

Appendix B

Biological Resource and Regulatory Reports

- 2023 CVCC North Cathedral City Improvements Project Like Exchange and Consistency Determination Memo
 - 2023 MBI Jurisdictional Delineation
 - 2022 MBI Biological Assessment
 - 2022 MBI Biological Resources Technical Report
- 2022 MBI letter to CVCC Re: Proposed Changes to Grading Limits
 - 2017 CVCC Like Exchange Consistency Concurrence Memo
 - 2016 MBI Equivalency Analysis
- 2016 MBI Habitat Assessment and MSHCP Consistency Analysis
 - 2016 MBI Burrowing Owl Focused Survey Report

**North Cathedral City Regional Stormwater Project
Initial Study/Environmental Assessment**

COACHELLA VALLEY CONSERVATION COMMISSION



Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert • Palm Springs
Rancho Mirage • County of Riverside • Coachella Valley Water District • Imperial Irrigation District
Mission Springs Water District

April 7, 2023

William Patterson
Environmental Supervisor
Environmental Services Department
Coachella Valley Water District
75-519 Hovley Lane East
Palm Desert, CA 92211

RE: CVCC 16-003 North Cathedral City Improvements Project Like Exchange and Consistency Determination

Dear Mr. Patterson:

In June 2016, the Coachella Valley Water District (CVWD) submitted to the Coachella Valley Conservation Commission (CVCC) an application for a Joint Project Review (JPR) of the North Cathedral City Improvements Project, which would re-establish a stormwater drain to convey flows from Morongo Wash under the Union Pacific Railroad bridge in the Whitewater Floodplain Conservation Area (WWFP). This project is explicitly described in the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), noting, in section 4.3.6 detailing conservation requirements for the WWFP, that it would enhance sand transport and wildlife movement between the WWFP and the Willow Hole Conservation Area to the north.

During the review process, it was determined that the project would be processed as a Like Exchange, a mechanism of the CVMSHCP whereby a Permittee may request a modification of a Conservation Area in one location in exchange for an expansion of a Conservation Area at a separate location, provided the latter contains habitat values of equal or greater value than those being removed. Upon approval of a Like Exchange by the United States Fish and Wildlife Service and California Department of Fish and Wildlife, (collectively, Wildlife Agencies), project buildout would effectively be taking place outside a Conservation Area and would no longer be subject to the JPR process, provided it otherwise incorporated the necessary Land Use Adjacency Guidelines.

The Wildlife Agencies approved CVWD's Like Exchange request for the project on March 15, 2017, with the condition that CVWD deed to CVCC for permanent conservation 42 acres within the WWFP, 19 acres of which would be additional acreage not previously encompassed by the WWFP. However, communications at that time between the Wildlife Agencies and CVCC suggest that, unlike a traditional Like Exchange, this particular Like Exchange would not result in the removal of land from the Conservation Area, and would thus be subject to the JPR consistency analysis. Additionally, CVCC correspondence to CVWD included alongside the Wildlife Agencies' concurrence letter appears to conflate the Like Exchange process with the JPR process – despite the former's lack of a Rough Step proportionality evaluation or an assessment of any required

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avoidance, minimization, and mitigation measures that would otherwise be evaluated through the JPR process – further confounding the necessary review components of the project.

What remains indisputable is that the flood control project was contemplated during the formulation of the CVMSHCP, that it would provide benefit to sand transport and wildlife connectivity, and that a Like Exchange has been approved by the Wildlife Agencies. What requires further elucidation is whether the project area will remain within the boundaries of the WWFP (versus being excised as in a traditional Like Exchange), and, if so, whether the project is consistent with the conservation measures for the WWFP and the CVMSHCP more generally.

Since the project will result in direct benefits to conservation objectives in the area by more effectively channeling sand and wildlife under the railroad bridge and maintaining the Willow Wash Biological Corridor, CVCC believes that it is in the best interest of the WWFP to keep the project area within the boundaries of the WWFP. An assessment of the project's impact on the conservation objectives of the CVMSHCP is therefore necessary. The project will result in impacts to Core Habitat for Coachella Valley milkvetch, Coachella Valley giant sand treader cricket, Coachella Valley fringe-toed lizard, Coachella Valley round-tailed ground squirrel, and Palm Spring pocket mouse; impacts to Other Conserved Habitat for Le Conte's thrasher; and impacts to the Active desert sand field natural community. Although the project also occurs within modeled sand transport and wildlife linkage corridors, the project will actually enhance these ecological processes.

Unlike other Local Permittees, CVWD does not have a quota of authorized take to draw against for any given Conservation Area. In certain cases, disturbance may be permitted by the CVMSHCP but not accrue against the authorized disturbance for a given Conservation Area. These cases include disturbance where the only conservation objective is to maintain fluvial sand transport processes, disturbance incurred as part of a Covered Activity, and disturbance allocated to public utilities and/or Participating Special Entities. For the latter two instances, disturbance is allocated directly from the CVMSHCP permits. Any impacts from CVWD projects are therefore measured against the gross take authorizations as listed in the Permits and supplemental materials issued by the Wildlife Agencies. Note that the Permits do not distinguish among the various types of habitat defined in the CVMSHCP, and further, in the context of the Permits, natural communities do not have a required conservation acreage goal, only an authorized take limit. Supplemental information regarding conservation goals and authorized take for natural communities can be found in Table 4-115 of the CVMSHCP. There are no quantitative measures for Essential Ecological Processes or Biological Corridors across the entire CVMSHCP area specified in the Permits or in any tables within the CVMSHCP.

Project impacts to conservation objectives for the CVMSHCP as a whole are summarized in Table 1. In no instance does the combined project disturbance and disturbance to date exceed authorized disturbance limits, and in all cases Rough Step results in a positive number, indicating that sufficient conservation has taken place to permit further disturbance. Projects utilizing direct Permit take are also generally measured at the more local scale of the specific Conservation Area and Local Permittee jurisdiction within which the project falls. The project falls within the jurisdictional boundary of Cathedral City; this portion of the WWFP accounts for a very small portion of the larger Conservation Area, and has been allocated very little authorized disturbance. In all cases the disturbance proposed by the project will exceed the authorized disturbance cap

COACHELLA VALLEY CONSERVATION COMMISSION

for the Cathedral City area of the WWFP, as shown in Table 2. This inherent inconsistency led to the project's consideration as a Like Exchange.

The Wildlife Agencies' approval of the Like Exchange, whereby CVWD will be adding 19 acres of habitat currently outside the WWFP boundary to the Conservation Area, in addition to placing 23 acres of habitat already within the WWFP under permanent conservation, indicates that this reconfiguration is an acceptable deviation from the Conservation Area conservation objectives. Take authorized under the Permits has not increased, as CVWD is drawing against the pool of take identified in the Permits, while simultaneously expanding the WWFP. The project can thus be considered consistent with the CVMSHCP's conservation objectives at both the Plan's regional scale and at the scale of the WWFP.

