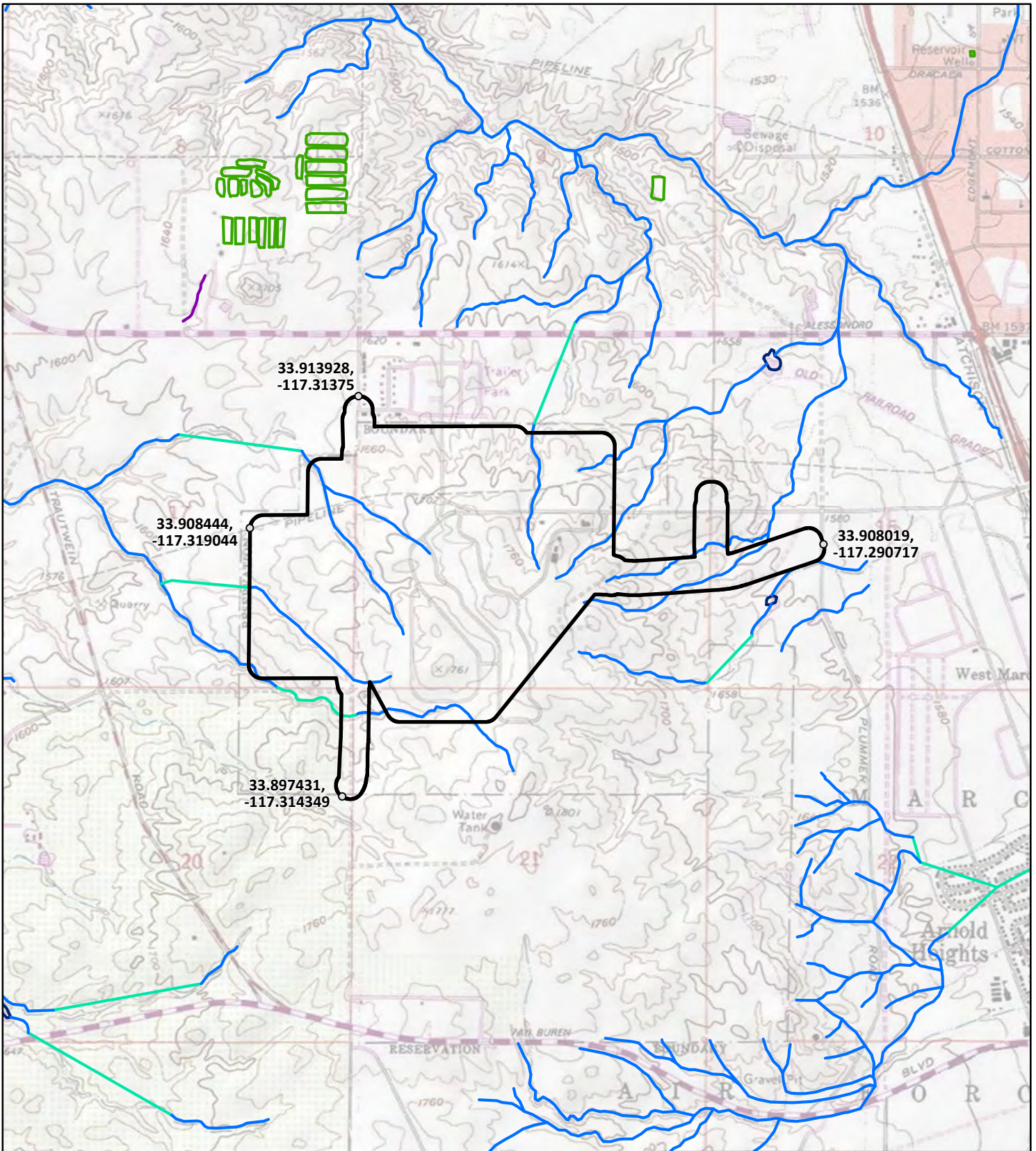
33.908019,
-117.290717

33.897431,
-117.314349

○ ARDR Review Area (514.69 ac)



FIGURE 1	Project Location
	UPPER PLATEAU
1 INCH = 2,000 FEET 0 1,000 2,000 FEET	
Date: 10/27/2021 Aerial Photo: Nearmap 2021 Regional Map: National Geographic, Esri 2012	











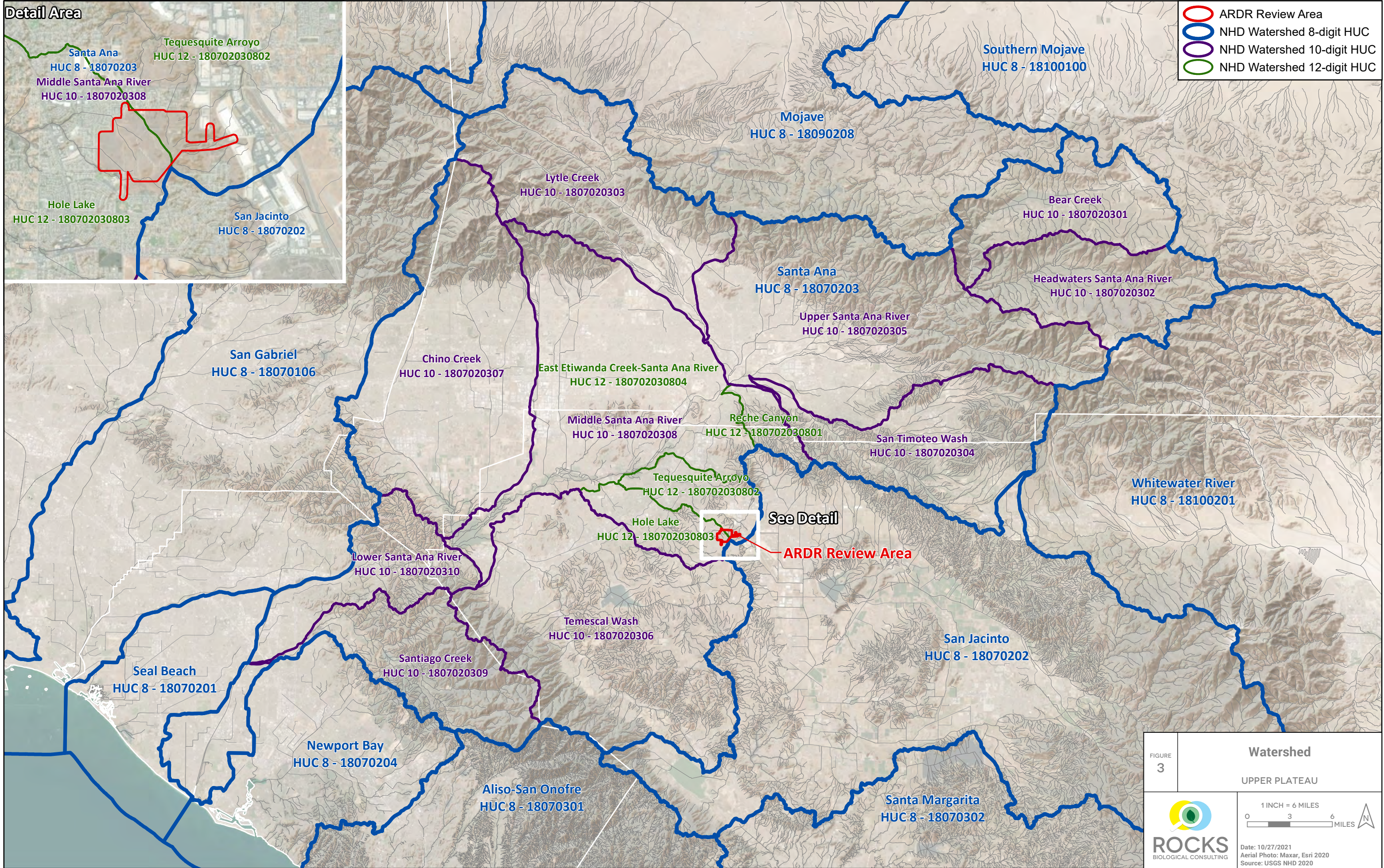
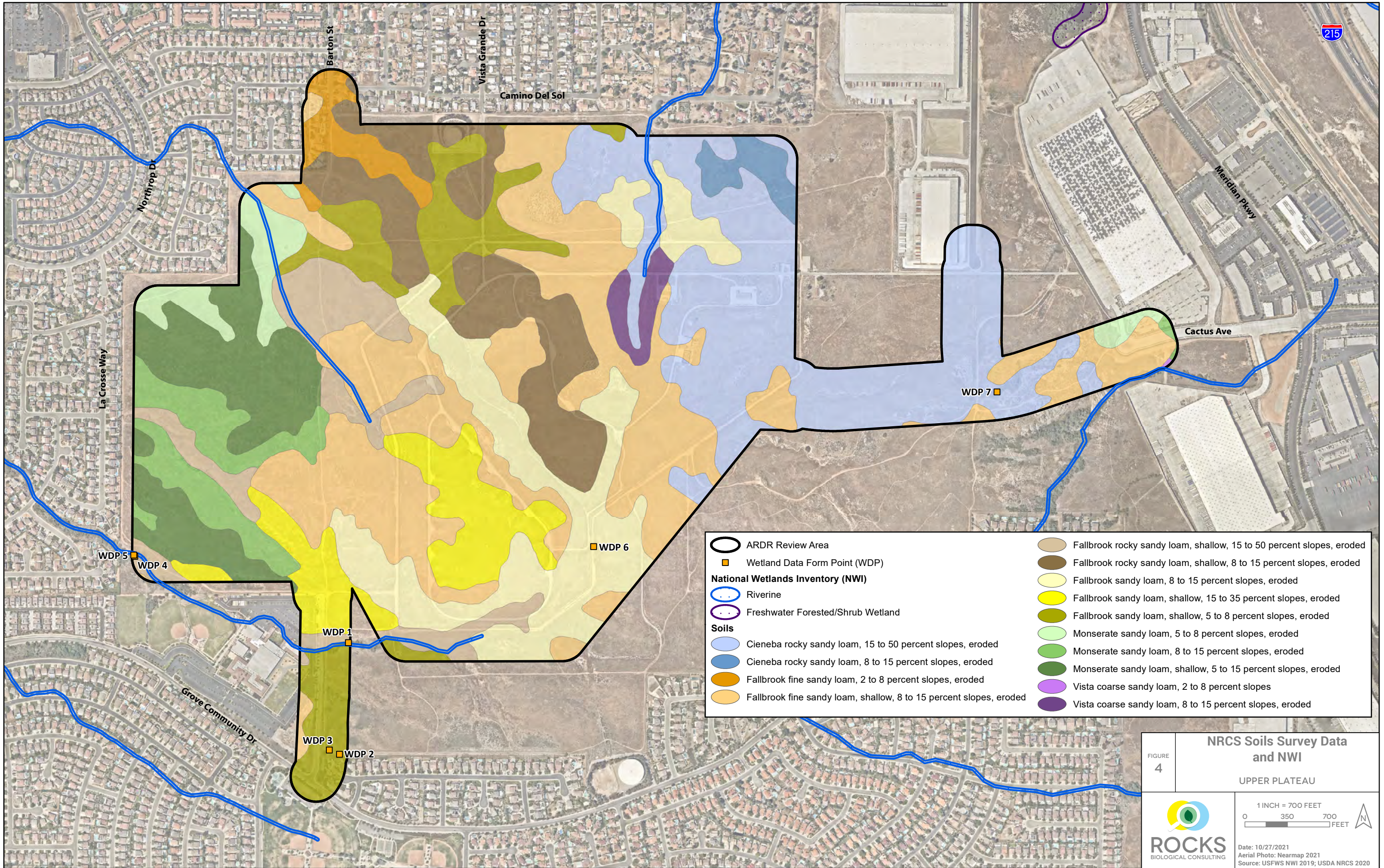
-  ARDR Review Area
- National Hydrography Dataset (NHD)**
-  Stream/River
-  Canal/Ditch
-  Connector
-  Lake/Pond
-  Reservoir

FIGURE 2	USGS Topo and NHD UPPER PLATEAU
	1 INCH = 2,000 FEET 0 1,000 2,000 FEET  Date: 10/27/2021 Base Map: National Geographic Society, i-cubed 2013 Source: USGS NHD 2020 USGS 7.5' Quadrangles (Riverside East); T3S, R4W, S9-10, 15-17, 20-21





<ul style="list-style-type: none"> ARDR Review Area Wetland Data Form Point (WDP) National Wetlands Inventory (NWI) Riverine Freshwater Forested/Shrub Wetland Soils Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded Fallbrook rocky sandy loam, shallow, 8 to 15 percent slopes, eroded Fallbrook sandy loam, 8 to 15 percent slopes, eroded Fallbrook sandy loam, shallow, 15 to 35 percent slopes, eroded Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded Monserate sandy loam, 5 to 8 percent slopes, eroded Monserate sandy loam, 8 to 15 percent slopes, eroded Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded Vista coarse sandy loam, 2 to 8 percent slopes Vista coarse sandy loam, 8 to 15 percent slopes, eroded

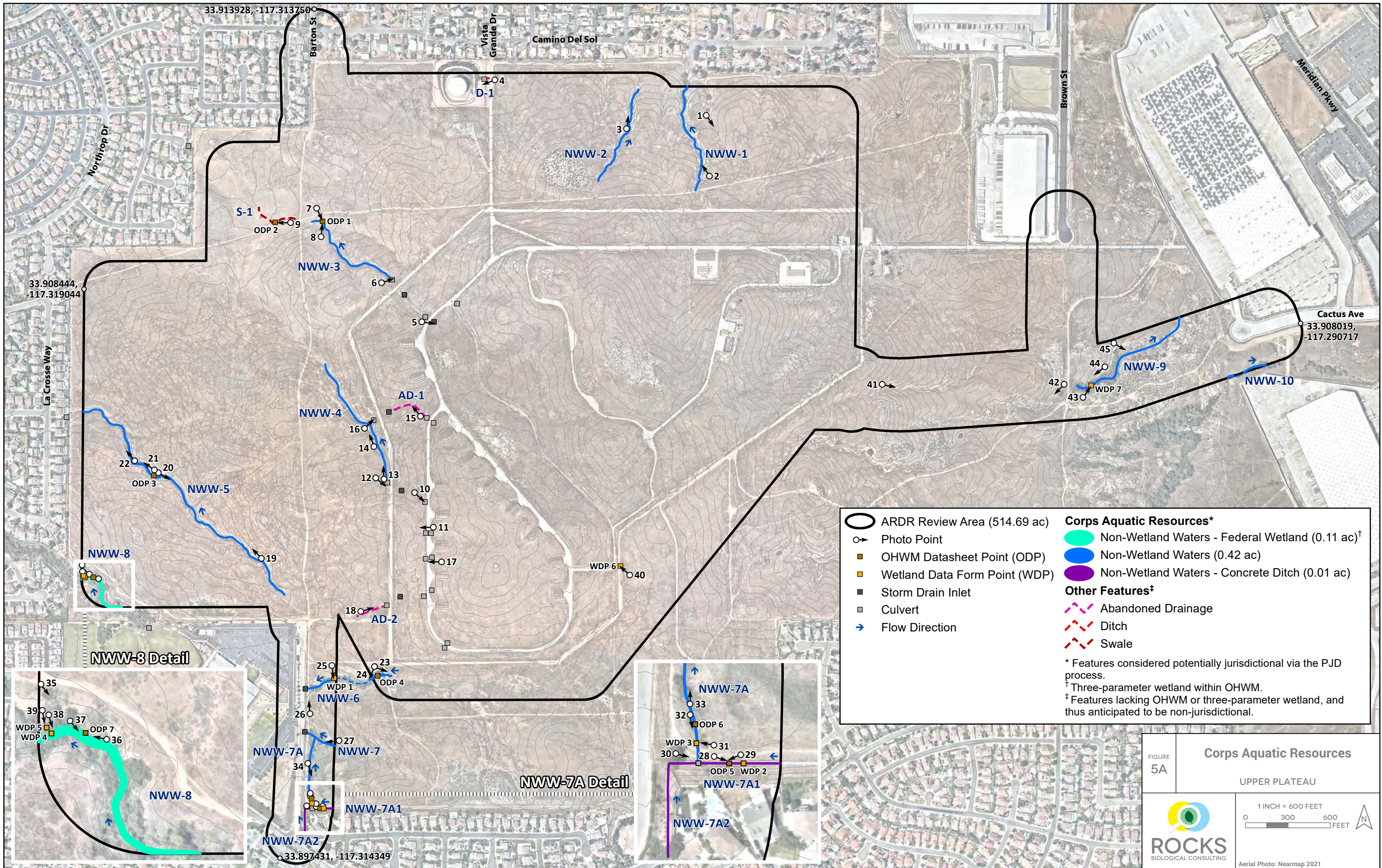
NRCS Soils Survey Data and NWI

UPPER PLATEAU

FIGURE 4

1 INCH = 700 FEET

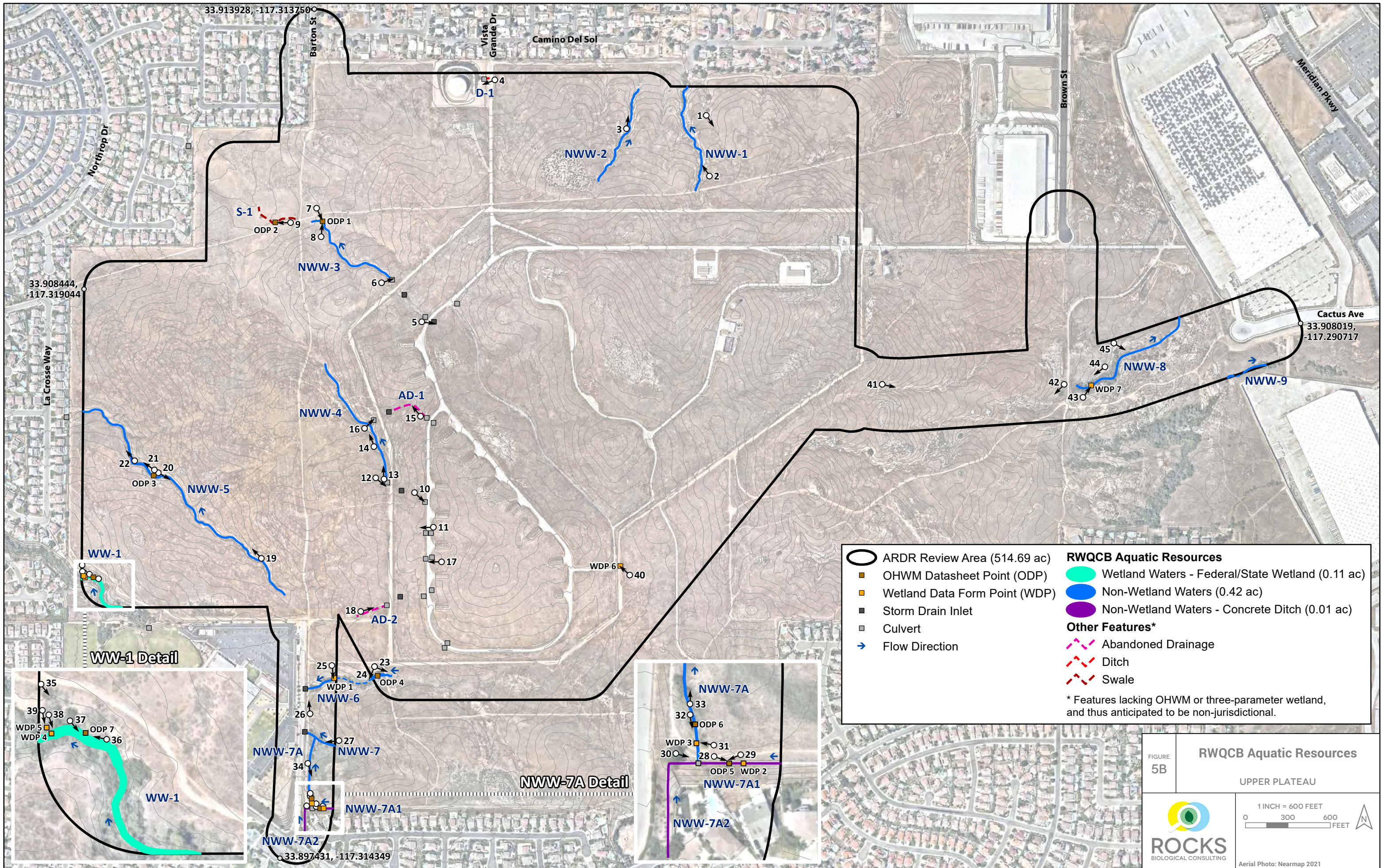
Date: 10/27/2021
 Aerial Photo: Nearmap 2021
 Source: USFWS NWI 2019; USDA NRCS 2020



<ul style="list-style-type: none"> ARDR Review Area (514.69 ac) ○ Photo Point ■ OHWM Datasheet Point (ODP) ■ Wetland Data Form Point (WDP) ■ Storm Drain Inlet ■ Culvert ➔ Flow Direction 	<p>Corps Aquatic Resources*</p> <ul style="list-style-type: none"> Non-Wetland Waters - Federal Wetland (0.11 ac)[†] Non-Wetland Waters (0.42 ac) Non-Wetland Waters - Concrete Ditch (0.01 ac) <p>Other Features[‡]</p> <ul style="list-style-type: none"> Abandoned Drainage Ditch Swale
--	--

* Features considered potentially jurisdictional via the PJD process.
[†] Three-parameter wetland within OHWM.
[‡] Features lacking OHWM or three-parameter wetland, and thus anticipated to be non-jurisdictional.

FIGURE 5A	Corps Aquatic Resources
UPPER PLATEAU	
Aerial Photo: Nearmap 2021	



33.913928, -117.313750

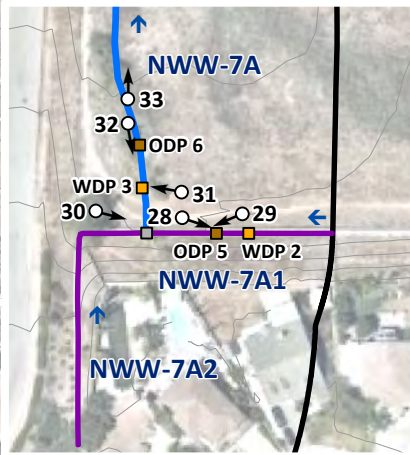
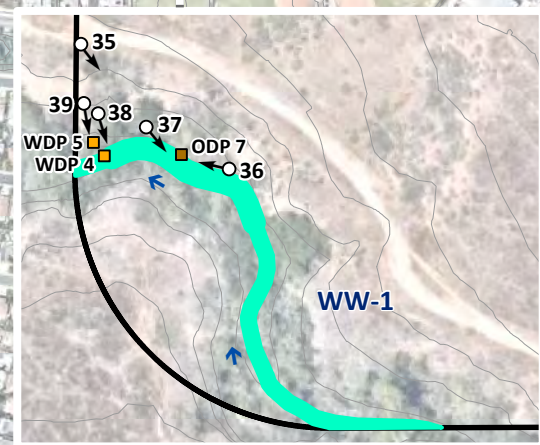
33.908444, -117.319044

Cactus Ave
33.908019, -117.290717

33.897431, -117.314349

WW-1 Detail

NWW-7A Detail



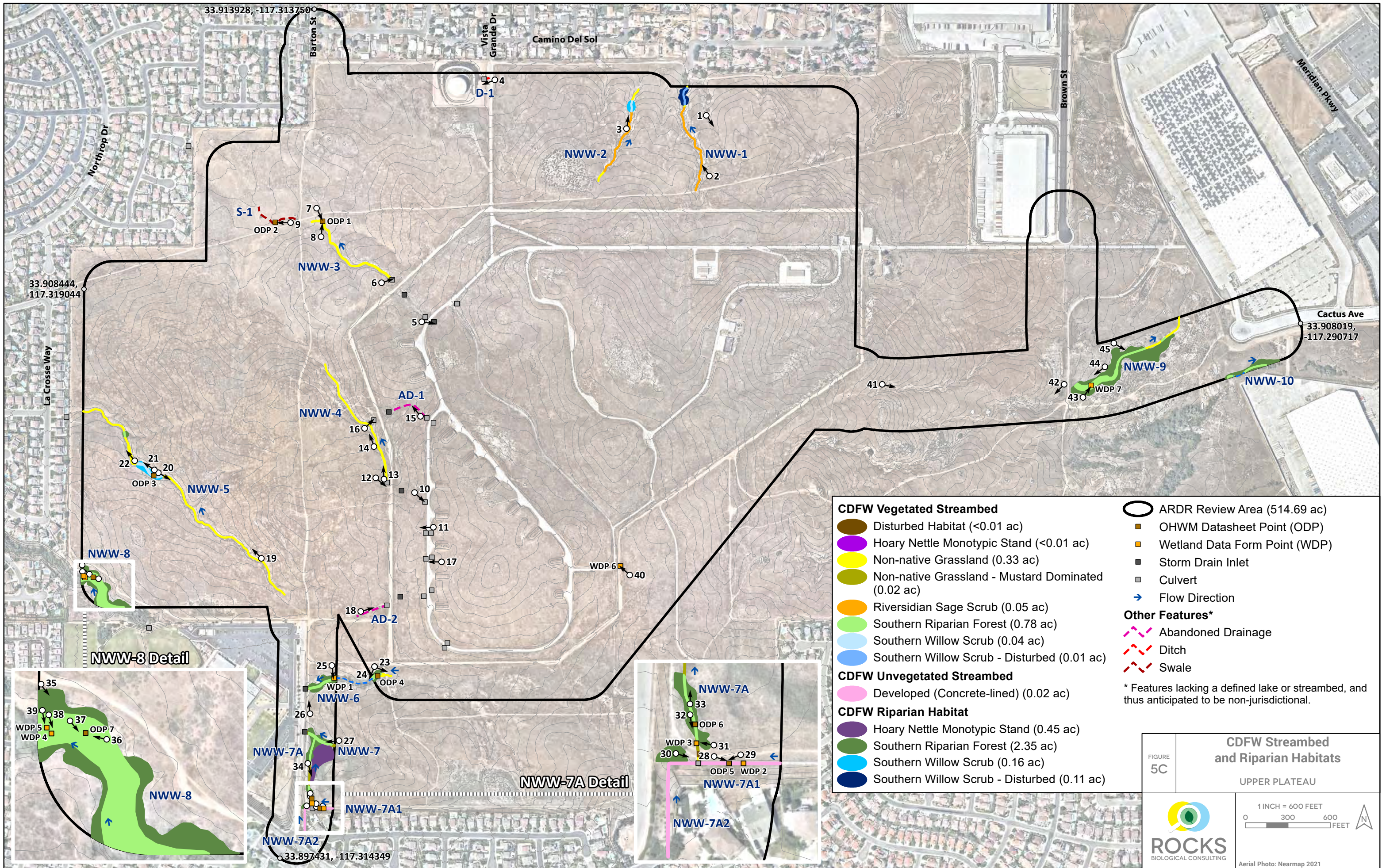


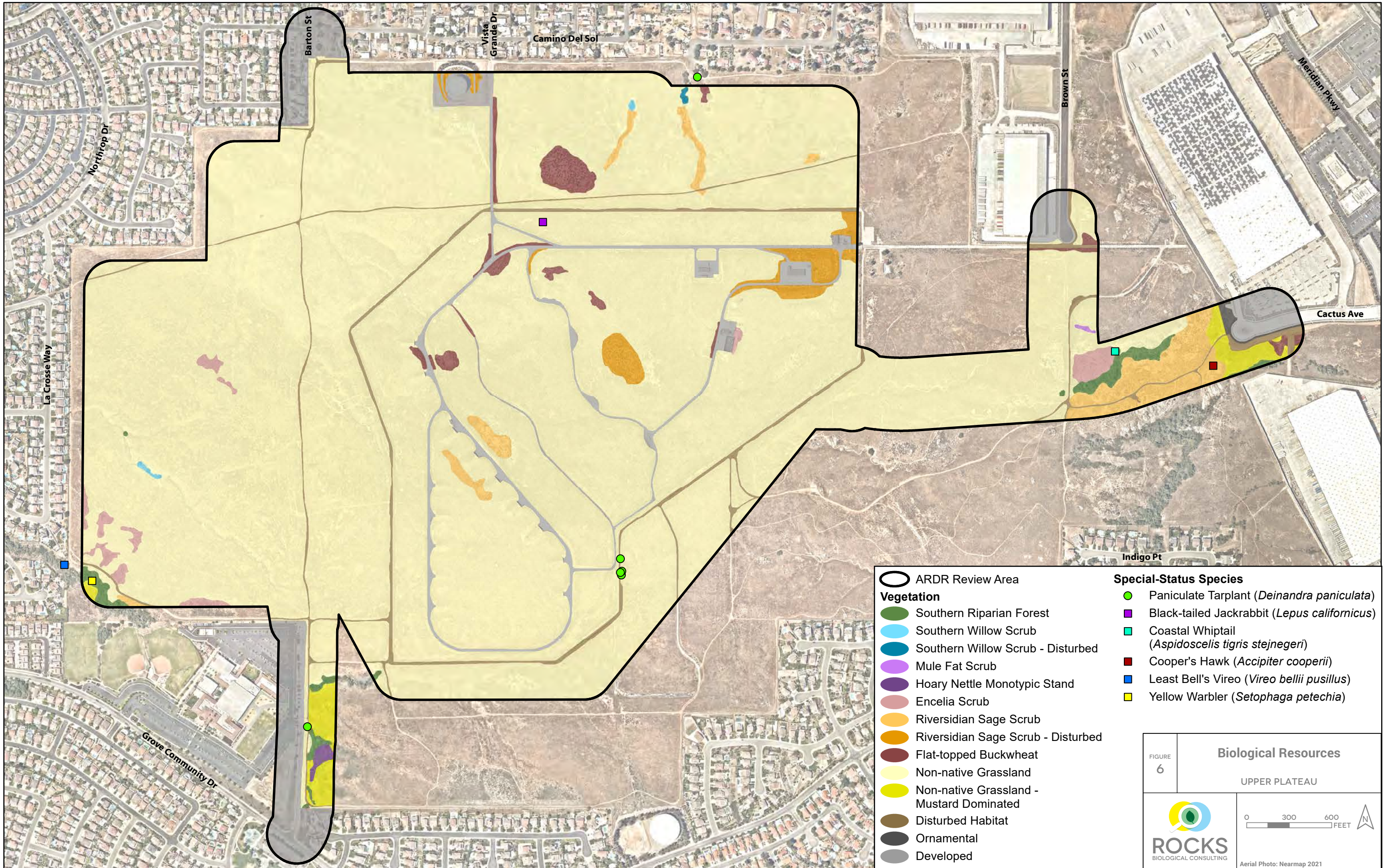
FIGURE 5C
CDFW Streambed and Riparian Habitats
 UPPER PLATEAU

1 INCH = 600 FEET

0 300 600 FEET


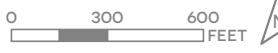

ROCKS
 BIOLOGICAL CONSULTING

Aerial Photo: Nearmap 2021



- ARDR Review Area
- Vegetation**
- Southern Riparian Forest
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Mule Fat Scrub
- Hoary Nettle Monotypic Stand
- Encelia Scrub
- Riversidian Sage Scrub
- Riversidian Sage Scrub - Disturbed
- Flat-topped Buckwheat
- Non-native Grassland
- Non-native Grassland - Mustard Dominated
- Disturbed Habitat
- Ornamental
- Developed