Because the project will remain a part of the WWFP, it must also incorporate the required avoidance, minimization, and mitigation measures for any species with modeled habitat overlapping the project site, and including burrowing owl, for which habitat was not modeled under the CVMSHCP. Of the species with a potential to occur on site, only burrowing owl and Le Conte's thrasher require the implementation of avoidance, minimization, and mitigation measures. Although modeled habitat for Palm Springs pocket mouse overlaps the project site, no mitigation measures are required for this species in the WWFP. Additional measures are also required to maintain biological corridors and fluvial sand transport.

CVWD included as an appendix to their equivalency analysis an internal consistency analysis identifying required avoidance, minimization, and mitigation measures that are expected to be incorporated into subsequent environmental review documents and implemented during project buildout. These include the required measures for both burrowing owl and Le Conte's thrasher. Passage beneath the existing railroad bridge is currently blocked by both berms and tamarisk windbreaks; the project would create a break in the terrain on both sides of the bridge allowing for improved movement of both fluvial sand and wildlife underneath. There are no further avoidance, minimization, and mitigation measures for these ecological processes.

The project must also demonstrate consistency with the land use adjacency guidelines described in the CVMSHCP, in particular those pertaining to drainage and grading. As discussed above, the project will enhance drainage by channeling flows from adjacent Conservation Areas into the WWFP. Grading is not anticipated beyond the project footprint, and will serve primarily to direct flows into the channel and under the existing railroad bridge.

Operations and maintenance of the project are expected to be performed in accordance with CVWD's Operations and Maintenance Manual for Coachella Valley Water District Covered Activities and Facilities within Conservation Areas, prepared pursuant to the CVMSHCP.

Through a combination of a Like Exchange and incorporation of the required avoidance, minimization, and mitigation measures and land use adjacency guidelines, this project can be considered fully consistent with the CVMSHCP, conditioned on the permanent conservation of the 42 acres of habitat discussed in the equivalency analysis for the Like Exchange. CVWD anticipates that this conservation will take place after certification of the required California Environmental Quality Act documentation and before construction. Should the project fail to

COACHELLA VALLEY CONSERVATION COMMISSION

implement any of the measures described in either the Like Exchange or in this consistency memo, it can no longer be considered consistent with the CVMSHCP.

If you have any questions, please do not hesitate to contact me via email at psatin@cvag.org or by phone at 760.346.1127.

Sincerely,



Peter Satin
Regional Planner

CC: Felicia Sirchia, USFWS
Vince James, USFWS
Heather Brashear, CDFW
Jacob Skaggs, CDFW
Kathleen Brundige, CVCC

Attachments:

2016 Wildlife Agency concurrence to the Like Exchange

COACHELLA VALLEY CONSERVATION COMMISSION

Table 1: Project impacts compared against conservation objectives for the entire CVMSHCP area.

Conservation Element	Total Acres in Conservation Areas	Authorized Disturbance (ac)	Project Disturbance (ac)	Disturbance to Date (ac)	Remaining Conservation (ac)	Conservation to Date (ac)	Rough Step (ac)
<i>Coachella Valley milkvetch*</i>	16,479	1,620	22	65.5	8,772	6,574	1,167.25
<i>Coachella Valley giant sand treader cricket*</i>	11,269	899	22	24.25	5,270	3,349	557.75
<i>Coachella Valley fringe-toed lizard*</i>	11,269	898	22	24.25	5,270	3,349	557.25
<i>Le Conte's thrasher*</i>	114,375	10,346	22	203.5	55,123	34,720	6,674.00
<i>Coachella Valley round-tailed ground squirrel*</i>	28,770	3,601	22	202.75	15,413	11,942	2,646.25
<i>Palm Springs pocket mouse*</i>	48,062	5,921	22	271.5	26,811	22,612	4,792.75
<i>Active desert sand fields**</i>	3,990	148	21	0	1,325	1,147	109.25
<i>Sand transport</i>	NA	NA	0	165.75	NA	17,871	NA
<i>Biological corridor</i>	NA	NA	0	157.5	NA	33,261	NA

*Numbers derived from 2008 USFWS permit

**Numbers derived from Table 4-115

COACHELLA VALLEY CONSERVATION COMMISSION

Table 2: Project impacts compared against the Cathedral City portion of the WWFP.

Conservation Element	Total Acres in Conservation Area*	Authorized Disturbance (ac)	Project Disturbance (ac)	Disturbance to Date (ac)	Remaining Conservation	Conservation to Date (ac)**	Rough Step (ac)
<i>Coachella Valley milkvetch, Core Habitat</i>	134	7	22.00	0.00	61	41.50	-17.00
<i>Coachella Valley giant sand treader cricket, Core Habitat</i>	134	7	22.00	0.00	61	41.50	-17.00
<i>Coachella Valley fringe-toed lizard, Core Habitat</i>	134	7	22.00	0.00	61	41.50	-17.00
<i>Le Conte's thrasher, Other Conserved Habitat</i>	134	7	22.00	0.00	61	41.50	-17.00
<i>Coachella Valley round-tailed ground squirrel, Core Habitat</i>	105	7	22.00	0.00	59	41.50	-16.75
<i>Palm Springs pocket mouse, Core Habitat</i>	134	7	22.00	0.00	61	41.50	-17.00
<i>Active desert sand fields</i>	76	5	21.00	0.00	43	39.50	-16.25
<i>Sand transport</i>	107	7	0.00	0.00	61	15.00	2.25
<i>Willow Wash Biological Corridor</i>	28	2	0.00	0.00	18	2.25	0.50

*Includes additional habitat from expanded WWFP boundary

**Assumes dedication of conservation land as described in the Like Exchange equivalency analysis



U.S. Fish and Wildlife Service
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262
760-322-2070
FAX 760-322-4648



California Department of Fish and Wildlife
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, California 91764
909-484-0167
FAX 909-481-2945

In Reply Refer To:
FWS/CDFW-ERIV-09B0023-17TA0477

March 15, 2017
Sent by Email

Mr. Jim Sullivan
Coachella Valley Conservation Commission
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92260

Subject: North Cathedral City Improvements Project, Phase I, City of Cathedral City,
Riverside County, California

Dear Mr. Sullivan:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department) have reviewed the Like Exchange Equivalency Analysis for Phase I of the North Cathedral City Improvements Project (Project), prepared by Michael Baker International on behalf of the Coachella Valley Water District (CVWD) for submission to the Coachella Valley Conservation Commission (CVCC). The CVWD proposes to re-establish a stormwater drain to convey flows from Morongo Wash under the Union Pacific Railroad Bridge, southward to the Whitewater River Stormwater Channel, as part of the North Cathedral City Stormwater Master Plan. The project is located in the Whitewater Floodplain Conservation Area (WFCA) within the jurisdiction of the City of Cathedral City.

The Project includes a total of 23 acres of impacts from 5.7 acres of hardscape permanent impacts and 17.3 acres of temporary impacts (16.9 acres of earthen improvements and 0.4 acres from a temporary earthen construction access road). The project impacts exceed the 7 acres of authorized disturbance for the WFCA in the City of Cathedral City Area. To offset the 23 acres of impacts to biological resources, CVWD will acquire 42 acres within and immediately adjacent to the WFCA and record a conservation easement in favor of CVCC on the acquired properties; resulting in a net increase of 19 acres added to the Conservation Area. The re-establishment of connectivity between the WFCA and the Willow Hole Conservation Area will help restore an important corridor for wildlife movement and sand transport. This proposed modification to the Conservation Area will result in biologically equivalent or superior conservation value and is consistent with the Like Exchange criteria in Section 6.12.2 of the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan.

We concur that the following Conservation Area boundary adjustment is allowable through this Like Exchange and will be effective either (1) upon the transfer of property titles to CVCC or (2) the recording of conservation easements on the properties in favor of CVCC.

Mr. Jim Sullivan (FWS/CDFW-ERIV-09B0023-17TA0477)

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If you have any questions regarding this letter, please contact Jenness McBride of the Service at 760-322-2070, extension 403, or Heather A. Pert of the Department at 858-395-9692.

Sincerely,

A handwritten signature in blue ink that reads "Heather A. Pert" with a small mark below it.

Kennon A. Corey
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Leslie MacNair
Inland Deserts Region
Regional Manager
California Department of Fish and Wildlife

cc:
Luke Stowe, CVWD

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITIES OF CATHEDRAL CITY AND PALM SPRINGS, COUNTY OF RIVERSIDE,
CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

Prepared For:

Coachella Valley Water District
75525 Hovley Lane East
Palm Desert, California 92211
Contact: *Scott Strosnider P.E., CFM*
(760) 398-2661, ext. 2737

Prepared By:

MICHAEL BAKER INTERNATIONAL
5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: *April Nakagawa*
(949) 472-3468

March 23, 2023
JN 179420

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITIES OF CATHEDRAL CITY AND PALM SPRINGS, COUNTY OF RIVERSIDE,
CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of jurisdictional wetland and non-wetland “waters of the U.S.,” “waters of the State,” and streambed/banks and associated riparian vegetation delineation for the above-referenced project.



April Nakagawa
Regulatory Specialist
Natural Resources and Regulatory Permitting



Richard Beck, PWS
Senior Regulatory Specialist
Natural Resources and Regulatory Permitting

March 23, 2023
JN 179420

Executive Summary

On behalf of the Coachella Valley Water District, Michael Baker International (Michael Baker) has prepared this Delineation of State and Federal Jurisdictional Waters Report for the proposed North Cathedral City Improvements Project, Phase 1 (project or project site), located in the Cities of Cathedral City and Palm Desert, Riverside County, California. Michael Baker originally conducted a jurisdictional delineation on January 29, 2015. Michael Baker conducted a second site visit on September 22, 2021 to verify existing site conditions and identify any changes since the 2015 field delineation. It should be noted that several regulations changed during this period, specifically with the Clean Water Act. While changes did occur, the findings of this report have not changed. Therefore, the findings and recommendations in this report are current as March 2023.

The project proposes to implement numerous stormwater improvements including the placement of concrete channel protection on both sides of the Union Pacific Railroad (UPRR) bridge, bridge improvements, channel grading, and slope protection. This report was prepared to document all aquatic and other hydrological features identified by Michael Baker within the project site that are potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Federal Clean Water Act (CWA), the Regional Water Quality Control Board (Regional Board) pursuant to Section 401 of the CWA and/or Section 13263 of the California Porter-Cologne Water Quality Control Act, and the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFGC).

State jurisdictional areas (Morongo Wash) were identified within the project site. Table ES-1 identifies the total jurisdiction for each regulatory agency. Delineation methods followed the most recent, acceptable guidelines for conducting a jurisdictional delineation in this region. However, only the regulatory agencies can make a final determination of jurisdictional limits.

ES-1: Jurisdictional Limits within the Project Site

Drainage Area	Location Lat/Long	Cowardin Type	Jurisdictional Limits					
			Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
			Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	33.873034° / -116.498285°	Riverine	--	--	5.22	3,528	5.22	3,528
Reach 2	33.870954° / -116.494777°	Riverine	--	--	4.36	4,077	5.52	4,077
Reach 3	33.870019° / -116.491198°	Riverine	--	--	5.97	2,849	8.39	2,849
Reach 4	33.865166° / -116.487873°	Riverine	--	--	2.09	1,680	2.09	1,680
TOTAL			--	--	17.64	12,135	21.22	12,135

ES-2: Summary of Impacts

Jurisdictional Feature	Impacts to Jurisdiction					
	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Morongo Wash	--	--	1.19	770	1.19	770

Morongo Wash is subject to Regional Board and CDFW regulatory authority and would require authorization prior to the commencement of construction. Based on a detailed review of current site conditions and project design plans, the following regulatory permits/authorizations would be required prior to construction within the identified jurisdictional areas:

1. Approved Jurisdictional Determination (AJD) or similar approval from the Corps to formal receive concurrence that ephemeral aquatic features within the project site do not qualify as waters of the U.S. (WoUS) and therefore are not subject to regulation under Section 404 of the CWA;
2. Regional Board Waste Discharge Requirements (WDR) for impacts associated with the placement of dredge and/or fill material into waters of the State pursuant to the Porter-Cologne Act; and,
3. CDFW Section 1602 Lake or Streambed Alteration Agreement (or other approval in-lieu of a formal agreement such as an Operation-by-Law letter) for alteration to streambed/banks and/or associated vegetation.