- Special-Status Species**
- Panicate Tarplant (*Deinandra paniculata*)
- Black-tailed Jackrabbit (*Lepus californicus*)
- Coastal Whiptail (*Aspidoscelis tigris stejnegeri*)
- Cooper's Hawk (*Accipiter cooperii*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Yellow Warbler (*Setophaga petechia*)

FIGURE 6	Biological Resources
	UPPER PLATEAU
	 
Aerial Photo: Nearmap 2021	

APPENDIX A

**CHECKLIST: MINIMUM STANDARDS FOR ACCEPTANCE OF
AQUATIC RESOURCES DELINEATION REPORTS**

DRAFT

APPENDIX A. CHECKLIST: MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS, LOS ANGELES DISTRICT REGULATORY DIVISION, USACE, MARCH 16, 2017

REPORT SECTION/ PAGE NUMBER	MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS	ADDITIONAL NOTES
Section 1; Appendix C	1. JD REQUEST AND FORMS: <input checked="" type="checkbox"/> A cover letter indicating whether you are requesting a jurisdictional determination (JD)*. <input checked="" type="checkbox"/> If you are requesting a JD, you must complete, sign, and return the Request for Corps Jurisdictional Determination (JD) sheet. <input checked="" type="checkbox"/> For preliminary jurisdictional determinations the Preliminary Jurisdictional Determination Form must be signed and submitted.	
Section 9	2. CONTACT INFORMATION: Contact information for the <input checked="" type="checkbox"/> applicant(s), <input checked="" type="checkbox"/> property owner(s), and <input checked="" type="checkbox"/> agent(s).	
N/A	3. SITE ACCESS: If the property owner or their representatives will not accompany the Corps to the site, a signed statement from the property owner(s) allowing Corps personnel to enter the property and to collect samples during normal business hours. If the property lacks direct access by public roads (in other words, access requires passage through private property not owned by the applicant), the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for Corps personnel.	Property owner and/or representatives will accompany the Corps for a site visit upon request.
Section 2.1	4. LOCATION: <input checked="" type="checkbox"/> Directions to the survey area, <input type="checkbox"/> an address (if available) and <input checked="" type="checkbox"/> one or more set of geographic coordinates expressed in decimal degrees.	
Section 3.2.1	5. DELINEATION MANUAL CONFIRMATION: <input checked="" type="checkbox"/> A statement confirming the delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and applicable regional supplement(s). <input checked="" type="checkbox"/> The regional supplement(s) used must be identified. <input checked="" type="checkbox"/> For OHWM delineations, a statement must be included confirming the use of the OHWM field guide or that it is not applicable.	
Section 6	6. AQUATIC RESOURCE(S) DESCRIPTION: <input checked="" type="checkbox"/> A narrative describing all aquatic resources on-site and an explanation of the mapped boundaries and any complex transition zones. <input checked="" type="checkbox"/> If the site contains resources that only meet one or two of the three wetland criteria or do not exhibit a clear OHWM, describe the rationale for their inclusion or exclusion from the delineation. <input checked="" type="checkbox"/> Also explain if any erosional features, upland swales, ditches and other potential aquatic features were considered but not included in the delineation.	
Figures 1 and 5A; Section 6; Table 6	7. AQUATIC RESOURCE MAPPING AND ACREAGE: <input checked="" type="checkbox"/> Map of the outside survey boundary, <input checked="" type="checkbox"/> total extent of aquatic and proposed non-aquatic features, <input checked="" type="checkbox"/> type of feature(s) (waters of the United States or wetland), and include <input checked="" type="checkbox"/> the total acreage for each polygon.	
Section 3.2; Table 1	8. FIELD WORK DATES: <input checked="" type="checkbox"/> Date(s) field work was completed.	
Table 6	9. AQUATIC RESOURCE TABLE: A table listing all aquatic resources. The table must include <input checked="" type="checkbox"/> the name of each aquatic resource (actual or arbitrary), <input checked="" type="checkbox"/> its Cowardin type, <input checked="" type="checkbox"/> acreage, <input checked="" type="checkbox"/> summary of OHWM/wetland presence, <input checked="" type="checkbox"/> dominant vegetation for each, and <input checked="" type="checkbox"/> location (latitude/longitude in decimal degrees). <input checked="" type="checkbox"/> For linear features, the table must show both acreage and linear feet as well as channel measurements (active channel width).	
Section 4; Tables 4 and 5; Appendices B, F, and G	10. FIELD CONDITIONS: A description of existing field conditions, including <input checked="" type="checkbox"/> current land use, <input checked="" type="checkbox"/> normal conditions, <input checked="" type="checkbox"/> flood/drought conditions, <input type="checkbox"/> irrigation practices, <input checked="" type="checkbox"/> past or recent manipulation to the site, and <input type="checkbox"/> characteristics considered atypical (for criteria see OHWM and wetland supplement guides). <input checked="" type="checkbox"/> Include WETS tables or pre-site visit precipitation data as appropriate: https://www.wcc.nrcs.usda.gov/climate/wets_doc.html .*	N/A for unchecked; APT data provided in

		lieu of WETS tables
Section 4.2	11. HYDROLOGY: <input checked="" type="checkbox"/> A discussion of the hydrology at the site, including <input checked="" type="checkbox"/> all known surface or subsurface sources, <input checked="" type="checkbox"/> drainage gradients, <input checked="" type="checkbox"/> downstream connections to the nearest traditional navigable waterway or interstate water, and <input checked="" type="checkbox"/> any influence from manmade water sources such as irrigation.	
N/A	12. REMOTE SENSING: <input type="checkbox"/> If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools and data used and copies of the maps/photographs.	N/A
Section 4.1; Table 2; Figure 4; Appendix G	13. SOILS: <input checked="" type="checkbox"/> Soil descriptions, <input checked="" type="checkbox"/> soil map(s), <input checked="" type="checkbox"/> soil photos, and <input checked="" type="checkbox"/> a discussion of hydric soils (for wetland delineations only).	
Figure 2	14. USGS QUADRANGLE: <input checked="" type="checkbox"/> A site location map on a 7.5-minute USGS quadrangle. The map must provide <input checked="" type="checkbox"/> the name of the USGS quadrangle, <input checked="" type="checkbox"/> Section, <input checked="" type="checkbox"/> Township, <input checked="" type="checkbox"/> Range, and <input checked="" type="checkbox"/> the latitude and longitude in decimal degree format.	
Appendix I	15. BULK UPLOAD FORM: <input checked="" type="checkbox"/> For sites with 3 or more separate aquatic features a completed copy of the ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet must be submitted.	
Figure 5 series	16. FIGURES: <input checked="" type="checkbox"/> Map(s) of all delineated aquatic resources in accordance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program.	
Figure 5 series and Appendix G	17. SITE PHOTOGRAPHS: <input checked="" type="checkbox"/> Ground photographs showing representative aquatic resource sites (or lack of), <input checked="" type="checkbox"/> as well as an accompanying map of photo-points and table of photographic information (see Final Map and Drawing Standards for the South Pacific Division Regulatory Program item no. 8 a-c).	
Appendix E	18. DATA FORMS: <input checked="" type="checkbox"/> Completed data forms including all essential information to make a jurisdictional determination [e.g. 2006 Wetland Determination Data Form -- Arid West Supplement; 2010 Arid West Ephemeral and Intermittent Streams OHWM Datasheet].	
Section 3	19. METHODS: <input checked="" type="checkbox"/> A description of the methods used to survey the aquatic resource boundaries. <input checked="" type="checkbox"/> If GPS data is used, the level of accuracy must be included. Ideally, the GPS equipment should have the capability of sub-meter (≤ 1 meter) level horizontal accuracy.	
Appendix J	20. GIS DATA: <input checked="" type="checkbox"/> Digital data for the site, aquatic resource boundaries, and data point locations must be provided in a geographic information system (GIS) format, preferably either ESRI shapefiles or Geodatabase format, but GoogleEarth KMZ or KML files may be acceptable non-complex projects. Each GIS data file must be accompanied by a metadata file containing the appropriate geographic coordinate system, projection, datum, and labeling description. If GIS data is unavailable or otherwise cannot be produced and the Corps determines a site visit is necessary, the aquatic resource boundaries should be physically marked with numbered flags or stakes to facilitate verification by the Corps.	

APPENDIX B

**APPLICABLE AQUATIC RESOURCE PROTECTION
REGULATIONS**

DRAFT

APPENDIX B. APPLICABLE AQUATIC RESOURCE PROTECTION REGULATIONS

Several regulations have been established by federal, state, and local agencies to protect and conserve aquatic resources. The descriptions below provide a brief overview of agency regulations that may be applicable to the project.

Executive Order 11990

Executive Order 11990 aims to avoid direct or indirect impacts on wetlands from federal or federally approved projects when a practicable alternative is available. If wetland impacts cannot be avoided, all practicable measures to minimize harm must be included.

Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S. Code [USC] § 1251 et seq.; CWA), the U.S. Army Corps of Engineers (Corps) is authorized to regulate any activity that would result in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 Code of Federal Regulations (CFR) 328.3 (51 Federal Register [FR] 41217, November 13, 1983; 53 FR 20764, June 6, 1988) and further defined by the 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC; 531 U.S. 159) decision and the 2006 *Rapanos v. United States* (547 U.S. 715) decision. The Corps, with oversight from the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 permits. The Corps would require a Standard Individual Permit (SIP) for more than minimal impacts to waters of the U.S. as determined by the Corps. Projects with minimal individual and cumulative adverse effects on the environment may meet the conditions of an existing Nationwide Permit (NWP).

A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for all Section 404 permitted actions. The RWQCB, a division of the State Water Resources Control Board, provides oversight of the Section 401 certification process in California. The RWQCB must certify "that there is a reasonable assurance that the activity will be conducted in a manner which will not violate water quality standards" (40 CFR 121.2(a)(3)). Water Quality Certification's must be based on the finding that a proposed discharge will comply with applicable water quality standards.

The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the U.S. under Section 402 of the CWA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.) provides for statewide coordination of water quality regulations. The SWRCB was established as the statewide authority and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis. The RWQCBs have primary responsibility for protecting water quality in California. As discussed above, the RWQCBs regulate discharges to surface waters under the CWA. In addition, the RWQCBs are responsible for administering the Porter-Cologne Water Quality Control Act.

Pursuant to the Porter-Cologne Water Quality Control Act, the state is given authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 permit is not

required for the activity. "Waste" is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

California Fish and Game Code Section 1600-1602

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code (CFGC), California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Notification of Lake or Streambed Alteration must be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW has jurisdiction over riparian habitats associated with watercourses and wetland habitats supported by a river, lake, or stream. Jurisdictional waters are delineated by the outer edge of riparian vegetation (i.e., drip line) or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources (e.g., riparian or wetland areas not supported by a river, lake, or stream). CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and applicant is the Lake or Streambed Alteration Agreement.

APPENDIX C

JURISDICTIONAL DETERMINATION REQUEST FORMS

DRAFT

Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: District Name Here

- I am requesting a JD on property located at: south of Alessandro Blvd., north of Dayton St, west of terminus of Cactus Ave.
(Street Address)
City/Township/Parish: unincorporated County: Riverside State: CA
Acreage of Parcel/Review Area for JD: 514.69
Section: 9-10, 15-17, 20-21 Township: 3 S Range: 4 W
Latitude (decimal degrees): 33.906896 Longitude (decimal degrees): -117.308733
(For linear projects, please include the center point of the proposed alignment.)
- Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
- I currently own this property. I plan to purchase this property.
 I am an agent/consultant acting on behalf of the requestor.
 Other (please explain): _____
- Reason for request: (check as many as applicable)
 I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
 I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
 I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
 I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
 I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
 A Corps JD is required in order to obtain my local/state authorization.
 I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
 I believe that the site may be comprised entirely of dry land.
 Other: _____
- Type of determination being requested:
 I am requesting an approved JD.
 I am requesting a preliminary JD.
 I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
 I am unclear as to which JD I would like to request and require additional information to inform my decision.

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature: _____ Date: _____

- Typed or printed name: Timothy C. Reeves
Company name: Meridian Park LLC
Address: 1156 North Mountain Avenue
Upland, CA 91786
Daytime phone no.: (909) 579-1294
Email address: timothy.reeves@lewismc.com

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.

Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: _____.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____.
- Data sheets prepared by the Corps: _____.
- Corps navigable waters' study: _____.
- U.S. Geological Survey Hydrologic Atlas: _____.
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: _____.
- Natural Resources Conservation Service Soil Survey. Citation: _____.
- National wetlands inventory map(s). Cite name: _____.
- State/local wetland inventory map(s): _____.
- FEMA/FIRM maps: _____.
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): _____.
or Other (Name & Date): _____.
- Previous determination(s). File no. and date of response letter: _____.
- Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of
Regulatory staff member
completing PJD

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH “MAY BE” SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resources (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource “may be” subject (i.e., Section 404 or Section 10/404)
NWW-1	33.911494	-117.304933	0.04 ac/821 ln ft	Non-wetland waters	Section 404
NWW-2	33.911516	-117.306580	0.03 ac/753 ln ft	Non-wetland waters	Section 404
NWW-3	33.909152	-117.312802	0.03 ac/813 ln ft	Non-wetland waters	Section 404
NWW-4	33.905922	-117.312596	0.05 ac/995 ln ft	Non-wetland waters	Section 404
NWW-5	33.904494	-117.316792	0.12 ac/2,159 ln ft	Non-wetland waters	Section 404
NWW-6	33.900933	-117.312589	0.04 ac/373 ln ft	Non-wetland waters	Section 404
NWW-7	33.899747	-117.313461	0.02 ac/236 ln ft	Non-wetland waters	Section 404
NWW-7A	33.899104	-117.313655	0.02 ac/512 ln ft	Non-wetland waters	Section 404
NWW-7A1	33.898410	-117.313369	<0.01 ac/146 ln ft	Non-wetland waters	Section 404
NWW-7A2	33.898233	-117.313761	0.01 ac/216 ln ft	Non-wetland waters	Section 404
NWW-8	33.902621	-117.318620	0.11 ac/425 ln ft	Non-wetland waters	Section 404
NWW-9	33.907245	-117.294771	0.05 ac/974 ln ft	Non-wetland waters	Section 404
NWW-10	33.907086	-117.291994	0.01 ac/202 ln ft	Non-wetland waters	Section 404

APPENDIX D

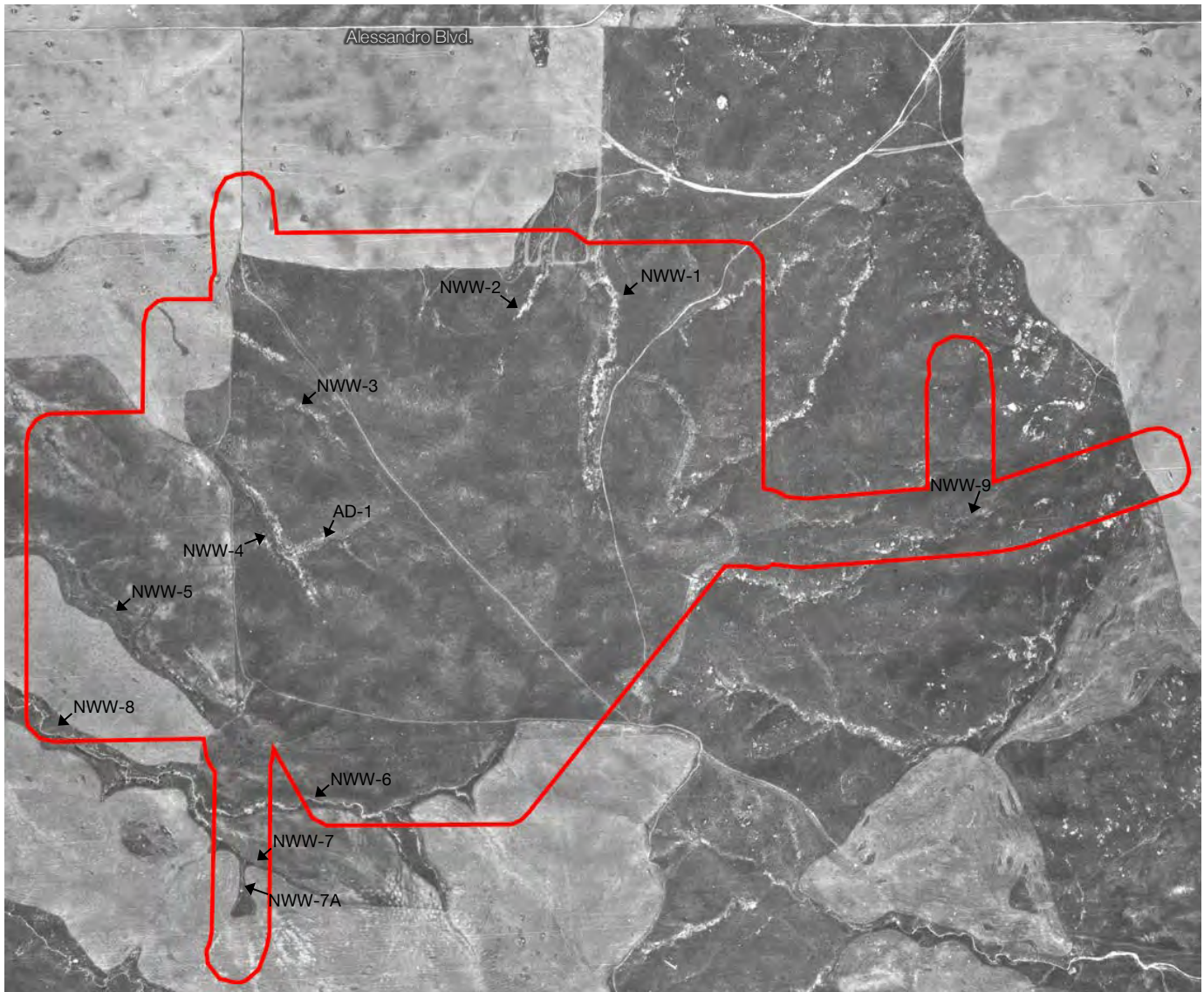
RECENT AND HISTORIC AERIALS ANALYSIS

DRAFT

Appendix D

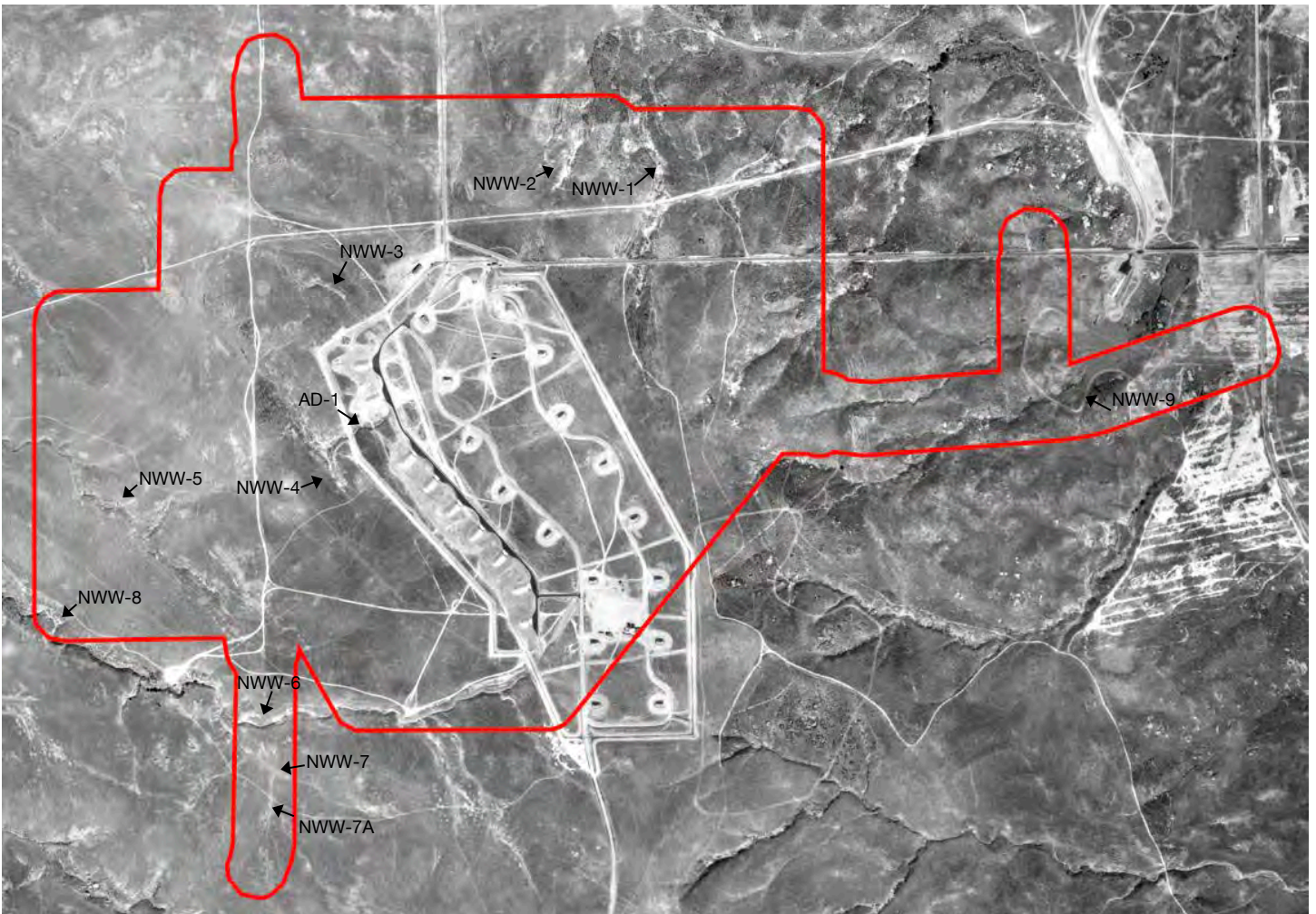
Recent and Historic Aerials Analysis

Source: Google Earth Pro and University of California – Santa Barbara



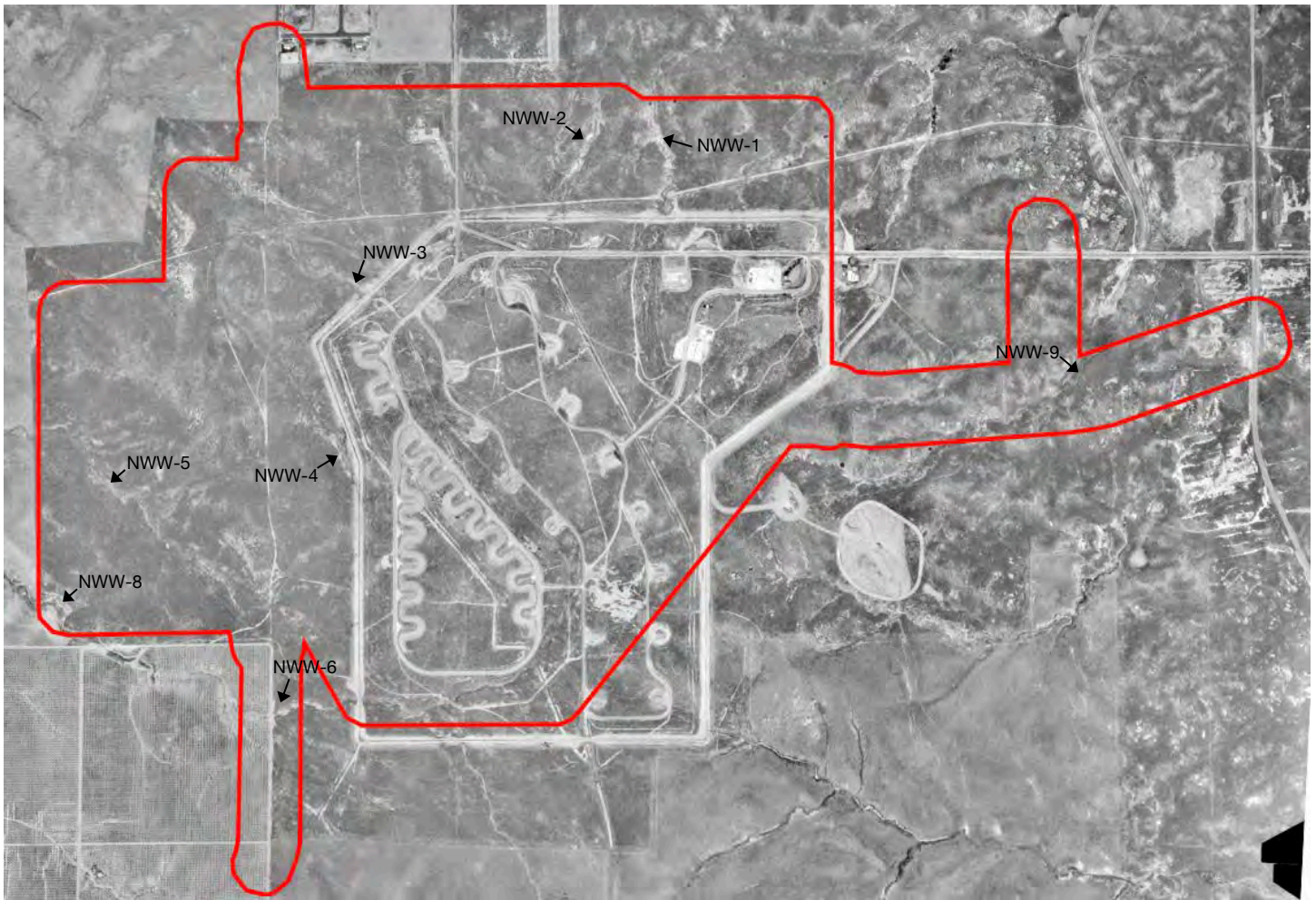
September 1931 – Very little development occurs within and surrounding the review area in the September 1931 aerial. Alessandro Boulevard is noted above for reference. Dirt roads are visible throughout the review area. Portions of the southwest corners and northern segment of the review area appear to be regularly mowed as distinguished by the contrast in color between areas of higher elevation and lower elevation between hill slopes and along drainage features.

Non-Wetland Water (NWW-) 1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-8, and NWW-9 are generally visible in their present-day locations. NWW-1 extends farther south than its present-day extent while NWW-2 commences slightly north of its present-day extent in the September 1931 aerial. Additionally, NWW-6 extends farther east and west than its present-day extent and NWW-7 extends farther west than its present-day extent in the September 1931 aerial; NWW-6 and NWW-7 also appear to connect downstream to NWW-8. Abandoned Drainage (AD-) 1 is slightly evident; however, NWW-7A1, NWW-7A2, NWW-10, Swale (S-) 1, AD-2, and Ditch (D-) 1 are not yet visible in the September 1931 aerial.



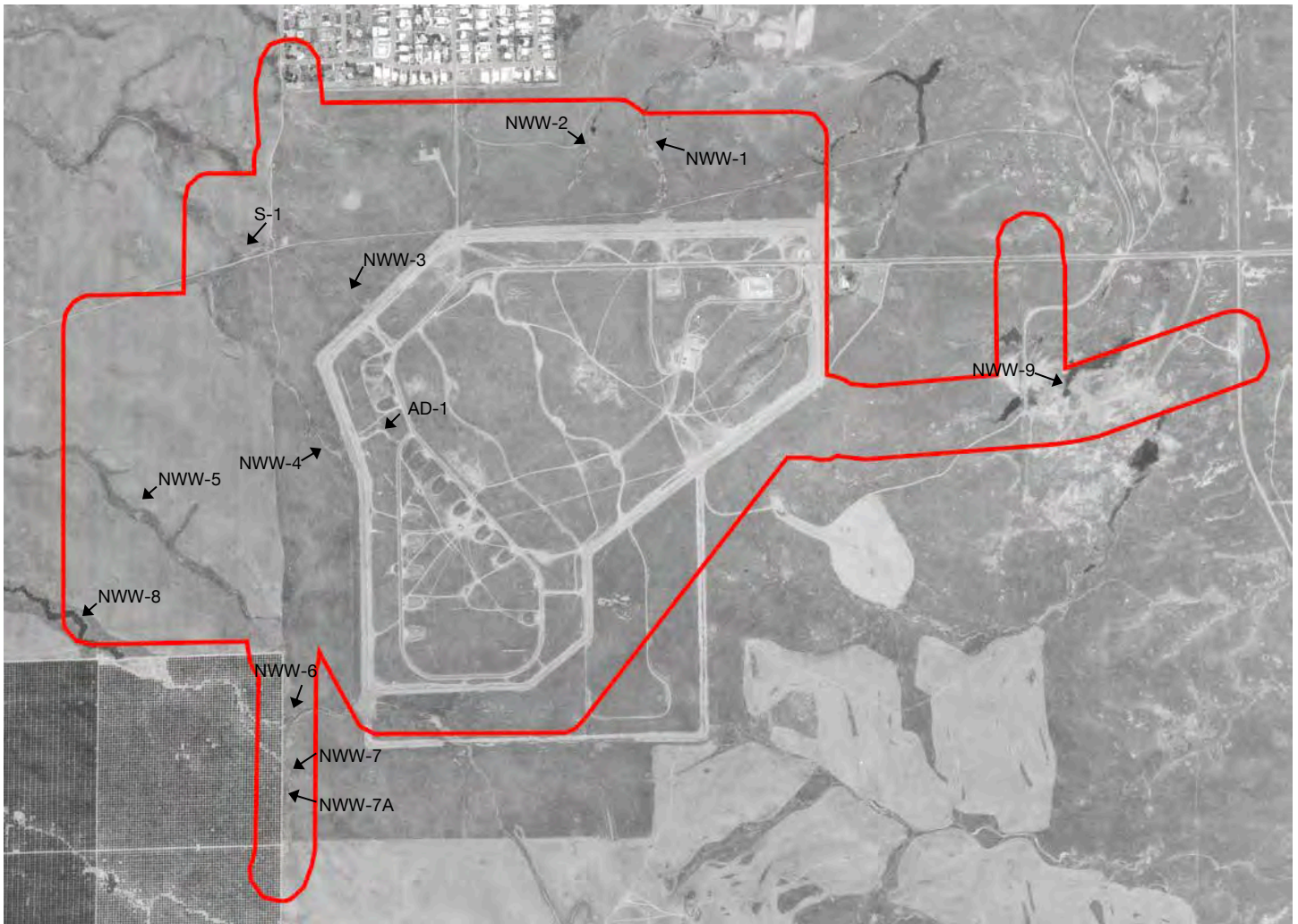
January 1953 – Development begins to appear northeast of the review area in the January 1953 aerial. A large bunker/military installation was constructed within the review area between September 1931 and January 1953; this development further defined and established various roadways throughout the review area. Remains from this development, such as roadways and bunkers, exist to this day.

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-8, and NWW-9 are generally visible in their present-day locations, although NWW-3 and NWW-4 are less evident than in the September 1931 aerial. NWW-1 still extends farther south than its present-day extent; NWW-6 still extends farther east and west than its present-day extent, connecting downstream with NWW-8, and now appears to receive runoff from the bunker/military installation in the January 1953 aerial. AD-1 appears to be further defined than in the September 1931 aerial. The area of present-day NWW-4 and AD-1 appears to receive runoff from the newly constructed bunker/military installation. NWW-7 and NWW-7A are less evident than in the September 1931 aerial. NWW-7A1, NWW-7A2, NWW-10, S-1, AD-2, and D-1 are not yet visible in the January 1953 aerial.