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ACRONYMS AND ABBREVIATIONS

AJD	Approved Jurisdictional Determination
amsl	above mean sea level
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
Corps	U.S. Army Corps of Engineers
Corps Manual	<i>1987 Corps Wetland Delineation Manual</i>
CVWD	Coachella Valley Water District
CWA	Federal Clean Water Act
DBH	diameter at breast height
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
LSAA	Lake or Streambed Alteration Agreement
Michael Baker	Michael Baker International
NHD	National Hydrography Dataset
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
OBL	Obligate Wetland
OHWM	ordinary high-water mark
Porter-Cologne Act	California Porter-Cologne Water Quality Control Act
Procedures	State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State
project	North Cathedral City Improvements Project, Phase 1
Rapanos	<i>Rapanos v. United States</i>
Regional Board	Regional Water Quality Control Board
Regional Supplement	<i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0</i>
SWANCC	<i>Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers</i>
TNW	Traditional Navigable Waters
UPL	Upland
USDA	U.S. Department of Agriculture, Natural Resources Conservation Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WDR	Waste Discharge Requirements
WoUS	waters of the U.S.
WQC	Water Quality Certification

Section 1 Introduction

On behalf of Coachella Valley Water District (CVWD), Michael Baker International (Michael Baker) has prepared this Delineation of State and Federal Jurisdictional Waters Report to describe, map, and quantify aquatic and other aquatic features located within the project site for the proposed project.

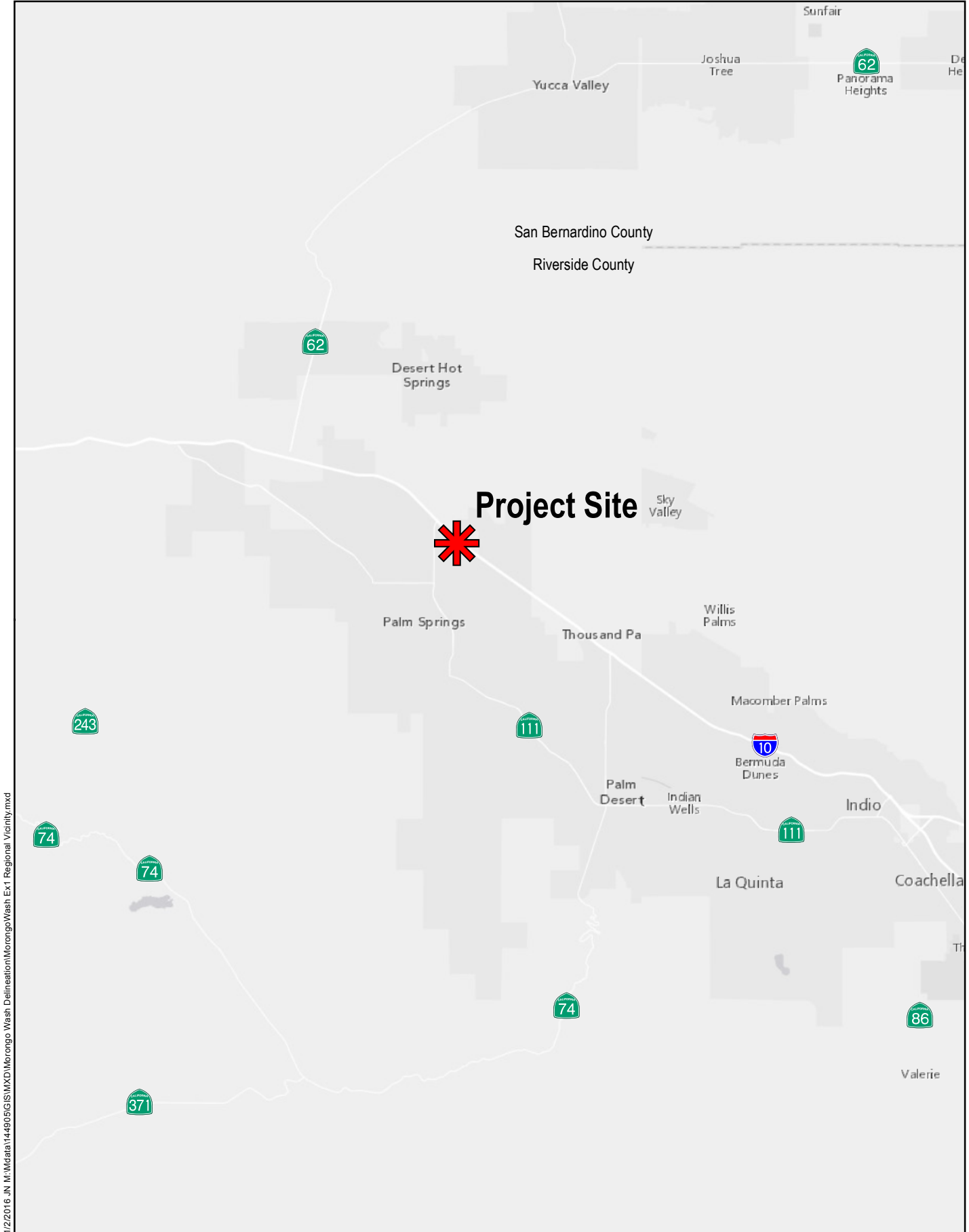
This report describes the regulatory setting, methodologies, and results of the jurisdictional delineation, including recommendations for any proposed impacts to previously documented or potential jurisdictional resources. This report presents Michael Baker's best professional effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional limits.

1.1 PROJECT LOCATION

The project site is located within the cities of Palm Springs and Cathedral City, County of Riverside, State of California (Figure 1, *Regional Vicinity*). Specifically, the project site is depicted within Sections 5 and 6 of Township 4 South and Sections 31 and 32 of Township 3 South, Range 5 East of the U.S. Geological Survey's (USGS) *Cathedral City, California* 7.5-minute topographic quadrangle. Additionally, the northwesternmost portion of the project site is depicted within Section 30 of Township 3 South, Range 5 East of the USGS *Seven Palms Valley, California* 7.5-minute topographic quadrangle (Figure 2, *Project Vicinity*). The project site is generally within the corridor between Interstate 10 (I-10) and the Union Pacific Railroad line (UPRR Line), with portions of the site extending beyond these limits (refer to Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

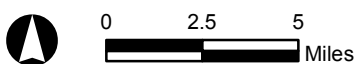
The Coachella Valley Water District proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific railroad (UPRR) bridge, and under the bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of CVWD's stormwater infrastructure. This proposed project (also referred to as the "proposed action") would provide a reliable and engineered channel under the bridge to provide a long-term solution for conveying flows downstream to the WWRSC. As such, the proposed project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the Thousand Palms planning unit.



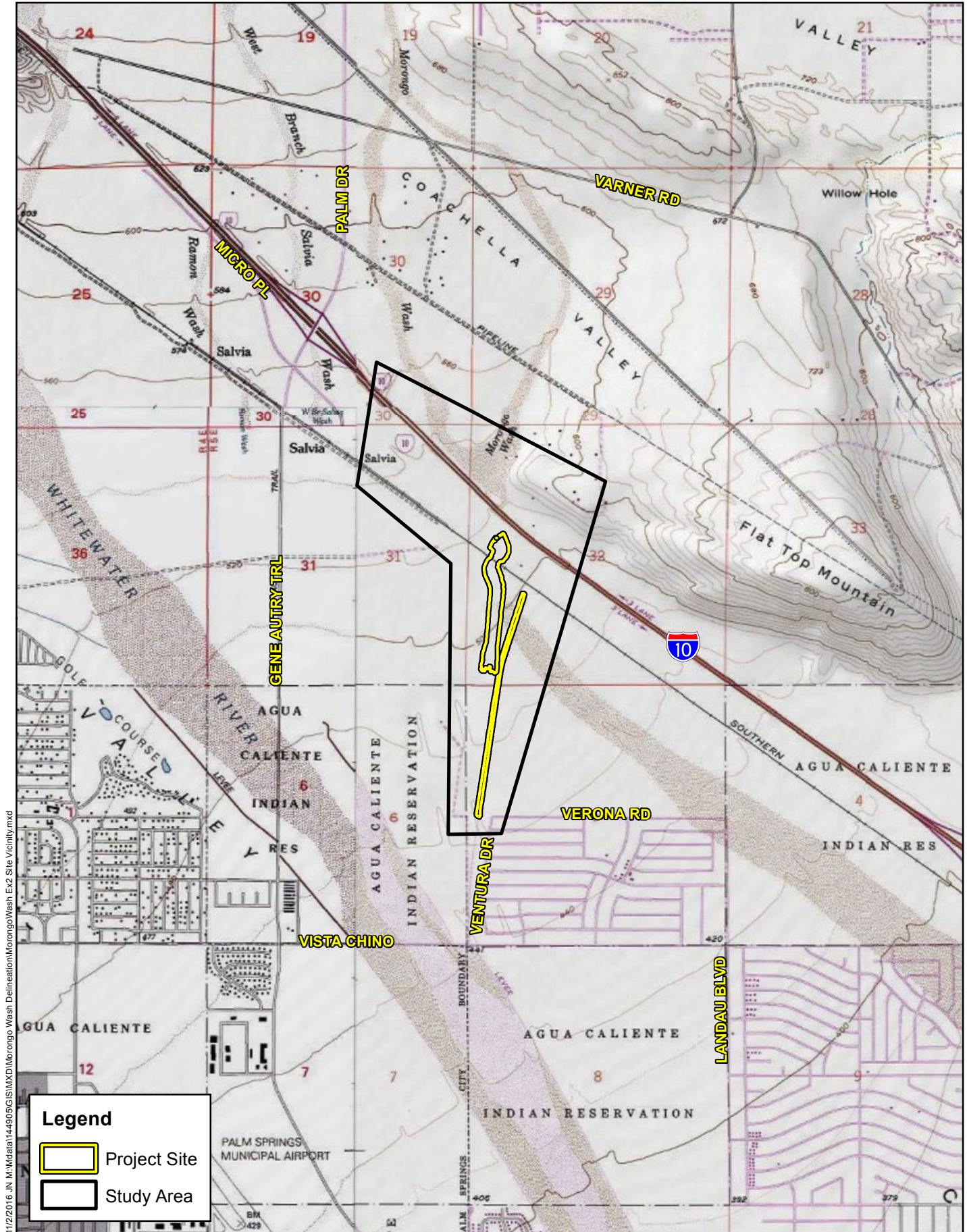
11/2/2016 JN M:\Data\144905\GIS\MXD\Morongo Wash Delineation\MorongoWash_Ex1_Regional_Vicinity.mxd

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Regional Vicinity



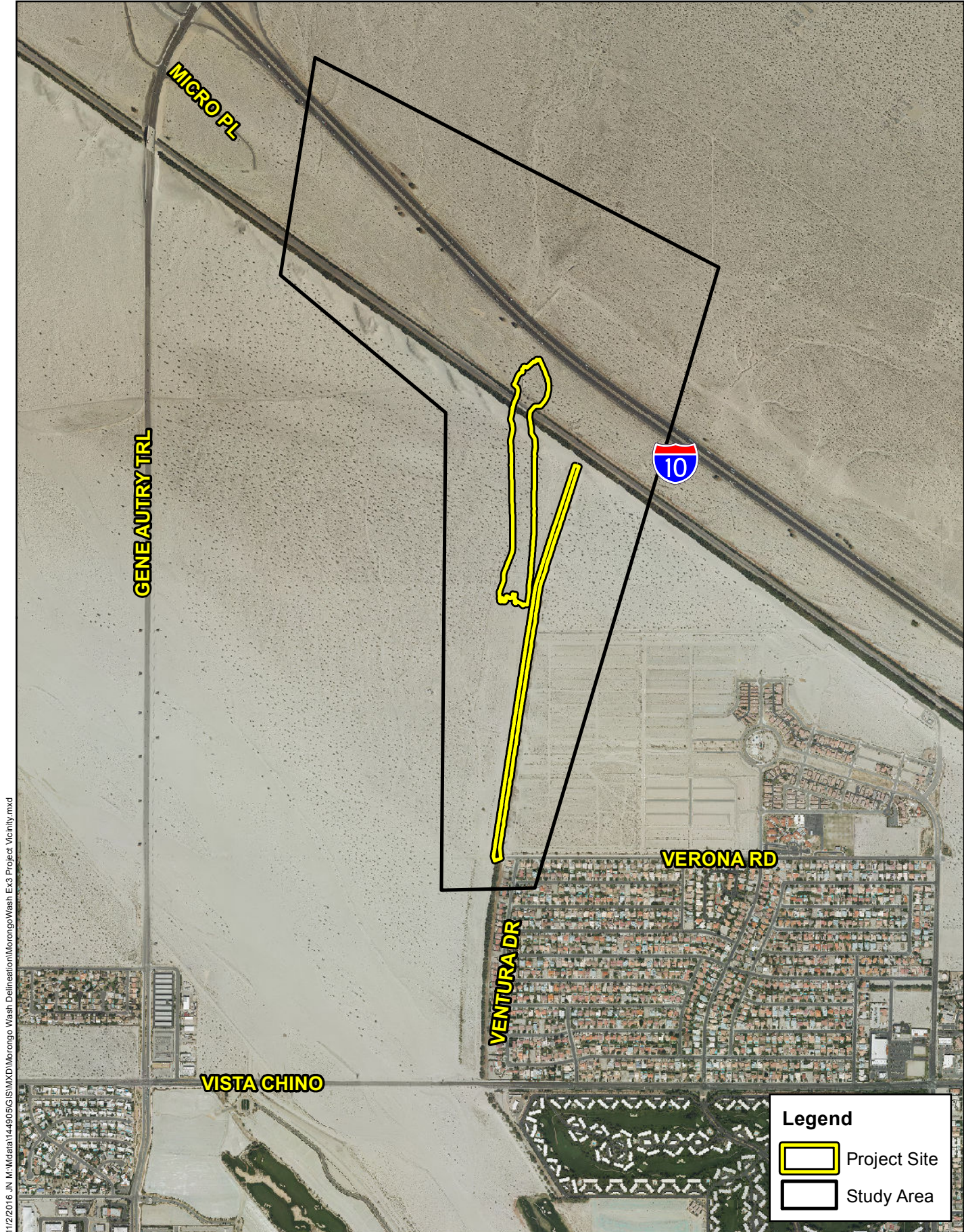
Source: ArcGIS Online, County of Riverside, County of San Bernardino