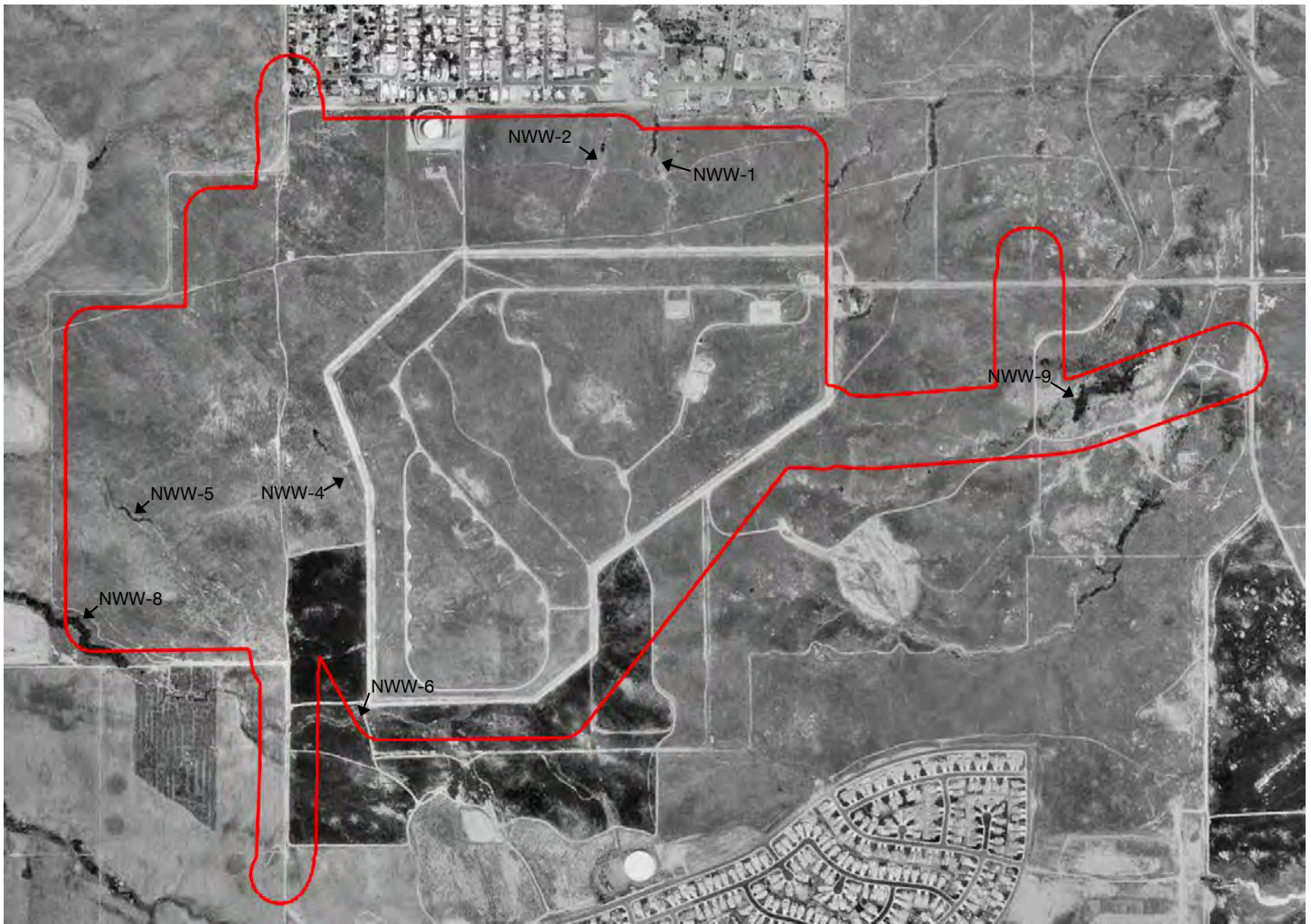
January 1967 – Residential development was under construction north of the review area and agriculture production was established in the southwestern portion of the review area between January 1953 and 1967. The military/bunker installation was also further expanded between January 1953 and 1967. Remains from this expansion, such as roadways and bunkers, exist to this day.

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, and NWW-8 are generally visible in their present-day locations. NWW-6 still extends farther east and west than its present-day extent, connecting downstream with NWW-8, and appears to receive runoff from the military/bunker installation. NWW-9 is only faintly visible and generally not in its present-day extent. NWW-1 no longer appears to extend farther south than its present-day location; NWW-7 and NWW-7A are no longer evident in the January 1967 aerial. AD-1 is now less apparent; however, the bunker/military installation continues to manipulate the area where present-day NWW-4 and AD-1 are located. NWW-7A1, NWW-7A2, NWW-10, S-1, AD-2, and D-1 are not yet visible in the January 1967 aerial.



June 1980 – Agriculture production continues in the southwest portion of the review area and mowing appears active in the western portion of the review area in June 1980. Construction of the residential development north of the review area was completed between January 1967 and June 1980. Additionally, the military/bunker installation did not expand between January 1967 and June 1980. Remains from this establishment, such as roadways and bunkers, exist to this day.

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-8, and NWW-9 are generally visible in their present-day locations. NWW-6 still extends farther east and west than its present-day extent, connecting downstream with NWW-8, although the eastern extent of NWW-6 is less distinguishable than in previous aerals; NWW-6 appears to receive runoff from the military/bunker installation. AD-1 is evident in the June 1980 aerial; the bunker/military installation continues to manipulate the area where present-day NWW-4 and AD-1 are located. NWW-7 and NWW-7A are again slightly evident; S-1 is now also slightly evident. NWW-7A1, NWW-7A2, NWW-10, AD-2, and D-1 are not yet visible in the June 1980 aerial.



May 1994 – Agriculture production in the southwest portion of the review area appears to have ceased and the water tower in the northern portion of the review area was constructed between June 1980 and May 1994. Additionally, the various makeshift roadways and overall activity throughout the military/bunker installation has been severely reduced between June 1980 and May 1994; however, remains from this establishment, such as the major roadways and bunkers, exist to this day.

NWW-1, NWW-2, NWW-4, NWW-5, NWW-6, NWW-8, and NWW-9 are generally visible in their present-day locations, although NWW-4 and portions of NWW-5 appear less evident. NWW-6 still extends farther east and west than its present-day extent, connecting downstream with NWW-8. NWW-3, NWW-7, NWW-7A, and S-1 are now indistinguishable; NWW-10 is not well-defined. The reduced activity throughout the military/bunker installation appears to have resulted in AD-1, NWW-3, and S-1 becoming less defined and NWW-4 becoming only slightly visible. NWW-7A1, NWW-7A2, AD-2, and D-1 are not yet visible in the May 1994 aerial, although D-1 was likely installed with construction of the water tower and is not visible in the May 1994 aerial due to the photo's low resolution.



November 2009 – Various housing developments were constructed around the review area between May 1994 and November 2009. Additionally, a large church and associated parking lots were constructed in the southwest portion of the review area/southwest of the review area beginning in September 2004. The extent of the military/bunker installation did not appear to change between May 1994 and November 2009. The remains from this establishment as shown in the November 2009 aerial exist to this day.

NWW-1, NWW-2, NWW-3, NWW-4, NWW-5, NWW-6, NWW-7, NWW-7A, NWW-7A1, NWW-7A2, NWW-8, NWW-9, and NWW-10 are generally visible in their present-day locations in the November 2009 aerial. NWW-6 begins to form its present-day extent as the easternmost portion of the feature shown in previous aerals is no longer visible in the November 2009 aerial. Additionally, construction of the large church and associated lots to the west of NWW-6 and NWW-7 appears to have cut off any direct, surface hydrological connection with NWW-8.

The various housing developments established between May 1994 and November 2009 appear to have resulted in the construction of NWW-7A1 and NWW-7A2. D-1 is visible in the November 2009 aerial and was likely installed with construction of the water tower (see May 1994 aerial). AD-2 is now slightly visible; S-1 and AD-1 are faintly visible in the November 2009 aerial.



March 2017 – Development within and around the review area did not change significantly between November 2009 and March 2017. NWW-1, NWW-2, NWW-5, NWW-6, NWW-7, NWW-7A1, NWW-7A2, NWW-8, NWW-9, NWW-10, and D-1 are generally visible in their present-day locations in the March 2017 aerial. NWW-7A is less apparent, although some vegetation is visible near its present-day extent. AD-2 and NWW-4 are now only faintly visible; however, AD-1, NWW-3, and S-1 are no longer evident in the March 2017 aerial.

APPENDIX E

**ARID WEST WETLAND DETERMINATION DATA FORMS AND
EPHEMERAL AND INTERMITTENT STREAMS OHWM
DATASHEETS**

DRAFT

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 7/28/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 1
 Investigator(s): Sarah Krejca, Chelsea Polevy Section, Township, Range: T35, R4W, S20
 Landform (hillslope, terrace, etc.): Within drainage Local relief (concave, convex, none): Slightly concave Slope (%): 0-1%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.900942 Long: -117.313135 Datum: WGS 84
 Soil Map Unit Name: Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point taken within drainage that receives runoff from dirt road. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic).	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix gooddingii</u>	40%	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
2. _____				
3. _____				
4. _____				
40% = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5-foot radius</u>)				
1. <u>Baccharis salicina</u>	65%	Yes	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
65% = Total Cover				
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <u>Hirschfeldia incana</u>	8%	Yes	NL/UPL	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Urtica dioica</u>	2%	Yes	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
10% = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
N/A = Total Cover				
% Bare Ground in Herb Stratum <u>90%</u>		% Cover of Biotic Crust <u>0%</u>		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Remarks:
 Sample point taken within area mapped as southern riparian forest. Ten-foot radius for tree stratum used to only account for vegetation within area growing under same soil and hydrologic conditions (i.e., within the drainage).

SOIL

Sampling Point: WDP 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10 YR 3/3	100%	N/A	N/A	N/A	N/A	Sandy loam	No evidence of redox observed.

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: N/A
 Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks:

Dry soils; soils moistened with spray bottle to record soil color. Uniform soil throughout. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): N/A
 Water Table Present? Yes No Depth (inches): N/A
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): N/A

Wetland Hydrology Present? Yes No

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

N/A

Remarks:

FAC-Neutral Test met. No other wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 08/06/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 2
 Investigator(s): Sarah Krejca, Ian Hirschler Section, Township, Range: T35, R4W, S20
 Landform (hillslope, terrace, etc.): Within ditch Local relief (concave, convex, none): None Slope (%): 1-2%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.898410 Long: -117.313346 Datum: WGS 84
 Soil Map Unit Name: Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point taken within concrete v-ditch. Hydrology considered significantly disturbed as the location receives runoff from surrounding urban development. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic); however, wetland hydrology parameter met. Wetland conditions not expected within concrete v-ditch based on lack of accumulated sediment - vegetation and soils parameters also not met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>N/A</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____				
3. _____				
4. _____				
<u>N/A</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1. <u>N/A</u>				
2. _____				
3. _____				
4. _____				
5. _____				
<u>N/A</u> = Total Cover				
Herb Stratum (Plot size: <u>N/A</u>)				
1. <u>N/A</u>				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
<u>N/A</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1. <u>N/A</u>				
2. _____				
<u>N/A</u> = Total Cover				
% Bare Ground in Herb Stratum <u>N/A</u>		% Cover of Biotic Crust <u>N/A</u>		Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Remarks:
 Concrete-lined; no vegetation present in ditch. Per Arid West Manual, less than 5% vegetation under normal circumstances equals no wetland. Data collected for informational purposes only.

SOIL

Sampling Point: WDP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
N/A								
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 1 cm Muck (A9) (LRR C)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> 2 cm Muck (A10) (LRR B)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Stratified Layers (A5) (LRR C)			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)			<input type="checkbox"/> Redox Dark Surface (F6)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Vernal Pools (F9)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)								
Restrictive Layer (if present):								
Type: <u>N/A</u>								
Depth (inches): <u>N/A</u>						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:								
No soils present; concrete v-ditch with no accumulated sediment.								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)			
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>			
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
N/A					
Remarks:					
Water marks observed as staining on portions of concrete v-ditch. Drift deposits present as dead plant material. See ODP 5 for OHWM data. Did not meet FAC-Neutral Test.					

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 7/28/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 3
 Investigator(s): Sarah Krejca, Chelsea Polevy Section, Township, Range: T35, R4W, S20
 Landform (hillslope, terrace, etc.): Within faint drainage Local relief (concave, convex, none): None Slope (%): 0-3%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.898505 Long: -117.313621 Datum: WGS 84
 Soil Map Unit Name: Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point taken within an area with a faint OHWM, downstream from concrete v-ditch, and adjacent to Tamarix ramosissima. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic).	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
4. _____	_____	_____	_____	
N/A = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Tamarix ramosissima</u>	<u>35%</u>	<u>Yes</u>	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Salix gooddingii</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>5</u> x 2 = <u>10</u>
4. _____	_____	_____	_____	FAC species <u>35</u> x 3 = <u>105</u>
5. _____	_____	_____	_____	FACU species <u>50</u> x 4 = <u>200</u>
40% = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>90</u> (A) <u>315</u> (B)
				Prevalence Index = B/A = <u>3.50</u>
Herb Stratum (Plot size: <u>5-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Festuca myuros</u>	<u>35%</u>	<u>Yes</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Marrubium vulgare</u>	<u>15%</u>	<u>Yes</u>	<u>FACU</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
N/A = Total Cover				
% Bare Ground in Herb Stratum <u>50%</u> % Cover of Biotic Crust <u>0%</u>				

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

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
 Sample point taken within area mapped as southern riparian forest - Goodding's black willow dominated. Tamarix ramosissima (NL) is synonymous with Tamarix chinensis (FAC) per the NWPL. Festuca myuros (NL) is synonymous with Vulpia myuros (FACU) per the NWPL.

SOIL

Sampling Point: WDP 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10 YR 3/3	100%	N/A	N/A	N/A	N/A	Loam	No evidence of redox observed.

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: Shovel refusal - compact soils
 Depth (inches): @ 14 inches

Hydric Soil Present? Yes No

Remarks:

Dry soils; soils moistened with spray bottle to record soil color. Uniform soil throughout. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): N/A
 Water Table Present? Yes No Depth (inches): N/A
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): N/A

Wetland Hydrology Present? Yes No

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

N/A

Remarks:

Did not meet FAC-Neutral Test; no wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 7/28/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 4
 Investigator(s): Sarah Krejca, Chelsea Polevy Section, Township, Range: T35, R4W, S17
 Landform (hillslope, terrace, etc.): Within drainage Local relief (concave, convex, none): Slightly concave Slope (%): 0-1%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.902847 Long: -117.318961 Datum: WGS 84
 Soil Map Unit Name: Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point taken within drainage southwest of dirt road, north of ball fields, and west of residential development. Area receives flows from off-site concrete culvert and runoff from adjacent ball fields to the south. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic); however, three-parameter wetland persisted.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix laevigata</u>	10%	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
	10%	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____				
2. _____				
3. _____				
4. _____				
Herb Stratum (Plot size: <u>5-foot radius</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Typha sp.</u>	35%	Yes	OBL	
2. <u>Solidago californica</u>	8%	No	NL/UPL	
3. <u>Nasturtium officinale</u>	3%	No	OBL	
4. <u>Urtica dioica</u>	2%	No	FAC	
5. <u>Pulicaria paludosa</u>	2%	No	FAC	
6. _____				
7. _____				
8. _____				
	50%	= Total Cover		
Woody Vine Stratum (Plot size: <u>N/A</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____				
2. _____				
	N/A	= Total Cover		
% Bare Ground in Herb Stratum <u>50%</u>		% Cover of Biotic Crust <u>0%</u>		

Remarks:
 Sample point taken within area of southern riparian forest. Ten-foot radius for tree stratum used to only account for vegetation within area growing under same soil and hydrologic conditions (i.e., within the drainage). Typha sp. was difficult to key to species; however, all possible species of Typha are OBL.

SOIL

Sampling Point: WDP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10 YR 2/1	95%	7.5 YR 4/4	5%	C	M	Sandy loam	Prominent redox concentrations observed as soft masses.

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

Restrictive Layer (if present):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>N/A</u>	
Depth (inches): <u>N/A</u>	

Remarks:
Soils very wet; allowed to dry to moist conditions before recording soil color. Prominent redox concentrations occur as soft masses within soil matrix.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:			Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>		
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>5 inches</u>		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>8 inches</u>		

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

Remarks:
Water table observed at 5 inches from soil surface; saturation observed at 8 inches from soil surface. Drift deposits present as dead plant material; sediment deposits observed on vegetation. Met FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 7/28/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 5
 Investigator(s): Sarah Krejca, Chelsea Polevy Section, Township, Range: T35, R4W, S17
 Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): None Slope (%): 3-5%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.902876 Long: -117.318989 Datum: WGS 84
 Soil Map Unit Name: Fallbrook rocky sandy loam, shallow, 15 to 50 percent slopes, eroded NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Upland sample point associated with WDP 4 (at slightly higher topography than WDP 4); within area southwest of dirt road, north of ball fields, and west of residential development. Adjacent drainage receives flows from off-site concrete culvert and runoff from adjacent ball fields to the south. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic).	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
N/A = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
N/A = Total Cover				
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <u>Urtica dioica</u>	18%	Yes	FAC	
2. <u>Pulicaria paludosa</u>	3%	No	FAC	
3. <u>Solidago californica</u>	2%	No	NL/UPL	
4. <u>Erigeron canadensis</u>	2%	No	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
25% = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
N/A = Total Cover				
% Bare Ground in Herb Stratum <u>75%</u>		% Cover of Biotic Crust <u>0%</u>		
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point taken within area mapped as southern riparian forest.

SOIL

Sampling Point: WDP 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10 YR 3/3	100%	N/A	N/A	N/A	N/A	Sandy loam	No evidence of redox observed.
12-14	10 YR 3/2	100%	N/A	N/A	N/A	N/A	Loamy sand	No evidence of redox observed.

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: Shovel refusal - rocks/roots
 Depth (inches): @ 14 inches

Hydric Soil Present? Yes No

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): N/A
 Water Table Present? Yes No Depth (inches): N/A
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): N/A

Wetland Hydrology Present? Yes No

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

N/A

Remarks:

Did not meet FAC-Neutral Test; no wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 8/6/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 6
 Investigator(s): Sarah Krejca, Ian Hirschler Section, Township, Range: T35, R4W, S16
 Landform (hillslope, terrace, etc.): Depression/road rut Local relief (concave, convex, none): Concave Slope (%): 0-1%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.903175 Long: -117.306496 Datum: WGS 84
 Soil Map Unit Name: Fallbrook sandy loam, 8 to 15 percent slopes, eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point within road rut adjacent to dirt road. Hydrology considered significantly disturbed as the adjacent dirt road appears to be regularly graded and results in runoff. Soil considered significantly disturbed as fill is present at a depth of 6 inches from the soil surface. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic); however, wetland hydrology parameter still met based on the presence of surface soil cracks. Wetland conditions not expected to persist adjacent to regularly graded road - vegetation and soils parameters also not met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
N/A = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>25</u> (A) <u>105</u> (B) Prevalence Index = B/A = <u>4.2</u>
N/A = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
N/A = Total Cover				
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <u>Trichostema lanceolatum</u>	12%	Yes	FACU	
2. <u>Deinandra paniculata</u>	8%	Yes	FACU	
3. <u>Croton setiger</u>	5%	Yes	NL/UPL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
25% = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
N/A = Total Cover				
% Bare Ground in Herb Stratum <u>75%</u>		% Cover of Biotic Crust <u>0%</u>		

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
 Sample point taken within area mapped as non-native grassland.

SOIL

Sampling Point: WDP 6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10 YR 3/4	100%	N/A	N/A	N/A	N/A	Clay loam	No evidence of redox observed.

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: Shovel refusal - likely fill
 Depth (inches): @ 6 inches

Hydric Soil Present? Yes No

Remarks:

Dry soils; soils moistened with spray bottle to record soil color. Uniform soils throughout. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): N/A
 Water Table Present? Yes No Depth (inches): N/A
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): N/A

Wetland Hydrology Present? Yes No

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

N/A

Remarks:

FAC-Neutral Test not met.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Upper Plateau City/County: Unincorporated Riverside County Sampling Date: 8/6/2021
 Applicant/Owner: Meridian Park, LLC State: CA Sampling Point: WDP 7
 Investigator(s): Sarah Krejca, Ian Hirschler Section, Township, Range: T35, R4W, S15
 Landform (hillslope, terrace, etc.): Within drainage Local relief (concave, convex, none): Slightly concave Slope (%): 0-2%
 Subregion (LRR): LRR C - Mediterranean California Lat: 33.906773 Long: -117.295577 Datum: WGS 84
 Soil Map Unit Name: Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point taken within drainage that receives runoff from dirt road. Drought conditions per APT (i.e., atypical hydrologic conditions/naturally problematic).	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix laevigata</u>	40%	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)
2. <u>Populus fremontii</u>	30%	Yes	FAC	
3. _____				
4. _____				
70% = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1. _____				
2. _____				
3. _____				
N/A = Total Cover				
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <u>Heliotropium curassavicum</u>	5%	Yes	FACU	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
5% = Total Cover				
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
N/A = Total Cover				
% Bare Ground in Herb Stratum <u>95%</u>		% Cover of Biotic Crust <u>0%</u>		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Remarks:
 Sample point taken within area mapped as southern riparian forest.

SOIL

Sampling Point: WDP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10 YR 3/1	100%	N/A	N/A	N/A	N/A	Sandy loam	No evidence of redox observed.

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: <u>Shovel refusal - likely rocks/roots</u> Depth (inches): <u>14 inches</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Dry soils; soils moistened with spray bottle to record soil color. Uniform soils throughout. No hydric soil indicators observed.

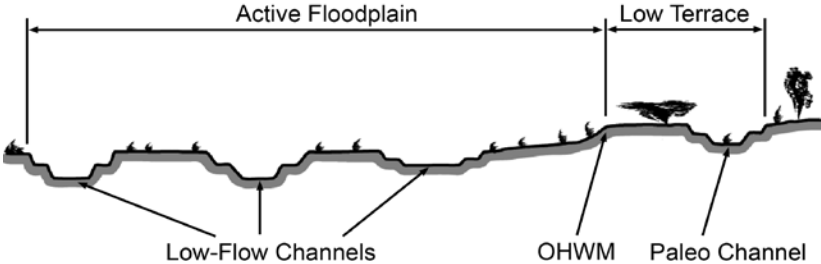
HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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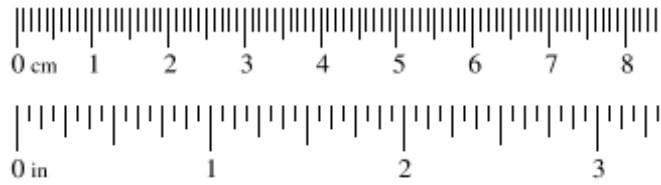
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 N/A
 Remarks:
 Did not meet FAC-Neutral Test; no wetland hydrology indicators observed.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

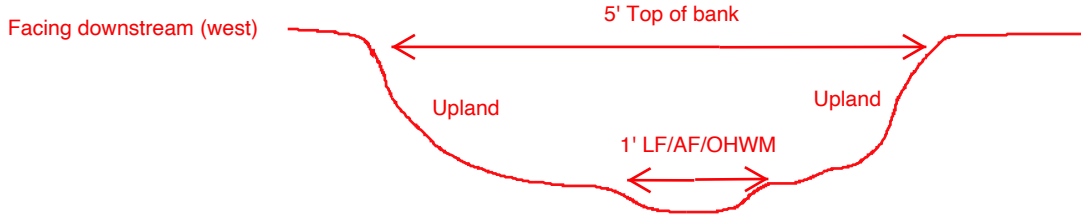
Project: Upper Plateau Project Number: N/A Stream: ODP 1 Investigator(s): Sarah Krejca, Ian Hirschler	Date: 08/06/2021 Time: 0740 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 7 Photo end file#: 8				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.909809, -117.313510				
Potential anthropogenic influences on the channel system: Area is undeveloped but located downslope of a series of culverts and a storm drain inlet, just south and east of two unnamed dirt roads; informal bike trails are also located in the area.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage within area of non-native grassland just downslope of culvert outlet.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event				
Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.909809, -117.313510

Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Approximately 1-foot wide OHWM defined by a faint break in slope and a change in vegetation cover. Data was taken during a drought year; however, indicators still observed and consistent with anticipated extent of OHWM based on review of aerials and site conditions/topography. No distinguishable difference in sediment texture from active floodplain (AF) to upland.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Low-flow channel (LF) is indistinguishable/cannot be determined from AF/OHWM.

Project ID: Upper Plateau

Cross section ID: ODP 1

Date: 08/06/2021

Time: 0740

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt _____

Total veg cover: 80 % Tree: 0 % Shrub: 0 % Herb: 80 %

Community successional stage:

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

Indicators:

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

Comments:

AF defined by faint break in bank slope; AF heavily vegetated. Vegetation dominated by non-native grasses.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt _____

Total veg cover: 50 % Tree: 0 % Shrub: 0 % Herb: 50 %

Community successional stage:

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

Indicators:

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

Comments:

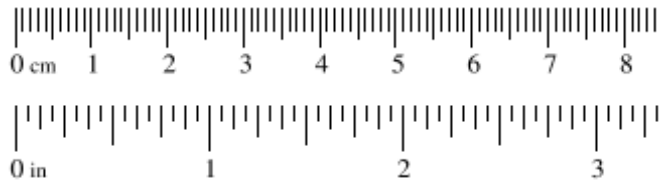
No true low terrace; uplands defined by surface relief. Uplands dominated by same non-native grasses as within AF.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Upper Plateau Project Number: N/A Stream: ODP 2 Investigator(s): Sarah Krejca, Ian Hirschler	Date: 08/06/2021 Time: 0905 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 9 Photo end file#: 9				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.909780, -117.314614				
Potential anthropogenic influences on the channel system: Area is undeveloped but located just north and west of two unnamed dirt roads; informal bike trails are also located in the area.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Swale-like feature within area of non-native grassland.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.909780, -117.314614

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments:

Area did not contain clear bed and bank indicators; no change in sediment texture or break in slope; vegetation in swale and adjacent upland area did not differ (both heavily vegetated and dominated by non-native grasses). Data was collected during a drought year; however, historic aerials suggest consistent conditions.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

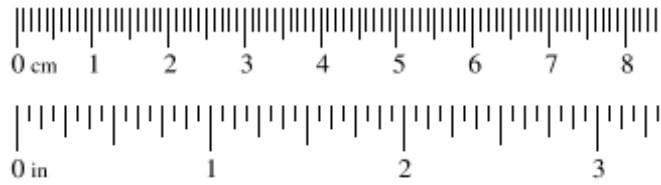
Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

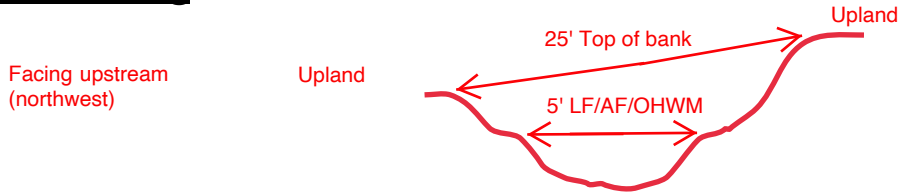
Project: Upper Plateau Project Number: N/A Stream: ODP 3 Investigator(s): Sarah Krejca, Ian Hirschler	Date: 08/06/2021 Time: 0900 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 20 Photo end file#: 21				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.904839, -117.317383				
Potential anthropogenic influences on the channel system: Area is undeveloped but located downslope from development and a series of unnamed dirt roads; informal bike trails are also located in the area.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage within area of undulating topography throughout non-native grassland; intermittent riparian vegetation in drainage.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.904839, -117.317383

Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input checked="" type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Approximately 5-foot wide OHWM defined by a break in slope and change in vegetation cover and species. Data was taken during a drought year; however, indicators still observed and consistent with anticipated extent of OHWM based on review of aerials and site conditions/topography. No distinguishable difference in sediment texture from active floodplain (AF) to upland.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Low-flow channel (LF) is indistinguishable/cannot be determined from AF/OHWM.

Project ID: Upper Plateau

Cross section ID: ODP 3

Date: 08/06/2021

Time: 0900

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 80 % Tree: 0 % Shrub: 20 % Herb: 60 %

Community successional stage:

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

Indicators:

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

Comments:

AF defined by a break in slope (break in slope less distinguishable in the upstream portions of the feature). Vegetation dominated by Baccharis salicifolia, Salix lasiolepis, Urtica dioica, and Hirschfeldia incana.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 50 % Tree: 0 % Shrub: 5 % Herb: 45 %

Community successional stage:

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

Indicators:

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

Comments:

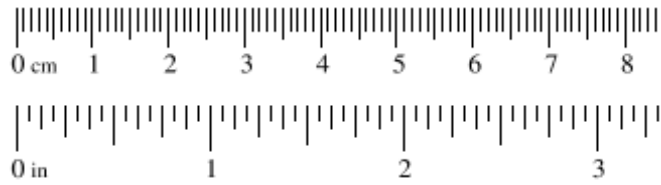
No true low terrace. Vegetation dominated by Cylindropuntia californica ssp. parkeri, Hirschfeldia incana, Corethrogyne filaginifolia, Festuca myuros, Encelia farinosa, Marrubium vulgare, and Euphorbia albomarginata

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

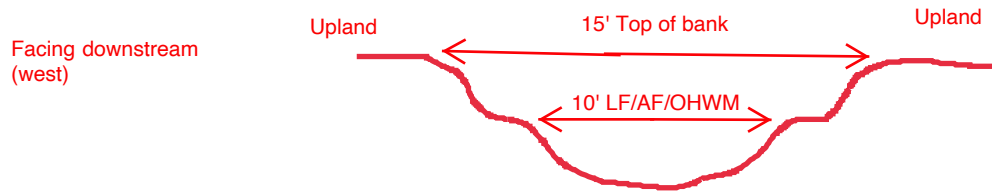
Project: Upper Plateau Project Number: N/A Stream: ODP 4 Investigator(s): Sarah Krejca, Chelsea Polevy	Date: 07/28/2021 Time: 1030 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 23 Photo end file#: 24				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.900996, -117.312122				
Potential anthropogenic influences on the channel system: Area is undeveloped but located downslope from unnamed dirt roads					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage within area mapped as southern riparian forest, adjacent/downstream to unnamed dirt road.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.900996, -117.312122

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments:

Approximately 15-foot wide OHWM defined by a break in slope and change in vegetation cover and species. Data was taken during a drought year; however, indicators still observed and consistent with anticipated extent of OHWM based on review of aerials and site conditions/topography No distinguishable difference in sediment texture from active floodplain (AF) to upland.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Low-flow channel (LF) is indistinguishable/cannot be determined from AF/OHWM.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 65 % Tree: 15 % Shrub: 50 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

AF defined by a break in slope. Vegetation dominated by *Salix laevigata*, *Urtica dioica*, *Marrubium vulgare*.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 50 % Tree: 0 % Shrub: 0 % Herb: 50 %

Community successional stage:

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

Indicators:

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

Comments:

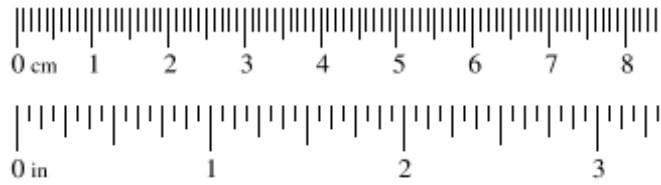
No true low terrace; uplands defined by surface relief. Upland dominated by *Urtica dioica*, *Hirschfeldia incana*, *Brassica nigra*, and other non-native grasses.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

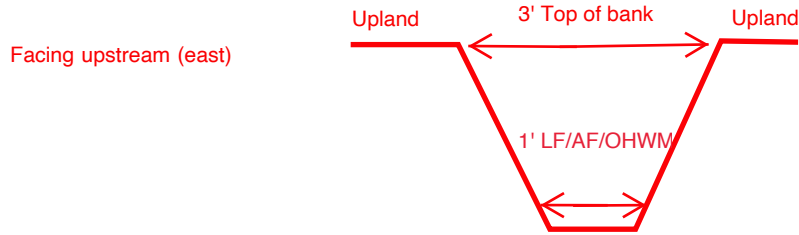
Project: Upper Plateau Project Number: N/A Stream: ODP 5 Investigator(s): Sarah Krejca	Date: 07/28/2021 Time: 0930 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 28 Photo end file#: 29				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.898409, -117.313429				
Potential anthropogenic influences on the channel system: Area is located adjacent to and receives runoff from homes/residential development.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage is a concrete v-ditch at the base of a slope behind homes/residential development.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.898409, -117.313429

Indicators:

- | | |
|---|--|
| <input type="checkbox"/> Change in average sediment texture | <input type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input checked="" type="checkbox"/> Other: <u>water staining</u> |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Approximately 1-foot wide OHWM; concrete-lined v-ditch. The OHWM was defined by water staining on the concrete banks; no other clear OHWM indicators.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Low-flow channel (LF) is indistinguishable/cannot be determined from AF/OHWM.