11/22/2016 JN M:\Data\144905\GIS\WDXD\Moronogo Wash Delineation\MoronogoWash_Ex2_Site Vicinity.mxd

Legend

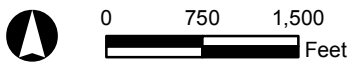
- Project Site
- Study Area



11/2/2016 JN M:\Data\144905\GIS\IMXD\Morongo Wash Delineation\Morongo Wash Ex3 Project_Vc\city.mxd

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Project Site



Source: ArcGIS Online, County of Riverside, County of San Bernardino

ALTERNATIVE 1 – PROPOSED ACTION

The primary components of the project include the placement of concrete channel protection upstream and downstream of the UPRR bridge, bridge improvements, channel grading, and levee slope protection. Additional detail is provided below:

- *Concrete Channel Lining:* The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- *Bridge Improvements:* The project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g., bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR’s clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- *Earthen Channel Grading:* The project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- *Concrete Levee Slope Protection:* Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge and is currently delineated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 06065C1576G as a levee, dike, or floodwall. This levee, however, is only a sand berm and would likely fail under a future 100-year storm event. Thus, the project proposes to install a concrete slope at this location, consistent with current levee design criteria identified in 44 CFR 65.10, in order to reinforce the levee and better protect residents downstream during a 100-year storm event. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately nine months. Nighttime construction may be required. Temporary construction access would be provided via Vista Chino, located approximately 0.5 mile south of the project site. A temporary construction access road would be extended from Vista Chino, extending north to the project site. All staging activities would occur within the proposed grading footprint for the drainage facility or within the footprint of the proposed temporary access road.

Operations and Maintenance

Maintenance activities would also include emergency maintenance to clear sediment deposits threatening infrastructure integrity and flow conveyance following a large storm event and invasive species control measures to protect native habitat within the project area. It is anticipated an invasive species control program would be implemented as part of the Habitat Mitigation and Monitoring Plan required under the Section 1602 Streambed Alteration Agreement anticipated for the project. The program would include measures such as a five-year period where non-native species are controlled/removed, photo documentation, a project completion report, and annual reporting to ensure compliance with the plan.

Whitewater Floodplain Conservation Area

In addition to improved conditions related to regional stormwater flows and flood protection, the project would also provide biological benefits within the site vicinity. Currently, wildlife cannot cross the UPRR at the project site, given the existing sediment that has built up at the bridge undercrossing. The creation of a permanent, unimpeded channel crossing beneath the UPRR bridge would re-establish wildlife movement between the northern and southern sides of the UPRR tracks. The project would not include any fencing, structures, or other facilities that would impede wildlife movement under the UPRR bridge. By providing a connection to the WWRSC, the project would allow for stormwater flows and associated sand transport, resulting in an increase in sand habitat within the project area.

The project site is located within a conservation area associated with the CVMSHCP, and the project underwent review by the Coachella Valley Conservation Commission (CVCC) under the Joint Project Review (JPR) process. Through the JPR review process, CVWD consulted extensively with CVCC to review the project's potential impacts to sensitive biological resources and consistency with the existing CVMSHCP. The JPR review resulted in a "Like Exchange" under the CVMSHCP, where land would be acquired by CVWD and deeded to CVCC or placed under a conservation easement in order to compensate for lands improved under the proposed project.

ALTERNATIVE 2 – NO ACTION ALTERNATIVE

Currently, sediment build-up under the UPRR bridge is causing existing flows to become trapped between the UPRR and I-10, resulting in flow downstream to the southeast, into the Thousand Palms planning unit. With the No Action Alternative, the stormwater improvements, including placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection, would not be constructed. Thus, stormwater flows would not be conveyed beneath the bridge and floodplain impacts would not be reduced for tributary areas to the project site, including existing and planned future development. With the No Action Alternative, implementation of the Thousand Palms Flood Control Project, situated downstream of the existing flows, would only achieve flood control for approximately 3 to 4 square miles of flows and 100-year flood flows would continue to impact existing development and impede future planned development within the Thousand Palms planning unit.

Section 2 Regulations

Three agencies regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Division regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA). Of the State agencies, the California Department of Fish and Wildlife (CDFW) regulates activities under Sections 1600 *et seq.* of the California Fish and Game Code (CFGC), and the Regional Water Quality Control Board (Regional Board) regulates activities pursuant to Section 401 of the CWA and/or Section 13263 of the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

2.1 U.S. ARMY CORPS OF ENGINEERS

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) jointly regulate discharges of dredged or fill material into “waters of the U.S.” (WoUS), including wetland and non-wetland aquatic features, pursuant to Section 404 of the CWA. Section 404 is founded on the findings of a significant nexus (or connection) between the aquatic or other hydrological features in question and interstate commerce via Relatively Permanent Waters (RPW), and ultimately Traditional Navigable Waters (TNW), through direct or indirect connection as defined by Corps regulations.

2.2 REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a Federal license or permit for activities that may discharge to WoUS must seek a Water Quality Certification (WQC) from the State or Indian tribe with jurisdiction¹. In California, there are nine (9) Regional Boards that issue or deny Certification for discharges within their geographical jurisdiction. Such Certification is based on a finding that the discharge will meet water quality standards, which are defined as numeric and narrative objectives in each Regional Board’s Basin Plan, and other applicable requirements. The State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board’s jurisdiction extends to all WoUS, including wetlands, and to waters of the State (described below).

The Porter-Cologne Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool for the regulatory environment following the SWANCC² and Rapanos³ court cases, with respect to the state’s authority over isolated and otherwise insignificant waters. Generally, in the event that there is no nexus to a Traditionally Navigable Water (TNW), any person proposing to discharge waste into waters of the State that could affect its water quality must file a Report of Waste Discharge. Although

¹ Title 33, United States Code, Section 1341; Clean Water Act Section.

² *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001).

³ *Rapanos v. United States*, 547 U.S. 715 (2006).

“waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

On April 2, 2019 the State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures were approved by the Office of Administrative Law on August 28, 2019 and became effective May 28, 2020.