Project ID: Upper Plateau

Cross section ID: ODP 5

Date: 07/28/2021

Time: 0930

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: N/A - Concrete-lined

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

Approximately 1-foot wide AF based on the presence of water staining on the concrete-lined banks. Small pieces of dead vegetation present within concrete-lined channel.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 70 % Tree: 0 % Shrub: 10 % Herb: 60 %

Community successional stage:

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

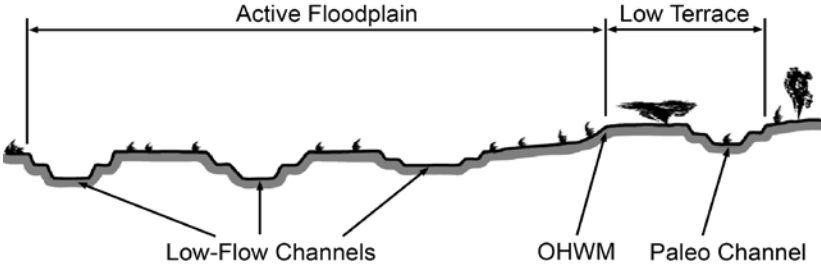
Indicators:

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

Comments:

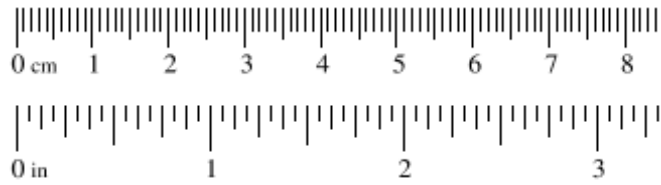
Upland slopes also composed of concrete-lined channel (above the AF), which then continues upwards to earthen, upland slopes dominated by Tamarix ramosissima, Bromus sp., and Corethrogyne filaginifolia.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Upper Plateau Project Number: N/A Stream: ODP 6 Investigator(s): Sarah Krejca	Date: 08/06/2021 Time: 0930 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 32 Photo end file#: 33				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.898597, -117.313629				
Potential anthropogenic influences on the channel system: Area is undeveloped but receives runoff from upstream concrete v-ditch and residential development.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage is in the southwest portion of site adjacent to a residential development.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
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<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

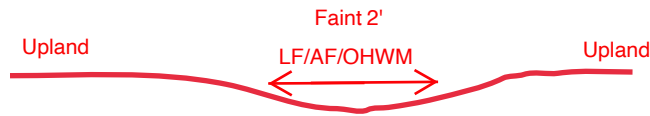
Wentworth Size Classes

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



Cross section drawing:

Facing downstream
(north)



OHWM

GPS point: 33.898597, -117.313629

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: Historic aerials
- Other: _____

Comments:

Approximately 2-foot wide OHWM defined by a faint break in slope. Data was taken during a drought year and therefore, OHWM was difficult to decipher. Staff utilized historic aerials (ARDR Appendix C) and observed vegetation to depict the approximate extent of the OHWM.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Low-flow channel (LF) is indistinguishable/cannot be determined from AF/OHWM.

Project ID: Upper Plateau

Cross section ID: ODP 6

Date: 08/06/2021

Time: 0930

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 90 % Tree: 0 % Shrub: 40 % Herb: 50 %

Community successional stage:

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

Indicators:

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

Comments:

2-foot wide OHWM defined by a very faint/slight break in slope. Vegetation dominated by Tamarix ramosissima, Baccharis salicifolia, Salix gooddingii, Baccharis sarothroides, Hirschfeldia incana, and Marrubium vulgare.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 60 % Tree: 0 % Shrub: 10 % Herb: 50 %

Community successional stage:

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

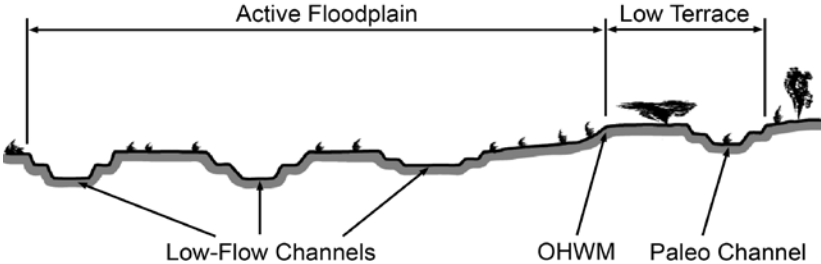
Indicators:

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

Comments:

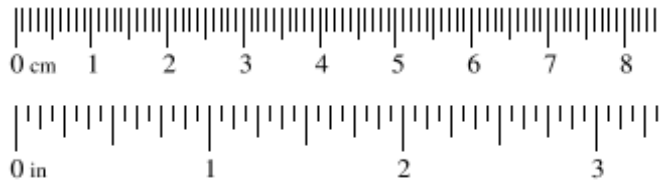
No true low terrace; uplands defined by surface relief. Uplands contained similar vegetation as AF/OHWM, in addition to the following plant species: Brassica nigra, Corethrogyne filaginifolia, and more Marrubium vulgare.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

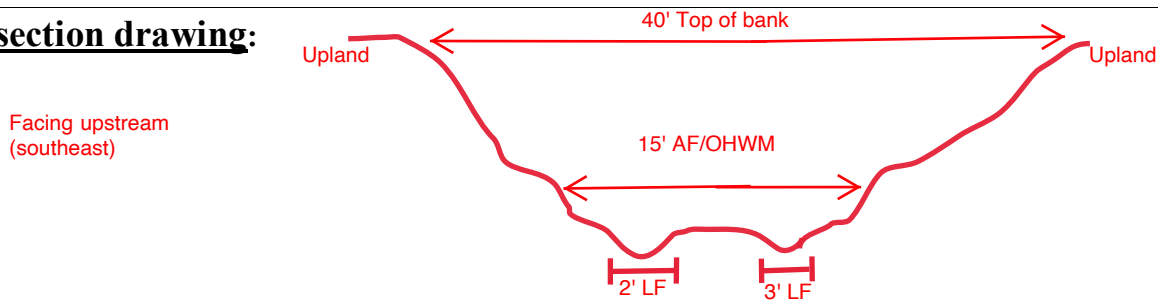
Project: Upper Plateau Project Number: N/A Stream: ODP 7 Investigator(s): Sarah Krejca	Date: 07/28/2021 Time: 1125 Town: Unincorporated Riverside Co. State: CA Photo begin file#: 36 Photo end file#: 37				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Upper Plateau Aquatic Resource Delineation Report Review Area Projection: WGS 84 Datum: NAD 83 Coordinates: 33.902852, -117.318762				
Potential anthropogenic influences on the channel system: Area undeveloped but located adjacent to ball fields to the south and dirt road to the north. Area also receives flows from an upstream drop structure and 2' culvert.					
Brief site description: Site was previously part of the March Air Reserve Base and includes associated bunkers; portions of the site remain undeveloped. Drainage located in the southwest corner of site, receiving flows/commencing at culvert off-site.					
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input checked="" type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

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



Cross section drawing:



OHWM

GPS point: 33.902852, -117.318762

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments:

Approximately 15-foot wide OHWM defined by a break in slope and change in vegetation cover and species. One 2-foot and one 3-foot wide LF channels observed within the OHWM. Data was taken during a drought year; however, standing/flowing water and OHWM indicators still observed and consistent with anticipated extent of OHWM based on review of aerials and site conditions/topography.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Within OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

Total veg cover: 80 % Tree: 0 % Shrub: 0 % Herb: 80 %

Community successional stage:

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

Indicators:

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

Comments:

LF channels presumed as area with standing/flowing water as flows were present despite drought conditions in August. Vegetation dominated by Nasturtium officinale and Typha sp.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand

Total veg cover: 95 % Tree: 45 % Shrub: 0 % Herb: 50 %

Community successional stage:

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

Indicators:

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

Comments:

15-foot wide OHWM defined by a break in bank slope and the presence of drift and debris in the form of dead vegetation. Moist soils present. Vegetation dominated by *Urtica dioica*, *Typha* sp., *Salix lasiolepis*, *Salix laevigata*, *Solidago californica*, and *Pulicaria paludosa*.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 40 % Tree: 10 % Shrub: 5 % Herb: 25 %

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace; uplands defined by surface relief. Vegetation dominated by *Hirschfeldia incana*, *Cynodon dactylon*, *Artemisia californica*, *Salvia apiana*, *Ericameria palmeri* var. *pachylepis*, and *Salix lasiolepis*.

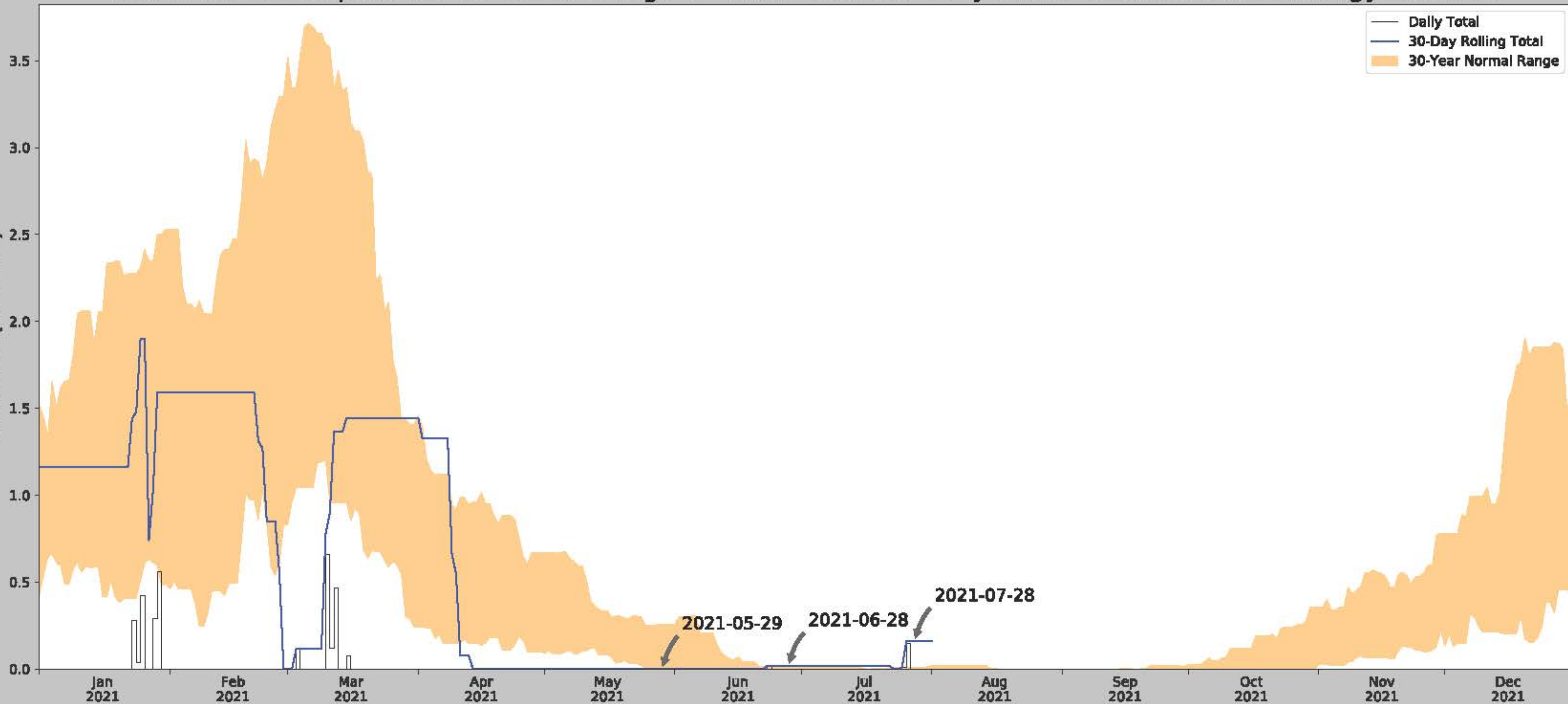
APPENDIX F

ANTECEDENT PRECIPITATION TOOL OUTPUT

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Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	33.907211, -117.307682
Observation Date	2021-07-28
Elevation (ft)	1757.36
Drought Index (PDSI)	Extreme drought (2021-06)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (In)	70 th %ile (In)	Observed (In)	Wetness Condition	Condition Value	Month Weight	Product
2021-07-28	0.0	0.011811	0.161417	Wet	3	3	9
2021-06-28	0.0	0.011811	0.019685	Wet	3	2	6
2021-05-29	0.008268	0.257874	0.0	Dry	1	1	1
Result							Wetter than Normal - 16



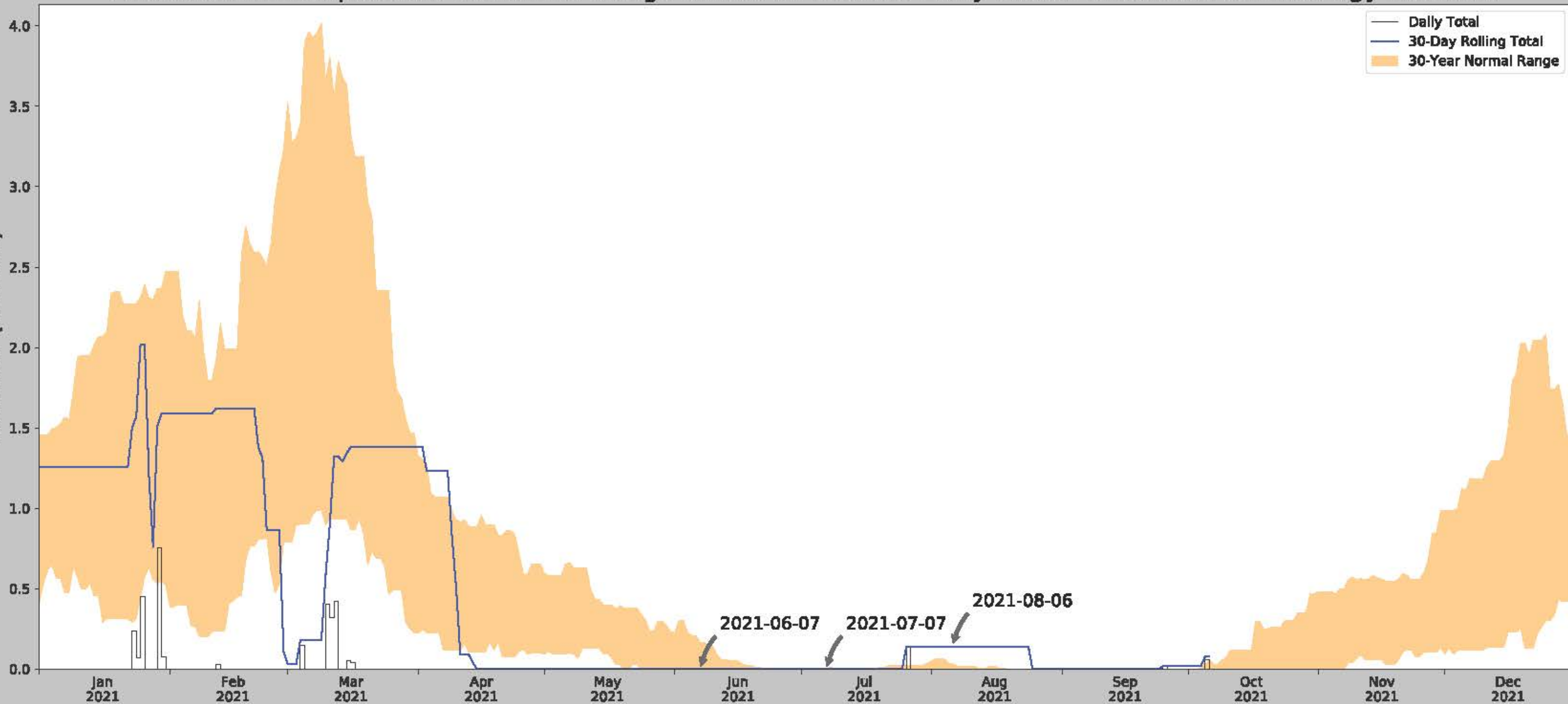
Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RIVERSIDE MUNI AP	33.9519, -117.4386	805.118	8.116	952.242	11.38	7750	90
RIVERSIDE 3.8 NW	33.9793, -117.4541	840.879	2.091	35.761	1.016	6	0
RIVERSIDE FIRE STN 3	33.9511, -117.3881	839.895	2.895	34.777	1.403	3544	0
RIVERSIDE CITRUS EXP	33.9669, -117.3614	985.892	4.544	180.774	2.866	53	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	33.907211, -117.307682
Observation Date	2021-08-06
Elevation (ft)	1757.36
Drought Index (PDSI)	Extreme drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (In)	70 th %ile (In)	Observed (In)	Wetness Condition	Condition Value	Month Weight	Product
2021-08-06	0.0	0.037402	0.141732	Wet	3	3	9
2021-07-07	0.0	0.0	0.0	Normal	2	2	4
2021-06-07	0.0	0.164961	0.0	Normal	2	1	2
Result							Wetter than Normal - 15



Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RIVERSIDE FIRE STN 3	33.9511, -117.3881	839.895	5.518	917.465	7.546	10480	90
RIVERSIDE CITRUS EXP	33.9669, -117.3614	985.892	1.88	145.997	1.12	279	0
RIVERSIDE MUNI AP	33.9519, -117.4386	805.118	2.895	34.777	1.403	590	0
RIVERSIDE 3.8 NW	33.9793, -117.4541	840.879	4.254	0.984	1.918	4	0

APPENDIX G

SITE PHOTOGRAPHS

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Appendix G. Site Photographs¹

Upper Plateau Aquatic Resources Delineation – July 28, 2021 and August 6, 2021



Photo 1. View of lower topographic area, facing southeast, within an area of non-native grassland (33.911942, -117.304599). August 6, 2021.



Photo 2. Overview/downstream view of NWW-1 (yellow arrow), facing northwest, within an area of Riversidean sage scrub (33.910833, -117.304563). August 6, 2021.



Photo 3. View of NWW-2, facing north, generally within an area of Riversidean sage scrub, with a small area of southern willow scrub – arroyo willow (*Salix lasiolepis*) towards the downstream extent (33.911679, -117.306428). August 6, 2021.



Photo 4. View of Ditch (D-)1, facing west (33.912686, -117.309622). July 28, 2021.

¹ See corresponding Figure 5 series for Photo Point Locations. See Aquatic Resource Delineation Report Sections 6 through 8 for a discussion of each feature.

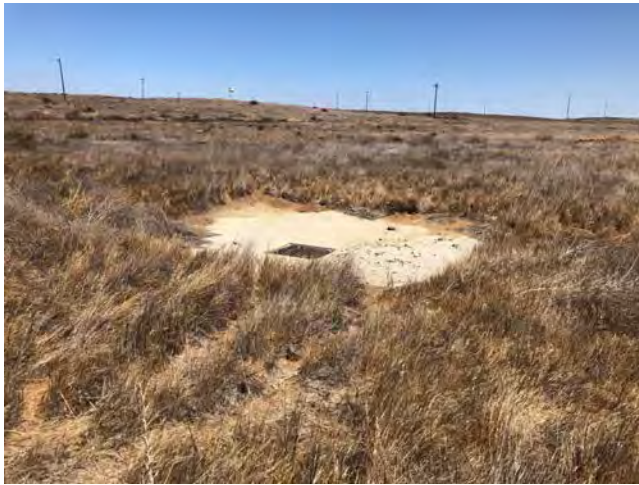


Photo 5. View of storm drain inlet, facing east, that likely historically provided flows to NWW-3, through a series of culverts. Photo is representative of the other storm drain inlets shown on the Figure 5 series (33.907898, -117.311003). August 6, 2021.



Photo 6. Culvert (white arrow) through which flows enter the more defined and wider portion of NWW-3, facing east. Based on field observations and a review of aeriels, flows likely originated from within the bunker area via a storm drain inlet (similar to Photo 5) (33.908661, -117.312008). August 6, 2021.



Photo 7. Upstream view of Ordinary High Water Mark (OHWM) Data Point (ODP) 1 within NWW-3, facing south, within an area of non-native grassland. The OHWM at ODP 1 was defined by a slight break in slope and change in vegetation cover (33.909910, -117.313571). August 6, 2021.



Photo 8. Downstream view of ODP 1, facing north, within NWW-3 (33.909727, -117.313509). August 6, 2021.



Photo 9. View of ODP 2 within Swale (S-)1, facing west, within an area of non-native grassland. S-1 did not display an observable OHWM or bed and bank and instead appeared to convey surface flows as runoff from the adjacent dirt road (33.909777, -117.314474). July 28, 2021.



Photo 10. View of culvert, facing southeast, that historically provided flows to NWW-3 through a storm drain inlet. This culvert was representative of the other culverts within the bunker area that historically provided flows to the storm drain inlets (33.904439, -117.311138). August 6, 2021



Photo 11. View, facing west, where flows historically drained from a culvert (similar to Photo 10) and northwest into a storm drain inlet (similar to Photo 5) before continuing through another culvert (Photo 12) and into NWW-4 (33.903778, -117.310959). August 6, 2021.



Photo 12. Upstream view of culvert that feeds into NWW-4, facing southeast (33.904782, -117.312060). August 6, 2021.



Photo 13. Downstream view of NWW-4 from the culvert (Photo 12), facing north. Broken asphalt had been placed within a portion of the drainage, likely to slow/dissipate flows. NWW-4 exhibited a faint break in slope and change in vegetation cover (33.904788, -117.311987). August 6, 2021.



Photo 14. View of downstream portion of NWW-4, facing north, within an area of non-native grassland (33.905464, -117.312213). August 6, 2021.



Photo 15. Downstream view of Abandoned Drainage (AD-1), where flows historically commenced at the culvert (Photo 15) (33.906067, -117.311156). August 6, 2021.



Photo 16. View of culvert (white arrow) blocked with sediment that historically received flows from AD-1, facing northeast (33.905876, -117.312380). August 6, 2021.



Photo 17. View from culvert (white arrow) that likely historically provided flows to AD-2, facing west (33.903271, -117.310931). August 6, 2021.



Photo 18. View of AD-2, facing northeast, with culvert (white arrow) in background that historically provided flows to AD-2 (33.902220, -117.312520). August 6, 2021.



Photo 19. Downstream view of NWW-5, facing northwest (33.903250, -117.314850). August 6, 2021.



Photo 20. Upstream view of ODP 3, facing southeast, within NWW-5. The OHWM at ODP 3 was defined by a break in bank slope, change in vegetation species, and change in vegetation cover (33.904880, -117.317402). August 6, 2021.



Photo 21. Downstream view of ODP 3, facing northwest, within NWW-5 (33.904906, -117.317439). August 6, 2021.



Photo 22. Downstream view of NWW-5, facing northwest, within an area of non-native grassland with small area of southern riparian forest – Goodding's black willow dominated in the distance (33.905120, -117.317823). August 6, 2021.



Photo 23. Upstream view of ODP 4, facing east, within NWW-6. ODP 4 displayed a break in bank slope, change in vegetation species, and change in vegetation cover (33.901166, -117.312216). July 28, 2021.



Photo 24. Downstream view of ODP 4, facing southwest, within NWW-6 (33.901164, -117.312220). July 28, 2021.



Photo 25. View of WDP 1 (white arrow), facing south, within NWW-6. WDP 1 met the hydrophytic vegetation parameters; however, WDP 1 did not meet the hydric soil or wetland hydrology parameters (33.901044, -117.313152). July 28, 2021.



Photo 26. Overview of downstream extent of NWW-6, facing north, where NWW-6 drained into a storm drain inlet (white arrow) (33.900242, -117.313681). July 28, 2021.



Photo 27. Downstream view of NWW-7, facing west. NWW-7 continued into a storm drain inlet, similar to NWW-6 (Photo 26) (33.899688, -117.313032). August 6, 2021.



Photo 28. Upstream view of ODP 5 and view of WDP 2, facing east, within NWW-7A1. The OHWM was primarily defined by water staining. WDP 2 met the hydrology parameter; however, WDP 2 did not meet the hydrophytic vegetation or hydric soil parameters (33.898441, -117.313517). August 6, 2021.



Photo 29. Downstream view of ODP 5, facing west, within NWW-7A1 (33.898451, -117.313362). August 6, 2021.



Photo 30. View of the upstream extent of NWW-7A (yellow dashed line), facing east, where flows from NWW-7A1 and NWW-7A2 travel through the culvert (33.898454, -117.313740). July 28, 2021.



Photo 31. View of WDP 3, facing west, within NWW-7A. WDP 3 did not meet the hydrophytic vegetation, hydric soil, or wetland hydrology parameters (33.898496, -117.313519). July 28, 2021.



Photo 32. Upstream view of ODP 6, facing south, within NWW-7A. ODP 6 displayed a faint break in slope (33.898643, -117.313658). August 6, 2021.



Photo 33. Downstream view of ODP 6, facing north, within NWW-7A (33.898695, -117.313660). July 28, 2021.



Photo 34. Upstream view of NWW-7A, facing south. NWW-7A displayed a faint OHWM before converging with NWW-7 (33.899277, -117.313722). July 28, 2021.



Photo 35. Upstream overview of NWW-8 (Wetland Water [WW]-1 for the Regional Water Quality Control Board [RWQCB]), facing southeast (33.903086, -117.319023). July 28, 2021.



Photo 36. Downstream view of ODP 7, facing northwest, within NWW-8 (WW-1 for the RWQCB) (33.902821, -117.318638). July 28, 2021.



Photo 37. Upstream view of ODP 7, facing southeast, within NWW-8 (WW-1 for the RWQCB). ODP 7 displayed a break in bank slope, change in vegetation species and cover, and change in average sediment texture (33.902910, -117.318853). July 28, 2021.



Photo 38. View of WDP 4 (white arrow), facing south, within NWW-8 (WW-1 for the RWQCB). WDP 4 met the hydrophytic vegetation, hydric soil, and wetland hydrology parameters (33.902937, -117.318977). July 28, 2021.



Photo 39. View of WDP 5 (white arrow), facing south, within NWW-8 (WW-1 for the RWQCB). WDP 5 met the hydrophytic vegetation parameter; however, WDP 5 did not meet the hydric soil or wetland hydrology parameters (33.902959, -117.319014). July 28, 2021.



Photo 40. View of WDP 6 (white arrow), facing northwest, within an area of non-native grassland with cracked soils. WDP 6 met the wetland hydrology parameter; however, WDP 6 did not meet the hydrophytic vegetation or hydric soil parameters (33.903092, -117.306402). August 6, 2021.



Photo 41. Overview of area of lower topography with bike trails, facing east, within an area of non-native grassland (33.906752, -117.300441). August 6, 2021.



Photo 42. View, facing southwest, within area of non-native grassland with a small patch of southern riparian forest – Goodding's black willow dominated, located west of NWW-9 (33.906787, -117.296206). August 6, 2021.



Photo 43. View of WDP 7 (white arrow), facing northeast, within area of southern riparian forest within NWW-9 (NWW-8 for the RWQCB). WDP 7 met the hydrophytic vegetation parameter; however, WDP 7 did not meet the hydric soil or wetland hydrology parameters (33.906675, -117.295635). August 6, 2021.



Photo 44. Upstream view of NWW-9 (NWW-8 for the RWQCB), facing southwest, within area of southern riparian forest (33.907136, -117.295261). August 6, 2021.



Photo 45. Downstream view of NWW-9 (NWW-8 for the RWQCB), facing east, where the feature becomes less confined within an area of southern riparian forest – Goodding's black willow dominated (33.907597, -117.295057). August 6, 2021.

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APPENDIX H

LITERATURE CITATIONS AND REFERENCES

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APPENDIX I. LITERATURE CITATIONS AND REFERENCES

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APPENDIX I

**ORM BULK UPLOAD AQUATIC RESOURCES OR
CONSOLIDATED EXCEL SPREADSHEET**

DRAFT

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
NWW-1	CALIFORNIA	R6		Area	0.0377	ACRE	DELINEATE	33.911494	-117.304933
NWW-2	CALIFORNIA	R6		Area	0.0346	ACRE	DELINEATE	33.911516	-117.306580
NWW-3	CALIFORNIA	R6		Area	0.0307	ACRE	DELINEATE	33.909152	-117.312802
NWW-4	CALIFORNIA	R6		Area	0.0457	ACRE	DELINEATE	33.905922	-117.312596
NWW-5	CALIFORNIA	R6		Area	0.1246	ACRE	DELINEATE	33.904494	-117.316792
NWW-6	CALIFORNIA	R6		Area	0.0386	ACRE	DELINEATE	33.900933	-117.312589
NWW-7	CALIFORNIA	R6		Area	0.0163	ACRE	DELINEATE	33.899747	-117.313461
NWW-7A	CALIFORNIA	R6		Area	0.0235	ACRE	DELINEATE	33.899104	-117.313655
NWW-7A1	CALIFORNIA	R6		Area	0.0033	ACRE	DELINEATE	33.898410	-117.313369
NWW-7A2	CALIFORNIA	R6		Area	0.0050	ACRE	DELINEATE	33.898233	-117.313761
NWW-8	CALIFORNIA	R5		Area	0.1104	ACRE	DELINEATE	33.902621	-117.318620
NWW-9	CALIFORNIA	R6		Area	0.0540	ACRE	DELINEATE	33.907245	-117.294771
NWW-10	CALIFORNIA	R6		Area	0.0121	ACRE	DELINEATE	33.907086	-117.291994

APPENDIX J

GIS DATA (PROVIDED ELECTRONICALLY TO AGENCIES)

DRAFT

APPENDIX F

**90-DAY REPORT FOR WET AND DRY SEASON LISTED
LARGE BRANCHIOPOD SURVEYS FOR THE UPPER
PLATEAU DEVELOPMENT PROJECT, RIVERSIDE
COUNTY, CALIFORNIA**



October 6, 2022

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

Subject: 90-Day Wet and Dry Season Vernal Pool Branchiopod Survey Results, Upper Plateau Development Project, Riverside County, California

Ms. Love:

This letter presents the results of the 2021-2022 wet and dry season vernal pool branchiopod (fairy shrimp) surveys conducted by Rocks Biological Consulting (RBC) for the Upper Plateau Development Project (project) in Riverside County, California. The project site supports four ponding areas that remained inundated long enough for branchiopod sampling during the 2021-2022 wet season. Of the four basins sampled during wet season surveys, common versatile fairy shrimp (*Branchinecta lindahli*) were documented within one basin. Eight additional basins were found to support versatile fairy shrimp following the 2021 – 2022 dry season soil sample analysis. RBC did not identify any federally-listed endangered or threatened fairy shrimp species from basins within the project site during wet or dry season surveys.