2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Sections 1600 *et seq.* of the CFGC establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely affect fish and wildlife resources, or when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Section 1602 of the CFGC requires any person, State, or local governmental agency or public utility to notify CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;
or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, including the maintenance of existing drain culverts, outfalls, and other structures. To avoid the need for a Lake or Streambed Alteration Agreement (LSAA) from CDFW, all proposed impacts should remain outside of the top of active banks and the canopy/dripline of any associated riparian vegetation, whichever is greater.

Section 3 Methodology

The analysis presented in this report is supported by site reconnaissance and verification of site conditions conducted by Michael Baker on January 29, 2015 and September 22, 2021. A field delineation was conducted to determine the jurisdictional limits of WoUS and waters of the State (including potential wetlands), located within the boundaries of the project site. While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1" = 100' using topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin Map62 Global Positioning System to record and identify specific widths for OHWM indicators and the locations of photographs, soil points, and other pertinent jurisdictional features, if present. These data were then transferred as a .shp file and added to the report's jurisdictional figures. The jurisdictional figures were prepared using ESRI ArcMap Version 10 software and comply with the Corps Minimum Standards for Acceptance of Aquatic Resource Delineations, dated January 2016.

3.1 WATERS OF THE U.S. AND WATERS OF THE STATE

3.1.1 NON-WETLAND WATERS OF THE U.S.

The limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined as "...*that 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 and debris, or other appropriate means that consider the characteristics of the surrounding areas.*"⁴ An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and/or change in plant community. The Regional Board generally shares the Corps jurisdictional methodology, unless the waterbody is not jurisdictional to the Corps. In the case the waterbody is not a WoUS, the Regional Board considers such waterbodies to be jurisdictional waters of the State.

3.1.2 WETLAND WATERS OF THE U.S.

For this project location, jurisdictional wetlands were delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Regional Supplement; Corps, 2008). This document is part of a series of regional supplements to the *1987 Corps Wetland Delineation Manual* (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal

⁴ CWA regulations 33 CFR §328.3(e).

characteristics within these three (3) parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps wetland determination data forms, when applicable.

The Procedures adopted by the State Water Resources Control Board on April 2, 2019, contain a wetland definition and wetland delineation procedures. The State wetland definition and delineation procedures are largely consistent with the three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology implemented by the Corps and outlined in the 2010 Regional supplement to the Corps Manual. However, one exception is that an area can lack vegetation and still qualify as a wetland water of the State if it satisfies both the hydric soil and wetland hydrology parameters.

Vegetation

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, often referred to as hydrophytic vegetation, are listed in regional publications by the U.S. Fish and Wildlife Service (USFWS). In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during growing season. Hydrophytic vegetation decisions are based on the assemblage of plant species growing on a site, rather than the presence or absence of particular indicator species. Vegetation strata are sampled separately when evaluating indicators of hydrophytic vegetation. A stratum for sampling purposes is defined as having 5 percent or more total plant cover. The following vegetation strata are recommended for use across the Arid West Region:

- *Tree Stratum*: Consists of woody plants 3 inches or more in diameter at breast height (DBH);
- *Sapling/shrub Stratum*: Consists of woody plants less than 3 inches in DBH, regardless of height;
- *Herb Stratum*: Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size; and
- *Woody Vines*: Consists of all woody vines, regardless of size.

The following indicator is applied per the test method below⁵. Hydrophytic vegetation is present if any of the indicators are satisfied.

⁵ Although the Dominance Test is utilized in most wetland delineations, other indicator tests may be employed. If one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present, then the Prevalence Test (Indicator 2) may be performed. If the plant community satisfies the Prevalence Test, then the vegetation is hydrophytic. If the Prevalence Test fails, then the Morphological Adaptation Test may be performed, where the delineator analyzes the vegetation for potential morphological features.

Indicator 1 – Dominance Test

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50 percent of the total dominant coverage, plus any species that comprise at least 20 percent (also known as the “50/20 rule”) of the total dominant coverage, are recorded on a wetland determination data form. Wetland indicator status is assigned to each species using The National Wetland Plant List The List, version 3.4 (U.S. Army Corps of Engineers, 2018). If greater than 50 percent of the dominant species from all strata were Obligate Wetland, Facultative Wetland, or Facultative species, the criteria for wetland vegetation is considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL)*: Plants that occur almost always in wetlands under natural conditions, but which may also occur rarely in non-wetlands;
- *Facultative Wetland (FACW)*: Plants that occur usually in wetlands, but also occur in non-wetlands;
- *Facultative (FAC)*: Plants with similar likelihood of occurring in both wetlands and non-wetlands;
- *Facultative Upland (FACU)*: Plants that occur sometimes in wetlands, but occur more often in non-wetlands; and
- *Obligate Upland (UPL)*: Plants that occur rarely in wetlands but occur almost always in non-wetlands under natural conditions.

Hydrology

Wetland hydrology indicators are presented in four (4) groups, which include:

Group A – Observation of Surface Water or Saturated Soils

Group A is based on the direct observation of surface water or groundwater during the site visit.

Group B – Evidence of Recent Inundation

Group B consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.

Group C – Evidence of Recent Soil Saturation

Group C consists of indirect evidence that the soil was saturated recently. Some of these indicators, such as oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

Group D – Evidence from Other Site Conditions or Data

Group D consists of vegetation and soil features that indicate contemporary rather than historical wet conditions and include shallow aquitard and the FAC-neutral test.

If wetland vegetation criteria are met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators is used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

Soils

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 16-20 inches⁶. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 20 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to an excavation depth of 20 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (2012). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables – hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation, iron reduction, translocation, and accumulation, and sulfate reduction, are also recorded. Hydric soil indicators are present in three groups, which include:

All Soils

“All soils” refers to soils with any U.S. Department of Agriculture, Natural Resources Conservation Service (USDA) soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1-centimeter muck, depleted below dark surface, and thick dark surface.

Sandy Soils

Sandy soils” refers to soil materials with a USDA soil texture of loamy fine sand and coarser. Hydric soil indicators within this group include sandy mucky mineral, sandy gleyed matrix, sandy redox, and stripped matrix.

⁶ According to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008), growing season dates are determined through on-site observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature.

Loamy and Clayey Soils

“Loamy and clayey soils” refers to soil materials with a USDA soil texture of loamy very fine sand and finer. Hydric soil indicators within this group include loamy mucky mineral, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, and vernal pools.

3.2 WATERS OF THE STATE

3.2.1 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board’s jurisdiction is mapped similarly to the Corps, by defining an OHWM and utilizing the three-parameter approach for wetlands, as described above.

3.2.2 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW jurisdiction applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State of California. CDFW regulatory authority extends to include riparian habitat (including adjacent wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils or saturated soil conditions. Generally, CDFW jurisdiction is mapped to the top of the active bank of the stream or to the outer drip line of the associated riparian vegetation, whichever is greater. For LSAA notification purposes, vegetated and non-vegetated streambeds are distinguished when riparian vegetation is present. CDFW jurisdiction typically does not include aquatic resources influenced by marine systems.