Project Location

The project site is in the northwestern portion of the March JPA planning area, west of the current terminus of Cactus Avenue, east and south of the Mission Grove neighborhood, and north of the Orangecrest neighborhood. The project site is located within Township 3 South, Range 4 West, Sections 15 and 22 within the Riverside East 7.5-minute quadrangle, as mapped by the U.S. Geological Survey (Figure 1).

Methods

Survey methodology followed the U.S. Fish and Wildlife Service (USFWS) *Survey Guidelines for Listed Large Branchiopods* (guidelines) revised November 13, 2017. According to the guidelines, the wet season usually occurs in California between October and June. A pre-survey notification was sent to the USFWS on September 30, 2021, and an amended notification adding additional surveyors was submitted on March 27, 2022.

Wet Season Survey Methodology

During the wet season, 12 basins were mapped within the project site and 100-foot buffer. These 12 basins were mapped during 24-hour ponding checks following rain events. Mapped pools met the three-centimeter depth criteria in accordance with the USFWS guidelines. The first 2021-2022 wet season survey was conducted on December 22, 2021, which was seven days following a 24-

hour ponding check for a rain event that occurred on December 14, 2021 that resulted in a total of 0.98 inch of rain at the nearby MARCH AFB weather station (NRCS 2022). Each ponded area was sampled at seven-day intervals until dry, and sampling continued at seven-day intervals after becoming re-inundated. Sampling was discontinued on April 6, 2022, after all mapped ponded areas became totally dry. Total rainfall for the 113-day ponding period from December 14, 2020, through April 6, 2021, was 3.69 inches (NRCS 2022).

RBC biologists Jim Rocks (TE-063230-5.7) and Ian Hirschler (PER0011963) conducted all sampling on the project site. Data collected for each ponded area included average and maximum water depth, water and air temperature, ponding area length, ponding area width, degree and form of disturbance, a population estimate of fairy shrimp present, and observations of any other aquatic species within the ponding area. Each sampling point was sampled using a standard 50-micron hand-held net swept through the water and examined for invertebrates. If fairy shrimp were captured, several mature individuals of both sexes were collected, as feasible, and preserved as voucher specimens in 95% ethanol (etoh). The collected specimens were identified using a dissecting scope and the dichotomous key written by Eriksen and Belk (1999) as modified by Belk (2005). If fairy shrimp were captured, one collected voucher specimen from each ponding area was accessioned at the Los Angeles Natural History Museum, Crustacea Section, Invertebrate Zoology, 900 Exposition Boulevard, Los Angeles, California, 90007.

Dry Season Survey Methodology

On July 20, 2022, Jim Rocks (TE-063230-5.7) collected dry season soil samples from ten distinct basins on the project site. Soil samples were collected in accordance with USFWS guidelines. Soil from each sample was hydrated and processed through a series of sieves to separate out fairy shrimp cysts that may have been present. The sieves used were of 710-, 355-, and 212-micron pore-sized screens. The final sieve pore size is smaller than the target fairy shrimp species (*Branchinecta* sp. and *Streptocephalus* sp.) average cyst diameter and therefore would retain cysts. The material remaining on the final sieve was next placed in a brine solution to help separate organic from inorganic material. The organic portion was then filtered through a standard coffee filter and allowed to dry. The dried material on the filters was then examined under a microscope to determine if cysts were present. Cyst surface characteristics were then used to identify cysts to genus if present.

Soil samples containing cysts were hydrated and reared to maturity to determine the species present. The samples were checked daily to see if any fairy shrimp had emerged. Once nauplii were observed, the hatched shrimp were fed two-to-four drops of prepared food on a daily basis until they reached maturity and were collected. The food used was a mix of active brewer's yeast, sugar, powdered fish food, and water.

Maturity of fairy shrimp was determined by the individual's full size, which included antennal development (males) and brood pouch (females). Once mature, the fairy shrimp were identified to the species level with the aid of a stereo dissecting scope. Dry season soil processing, cyst identification, cyst hydration, hatching, rearing, and subsequent identification were conducted by Greg Mason (TE-58862A-1; Attachment A).

Results

Wet Season Survey Results

A total of four basins remained inundated long enough to be sampled during the 2021-2022 wet season. One ponded area (PA-1) occurred at the outfall of a culvert headwall. Following the start of the wet season, the project boundary was adjusted, and this basin no longer occurred within the project site. Additionally, PA-9 was sampled initially as a shallow basin within a riparian drainage; however, it was observed during subsequent surveys that this drainage has continuous water flow and supported fish species. These conditions are not suitable for fairy shrimp and sampling of this ponded area was discontinued.

The common versatile fairy shrimp was documented in one of the four basins. No fairy shrimp were documented in the remaining three basins sampled during the wet season surveys (Figure 2).

A summary of surveys conducted on site during the wet season is presented in Table 1 and wet season survey results are presented in Table 2. Site photographs are provided as Attachment B. Surveyor field data sheets are provided as Attachment C.

Table 1: Wet Season Fairy Shrimp Survey Dates for the Upper Plateau Development Project

Survey Number	Date	Surveyor
24-Hour Ponding Check	12/15/2021	Ian Hirschler
1	12/22/2021	Ian Hirschler
2	12/29/2021	Ian Hirschler
24-Hour Ponding Check	1/1/2022	Ian Hirschler
3	1/5/2022	Ian Hirschler
4	1/8/2022	Ian Hirschler
5	1/12/2022	Ian Hirschler
6	1/15/2022	Ian Hirschler
7	1/19/2022	Jim Rocks
8	1/26/2022	Jim Rocks
24-Hour Ponding Check	3/30/2022	Hannah Swarthout
9	4/6/2022	Ian Hirschler

Table 2: Wet Season Fairy Shrimp Survey Results for the Upper Plateau Development Project

Ponding Area	Wet Season Fairy Shrimp Survey Results
PA-1	Sampled, no FS
PA-2	Insufficient ponding
PA-3	Insufficient ponding
PA-4	Insufficient ponding
PA-5	<i>Branchinecta lindahli</i>
PA-6	Insufficient ponding
PA-7	Sampled, no FS
PA-8	Insufficient ponding
PA-9	Sampled, no FS

PA-10	Insufficient ponding
PA-11	Insufficient ponding
PA-12	Insufficient ponding

Dry Season Survey Results

Cysts of the genus *Branchinecta* were found in eight of the ten basins from which soil samples were collected (Table 3). Two full rounds of hydration and rearing efforts resulted in the identification of 120 versatile fairy shrimp (68 male and 52 female) from all eight of the basins which supported cysts. No cysts of the genus *Streptocephalus* were found in any of the samples. Detailed results are provided in Tables 3 and 4, below and a complete dry season survey report is provided as Attachment A.

Table 3. Dry Season Soil Analysis Results for the Upper Plateau Development Project

Basin	Number of Subsamples	<i>Branchinecta</i> sp. Cysts
PA-2	10	-
PA-3	25	361
PA-4	10	18
PA-5	10	140
PA-6	10	21
PA-7	10	-
PA-8	10	3
PA-10	10	4
PA-11	10	1
PA-12	25	172

Table 4. Dry Season Hatching Results for the Upper Plateau Development Project

Basin	<i>Branchinecta lindahli</i>		
	Male	Female	Total
PA-3	32	18	50
PA-4	6	4	10
PA-5	17	13	30
PA-6	2	-	2
PA-8	1	-	1
PA-10	-	1	1
PA-11	1	-	1
PA-12	9	16	25
Total	68	52	120

Combined Survey Results

Combined results from both wet and dry season surveys are shown in Table 5.

Table 5. Complete Wet and Dry Season Results for the Upper Plateau Development Project


Ponding Area	Wet Season Fairy Shrimp Survey Results	Dry Season Sieving/ Cyst Results	Dry Season Hatching Results
PA-1	Sampled, no FS	N/A	N/A
PA-2	Insufficient ponding	No cysts	N/A
PA-3	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-4	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-5	<i>Branchinecta lindahli</i>	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-6	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-7	Sampled, no FS	No cysts	N/A
PA-8	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-9	Sampled, no FS	N/A	N/A
PA-10	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-11	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>
PA-12	Insufficient ponding	<i>Branchinecta</i> sp.	<i>Branchinecta lindahli</i>

Conclusion

During the 2021 – 2022 wet and dry season surveys at the Upper Plateau Development Project, RBC documented the common versatile fairy shrimp in eight out of ten basins sampled. RBC did not identify federally-listed endangered or threatened fairy shrimp species during the 2021 – 2022 wet and dry season surveys.

Please don't hesitate to contact us at (619) 701-6798 if you have any questions or concerns regarding this report.

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



Jim Rocks
Owner, Principal Biologist
TE-063230-5.7

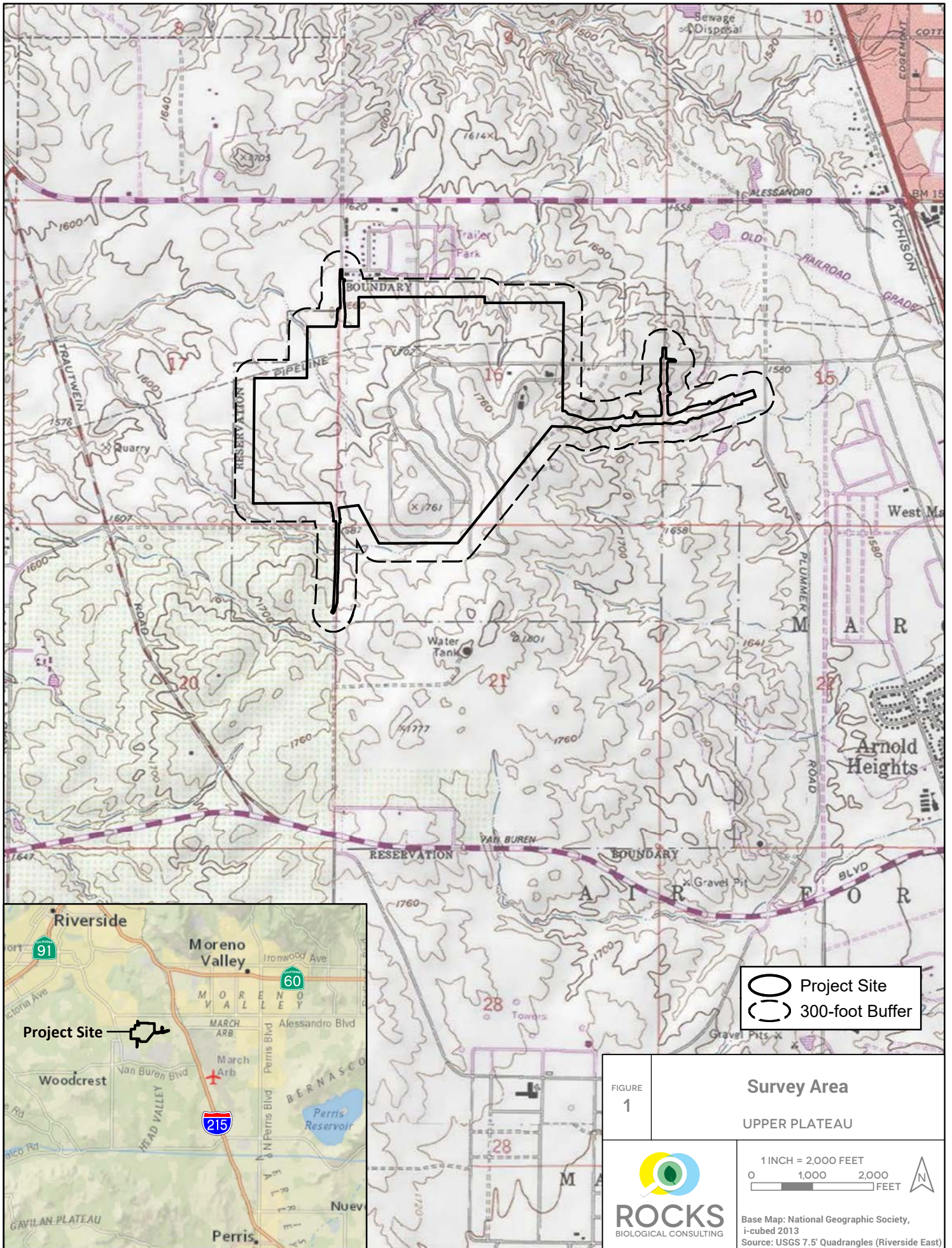


Ian Hirschler
Senior Biologist
PER0011963

Attachments: Figure 1 – Survey Area
Figure 2 – Survey Results
Attachment A – Dry Season Fairy Shrimp Sampling Results for the Upper Plateau
Project Report
Attachment B – Site Photographs
Attachment C – Surveyor Field Data Sheets

REFERENCES

- Eriksen, C.H. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2022. AgACIS for Riverside County. Climatological Data for MARCH AFB, CA.
- U.S. Fish and Wildlife Service. 2017. Survey Guidelines for Listed Large Branchiopods. November 13, 2017.




 Project Site
 300-foot Buffer

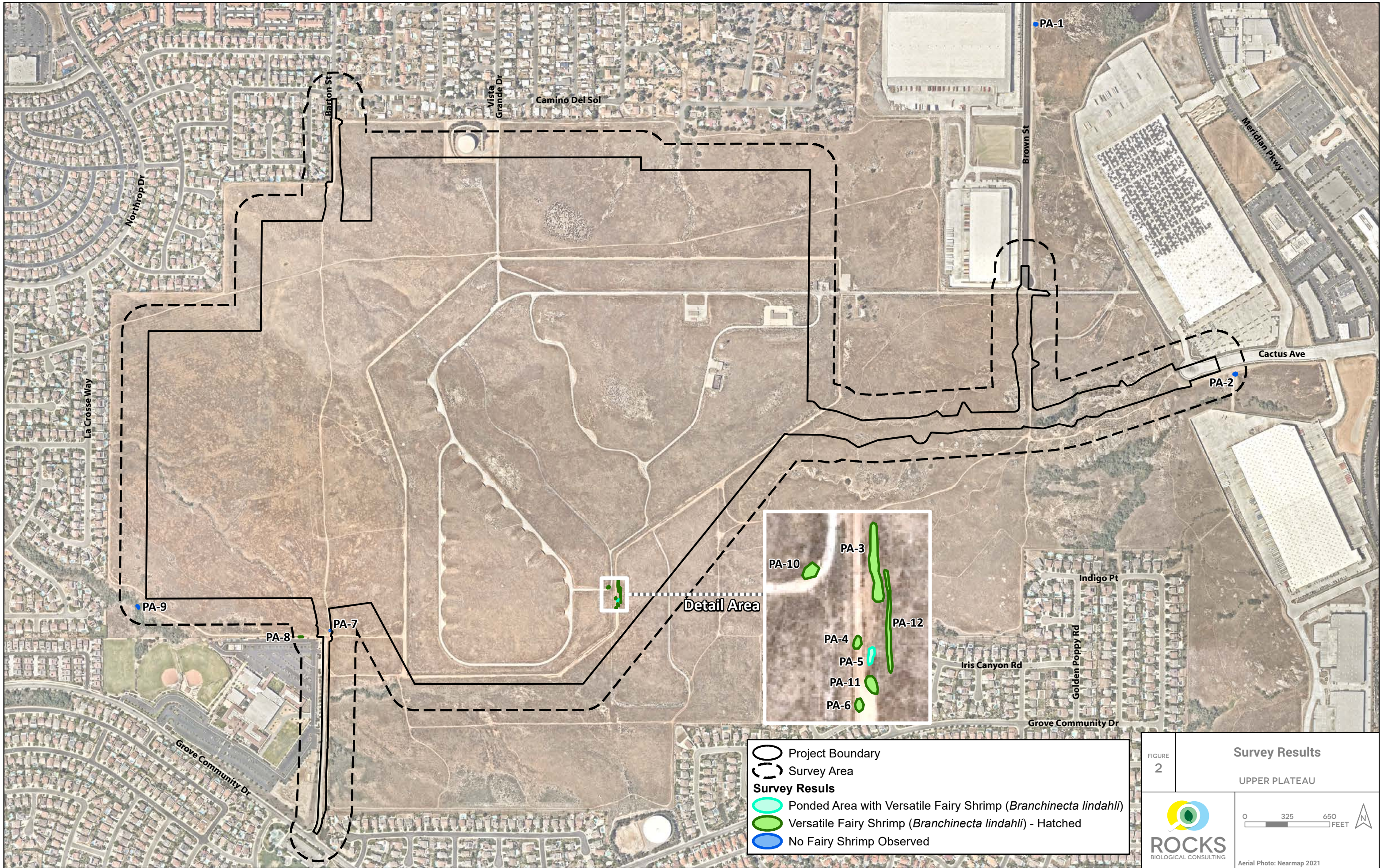
FIGURE 1

Survey Area
UPPER PLATEAU



1 INCH = 2,000 FEET
 0 1,000 2,000 FEET

Base Map: National Geographic Society, i-cubed 2013
 Source: USGS 7.5' Quadrangles (Riverside East)



Project Boundary
 Survey Area
Survey Results
 Ponded Area with Versatile Fairy Shrimp (*Branchinecta lindahli*)
 Versatile Fairy Shrimp (*Branchinecta lindahli*) - Hatched
 No Fairy Shrimp Observed

FIGURE 2
Survey Results
 UPPER PLATEAU

0 325 650 FEET

Aerial Photo: Nearmap 2021

ATTACHMENT A

**DRY SEASON FAIRY SHRIMP SAMPLING RESULTS FOR
THE UPPER PLATEAU PROJECT**

September 14, 2022

Ms. Kelsey Woldt
4312 Rialto Street
San Diego, CA 92107

Subject: Dry Season Fairy Shrimp Sampling Results for the Upper Plateau Project

Dear Ms. Woldt:

This letter presents the results of dry season fairy shrimp sampling (cyst identification and rearing) conducted for the Upper Plateau site.

Methods

Cyst Identification

On August 4, 2022, Alden received soil samples collected from 10 basins on the project site. The soil was provided in bags labeled with the basin number. The collected soil from each basin was divided into subsamples, based on the area of the pool and the amount of soil collected. Each sample was then hydrated and processed through a series of sieves to separate out fairy shrimp cysts that may be present. The sieves used were of 710-, 355-, and 212- μ m pore size screens. The final sieve pore size is smaller than the target fairy shrimp genera (*Branchinecta* and *Streptocephalus*) average cyst diameter and therefore would retain cysts. The material remaining on the final sieve was next placed in a brine solution to help separate organic from inorganic material. The organic portion was then filtered through a standard coffee filter and allowed to dry. The dried material on the filters was then examined under a stereo dissecting scope to determine if cysts were present. Cyst surface characteristics were then used to identify cysts to genus, if present.

Hatching/Rearing

The collected *Branchinecta* fairy shrimp cysts were hydrated by placing them into plastic containers filled with approximately 525 ml of filtered, non-chlorinated drinking water. The coffee filters (from the soil sieving effort) with the collected cysts were slowly opened over the containers and gently shaken to allow the material to fall into the water. The sides of the filters were then rubbed against one another to release any additional material. Finally, a squirt bottle filled with filtered drinking water was used to spray any additional material from the filters into the containers.

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

The samples were checked daily to see if any fairy shrimp had emerged. Once nauplii were observed, feeding began. The hatched shrimp were fed 2-4 drops of prepared food on a daily basis until they were collected. The food used was a mix of active brewer’s yeast, sugar, powdered fish food, and water.

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

Results

Cyst Identification

Cysts of the genus *Branchinecta* were found in 10 basins (Table 1; Attachment A). No cysts of the genus *Streptocephalus* were found in any of the sampled basins.

Basin	Number of Subsamples	<i>Branchinecta</i>	<i>Streptocephalus</i>
PA-2	10	-	-
PA-3	25	361	-
PA-4	10	18	-
PA-5	10	140	-
PA-6	10	21	-
PA-7	10	-	-
PA-8	10	3	-
PA-10	10	4	-
PA-11	10	1	-
PA-12	25	172	-

Hatching/Rearing

Two complete rounds of hydration and hatching were conducted, resulting in the collection and identification of the non-sensitive versatile fairy shrimp (*B. lindahli*) from 8 of the basins with fairy shrimp cysts present (Table 2). Of the basins with cysts, no shrimp were hatched from basins 5 and 7. Each of these had very low numbers of recovered cysts, making successful hatching difficult. No other fairy shrimp species were identified.

Table 2			
Fairy Shrimp Hatching Results			
Basin	<i>Branchinecta lindahli</i>		
	Male	Female	Total
PA-3	32	18	50
PA-4	6	4	10
PA-5	17	13	30
PA-6	2	-	2
PA-8	1	-	1
PA-10	-	1	1
PA-11	1	-	1
PA-12	9	16	25
Total	68	52	120

The above text presents the final results of the dry season fairy shrimp cyst identification and hatching effort for the project. The non-listed versatile fairy shrimp was the only shrimp species to be reared from the recovered cysts. If you have any questions or need additional information please call.

Sincerely,



Greg Mason
Principal/Senior Biologist

Attachment A Cyst per subsample table

ATTACHMENT B

SITE PHOTOGRAPHS

Attachment B

Site Photographs



Photo 1. Representative view of non-native grassland and disturbed roads within the project site.
July 28, 2021.



Photo 2. Representative view of disturbed Riversidian sage scrub on the project site, facing north.
November 8, 2021.



Photo 3. View of ponded area 1 (PA-1), facing east. This pool did not support any fairy shrimp species during the 2021 – 2022 wet season. March 30, 2022.



Photo 4. View of PA-5, facing south. This pool supported versatile fairy shrimp (*Branchinecta lindahli*) during the wet and dry season surveys. January 8, 2022.



Photo 5. View of PA-7, facing north. This pool did not support any fairy shrimp during the 2021 – 2022 wet and dry season surveys. January 8, 2022.



Photo 6. View of PA-10, facing northeast. This pool did not pond long enough to conduct fairy shrimp sampling during the 2021 – 2022 wet season surveys but did support versatile fairy shrimp during dry season surveys. March 30, 2022.

ATTACHMENT C

SURVEYOR FIELD DATA SHEETS



Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
Fairy Shrimp Present (Species)	Voucher # Male (♂)	Voucher # Female (♀)	Population Estimate	Other species present in pool (circle, add additional below)				
				copepods, ostracods, cladocera, coleptera, hemiptera, diptera, culicida, platyhelminths				
Habitat condition (circle one): 1. natural vernal pool 2. constructed pool Pool condition (circle all): 1. undisturbed 2. disturbed (tire tracks trash plowing) 3. ungrazed 4. grazed (cattle horses sheep) (light moderate heavy) 5. algal blooms Additional Comments:								
Pool or Area ID	Latitude	Longitude	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
Fairy Shrimp Present (Species)	Voucher # Male (♂)	Voucher # Female (♀)	Population Estimate	Other species present in pool (circle, add additional below)				
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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____
 Project: _____ Survey _____ of _____
 Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____
 End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
Fairy Shrimp Present (Species)	Voucher # Male (♂)	Voucher # Female (♀)	Population Estimate	Other species present in pool (circle, add additional below)				
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				copepods, ostracods, cladocera, coleptera, hemiptera, diptera, culicida, platyhelminths				
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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
Fairy Shrimp Present (Species)	Voucher # Male (♂)	Voucher # Female (♀)	Population Estimate	Other species present in pool (circle, add additional below)				
				copepods, ostracods, cladocera, coleptera, hemiptera, diptera, culicidea, platyhelminths				
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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
Fairy Shrimp Present (Species)	Voucher # Male (♂)	Voucher # Female (♀)	Population Estimate	Other species present in pool (circle, add additional below)				
				copepods, ostracods, cladocera, coleptera, hemiptera, diptera, culicida, platyhelminths				
Habitat condition (circle one): 1. natural vernal pool 2. constructed pool Pool condition (circle all): 1. undisturbed 2. disturbed (tire tracks trash plowing) 3. ungrazed 4. grazed (cattle horses sheep) (light moderate heavy) 5. algal blooms Additional Comments:								
Pool or Area ID	Latitude	Longitude	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
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Fairy Shrimp Survey Form

Surveyor: _____ Add'l Persons: _____ Date: _____

Project: _____ Survey _____ of _____

Start Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

End Time: _____ T: _____ CC: _____ Wind Sp/Dir: _____ General Weather Condition: _____

Pool or Area ID	Latitude*	Longitude*	Air Temp. (°C)	Water Temp. (°C)	Average Depth (cm)	Max. Depth (cm)	Pool length (m)	Pool width (m)
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APPENDIX G

**45-DAY REPORT FOR NON-BREEDING COASTAL
CALIFORNIA GNATCATCHER SURVEYS FOR THE UPPER
PLATEAU DEVELOPMENT PROJECT, RIVERSIDE
COUNTY, CALIFORNIA**



April 15, 2022

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

Subject: 45-Day Report for Non-Breeding Coastal California Gnatcatcher Surveys for the Upper Plateau Development Project, Riverside County, California

Ms. Love:

This letter is a summary of the protocol coastal California gnatcatcher (*Poliioptila californica californica*; CAGN) presence/absence surveys Rocks Biological Consulting (RBC) conducted for the proposed Upper Plateau Development Project (project) in unincorporated Riverside County, California (Figure 1). Survey results for CAGN were negative.

Introduction

The proposed project includes the development of business parks, industrial buildings, mixed-use development, facilities to support utilities, and a recreational park. RBC biologists conducted nine surveys for non-NCCP areas during the non-breeding season (July 1 to March 14) in compliance with the Coastal California Gnatcatcher Presence/Absence Survey Protocol (USFWS 1997).

Life History

The CAGN is federally listed as threatened and is considered a California Department of Fish and Wildlife (CDFW) Species of Special Concern. The species is a year-round resident of southern California and is found in the six southernmost California counties located within the coastal plain (Ventura, Los Angeles, San Bernardino, Orange, Riverside, and San Diego).

The primary cause of this species' decline is conversion of coastal sage scrub vegetation for urban and agricultural uses. USFWS has estimated that coastal sage scrub habitat has been reduced by 70 to 90 percent of its historical extent (USFWS 1991). The CAGN is generally found in scrub habitats consisting of California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), sages (*Salvia* spp.) and other shrubs generally below 1,500 feet in elevation along the coastal slope. When nesting, this species typically avoids slopes greater than 25% with dense, tall vegetation. Gnatcatcher pairs will often attempt several nests each year (average of four), each placed in a different location

inside their breeding territory, though most nest attempts are unsuccessful due to depredation by a variety of species (Preston et al. 1998; Atwood and Bontrager 2001). Clutch size ranges from one to five eggs, with three or four eggs being the most common. During the non-breeding season, adult CAGN will often incorporate areas of adjacent chaparral or riparian habitat into their home ranges (Bontrager 1991).

This species is particularly vulnerable to habitat destruction and fragmentation because of their low dispersal rate, reliance on a specific habitat type, and low breeding success. The CAGN has been described as “an obligate resident of coastal sage scrub” (Atwood and Bontrager 2001), a vegetation community that is vulnerable to urban development pressures. The destruction of coastal sage scrub by wildfire also has a detrimental effect on local populations.

Methods

RBC conducted nine presence/absence CAGN surveys during the non-breeding season (July 1 – March 14) in accordance with USFWS protocol. RBC conducted the surveys two weeks apart between November 8, 2021 and March 1, 2022 (Table 1). Surveys were conducted in all suitable CAGN habitat within the project site plus a 300-foot buffer. Taped CAGN vocalizations were played every couple of minutes within the suitable habitat to elicit a response. RBC biologists used field binoculars (8x42) to aid in the observation of avian species.

Table 1. Survey Conditions During the Non-Breeding Coastal California Gnatcatcher Surveys for the Upper Plateau Development Project

Date	Survey Number	Survey Time	Temp (°F) Start-End	Sky Cover (%) Start-End	Wind Speed (mph) Start; End	Surveyor(s)
11/8/21	1	0800-1200	56-66	0-0	0-2; 0-2	IH
11/22/21	2	0700-1000	59-74	0-10	0-2; 0-2	IH, HS*
12/6/21	3	0630-1115	61-75	10-15	0-2; 1-3	IH, AG*, HS*
12/21/21	4	0715-1115	52-62	100-100	0-2; 0-2	IH, AG*, HS*, KW*
1/4/22	5	0700-1130	38-57	5-0	0-2; 0-2	IH
1/18/22	6	0645-1000	52-53	100-100	0-2; 0-2	IH
2/1/22	7	0700-1015	45-50	25-100	1-4; 0-1	IH
2/15/22	8	0700-1015	50-51	90-100	0-2; 1-4	IH, AG*, HS*
3/1/22	9	0700-1030	51-79	0-0	0-2; 0-2	IH, HS*

Personnel: IH= Ian Hirschler (authorized under TE-063230-5.8), AG= Alec Goodman, HS= Hannah Swarthout, KW= Kelsey Woldt
 (*) indicates Trainee

Results

RBC surveyed approximately 35.4 acres of suitable CAGN habitat within the project site and 300-foot buffer. Habitat types suitable for CAGN within the survey areas include Riversidian sage scrub dominated by flat-top buckwheat, brittlebush (*Encelia farinosa*), deerweed

(*Acmispon glaber*), and California sagebrush, brittlebush scrub, and southern riparian forest dominated by Goodding's black willow (*Salix Gooddingii*), red willow (*Salix laevigata*), mulefat (*Baccharis salicifolia*), and broom baccharis (*Baccharis sarothroides*).

Adjacent habitat is largely composed of non-native grassland dominated by slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), red brome (*Bromus rubens*), and rattail sixweeks grass (*Festuca myuros*) (Figure 2). Representative site photographs are presented in Attachment A.

No CAGN were observed during the nine non-breeding season surveys. The complete list of 49 bird species observed is presented in Attachment B and surveyor field notes are presented in Attachment C.

Conclusion

RBC did not observe nor hear any CAGN within the project/survey area or 300-foot buffer during the nine non-breeding season presence/absence surveys.

Please do not hesitate to contact me at (714) 345-8619 if you have any questions or concerns regarding this report.

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

Sincerely,



Ian Hirschler
Authorized Individual TE-063230-5.8

Enclosures:

Figure 1 – Survey Area

Figure 2 – Survey Results

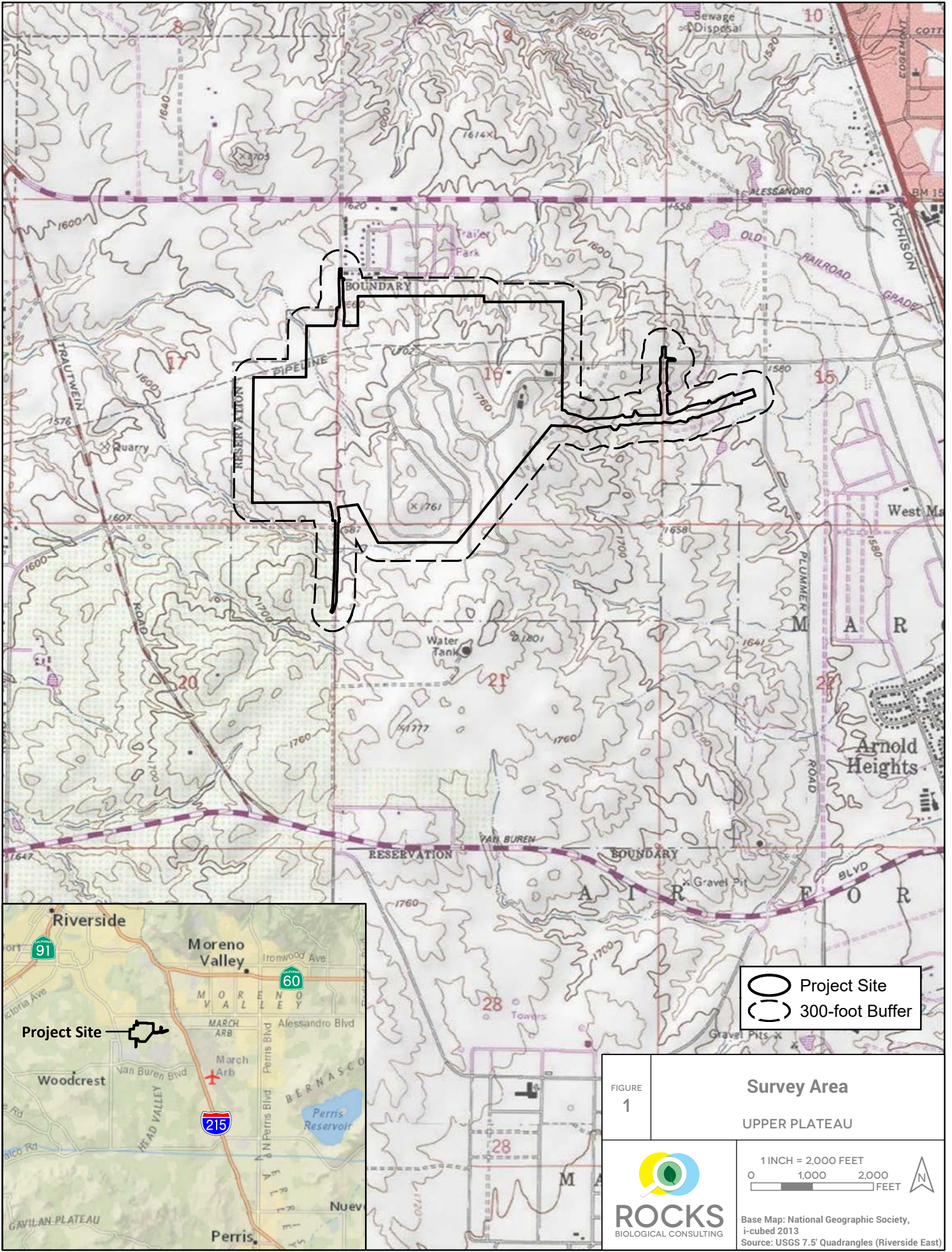
Attachment A – Site Photographs

Attachment B – Birds Species Observed During Coastal California Gnatcatcher
Presence/Absence Surveys for Upper Plateau Development Project

Attachment C – Surveyor Field Notes

References

- Atwood, J. L. and D. R. Bontrager. 2001. California Gnatcatcher (*Polioptila californica*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.574>. Accessed on September 5, 2019.
- Bontrager, D.R. 1991. Habitat Requirements, Home Range and Breeding Biology of the California Gnatcatcher (*Polioptila californica*) in South Orange County. California.
- Preston, K.L., Mock, P.J., Grishaver, M.A., Bailey, E.A. and King, D.F. 1998. California Gnatcatcher territorial behavior. *Western Birds*, 29, pp.242-257.
- U.S. Fish and Wildlife Service (USFWS). 1991. Endangered and threatened wildlife and plants: proposed rule to list the coastal California Gnatcatcher as endangered. *Federal Register* 56:47053-47060.
- U.S. Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5 pages.



 Project Site
 300-foot Buffer

FIGURE 1

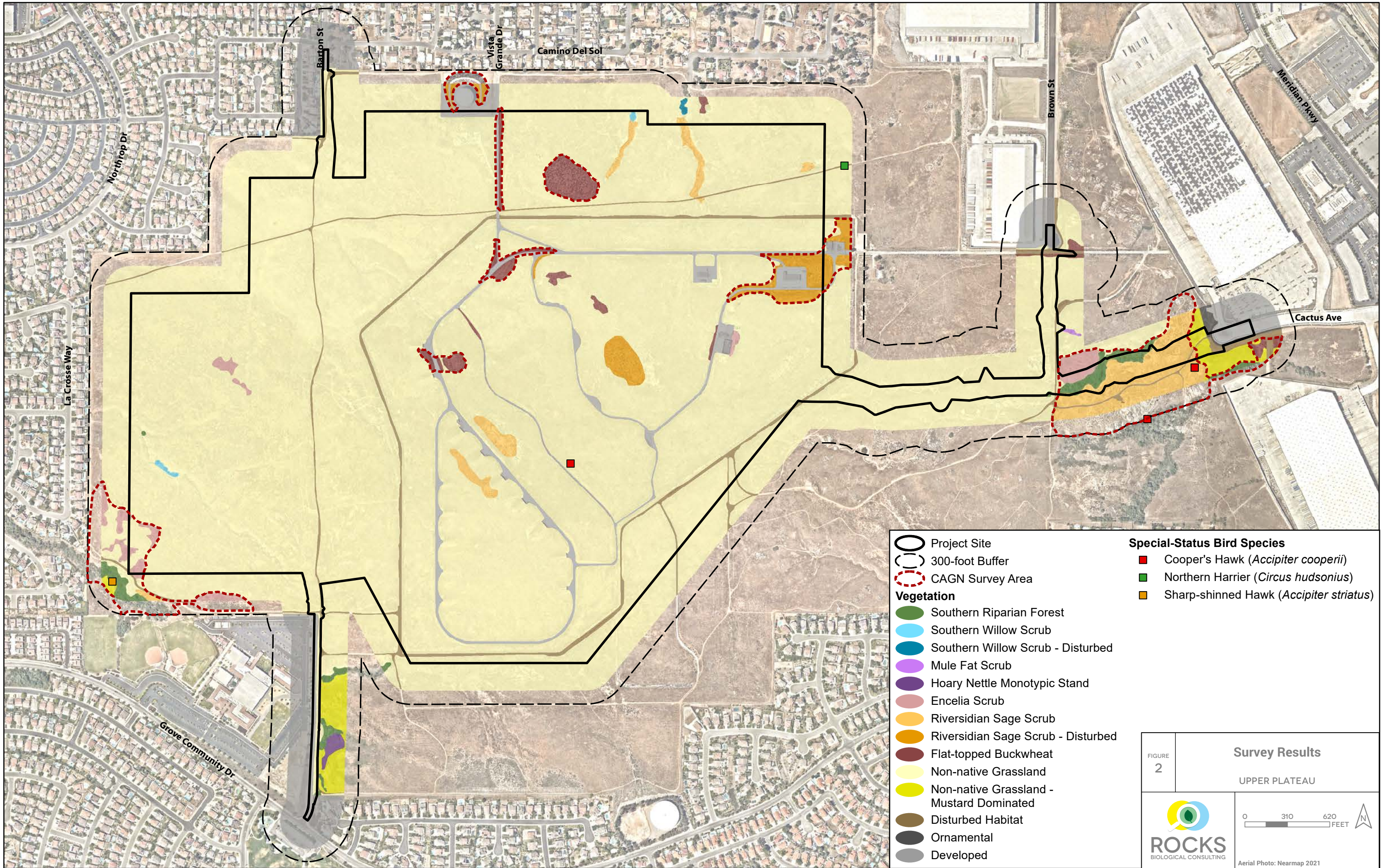
Survey Area

UPPER PLATEAU



1 INCH = 2,000 FEET
 0 1,000 2,000 FEET

Base Map: National Geographic Society, i-cubed 2013
 Source: USGS 7.5' Quadrangles (Riverside East)



<ul style="list-style-type: none"> Project Site 300-foot Buffer CAGN Survey Area Vegetation Southern Riparian Forest Southern Willow Scrub Southern Willow Scrub - Disturbed Mule Fat Scrub Hoary Nettle Monotypic Stand Encelia Scrub Riverside Sage Scrub Riverside Sage Scrub - Disturbed Flat-topped Buckwheat Non-native Grassland Non-native Grassland - Mustard Dominated Disturbed Habitat Ornamental Developed 	<p>Special-Status Bird Species</p> <ul style="list-style-type: none"> Cooper's Hawk (<i>Accipiter cooperii</i>) Northern Harrier (<i>Circus hudsonius</i>) Sharp-shinned Hawk (<i>Accipiter striatus</i>) 											
	<table border="1"> <tr> <td style="text-align: center;">FIGURE 2</td> <td style="text-align: center;">Survey Results</td> </tr> <tr> <td colspan="2" style="text-align: center;">UPPER PLATEAU</td> </tr> <tr> <td colspan="2" style="text-align: center;"> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> <small>Aerial Photo: Nearmap 2021</small> </td> </tr> </table>	FIGURE 2	Survey Results	UPPER PLATEAU								<small>Aerial Photo: Nearmap 2021</small>
FIGURE 2	Survey Results											
UPPER PLATEAU												
<small>Aerial Photo: Nearmap 2021</small>												

ATTACHMENT A

SITE PHOTOGRAPHS

Attachment A

Site Photographs



Photo 1. Representative view of flat-topped buckwheat (*Eriogonum fasciculatum*) in the northern portion of the project site, facing northwest. November 8, 2021.



Photo 4. Representative view of disturbed Riversidian sage scrub in the center portion of the project site, facing west. November 22, 2021.



Photo 8. Representative view of brittlebush scrub in adjacent habitat south of the project site, facing southeast. November 22, 2021.



Photo 2. Representative view of brittlebush (*Encelia farinosa*) scrub in the eastern portion of the project site, facing southeast. March 1, 2022.

ATTACHMENT B

**BIRD SPECIES OBSERVED DURING THE COASTAL
CALIFORNIA GNATCATCHER PRESENCE/ABSENCE
SURVEYS FOR UPPER PLATEAU DEVELOPMENT
PROJECT**

Attachment B

Bird Species Observed During Coastal California Gnatcatcher Presence/Absence Surveys for Upper Plateau Development Project

Family	Common Name	Scientific Name
Accipitridae	Cooper's hawk [†] (WL when nesting)	<i>Accipiter cooperii</i>
Accipitridae	northern harrier	<i>Circus hudsonius</i>
Accipitridae	red-tailed hawk	<i>Buteo jamaicensis</i>
Accipitridae	sharp-shinned hawk [†] (WL when nesting)	<i>Accipiter striatus</i>
Aegithalidae	bushtit	<i>Psaltriparus minimus</i>
Alaudidae	California horned lark (WL)	<i>Eremophila alpestris actia</i>
Apodidae	white-throated swift	<i>Aeronautes saxatalis</i>
Ardeidae	great egret	<i>Ardea alba</i>
Cardinalidae	western tanager	<i>Piranga ludoviciana</i>
Columbidae	Eurasian collared dove*	<i>Streptopelia decaocto</i>
Columbidae	mourning dove	<i>Zenaida macroura</i>
Columbidae	rock pigeon*	<i>Columba livia</i>
Corvidae	American crow	<i>Corvus brachyrhynchos</i>
Corvidae	common raven	<i>Corvus corax</i>
Cuculidae	greater roadrunner	<i>Geococcyx californianus</i>
Estrildidae	scaly-breasted munia*	<i>Lonchura punctulata</i>
Falconidae	American kestrel	<i>Falco sparverius</i>
Fringillidae	house finch	<i>Haemorhous mexicanus</i>
Fringillidae	lesser goldfinch	<i>Spinus psaltria</i>
Hirundinidae	barn swallow	<i>Hirundo rustica</i>
Hirundinidae	northern-rough winged swallow	<i>Stelgidopteryx serripennis</i>
Icteridae	red-winged blackbird	<i>Agelaius phoeniceus</i>
Icteridae	western meadowlark	<i>Sturnella neglecta</i>
Laridae	California gull	<i>Larus californicus</i>
Laridae	western gull	<i>Larus occidentalis</i>
Mimidae	California thrasher	<i>Toxostoma redivivum</i>
Mimidae	northern mockingbird	<i>Mimus polyglottos</i>
Parulidae	orange-crowned warbler	<i>Leiothlypis celata</i>
Parulidae	yellow-rumped warbler	<i>Setophaga coronata</i>
Passerellidae	California towhee	<i>Melospiza crissalis</i>
Passerellidae	lark sparrow	<i>Chondestes grammacus</i>
Passerellidae	Lincoln's sparrow	<i>Melospiza lincolni</i>
Passerellidae	savannah sparrow	<i>Passerculus sandwichensis</i>

Attachment B

Bird Species Observed During Coastal California Gnatcatcher Presence/Absence Surveys for Upper Plateau Development Project

Passerellidae	song sparrow	<i>Melospiza melodia</i>
Passerellidae	white-crowned sparrow	<i>Zonotrichia leucophrys</i>
Picidae	northern flicker	<i>Colaptes auratus</i>
Picidae	Nuttall's woodpecker	<i>Dryobates nuttallii</i>
Poliioptilidae	blue-gray gnatcatcher	<i>Poliioptila caerulea</i>
Regulidae	ruby-crowned kinglet	<i>Corthylio calendula</i>
Strigidae	great horned owl	<i>Bubo virginianus</i>
Sturnidae	European starling*	<i>Sturnus vulgaris</i>
Trochillidae	Anna's hummingbird	<i>Calypte anna</i>
Trochilidae	black-chinned hummingbird	<i>Archilochus alexandri</i>
Troglodytidae	Bewick's wren	<i>Thryomanes bewickii</i>
Troglodytidae	house wren	<i>Troglodytes aedon</i>
Turdidae	western bluebird	<i>Sialia mexicana</i>
Tyrannidae	black phoebe	<i>Sayornis nigricans</i>
Tyrannidae	Cassin's kingbird	<i>Tyrannus vociferans</i>
Tyrannidae	Say's phoebe	<i>Sayornis saya</i>
*Introduced species		
† This species was not observed nesting		
WL-California Department of Fish and Wildlife Watch List Species		

ATTACHMENT C

SURVEYOR FIELD NOTES

11/8/21 UPPER PLATEAU CAGN #1

14

	TIME	TEMP	CC	WIND
START	0800	56	0%	0-2
END	1200	66	0%	0-2

WEME ~~WEME~~ CAKI WCSP ANHU
MODO YRWA AMCR HOFI CORA
AMKE SAPH RTHA COHA SAVS
LASP BEWR LEGO EUST NOFL
UTA CAGS AVCO BUPH GRRO
LISP BUSH NUWO BTJR COHA
APVL NOMO

SURVEYED BRITTLEBUSH SCRUB
AND RIVERSIDIAN SAGE SCRUB
ON SITE $\frac{1}{2}$ W/IN 300 FT.
BUFFER.

NO CAGN.

11/22/21

UPPER PLATEAU CAGN #2

CHHS 147955-

	TIME	TEMP	CC	WIND
START	0700	59	0%	0-2
END	1000	74	10%	0-2

WCSP	RTHA	HOFI	CORA	BEWR	ANHU
ROPI	AMKE	MODD	SOSP	LASP	LE60
NUWD	NOFL	<u>CALA</u>	BUSH	BGGN	YRWA
RCKI	WEME	CALT	SAPH	HOLA	EUST
<u>BTJR</u>	NOMO	GREG	AMCR		

NO CAGN

12/6/21

UPPER PLATEAU CAGN #3

VA, AG, HS

TIME TEMP CC WIND

START 0630 61 10% 0-2

END 1115 75 15% 1-3

WCSP ANHU NOHA CAKI MODO EVST

BUSH LEGO HOFI SOSP YRWA CALT

BEWR NOMD WEME AMCR AMKE RTHA

NUWD BGGN COHA RCKI BTJR AUCO

SAPH SPHA NOFL SAVS

NO CAGN.

12/21/21 UPPER PLATEAU CAGN #4
 H, HS, AG, KW

	TIME	TEMP	CC	WIND
START	0715	52	100%	0-2
END	1115	62	100%	0-2

RTHA	MODD	CORA	CALT	CATH	WCSP
NUWO	LEGO	HOFI	AMCR	SAPH	BUSH
GHOW*	WEME	AMKE	BLPH	SAVS	<u>BJR</u>
<u>AUCO</u>	NOFL	CAKI	RCKI	YRWA	NOMO
EUST	ROPI	<u>CAGS</u>	SOSP		

NO CAGN

GHOW* - COULD BE SEOW

1/4/22 UPPER PLATEAU CAGN #5

	TIME	TEMP	CC	WIND
START	0700	38	5%	0-2
END	1130	57	0%	0-2

AMCR	LEGO	ANHU	MODD	BEWR	CATH
SOSP	RCKI	HOFI	YRWA	NOMO	AMKE
CORA	ROPI	CAGU	SAVS	RTHA	WCSP
NOFL	BUSH	NUWO	CALT	BLPH	SAPH
<u>BJR</u>	CAKI	WEME	<u>SEOW*</u>	NOHA	
NO CAGN.			COULD BE GHOW		

1/18/22 UPPER PLATEAU CAGN #6

	TIME	TEMP	CL	WIND
START	0645	52	100%	0-2
END	1000	53	100%	0-2

AMCP	SAVS	NCSP	ANHU	SOSP	CORA
RTHA	WEGU	MODD	CALT	CATH	ROPI
CALA	HOFI	RCKI	NOFL	BUSH	AVCO
SEOW	LEGO	BTJR	BEWR	NUWO	WEME
AMKE	LASP	CAKI	EUST	NOMO	EUCD
BGGN					

NO CAGN

? CONFIRM ID. 95% SURE

2/1/22 UPPER PLATEAU CAGN #7

53042-

	TIME	TEMP	CC	WIND
START	0700	45	25%	1-4
END	1015	50	100%	0-1

CORA	RTHA	NOFL	MODD	HOFI	BUSH
NCSP	CALT	ANHU	CATH	BTJR	SOSP
BEWR	LEGO	SBMU	WETA	SAVS	WEME
NUWO	<u>CAGS</u>	GHOW!	EUST	LASP	SAPH

NO CAGN.

CONFIRMED GLOW NOT SPAIN

2/15/22 UPPER PLATEAU CAGN #8
IH, HS, AG

	TIME	TEMP	CE	WIND
START	0700	50	90%	0-2
END	1015	51	100%	1-4

WCSP	RTHA	ROPI	SOSP	BENR	CORA
MODD	NUWD	ANHW	OALT	CATH	GREG
BGGN	RCKI	NOMD	HDFI	NOFL	BTJR
<u>PSHY</u>	BUSH	AMKE	WEME	YRWA	SAPH
SANS	<u>SSHA</u>	WEBL	LESD	<u>NOHA</u>	

NO CAGN

3/1/22 UPPER PLATEAU CAGN #9

1H, HS

	TIME	TEMP	CC	WIND
--	------	------	----	------

START	0700	51	0%	0-2
-------	------	----	----	-----

END	1030	79	0%	0-2
-----	------	----	----	-----

SOSP	NUWO	ROPI	BASW	AMCR	CALI
ANHU	BENR	RCKI	MODD	CAKI	BGGN
NRNS	LEGO	RNBL	WEME	WCSP	NOFL
HOWR	YRNA	BUSH	CATH	OCWA	WTSW
AMKE	GRRO	SAVS	NOMO	CORA	HOFI
BCHU	SAPH				

NO CAGN!

APPENDIX H

**45-DAY REPORT FOR LEAST BELL'S VIREO SURVEYS
FOR THE UPPER PLATEAU DEVELOPMENT PROJECT,
RIVERSIDE COUNTY, CALIFORNIA**



August 16, 2022

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

Subject: 45-Day Report for Least Bell's Vireo Surveys for the Upper Plateau Development Project, Riverside County, California

Ms. Love:

This letter is a summary of the protocol least Bell's vireo (*Vireo bellii pusillus*; LBVI) presence/absence surveys conducted by Rocks Biological Consulting (RBC) for the proposed Upper Plateau Development Project (project) in unincorporated Riverside County, California (Figure 1). Survey results were positive for LBVI.

INTRODUCTION

The 379.22-acre project site is located within Township 3 South, Range 4 West, Sections 15 and 22 within the Riverside East 7.5-minute quadrangle, as mapped by the U.S. Geological Survey (Figure 1). The project is in the northwestern portion of the March Joint Powers Authority (JPA) planning area, west of the current terminus of Cactus Avenue, east and south of the Mission Grove neighborhood, and north of the Orangecrest neighborhood (Figure 2).

Surrounding land uses include industrial development and residential development. Redevelopment of the area proposes a buffer of undisturbed land between the project site and the industrial and residential development, which will serve as a conserved area.

LIFE HISTORY

LBVI is a small, gray, migrant songbird that is federally and state-listed as endangered. LBVI breeds in northern Baja California and California and winters in southern Baja California. Historically, LBVI breeding grounds stretched from northwestern Baja California, north to Tehama County, California (Franzreb 1989).

Habitat loss caused LBVI populations to drastically decline throughout the late 1900s, reducing breeding populations to 300 pairs restricted to the counties south of Santa Barbara County (Allen et al. 2018; Kus 2002). Since being listed as federally endangered in 1986, U.S. populations of LBVI have increased from 291 to 2,968 known territories (USFWS 2006).

LBVI typically nest in dense willow-dominated riparian vegetation communities and will occasionally nest in upland transitional habitats. LBVI-occupied vegetation communities include

mixed willow riparian, willow-cottonwood, willow-sycamore, sycamore-oak, riparian scrub, upland scrub, and non-native dominated habitats. Typical plant species of LBVI-occupied habitats include willows (*Salix* spp.), wild roses (*Rosa* spp.), mule fat (*Baccharis salicifolia*), Fremont's cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*) (Allen et al. 2018).

LBVI nests are typically built within three feet of the ground, suspended in the horizontal fork of a branch, surrounded by dense understory. Although LBVI are commonly associated with riparian habitat, small numbers of nesting pairs have been documented using transitional upland scrub habitats (coastal sage scrub and chaparral habitats near floodplains) (Kus and Miner 1989) which may be used based on availability of suitable nesting habitat and other various nest-site factors.

The breeding season of LBVI extends from approximately March 15 through August 31, with peak nesting activity typically occurring from April through July. Egg incubation lasts approximately 14 days and most young fledge at 10 to 12 days after hatching. Young are altricial (no feathers) at hatching and are fed by parents until 20-30 days after fledging (Kus et al. 2010).

In addition to habitat loss, brood parasitism by brown-headed cowbird (*Molothrus ater*; BHCO), has led to LBVI population decline. Studies conducted from the late 1920s through the mid-1980s revealed that one-third of LBVI nests contained cowbird eggs (Goldwasser 1981). Data suggests that BHCO parasitism consistently influences the seasonal productivity of young in LBVI, and that BHCO control efforts are contributing to the recovery of LBVI in recent decades (Kus and Whitfield 2005). Therefore, BHCO occurrences are documented during LBVI surveys, if observed.

METHODS

RBC biologists conducted LBVI surveys within the survey area (project site plus 100-foot buffer) in accordance with survey methods outlined in the U.S. Fish and Wildlife Service (USFWS) *Least Bell's Vireo Survey Guidelines* (USFWS 2001). The survey area included approximately 3.2 acres of suitable riparian habitat. RBC conducted eight surveys between April 13 and July 21, 2022. Surveys were conducted at least 10 days apart between dawn and 1100 during suitable weather conditions. Surveys were not conducted during periods of excessive cold, heat, wind, rain, or other inclement weather. RBC surveyed all suitable LBVI habitat within the survey area and surveyors did not survey more than three linear kilometers or 50 hectares of suitable LBVI during any survey.

RBC biologists are familiar with the songs, whisper songs, calls, scolds, and plumage characteristics of adult and juvenile LBVI. Field binoculars (10x42) were used to identify LBVI and other sympatric bird species during each survey. LBVI and BHCO observations (if observed) were recorded in the Geographic Information System (GIS) application ArcGIS Collector. Table 1 presents the survey dates and conditions of the protocol surveys.

Table 1. Protocol LBVI Survey Dates and Conditions

Survey	Date	Survey Time	Temp (°F) Start-End	Cloud Cover (%)	Wind Speed (mph)	Surveyors
1	4/13/22	0715-0930	43-52	0-0	2-4; 2-5	IH, AG
2	4/25/22	0700-1100	56-78	2-2	2; 0-13	SM, KW
3	5/4/22	0715-0915	57-61	0-0	1-4; 1-3	IH
4	5/16/22	0745-0945	52-67	0-0	1-3; 1-4	IH, AG, HS
5	5/25/22	0645-0845	62-71	0-0	0-2; 0-2	IH
6	6/3/22	0715-0915	55-60	100-50	0-1; 1-3	IH, HS
7	6/15/22	0745-0930	66-71	0-0	2-5; 0-2	IH
8	7/21/22	0715-0930	71-81	30-30	0-2; 0-2	IH, HS

Surveyors: IH=Ian Hirschler, SM=Shannon Mindeman, AG=Alec Goodman, HS=Hannah Swarthout, KW=Kelsey Woldt

RESULTS

Suitable LBVI habitat is present in the approximately 3.2 acres of southern riparian forest within the survey area. The southern riparian forest within the survey area is composed of an overstory dominated by both Goodding’s black willow (*Salix gooddingii*) and red willow (*S. laevigata*). The understory supports a small number of mulefat as well as hoary nettle (*Urtica dioica*), broom baccharis (*Baccharis sarothroides*), seaside heliotrope (*Heliotropium curassavicum* var. *oculatum*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Southern riparian forest within the survey area occurs along the southern boundary in three main drainages, within a drainage in the southwestern corner and in a drainage along the eastern boundary (Figure 2). The southern riparian forest is relatively small and either occurs in isolated patches or is contiguous with riparian corridors located outside the survey area, such as the southwestern riparian areas. Unsuitable habitat within the survey area includes non-native grassland, developed land, disturbed habitat, brittlebush scrub, and Riversidian sage scrub, which were excluded from the survey area.

RBC observed three individual LBVI during the eight protocol surveys conducted between April 13 and July 21, 2022. Two individuals were observed within the southwestern corner of the survey area. A third individual was observed in southern riparian forest approximately 575 feet south of the survey area on the eastern side (Figure 2). The two LBVI individuals within the survey area were observed moving frequently and singing within the southern riparian forest. These individuals were not observed interacting, and both appeared to be males patrolling individual territories, though no breeding behavior was observed. The third off-site individual was not documented after the fourth survey and likely did not establish a territory.

Representative photographs of suitable LBVI habitat are presented in Attachment A and a list of the 51 bird species observed during the surveys is included as Attachment B.

CONCLUSION

RBC observed two individual LBVI within the survey area throughout the breeding season and one additional LBVI approximately 575 feet outside the survey area (Figure 2). No LBVI nests or nesting behavior was observed.

Please do not hesitate to contact us at (619) 701-6798 if you have any questions or concerns regarding this report.

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

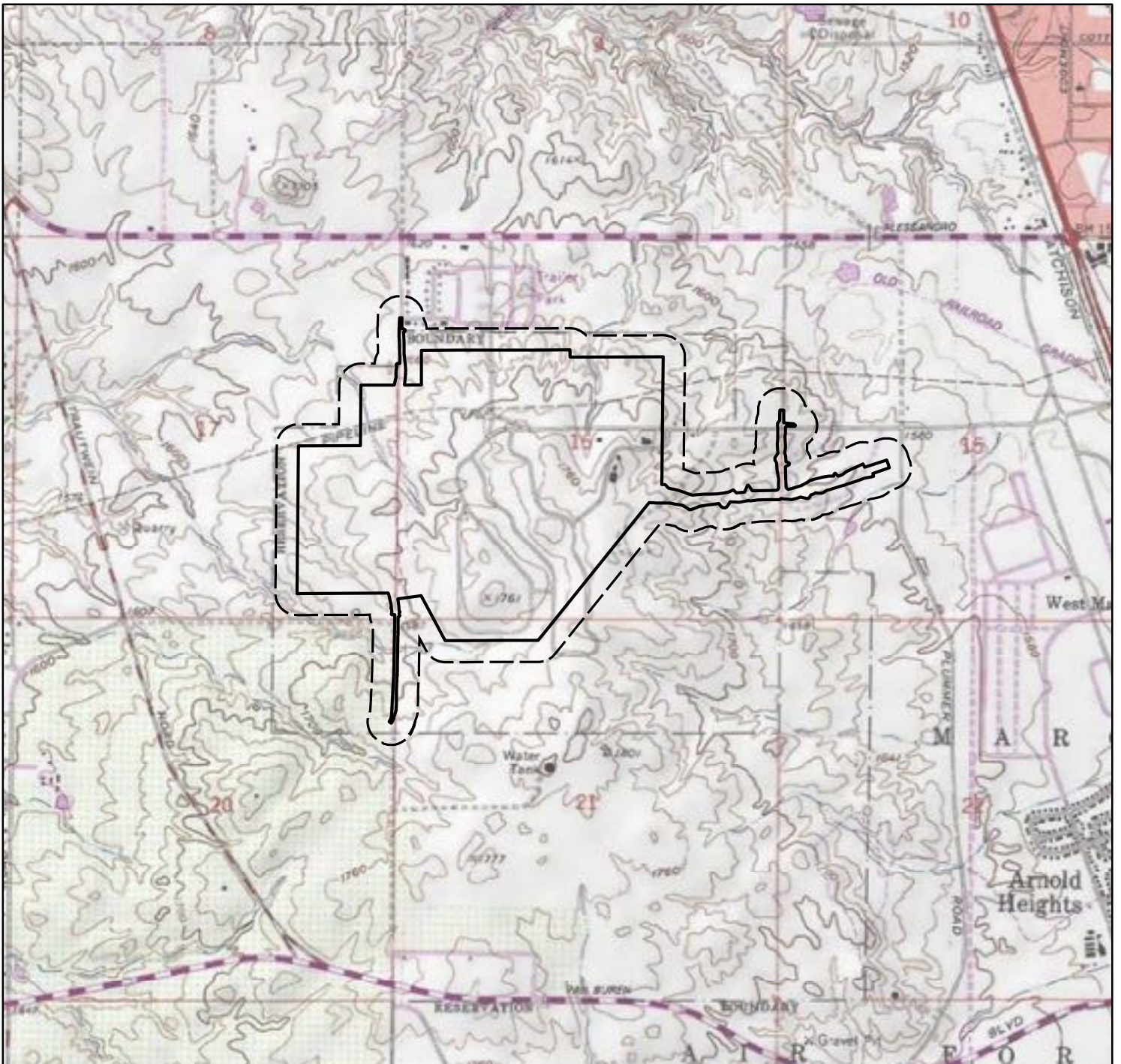


Ian Hirschler
Senior Biologist

Enclosures: Figure 1 – Survey Area
Figure 2 – Survey Results
Attachment A – Site Photographs
Attachment B – Bird Species Observed During Least Bell's Vireo Surveys for the
Upper Plateau Development Project

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- Allen, L. D., S. L. Howell, and B. E. Kus. 2018. Distribution and Abundance of Least Bell's Vireos (*Vireo bellii pusillus*) and Southwestern Willow Flycatchers (*Empidonax traillii extimus*) on the Middle San Luis Rey River, San Diego County, Southern California—2017 Data Summary. No. 1082. US Geological Survey.
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 Project Site
 300-foot Buffer

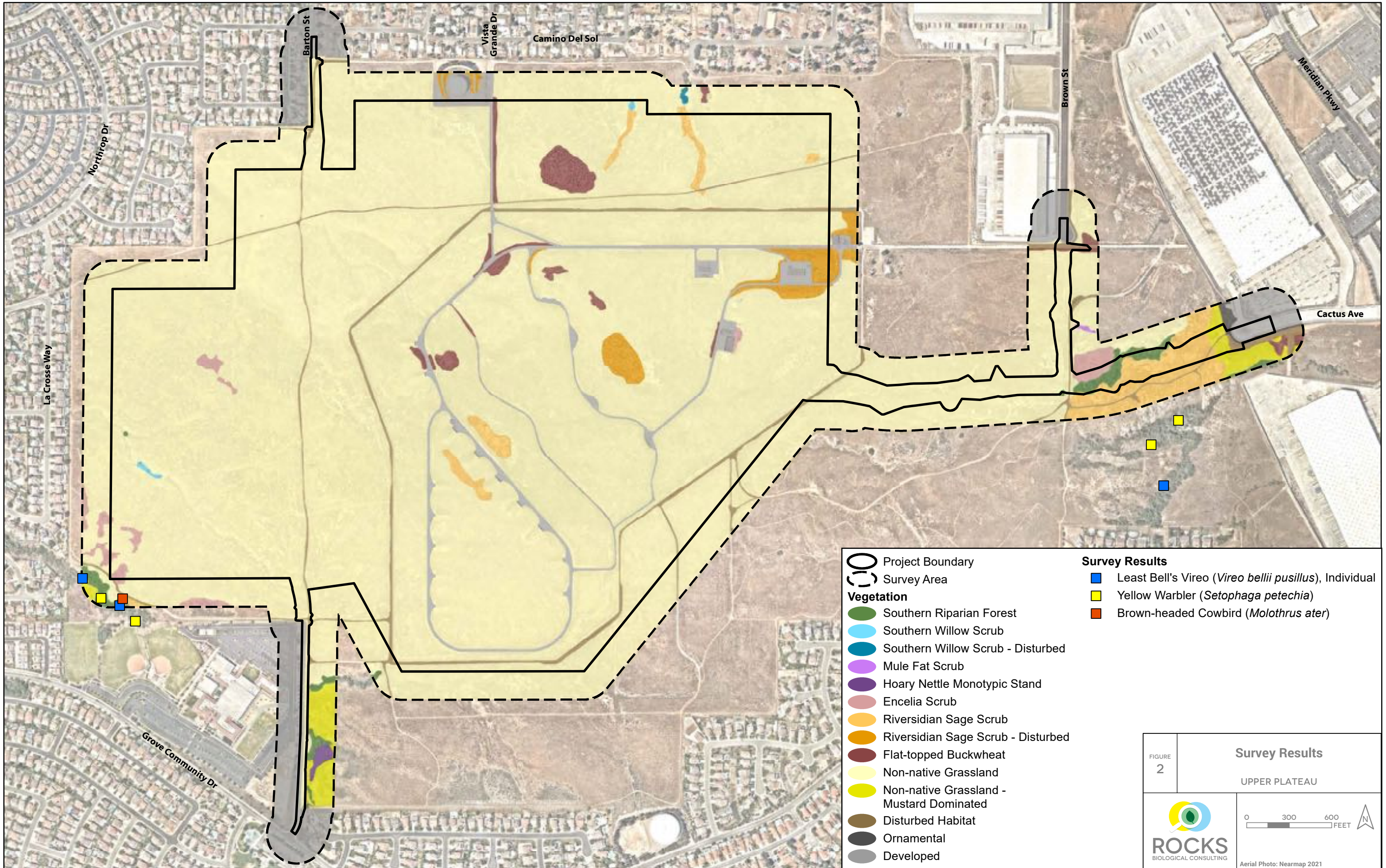
FIGURE 1

Survey Area
UPPER PLATEAU



1 INCH = 2,000 FEET
 0 1,000 2,000 FEET

Base Map: National Geographic Society, i-cubed 2013
 Source: USGS 7.5' Quadrangles (Riverside East)



Attachment A

Site Photographs



Photo 1. View of occupied LBVI habitat in the southwestern corner of the survey area. May 4, 2022.



Photo 2. View of isolated southern riparian forest in the southern portion of the survey area. June 15, 2022.



Photo 3. View of isolated southern riparian forest on the east side of the survey area. June 15, 2022.



Photo 4. View of isolated southern riparian forest in the eastern portion of the survey area. July 21, 2022.

Attachment B

Bird Species Observed During Least Bell's Vireo Presence/Absence Surveys for Upper Plateau Development Project

Family	Common Name	Scientific Name
Accipitridae	red-tailed hawk	<i>Buteo jamaicensis</i>
Aegithalidae	bushtit	<i>Psaltriparus minimus</i>
Alaudidae	California horned lark (WL)	<i>Eremophila alpestris actia</i>
Apodidae	white-throated swift	<i>Aeronautes saxatalis</i>
Cardinalidae	blue grosbeak	<i>Passerina caerulea</i>
Cardinalidae	western tanager	<i>Piranga ludoviciana</i>
Charadriidae	killdeer	<i>Charadrius vociferus</i>
Columbidae	mourning dove	<i>Zenaida macroura</i>
Columbidae	rock pigeon*	<i>Columba livia</i>
Corvidae	American crow	<i>Corvus brachyrhynchos</i>
Corvidae	common raven	<i>Corvus corax</i>
Cuculidae	greater roadrunner	<i>Geococcyx californianus</i>
Estrildidae	scaly-breasted munia*	<i>Lonchura punctulata</i>
Falconidae	American kestrel	<i>Falco sparverius</i>
Fringillidae	Lawrence's goldfinch	<i>Spinus lawrencei</i>
Fringillidae	house finch	<i>Haemorhous mexicanus</i>
Fringillidae	lesser goldfinch	<i>Spinus psaltria</i>
Hirundinidae	cliff swallow	<i>Petrochelidon pyrrhonota</i>
Hirundinidae	northern-rough winged swallow	<i>Stelgidopteryx serripennis</i>
Icteridae	hooded oriole	<i>Icterus cucullatus</i>
Icteridae	western meadowlark	<i>Sturnella neglecta</i>
Mimidae	California thrasher	<i>Toxostoma redivivum</i>
Mimidae	northern mockingbird	<i>Mimus polyglottos</i>
Parulidae	orange-crowned warbler	<i>Leiothlypis celata</i>
Parulidae	Wilson's warbler	<i>Cardellina pusilla</i>
Parulidae	yellow warbler (SSC)	<i>Setophaga petechia</i>
Parulidae	common yellowthroat	<i>Geothlypis trichas</i>
Passeridae	house sparrow	<i>Passer domesticus</i>
Passerellidae	California towhee	<i>Melospiza crissalis</i>
Passerellidae	spotted towhee	<i>Pipilo maculatus</i>
Passerellidae	lark sparrow	<i>Chondestes grammacus</i>
Passerellidae	savannah sparrow	<i>Passerculus sandwichensis</i>
Passerellidae	song sparrow	<i>Melospiza melodia</i>

Attachment B

Bird Species Observed During Least Bell's Vireo Presence/Absence Surveys for Upper Plateau Development Project

Passerellidae	white-crowned sparrow	<i>Zonotrichia leucophrys</i>
Picidae	northern flicker	<i>Colaptes auratus</i>
Picidae	Nuttall's woodpecker	<i>Dryobates nuttallii</i>
Polioptilidae	blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Sturnidae	European starling*	<i>Sturnus vulgaris</i>
Trochillidae	Anna's hummingbird	<i>Calypte anna</i>
Trochillidae	black-chinned hummingbird	<i>Archilochus alexandri</i>
Trochillidae	Allen's hummingbird	<i>Selasphorus sasin</i>
Troglodytidae	Bewick's wren	<i>Thryomanes bewickii</i>
Troglodytidae	house wren	<i>Troglodytes aedon</i>
Turdidae	western bluebird	<i>Sialia mexicana</i>
Tyrannidae	ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Tyrannidae	black phoebe	<i>Sayornis nigricans</i>
Tyrannidae	Cassin's kingbird	<i>Tyrannus vociferans</i>
Tyrannidae	Say's phoebe	<i>Sayornis saya</i>
Tyrannidae	willow flycatcher	<i>Empidonax traillii</i>
Vireonidae	least Bell's vireo (FE, SE)	<i>Vireo bellii pusillus</i>
Vireonidae	warbling vireo	<i>Vireo gilvus</i>
*Introduced species FE–Federally endangered SE–State endangered SSC–CDFW Species of Special Concern WL–CDFW Watch List Species		

APPENDIX I

BIRD AIR STRIKE HAZARD (BASH) STUDY FOR THE UPPER PLATEAU DEVELOPMENT PROJECT



July 28, 2022

sent via email

Mr. Adam Collier
Vice President - Planned Communities
Lewis Management Corporation
1156 North Mountain Avenue
Upland, California 91786

Subject: Wildlife Hazard Review of the West Campus Upper Plateau Specific Plan and Meridian Development project near March Air Reserve Base, Riverside County, California

Mr. Collier:

Meridian Park West, LLC (Meridian West) proposes to amend the *March Joint Powers Authority General Plan for March Air Reserve Base* through the adoption of the *West Campus Upper Plateau Specific Plan* (Specific Plan) which addresses an approximately 818-acre area (Plan Area) adjacent to March ARB.¹ The Specific Plan will guide and direct the development of a portion of the Plan Area into a master-planned industrial park, known as the West Campus Upper Plateau. The adoption of the Specific Plan serves two main purposes:

- Provide design standards and guidelines for projects proposed within the boundaries of the West Campus Upper Plateau Specific Plan; and
- Support the terms and conditions of a 2012 Settlement Agreement between and among the Center for Biological Diversity (CBD), the San Bernadino Audubon Society, March Joint Powers Authority (JPA), and LNR Riverside, LLC as a means of environmental protection.

PROJECT LOCATION

The 818-acre Plan Area is located within the western portion of the March Joint Powers Authority (MJPA) jurisdiction, specifically within the West March Planning Subarea (see **Figure 1**). The Plan Area is located within the Airport Influence Area (AIA) of the March ARB as identified in the Riverside County Airport Land Use Compatibility Plan (ALUCP), which was prepared by the Riverside County Airport Land Use Commission (ALUC) (2014; **Figure 2**). The Plan Area is also addressed in the Air Installation Compatible Use Zones (AICUZ) Study for March ARB that was prepared by the U.S. Air Force (2018; see **Figure 3**).

As presented to the Riverside County ALUC during a meeting on May 12, 2022, the proposed plan is one component of a large project that includes:

¹ The Specific Plan Executive Summary cites a Plan Area acreage of 807.9 acres. Table 2.1 cites a Plan Area of 817.9 acres. A Plan Area of 817.9 is cited throughout this letter report.

- **General Plan Amendment/Specific Plan.** The West Campus Upper Plateau Specific Plan (SP-9) contains development standards, design guidelines, infrastructure master plans, maintenance responsibilities, phasing schedule, and implementation procedures necessary to construct a business park in the Plan Area. Following General Plan Amendment/Specific Plan adoption, the March JPA will establish zoning that is consistent with the land uses and locations identified in the Specific Plan.
- **Industrial Development on Two Parcels.** Meridian proposes to construct two industrial buildings with mezzanines on separate parcels totaling 1,820,000 square feet on (combined) 115.88 acres. No development has been proposed for the other parcels within the Plan Area at this time.
- **Tentative Map Approval.** Meridian proposes a tentative tract map to divide 359.6 acres into specific lots development, streets, and open space. Mead & Hunt cannot comment on the tentative map because projects are not proposed in this area. Individual projects will be reviewed as they are proposed.

PROJECT REVIEW AND APPROACH

Many aviation facilities include large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage/attract wildlife to enter an airport's approach or departure airspace or aircraft operations area. Constructed or natural areas — such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal and some conservation-based land uses — can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Mead & Hunt reviewed the Specific Plan to consider the potential effect of the proposed project to attract potentially hazardous wildlife to March ARB.

Mead & Hunt reviewed Information and policies related to the wildlife hazard management set forth in the following documents to consider the potential for the Specific Plan to increase potential wildlife hazards to aircraft operations at March ARB:

- *Riverside County ALUCP*, including countywide policies and specific policies associated with March ARB, and other applicable guidance;
- *Air Installations Compatible Land Use Zone Study for the March ARB*;
- Guidance set forth by the Federal Aviation Administration, specifically FAA Advisory Circular (AC) 150/5200-33C, "Wildlife Hazard Attractants On and Near Airports"; and
- Previous studies associated with potentially hazardous wildlife and the Bird/Wildlife Aircraft Strike Hazard (BASH) Plan for March ARB.

The following analysis was prepared under the direction of an FAA-qualified Airport Wildlife Biologist (QAWB) as set forth by FAA AC 150/5200-36B, "Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports."

A. Applicable Wildlife Hazard Management Guidance and Policies

1. FAA Advisory Circular (AC)150/5200-33C, Wildlife Hazards On And Near Airports

The FAA identifies hazardous wildlife as “Species of wildlife (birds, mammals, reptiles), including feral and domesticated animals, not under control that may pose a direct hazard to aviation (i.e., strike risk to aircraft) or an indirect hazard such as an attractant to other wildlife that pose a strike hazard or are causing structural damage to airport facilities (e.g., burrowing, nesting, perching).” FAA AC 150/5200-33C provides guidance to identify “wildlife attractants,” or certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also addresses airport development projects, including airport construction, expansion, and renovation, affecting aircraft movement near hazardous wildlife attractants. For airports that serve turbine-powered aircraft, the FAA suggests a separation of 10,000 feet between aircraft movement areas and potential wildlife attractants.

Specific wildlife attractants identified by the FAA include vegetation, habitats, and land use practices that can attract wildlife that poses a risk to aviation safety. Such land uses include, but are not limited to:

- **Waste disposal operations**, such as landfills, trash transfer stations, recycling centers that accept food waste, etc.
- **Water management facilities**, such as stormwater management retention/detention ponds that hold water for more than 48 hours or include emergent and submergent vegetation, artificial marshes, wetlands, wetland mitigation sites, and mitigation banks.
- **Dredge spoil containment areas**, which include the application of unconsolidated rock, soil, or shell materials extracted and deposited during dredging and dumping activities.
- **Agricultural activities**, including crop production and livestock production.
- **Aquaculture**, including freshwater and marine aquaculture.
- **Golf courses and landscaping**. The FAA recommends against the construction of new golf courses and also recommends that a QAWB review all landscaping plans based on their geographic location, their ability to produce seeds/fruits/berries, and their potential to provide nesting cover. If a hazardous wildlife attractant is detected, immediate corrective actions should be taken.
- **Structures**, which can attract birds for nesting, roosting, and loafing (e.g., flat rooftops, light posts, towers, etc).
- **Other attractants**, such as conservation easements, parks/open space, and wildlife management areas, that may have the potential to attract hazardous wildlife.

The FAA also warns against the synergistic effects of surrounding land uses, which can occur when two or more land uses may create a wildlife corridor directly through the airport and/or surrounding airspace.

2. Air Installation Compatible Use Zones Study for March Air Reserve Base

The Air Installation Compatible Use Zone (AICUZ) for March ARB outlines the location of runway clear zones, aircraft accident potential zones, and noise contours and provides recommendations for development compatible with military flight operations. The Air Force Reserve Command provides the study so that local governments can incorporate the study recommendations into community plans, zoning ordinances, subdivision regulations, building codes, and other documents (Air Force, 2018).

AICUZ Study Section 5.3, Hazards to Aircraft Flight Zones, presents a discussion on Bird/Wildlife Strike Hazard (BASH), and notes that:

Wildlife represents a significant hazard to flight operations. Birds, in particular, are drawn to different habitat types found in the airfield environment including hedges, grass, brush, forest, water, and even the warm pavement of the runways. Although most bird and animal strikes do not result in crashes, they cause structural and mechanical damage to aircraft as well as loss of flight time.

To reduce the potential for strike hazards, the Air Force recommends against the development of land uses that attract birds near installations that support an active air operations mission, specifically in clear zones and accidental zones. The land uses include most of those identified by the FAA in AC 150.5200-33C and include, but are not limited to: waste disposal operations, wastewater treatment facilities and transfer stations, landfills, golf courses, wetlands, stormwater ponds/retention basins, dredge disposal sites, and fruit trees.

3. Riverside County Airport Land Use Compatibility Plan

Following Specific Plan adoption, the March JPA will establish zoning in the Plan Area that is consistent with the land uses and locations and uses identified in the Specific Plan. As Shown in **Figure 2**, Specific Plan Compatibility Zones, the Upper Plateau Specific Plan Area includes portions of Airport Compatibility Zones B1, B2, C1, and C2. ALUCP Table MA-2, Basic Compatibility Criteria for the March Air Reserve Base/Inland Port Airport, is presented as **Figure 4**. The table presents site-specific policies for the March AIA. Should conflicts occur between the county-wide policies and the site-specific policies for March ARB, the site-specific policies prevail.

ALUCP policies associated with wildlife hazard management and each Compatibility Zone are summarized below:

- **Zone B1 - Inner Approach Departure Zone.** Uses listed in AICUZ as not compatible in APZ 1 or APZ II and “hazards to flight” as identified in B2 below.
- **Zone B2 - High Noise Zone.** Prohibited uses include “Hazards to flight.” Table MA-2 identifies hazards to flights as:

“Land use development that may cause the attraction of birds to increase is also prohibited. Man-made features must be designed to avoid heightened attraction of birds. In Zones A, B1, and B2, flood control facilities should be designed to hold water for no more than 48 hours following a storm and be completely dry between storms (see FAA Advisory Circular 150/5200-33B). Additionally, certain farm crops and farming practices that tend to attract birds are strongly discouraged. These include: certain crops (e.g., rice, barley, oats, wheat – particularly durum – corn, sunflower, clover, berries, cherries, grapes, and apples); farming activities (e.g., tilling and harvesting); confined livestock operations, and fish production....”

- **Zone C1 - Primary Approach/Departure Zone.** Prohibited uses include “hazards to flight” (see item B2).
- **Zone C2 - Flight Corridor Zone.** Prohibited uses include “hazards to flight.”

B. General Plan Update/Specific Plan Review

Mead & Hunt reviewed the Proposed Specific Plan for its consistency with wildlife hazard management guidance and policies included in the documents cited above. Mead & Hunt did not consider consistency with other compatibility issues, such as noise exposure, overflight, etc.

As summarized in the Specific Plan, the Center for Biological Diversity (CBD), the San Bernardino Valley Audubon Society, the March MJPA, and LNR Riverside LLC, entered into a Settlement Agreement on September 12, 2012 (CBD Settlement Agreement). The CBD Settlement Agreement contemplated the division of western acreage under the jurisdiction of the MJPA, including the Plan Area, into Conservation Area, Developable Area, Proposed Park Area, and Water Quality - Open Space Area. The proposed Specific Plan would support the implementation of the CBD Settlement Agreement.

Chapter 2: Specific Plan Land Uses and Overlay Districts

The Specific Plan identifies several land uses for the approximately 818-acre Plan Area as summarized below:

- **Business Park (65.35 acres).** Business park areas are characterized as major employment concentrations. Outdoor storage as a primary use is prohibited.
- **Industrial (143.56 acres).** Industrial development may support manufacturing and non-manufacturing uses from warehouse and distribution facilities to industrial activities, including open storage, office/industrial parks, light industry, manufacturing, research and development centers, maintenance shops, and emergency services centers. The area devoted to outdoor storage may not exceed the building area.
- **Mixed use (42.22 acres).** Complementary land uses may include commercial, business park, office, medical, educational and vocational, research and development, and services.

- **Public Facility (5.71 acres).** Public facility uses include a wide range of public, quasi-public, and private uses such as public cultural and historical facilities, government administrative offices and facilities, public utilities, and major transportation corridors. However, land uses determined to be sensitive to, or incompatible with, aviation operations shall be excluded.
- **Park (10.88 acre).** A park will be established in the northwestern corner of the West Campus Upper Plateau area for both active and passive use including ball fields, exercise nodes, playground and picnic areas, and restrooms.
- **Open Space (67.11 acres).** Open space will be designated for hiking trails and other passive uses. The area will generally remain in its natural state, with the exception of planned hiking trails. Two trailheads will provide parking areas, benches, and information kiosks, etc.
- **Open Space - Conservation (445.47 acres).** The Plan Area includes an Open Space - Conservation Area as part of the Settlement Agreement. A majority of the Conservation Area is proposed within the eastern portion of the Plan Area. Several existing recreational trails are present throughout the Open Space - Conservation Area.
- **Roadways (37.70 acres).** Paved roads will provide access to and within specific land use areas throughout the Plan Area.

The following analysis considers these land uses and their potential to attract potentially hazardous wildlife to March ARB by considering individual topic areas presented in the Specific Plan.

Overlay Areas

Section 2.5 describes overlay zones that apply within Plan Area boundaries. The first paragraph in Section 2.5 states that the Specific Plan "provides land use regulations relating to safety (both for air navigation and for people within the West Campus Upper Plateau), noise impacts, and building heights," and subsequent paragraphs summarize those regulations (section 2.5.1). However, the discussion does not identify hazards to flight associated with wildlife hazard attractants.

Recommendation: The discussion should be amended to address hazards to flight associated with wildlife hazard attractants.

Chapter 3: Development Regulations

Chapter 3 establishes the permitted and development standards that will apply to proposed development in the Plan Area. Mead & Hunt offers several recommendations on the Development Standards to prevent the creation of hazardous wildlife attractants.

- **Table 3.1 - West Campus Upper Plateau Specific Plan Land Use Table.** Some conditionally acceptable land uses could conflict with ALUCP policies and FAA guidance pertaining to wildlife attractants, such as Bar and Grill, Open Air Markets for Agricultural Products, Recycling Facilities, and Restaurants (Fast Food and Sit Down).

Such facilities have the potential to attract hazardous wildlife based on the presence of outdoor dining, food waste, and inadequate trash storage/disposal practices.

Recommendation: The Specific Plan should provide guidance to guard against the accumulation and storage of food and waste storage (see comments provided for Chapter 4).

- **3.5.1 Lot Development.** Policy 3.5.1, Lot Development, paragraph 3 states, “Construction of objects taller than 50 feet in the Height Caution Zone will require review by the Airport Land Use Commission. This does not comply with ALUCP Table MA-2, which also requires the review of objects greater than 35 feet tall in Zones B1 and B2 and the review of objects greater than 70 feet tall in Zones C1 and C2, even if they are located outside of the high terrain area.

Recommendation: Revise Policy 3.5.1 to comply with the ALUCP.

- **3.5.7 Conceptual Building Layouts.** Section 3.5.7 provides conceptual layouts for the two structures proposed as part of the proposed project. The conceptual plans appear to be consistent with applicable guidance, but a detailed review of the proposed project, including landscape and stormwater management plans, could not be performed as detailed plans are not available at this time. If the proposed plans for both structures comply with the Specific Plan Guidance and the recommendations included in this analysis, it will be consistent with the Specific Plan and Riverside County ALUCP.

Recommendation: Provide detailed plans for review as they become available.

Chapter 4: Design Guidelines

Chapter 4 seeks to provide guidance to developers, builders, engineers, architects, landscape architects, and other professionals to achieve and maintain the desired design quality and character of the built environment expected for the Plan Area. **Table 1** identifies modifications to specific measures to address potential wildlife hazards. Landscaping recommendations are discussed separately.

Table 1. Recommended Modifications to Chapter 4, Design Guidelines

Section	Recommendation
4.3.1 Building Form	Amend Item 4.3.1e as follows: e. Pedestrian and ground-level building entries intended for visitor use should be recessed or covered by architectural projections, roofs, or arcades in order to provide shade and visual relief. <u>Projections should be treated with anti-perching devices to discourage wildlife (e.g. birds) from perching, roosting, and nesting. Recessed areas should be screened or equipped with bird slides to prevent nesting.</u>

<p>4.4.1 Walls and Fences</p>	<p>Section 4.4.1, third paragraph, states that landscaping within and outside of roadway rights-of-way serve as additional screening. Item “b” states:</p> <p>b. Landscaping may be used for visual screening instead of walls and fences where a solid physical barrier is not needed.</p> <p>The Riverside County ALUC has prepared specific guidelines for landscaping within the Airport Influence Area that warn against overlapping crowns at maturity and recommend the use of mixed vegetation to provide varied heights, both at the time of planting and at maturity. This guidance could be considered counter-intuitive to the Item 4.4.1b as presented. Item 4.4.1b should be amended as follows:</p> <p>b. Landscaping may be used for visual screening instead of walls and fences where a solid physical barrier is not needed. <u>Landscape barriers must comply with Riverside County ALUC guidance, “Landscaping near Airports.”</u></p>
<p>4.4.2 Truck Courts and Loading Docks</p>	<p>item 4.4.2a should be amended as follows:</p> <p>a. Loading doors, service docks, and equipment areas should be oriented or screened to reduce visibility from public roads and publicly accessible locations within the West Campus Upper Plateau Specific Plan. Screening may be accomplished with solid walls or fences that are compatible with the architectural expression of the building. Screening may also be accomplished by landscaping <u>that complies with Riverside County ALUC guidance, “Landscaping near Airports.”</u></p>
<p>4.4.3 Ground or Wall-Mounted Equipment</p>	<p>Item 4.4.3a should be amended as follows:</p> <p>a. Ground-mounted equipment, including but not limited to mechanical or electrical equipment, emergency generators, boilers, storage tanks, risers, and electrical conduits, should be screened from public viewing areas including adjacent public roads. Screening may be accomplished with solid walls, or landscaping <u>that complies with Riverside County ALUC guidance, “Landscaping near Airports.”</u></p>
<p>4.4.5 Trash Enclosures</p>	<p>Birds and mammals are attracted to trash storage containers that include organic waste or to seek refuge. Item 4.4.5b should be modified and amended as follows:</p> <p>b. All outdoor trash enclosures shall be constructed with solid roofs to prevent exposure of dumpster contents to rainfall and prevent polluted stormwater runoff from entering these structures. <u>Such enclosures must accommodate covered dumpsters and waste receptacles that shall remain closed at all times, and their dimensions must accommodate the opening and closing of the dumpsters and receptacles.</u></p>
<p>4.4.6 Outdoor Lighting</p>	<p>Section 4.4.6 should be amended to include the following:</p> <p>j. <u>Lighting poles and lights fixtures must be equipped with anti-perching devices to discourage wildlife (e.g. bird) use.</u></p>
<p>4.4.7 Signage Guidelines</p>	<p>Item 4.4.6 h should be amended as follows:</p> <p>h. <u>Signs shall be constructed to not have exposed wiring, raceways, ballasts, conduit, transformers, or the like, and shall be equipped with anti-perching devices to discourage wildlife (e.g. bird) use.</u></p>

4.5 Landscape Design Guidelines

Section 4.5, Landscape Design Guidelines, identifies principles and standards that will apply to the Plan Area. The Specific Plan states that “these Guidelines are intended to be flexible, and are subject to modification over time. However, any deviations from these Landscape Guidelines are to be in keeping with the spirit of the core elements of the over theme described herein...”. The guidance also states, “The landscaping plan serves the dual purpose of providing visual appeal while also being sensitive to the environment and climate by using drought tolerant materials.”

Landscaping is identified by the FAA as an important element in managing hazardous wildlife on and near airports, as plant materials can provide food, shelter, roosting and nesting habitat. Although the project is located within the AIA for March ARB, the current Specific Plan landscaping guidance does not address the relationship between landscaping and wildlife hazard management. As previously stated, ALUCP Table MA-2 identifies “hazards to flight” as a prohibited use and identifies wildlife attractants as a “hazard to flight” (note 8).

Recommendation: Amend Section 4.5 to identify or describe the following:

- The relationship between landscaping, wildlife attractants, and hazards to flight and the importance of addressing the creation of potential wildlife attractants during landscape design and installation;
- The necessity of preparing landscape plans that will not provide food, shelter, roosting, or nesting habitat for birds or mammals; and
- A requirement that landscaping plans that deviate from the Landscape Design Guidelines must be reviewed by a QAWB prior to approval.

4.5.1 Plant Palette

The second paragraph of Section 4.5.1 states, “A list of plant materials approved for use in the Specific Plan is provided for in Appendix A - Landscape Plant Palette. The plants listed establish a base palette for the landscape design. Other similar plant materials may be substituted for species listed in Appendix A, provided the alternative plants are drought-tolerant and complement the Specific Plan design theme.” The discussion also refers to the ALUC’s “Landscaping Near Airports” brochure and states that “the general planting guidelines shall also be considered.”

Recommendation: Amend the language in Section 4.5.1 to require that proposed plant materials that deviate from the Landscape Guidance must be reviewed by a QAWB prior to approval.

Mead & Hunt reviewed the plant palette identified in Appendix A and identified some species that are inappropriate for proposed projects in the AIA. Table 2 identifies species that should be deleted from Appendix A because they provide food sources, habitat, or other features that are attractive to potentially hazardous wildlife.

Table 2. Plant Materials Attractive to Potentially Hazardous wildlife	
Botanical Name	Common Name
Trees	
<i>Arbutus unedo</i>	Strawberry Tree
<i>Arbutus 'Marina'</i>	Marina Strawberry Tree
<i>Callistemon viminalis</i>	Weeping Bottlebrush
<i>Chilopsis linearis 'Burgundy Lace'</i>	Burgundy Lace Desert Willow
<i>Chitalpa tashkentensis</i>	Chitalpa
<i>Cinnamomum camphora</i>	Camphor Tree
<i>Eriobotrya japonica</i>	Loquat
<i>Eriobotrya deflexa</i>	Bronze Loquat
<i>Juglans californica</i>	California Walnut
<i>Juglans hindsii</i>	California Black Walnut
<i>Laurus nobilis 'Saratoga'</i>	Saratoga Laurel
<i>Pistacia chinensis</i>	Chinese Pistache
<i>Prosopis chilensis</i>	Thornless Chilean Mesquite
<i>Pyrus calleryana 'Aristocrat'</i>	Aristocrat Pear
<i>Tabebuia impetiginosa</i>	Pink Trumpet Tree
<i>Tecoma stans</i>	Yellow Bells
<i>Quercus spp.</i>	Oak
Shrubs	
<i>Anigozanthos</i>	Kangaroo Paw
<i>Anisacanthus quadrafidus var. Wrightii</i>	Flame Acanthus
<i>Callistemon viminalis 'Little John'</i>	Little John Callistemon
<i>Dianella revoluta 'Little Rev'</i>	Little Rev Flax Lily
<i>Dianella tasmanica</i>	Variegated Flax Lily
<i>Dodonaea viscosa 'Purpurea'</i>	Purple Hopseed
<i>Elaeagnus pungens</i>	Silverthorn
<i>Leucophyllum frutescens + cvs</i>	Texas Ranger
<i>Leymus condensatus 'Canyon Prince'</i>	Canyon Prince Wild Rye
<i>Olea europea 'Little Ollie'</i>	Dwarf Olive
<i>Phlomis fruticosa</i>	Jerusalem Sage
<i>Rhaphiolepis spp.</i>	Indian Hawthorn
<i>Stachys byzantine</i>	Lamb's Ear
<i>Trichostema lanatum</i>	Woolly Blue Curls
<i>Elymus triticoides</i>	Creeping Wild Rye

Recommendation: Remove plant species identified in **Table 2** from the Specific Plan plant palette in Appendix A.

4.5.3 Streetscapes

Several of the streetscape figures presented in section 4.5.3 include plant materials that were identified for deletion are noted **Table 2**. Such figures include, but are not limited to, Figure 4-4 (Creeping Wild Rye), Figure 4.5 (Creeping Wild Rye), Figure 4-6 (Saratoga Laurel and Dwarf Olive), 4-7 (Creeping Wild Rye).

Recommendation: Review and revise these figures to eliminate the species identified in **Table 2**.

4.5.4 Entries and Monuments

Figure 4-8 identifies typical Corner Plantings.

Recommendation: Revise the figure to eliminate Holly Oak.

4.5.5 Open Space Areas

The Specific Plan states, “With exception to passive use activity proposed within the open space area west of Barton Street, the open space areas are primarily intended to maintain landscaping and an overall aesthetic consistent with the current undeveloped environment.”

Recommendation: This paragraph should be amended to indicate that the landscaping should be “maintained with an aesthetic consistent with the current undeveloped environment while considering aviation safety in accordance with the Landscape Design Guidance, the Riverside County ALUCP, and ALUC guidance “Landscaping Near Airports.””

Chapter 6: Infrastructure and Grading

6.5 Storm Water Management

The Specific Plan provides stormwater management facilities in accordance with FAA guidance and Riverside County ALUC guidance regarding stormwater management and detention times, and no new stormwater management ponds are proposed.

The first paragraph of this section states, “stormwater in the northeastern portion of the Project area will be detained and flow to a detention basin on Alessandro Boulevard via an open channel. Storm water in other parts of the Specific Plan Area will be detained and flow through a storm drain system and ultimately discharged to existing native flow lines.” The section concludes, “The storm drain system would ultimately connect with various open native channels and carry stormwater off the Specific Plan Area....”

If the connections to these open channels and native areas require modification to accommodate site-related runoff, such modification must consider their potential to attract potentially hazardous wildlife to March ARB.

Recommendation: Amend the paragraph to include the following text: In the event that open channels or native flow lines require modification tin include additional project-related drainage, the modifications must be designed so that they do not include habitat enhancements to support potentially hazardous wildlife through the incorporation of vegetation that provides food, shelter, or nesting habitat for wildlife.

6.7 Solid Waste

Recommendation: Amend the solid waste discussion to include the following text: Solid waste that is stored on site for recycling and disposal must be contained in covered receptacles that remain closed at all times.

6.8.1 Grading and Development

Section 6.8.1 includes several bullet items to describe grading plan development standards.

Recommendation: Amend the seventh bullet item as follows:

- Potential brow [sic] ditches, terrace drains, or other minor swales, determined necessary at future stages of project review, shall be concealed, as feasible and possible, with landscape plantings, earth berms and similar features. Seed mixes used for soil stabilizations shall be reviewed by a QAWB and revised as necessary to exclude the use of grains or other constituents that may attract potentially hazardous wildlife.

Chapter 8: Consistency with the General Plan

Chapter 8 states, “The West Campus Upper Plateau Specific Plan is based upon the goals and policies set forth in the March JPA General Plan and presents those General Plan elements and policies. Relevant policies associated with aircraft operations at the March ARB include the following:

- **Land Use Goal 6** refers specifically to “the continued Military Mission of March ARB, and preservation of the airfield from incompatible land use encroachment.” The Specific Plan evaluation concludes that, “The industrial, mixed use, and recreation activities consistent with other existing uses within the March JPA boundary. These uses will support the Military Mission of the March ARB.”

While it is true that the proposed land uses associated with the Upper Plateau development are consistent with the March JPA General Plan, it is also true that more than half of the acreage in the Plan Area will be used for habitat conservation in response to the Settlement Agreement, which will result in the in the establishment of a permanent conservation easement.

- **Safety/Risk Management Goal 7** identifies the need to “Reduce the possible risk of upset, injury and loss of life, property damage, and other impacts associated with an aviation facility.” The Specific Plan contends that it is consistent with this goal as it was designed to incorporate appropriate uses in development-limited areas in accordance with the 1998 AICUZ study and the ALUCP.

The proposed project is consistent with many policies associated with aviation guidance related to safety and hazardous wildlife management, but several inconsistencies were identified. Moreover, the majority of the Plan Area will be used for Open Space - Conservation in accordance with the 2012 Settlement Agreement for the purpose of habitat conservation, and a permanent conservation easement will be placed on the property.

The proposed Open Space - Conservation Area will require the development of passive trails and periodic maintenance. Such activities will be undertaken in accordance with the Specific Plan. However, a permanent conservation easement may be inconsistent with ongoing aircraft operations unless specific provisions are included to address the presence of hazardous wildlife attractants that may require modification to support the ongoing Military Mission at March ARB, as stated in the March JPA General Plan. At this time, specific plans/designs for the Open Space - Conservation Area are not available.

FAA AC 150/5200-33C identifies conservation areas and wildlife management areas as having the potential to attract hazardous wildlife. The implementation of habitat enhancements and the establishment of a permanent conservation easement may attract hazardous wildlife to the aircraft operations area and the AIA for March ARB. The AC states that a QAWB should evaluate proposed mitigation projects before the mitigation is implemented, and "Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, the airport operator should take prompt remedial action(s) to protect aviation safety."

Recommendations: The following items should be incorporated into the Specific Plan to promote ongoing safety of aircraft operations at March ARB:

- Design plans for the development of the proposed Open Space - Conservation Area shall be reviewed by a QAWB for their consistency with the 2018 AICUZ, ALUCP, FAA guidance, and the current BASH Plan for March ARB. Inconsistent items should be revised to address the safety of ongoing aircraft operations.
- A proposed permanent conservation easement shall be reviewed by an Aviation Planner and QAWB to identify potential conflicts for ongoing aircraft operations and the Military Mission at March ARB. If potential conflicts are identified, safety concerns shall prevail.
- In the event that the conditions within the Plan Area, including areas within conservation easements, are identified as attracting potentially hazardous wildlife or increasing wildlife risks to aircraft operations, the land use, easement, and conservation practices shall be modified to remove the hazard. In the event that the remedial action conflicts with the conservation goals, safety concerns shall prevail.

CEQA CONSIDERATIONS

The General Plan Amendment/Specific Plan will be subject to environmental review in accordance with the California Environmental Quality Act (CEQA). As part of that CEQA analysis, an applicant must consider whether a proposed project would, “Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect” (CEQA Guidelines, Appendix G). The proposed Upper Plateau Specific Plan is located within the Airport Influence Area (AIA) identified in the adopted 2014 March ARB/Inland Port ALUCP; therefore, the proposed project is subject to review by the Riverside County ALUC to determine its consistency with the adopted ALUCP, including policies associated with wildlife attractants and hazards to flight. A determination of inconsistency by the ALUC would be considered a significant impact pursuant to CEQA. The incorporation of the recommended modifications identified in this review would make the Specific Plan consistent with agency guidance, the 2018 AICUZ, and the Riverside County ALUCP with regard to potentially hazardous wildlife.

LIMITATIONS ON THIS REVIEW

At the time of this review, neither a Biological Resources Report nor a draft CEQA document were available to provide more detailed input regarding current site conditions. Additional review pertaining to wildlife hazard management and aviation safety must be addressed as part of the EIR analysis.

Thank you for this opportunity to review the West Campus Upper Plateau Specific Plan. Should you have any questions, please reach out to me (Rick.Jones@meadhunt.com) or Lisa Harmon (lisa.harmon@meadhunt.com) by email or contact Lisa by telephone (916-993-4650).

Sincerely,
MEAD & HUNT INC.



Rick Jones
FAA-Qualified Airport Wildlife Biologist

Attachments:

Figure 1 – Project Location

Figure 2 – Airport Land Use Compatibility Zones within the Plan Area

Figure 3 – AICUZ for March ARB

Figure 4 – Table MA-2, Basic Compatibility Criteria for the March Air Reserve Base/Inland Port Airport

FIGURE 1 – PROJECT LOCATION

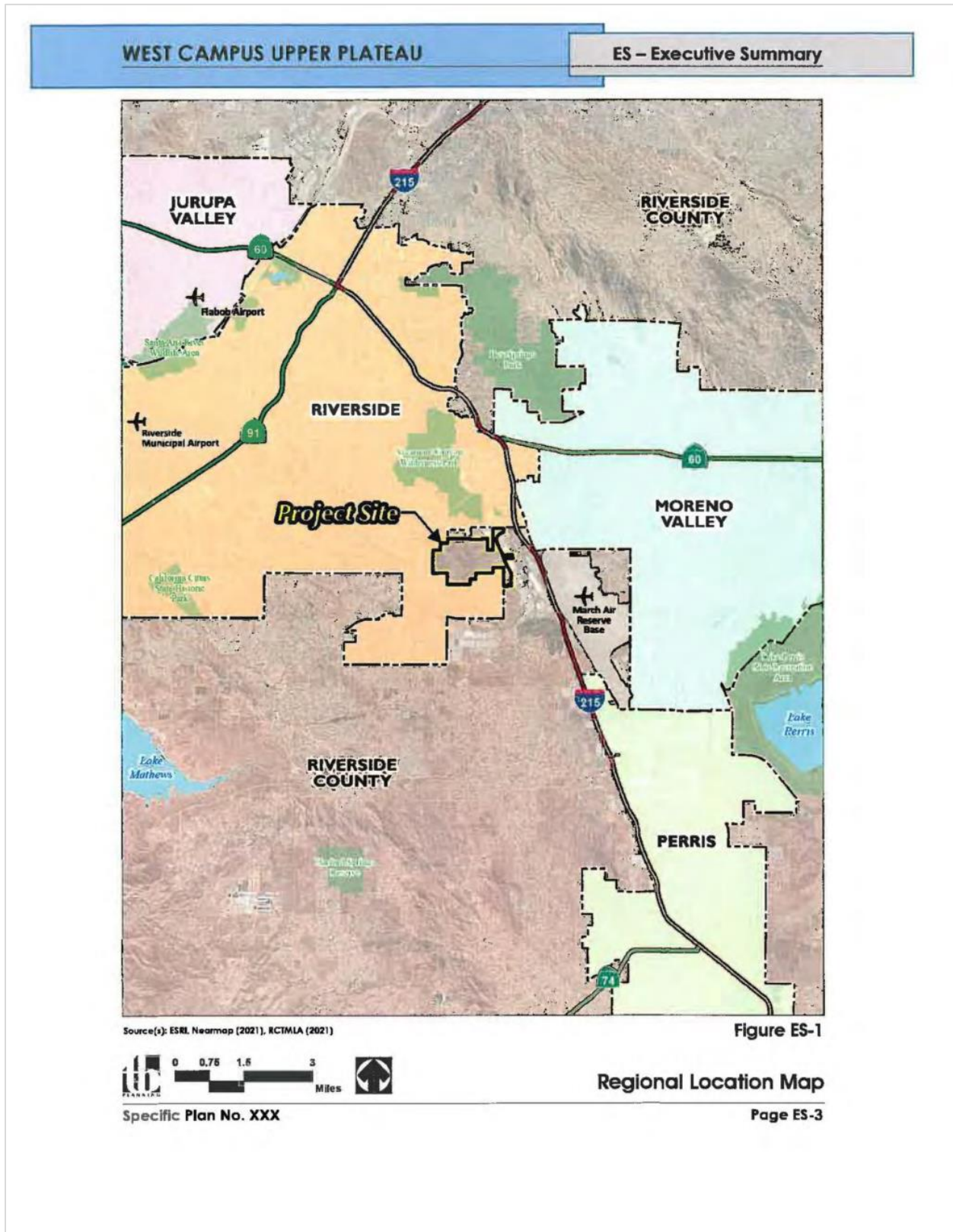
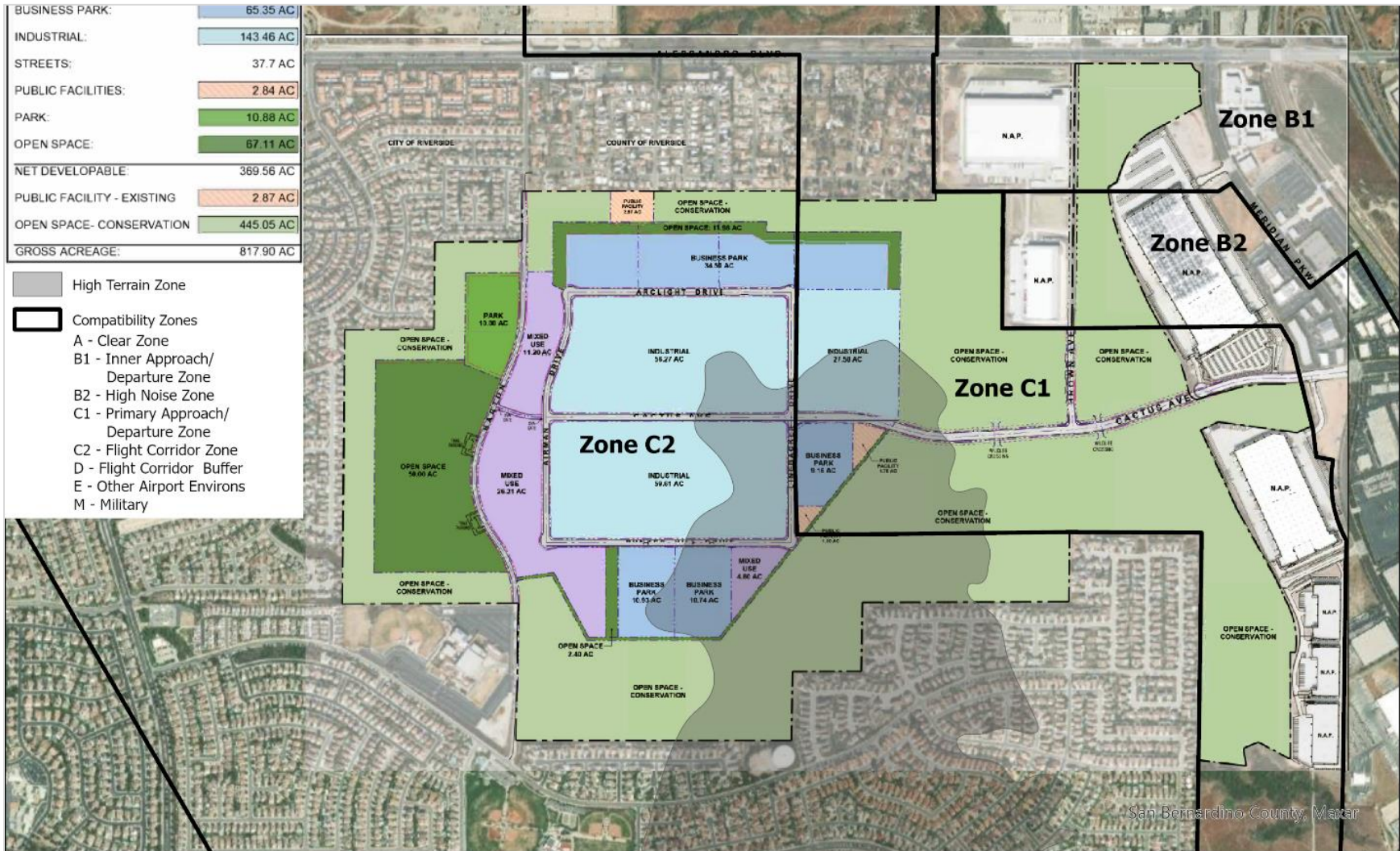


FIGURE 2 – AIRPORT LAND USE COMPATIBILITY ZONES WITHIN THE PLAN AREA



Sources:
 West Campus Upper Plateau Specific Plan, T&B Planning, Inc. April 2022.
 March Air Reserve Base Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, Inc. Nov. 13, 2014.

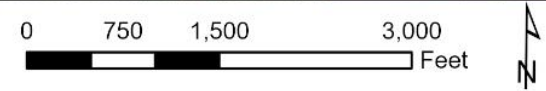


FIGURE 3 – AICUZ FOR MARCH ARB

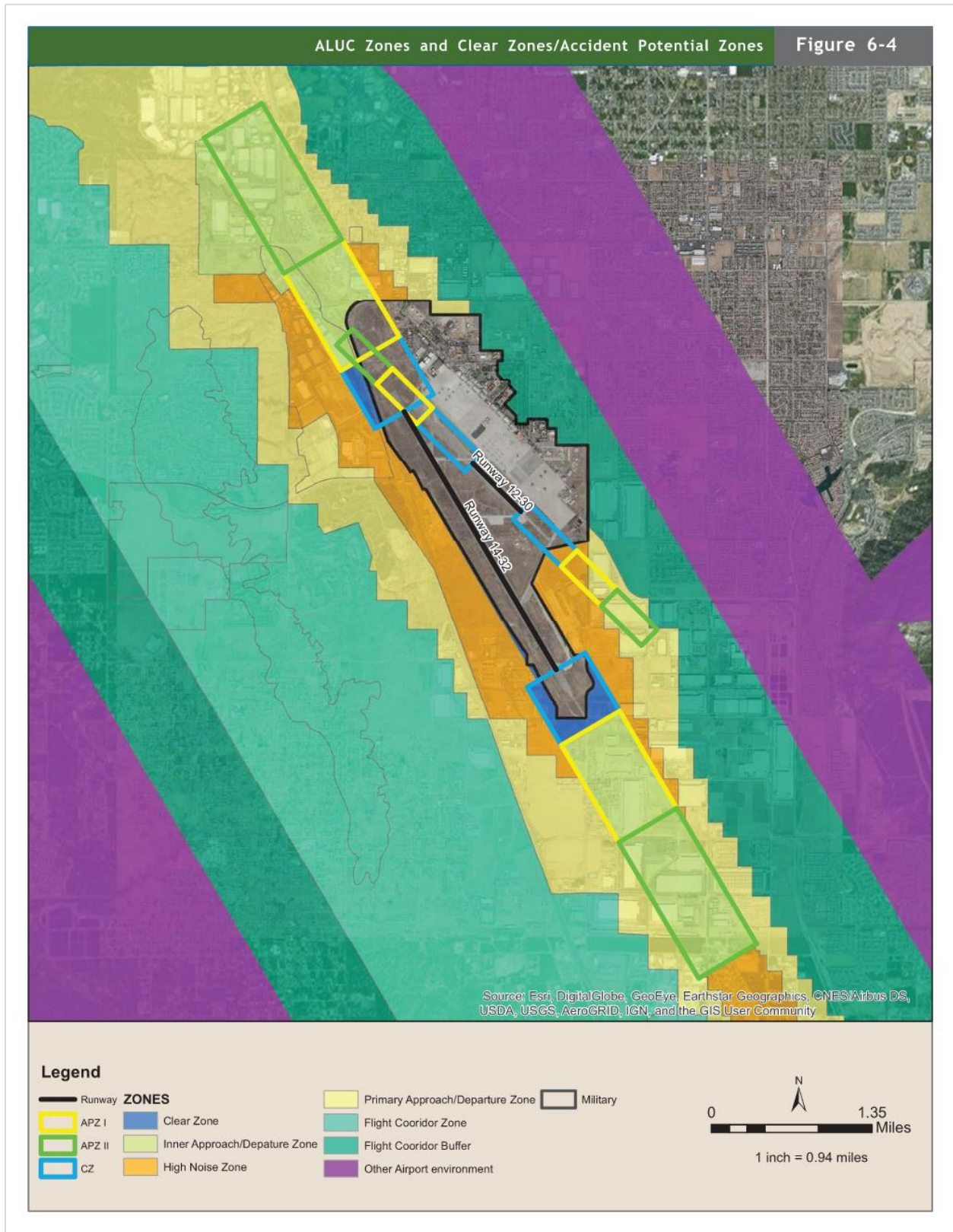


FIGURE 4 – TABLE MA-2, BASIC COMPATIBILITY CRITERIA FOR THE MARCH AIR RESERVE BASE/INLAND PORT AIRPORT

INDIVIDUAL AIRPORT POLICIES AND COMPATIBILITY MAPS **CHAPTER 3**

Zone	Locations	Density / Intensity Standards			Req'd Open Land	Additional Criteria	
		Residential (d.u./ac) ¹	Average ⁵	Other Uses (people/ac) ² Single Acre ⁶		Prohibited Uses ³	Other Development Conditions ⁴
M	Military						› No ALUC authority
A	Clear Zone ⁷	No new dwellings allowed	0	0	All Remaining	› All non-aeronautical structures › Assemblages of people › Objects exceeding FAR Part 77 height limits › All storage of hazardous materials › Hazards to flight ⁸	› Electromagnetic radiation notification ⁹ › Avigation easement dedication and disclosure ^{4,7}
B1	Inner Approach/Departure Zone	No new dwellings allowed ¹⁰	25 (APZ I) 50 (APZ II and outside APZs) ¹¹	100 100	Max. 50% lot coverage within APZs ¹²	› Children's schools, day care centers, libraries › Hospitals, congregate care facilities, hotels/motels, restaurants, places of assembly › Bldgs with >1 aboveground habitable floor in APZ I or >2 floors in APZ II and outside of APZs ¹³ › Hazardous materials manufacture/storage ¹⁴ › Noise sensitive outdoor nonresidential uses ¹⁵ › Critical community infrastructure facilities ¹⁶ › Hazards to flight ⁸ › Uses listed in AICUZ as not compatible in APZ I or APZ II ¹⁷	› Locate structures maximum distance from extended runway centerline › Sound attenuation as necessary to meet interior noise level criteria ¹⁸ › Zoned fire sprinkler systems required › Airspace review req'd for objects >35 ft. tall ¹⁹ › Electromagnetic radiation notification ⁹ › Avigation easement dedication and disclosure ⁴
B2	High Noise Zone	No new dwellings allowed ¹⁰	100	250	No Req't	› Children's schools, day care centers, libraries › Hospitals, congregate care facilities, hotels/motels, places of assembly › Bldgs with >3 aboveground habitable floors › Noise-sensitive outdoor nonresidential uses ¹⁵ › Critical community infrastructure facilities ¹⁶ › Hazards to flight ⁸	› Locate structures max. distance from runway › Sound attenuation as necessary to meet interior noise level criteria ¹⁸ › Aboveground bulk storage of hazardous materials discouraged ^{14,20} › Airspace review req'd for objects >35 ft. tall ¹⁹ › Electromagnetic radiation notification ⁹ › Avigation easement dedication and disclosure ⁴
C1	Primary Approach/Departure Zone	≤3.0	100	250	No Req't	› Children's schools, day care centers, libraries › Hospitals, congregate care facilities, places of assembly › Noise-sensitive outdoor nonresidential uses ¹⁵ › Hazards to flight ⁸	› Critical community infrastructure facilities discouraged ^{16,20} › Aboveground bulk storage of hazardous materials discouraged ^{14,20} › Sound attenuation as necessary to meet interior noise level criteria ¹⁸ › Airspace review req'd for objects >70 ft. tall ¹⁹ › Electromagnetic radiation notification ⁹ › Deed notice and disclosure ⁴
C2	Flight Corridor Zone	≤ 6.0	200	500	No Req't	› Highly noise-sensitive outdoor nonresidential uses ¹⁵ › Hazards to flight ⁸	› Children's schools discouraged ²⁰ › Airspace review req'd for objects >70 ft. tall ¹⁹ › Electromagnetic radiation notification ⁹ › Deed notice and disclosure ⁴
D	Flight Corridor Buffer	No Limit	No restriction ²¹	No Req't	No Req't	› Hazards to flight ⁸	› Major spectator-oriented sports stadium, amphitheaters, concert halls discouraged ²¹ › Electromagnetic radiation notification ⁹ › Deed notice and disclosure ⁴
E	Other Airport Environs	No Limit	No Restriction ²¹	No Req't	No Req't	› Hazards to flight ⁸	› Disclosure only ⁴
*	High Terrain	Same as Underlying Compatibility Zone			Not Applicable	› Hazards to flight ⁸ › Other uses restricted in accordance with criteria for underlying zone	› Airspace review req'd for objects >35 ft. tall ¹⁹ › Avigation easement dedication and disclosure ⁴

Table MA-2

Basic Compatibility Criteria
March Air Reserve Base / Inland Port Airport

FIGURE 4 (CONTINUED)

CHAPTER 3 INDIVIDUAL AIRPORT POLICIES AND COMPATIBILITY MAPS

NOTES:

Policies referenced here are from the *Riverside County Airport Land Use Compatibility Plan* adopted by the Riverside County ALUC for other airports beginning in October 2004. The countywide policies are hereby incorporated into the *March ARB/IPA ALUCP* except as modified or supplemented by the policies in Section MA.2 of this chapter. A complete copy of the *Riverside County Airport Land Use Compatibility Plan* is available on the Riverside County Airport Land Use Commission website at www.rcaluc.org.

- ¹ Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre. Clustering of units is encouraged provided that the density is limited to no more than 4.0 times the allowable average density for the zone in which the development is proposed. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands. Mixed-use development in which residential uses are proposed to be located in conjunction with nonresidential uses in the same or adjoining buildings on the same site shall be treated as nonresidential development for the purposes of usage intensity calculations; that is, the occupants of the residential component must be included in calculating the overall number of occupants on the site. A residential component shall not be permitted as part of a mixed use development in zones where residential uses are indicated as incompatible. See Countywide Policy 3.1.3(d). All existing residential development, regardless of densities, is not subject to ALUC authority.
- ² Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside.
- ³ The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria. See *Riverside County Airport Land Use Compatibility Plan*, Volume 1, Appendix D for a full list of compatibility designations for specific land uses.
- ⁴ As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. See Countywide Policy 4.4.2 for details. Easement dedication and deed notice requirements indicated for specific compatibility zones apply only to new development and to reuse if discretionary approval is required. Except within Zone A (Clear Zone), aviation easements are to be dedicated to the March Inland Port Airport Authority. See sample language in www.marchipa.com/docs_forms/avigationeasement.pdf. Any aviation easements required within Zone A shall be dedicated to the United States of America.
- ⁵ The total number of people permitted on a project site at any time, except rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at the airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.
- ⁶ Clustering of nonresidential development is permitted. However, no single acre of a project site shall exceed the indicated number of people per acre. See Countywide Policy 4.2.5 for details.
- ⁷ Clear zone (equivalent to runway protection zone at civilian airports) limits that delineate Zone A are derived from locations indicated in the March Air Reserve Base AICUZ study. See Note 4 for aviation easement dedication requirements in this zone.
- ⁸ Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. Man-made features must be designed to avoid heightened attraction of birds. In Zones A, B1, and B2, flood control facilities should be designed to hold water for no more than 48 hours following a storm and be completely dry between storms (see FAA Advisory Circular 150/5200-33B). Additionally, certain farm crops and farming practices that tend to attract birds are strongly discouraged. These include: certain crops (e.g., rice, barley, oats, wheat – particularly durum – corn, sunflower, clover, berries, cherries, grapes, and apples); farming activities (e.g., tilling and harvesting); confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg-laying operations); and various farming practices (e.g., livestock feed, water, and manure). Fish production (i.e., catfish, trout) conducted outside of fully enclosed buildings may require mitigation measures (e.g., netting of outdoor ponds, providing covered structures) to prevent bird attraction. Also see Countywide Policy 4.3.7.
- ⁹ March ARB must be notified of any land use having an electromagnetic radiation component to assess whether a potential conflict with Air Base radio communications could result. Sources of electromagnetic radiation include microwave transmission in conjunction with a cellular tower, radio wave transmission in conjunction with remote equipment inclusive of irrigation controllers and other similar EMR emissions.
- ¹⁰ Other than in Zone A, construction of a single-family home, including a second unit as defined by state law, on a legal lot of record is exempted from this restriction where such use is permitted by local land use regulations. Interior noise level standards and aviation easement requirements for the compatibility zone in which the dwelling is to be located are to be applied.
- ¹¹ Non-residential uses are limited to 25 people per gross acre in Accident Potential Zone (APZ) I and 50 people per acre in APZ II and elsewhere in Zone B1. Single-acre intensity limits are 100 people/acre throughout Zone B1.
- ¹² In APZ I, any proposed development having more than 20% lot coverage must not provide on-site services to the public. Zoned fire sprinklers are required. Also, in APZ I, site design of proposed development should to the extent possible avoid placement of buildings within 100 feet of the ex-

Table MA-2, continued

FIGURE 4 (CONTINUED)

tended runway centerline; this center strip should be devoted to parking, landscaping, and outdoor storage. Maximum lot coverage is not limited outside the APZs.

- ¹³ Within APZ II and outside APZs, two-story buildings are allowed.
- ¹⁴ Storage of aviation fuel and other aviation-related flammable materials on the airport is exempted from this criterion. In APZ I, manufacture or bulk storage of hazardous materials (toxic, explosive, corrosive) is prohibited unless storage is underground; small quantities of materials may be stored for use on site. In APZ II and elsewhere within Zone B1, aboveground storage of more than 6,000 gallons of nonaviation flammable materials per tank is prohibited. In Zones B2 and C1, aboveground storage of more than 6,000 gallons of hazardous or flammable materials per tank is discouraged.
- ¹⁵ Examples of noise-sensitive outdoor nonresidential uses that should be prohibited include major spectator-oriented sports stadiums, amphitheaters, concert halls and drive-in theaters. Caution should be exercised with respect to uses such as poultry farms and nature preserves.
- ¹⁶ Critical community facilities include power plants, electrical substations, and public communications facilities. See Countywide Policy 4.2.3(d).
- ¹⁷ For properties in either APZ I or II, any use listed as "N – not compatible" for that particular APZ in Table 3-1 of the 2005 *Air Installation Compatible Use Zone Study for March Air Reserve Base*. Beyond the boundaries of the APZs in Zone B1, such uses are discouraged, but not necessarily prohibited unless otherwise specified herein.
- ¹⁸ All new residences, schools, libraries, museums, hotels and motels, hospitals and nursing homes, places of worship, and other noise-sensitive uses must have sound attenuation features incorporated into the structures sufficient to reduce interior noise levels from exterior aviation-related sources to no more than CNEL 40 dB. This requirement is intended to reduce the disruptiveness of loud individual aircraft noise events upon uses in this zone and represents a higher standard than the CNEL 45 dB standard set by state and local regulations and countywide ALLUC policy. Office space must have sound attenuation features sufficient to reduce the exterior aviation-related noise level to no more than CNEL 45 dB. To ensure compliance with these criteria, an acoustical study shall be required to be completed for any development proposed to be situated where the aviation-related noise exposure is more than 20 dB above the interior standard (e.g., within the CNEL 60 dB contour where the interior standard is CNEL 40 dB). Standard building construction is presumed to provide adequate sound attenuation where the difference between the exterior noise exposure and the interior standard is 20 dB or less.
- ¹⁹ This height criterion is for general guidance. Airspace review requirements are determined on a site-specific basis in accordance with Part 77 of the Federal Aviation Regulations. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not to be obstructions. The Federal Aviation Administration or California Department of Transportation Division of Aeronautics may require marking and/or lighting of certain objects. See Countywide Policies 4.3.4 and 4.3.6 for additional information.
- ²⁰ Discouraged uses should generally not be permitted unless no feasible alternative is available.
- ²¹ Although no explicit upper limit on usage intensity is defined for *Zone D and E*, land uses of the types listed—uses that attract very high concentrations of people in confined areas—are discouraged in locations below or near the principal arrival and departure flight tracks.

Table MA-2, continued