For the purpose of this report, CDFW’s jurisdiction is mapped based on The Mesa Field Guide, which was developed to provide guidance on mapping episodic streams within the inland deserts of southern California as a means of complying with the California Fish and Game Code. MESA is conducted by examining the evidence left on the landscape by the processes that created them, which includes the geology of fluvial deposits, the landforms modified by stream activity, and the features formed from terrestrial processes that operate on fluvially inactive landscapes. The characteristics of these surficial deposits and the evidence of the processes acting on them are indicators of either fluvial activity or inactivity. The surficial geologic mapping method is conducted by first interpreting images of remotely sensed landforms and surfaces, and then undertaking a field examination of landforms; surface indicators of fluvial activity and inactivity; and sometimes soil profiles in shallow, hand-dug pits. Examples of field indicators of watercourse fluvial processes include, but are not limited to, bar forms, sediment sorting, wrack, cut banks, scour, and secondary channels.

Section 4 Literature Review

A thorough review of relevant literature and materials was conducted to preliminarily identify areas that may fall under the jurisdiction of the regulatory agencies. A summary of materials utilized during the literature review is provided below and in Appendix A, *Documentation*. In addition, refer to Section 8 for a complete list of references used throughout the course of this delineation.

4.1 WATERSHED REVIEW

The project site is located within the Morongo Wash (HUC 181002010602) sub-watershed of the larger Salton Sea watershed (Hydrologic Unit Code 18100200). The Morongo Wash has not been assessed as an Impaired Waterbody by the EPA. The Salton Sea watershed is located in the Sonoran desert region in the southeastern corner of California, encompassing one-third of the Colorado River Basin Region (about 8,260 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in southern California, south of Indio and north of El Centro. The basin is more than 200 feet below sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee break along the Colorado River caused its flows to enter the basin for about 18 months. Since 1905, the Sea has fluctuated in size with varying inflow, and today has a surface area of about 343 square miles. The project site is approximately 35 miles northwest of the Salton Sea.

The project site occurs approximately immediately northeast of Whitewater River. Whitewater River is tributary to the Salton Sea and is defined in the Basin Plan as the reach from the headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near the Indian Avenue crossing in the City of Palm Springs. The reach of the Whitewater River from the Whitewater recharge basins near Indian Avenue to the Coachella Valley Stormwater Channel (CVSC) near Indio is defined as a Wash (Intermittent or Ephemeral Stream) in the Basin Plan. The Whitewater River is not currently listed as an Impaired Waterbody within the Whitewater River Region. Due to the small percentage of the Whitewater River Watershed and the Whitewater River Region in urban land uses, urban runoff constitutes a minor percentage of the total flow in the Whitewater River under storm conditions.⁷

4.2 LOCAL CLIMATE

The Salton Sea Watershed is characterized by a year-round desert climate, with warm, sunny, dry summers, and cool, cloudy, mild winters. According to the Western Regional Climate Center, the average maximum temperature in this area of California is 88.6° F annually, and average minimum temperature is at 57.2° F annually. The warmest month on average is July at a maximum of 108.2° F, and the coolest months on average are December and January at a minimum of 42.3° F. Most precipitation occurs between November and March in the form of rain, with occasional and steadily increasing precipitation through the fall and

⁷ <https://mywaterway.epa.gov/community/181002010304/overview>

winter; the average total precipitation is 5.49 inches annually. Snowfall does not typically occur within this area of the watershed regardless of the season.

4.3 USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE

The majority of the project site is located within Sections 5 and 6 of Township 4 South and Sections 31 and 32 of Township 3 South, Range 5 East, San Bernardino Meridian in the USGS *Cathedral City* 7.5-minute topographic quadrangle map. Portions of the project site also extend to Section 30 of Township 3 South, Range 5 East, San Bernardino Meridian in the USGS *Palms Valley* 7.5-minute topographic quadrangle map.

The project site is located within the cities of Palm Springs and Cathedral City, County of Riverside, State of California (Figure 1, *Regional Vicinity*). Specifically, the project site is depicted within Sections 5 and 6 of Township 4 South and Sections 31 and 32 of Township 3 South, Range 5 East of the U.S. Geological Survey's (USGS) *Cathedral City, California* 7.5-minute topographic quadrangle. Additionally, the northwesternmost portion of the project site is depicted within Section 30 of Township 3 South, Range 5 East of the USGS *Seven Palms Valley, California* 7.5-minute topographic quadrangle (Figure 2, *Project Vicinity*). The project site is generally within the corridor between I-10 and the Union Pacific Railroad line, with portions of the site extending beyond these limits (refer to Exhibit 3, *Project Site*).

The site slopes gently to the southwest with onsite elevations ranging from approximately 600 feet amsl at the highest point in the northeast to approximately 450 feet amsl in the south. Whitewater River is mapped as occurring immediately southwest of the southernmost portion of the project site, and Morongo Wash occurs directly within the northern portion of the project site. The foothills of the San Jacinto Mountains occur approximately four miles to the southwest of the project site, and the foothills of the San Geronio Mountains occur approximately eight miles to the northwest.

4.4 AERIAL PHOTOGRAPH

Prior to the field visits, Michael Baker reviewed multiple aerial photographs from Google Earth Imaging for the project site, including images dated November 12, 2013 and December 12, 2019. Aerial photographs can be useful during the delineation process, as the photographs often indicate the presence of drainages and riparian vegetation within the boundaries of the project site (if any). Based on the aerial image, the project site is composed primarily of undeveloped land with transportation uses including the I-10 and the UPRR line. Numerous ephemeral drainages are noted traversing northern and central portions of the site entering the site from the north. Sparse desert vegetation consistent with the surrounding area is noted throughout the project site. The project is primarily surrounded by undeveloped land with residential uses to the southeast.

4.5 SOIL SURVEY

Soils within the project site were researched prior to the field delineation using the *Custom Soil Resource Report for Riverside County, Coachella Valley Area, California* (USDA, 2021). The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). The following soil series have been reported onsite:

Carsitas gravelly sand, 0 to 9 percent slopes (CdC)

The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 275 to 325 days. In a typical profile 0 to 10 inches and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y 4/2) when moist and 10 to 60 inches olive gray (5Y 4/2) when moist; stratified; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding and no ponding as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carsitas (4%), Myoma (4%), and other unnamed stony or gravelly soils (3%). Small slightly entrenched stream channels become less distinct as the soil of the slope decreases to 1 to 2 percent. According to the soils survey they form an indefinite pattern of braided stream channels, which are very shallow and have coarser debris deposited in them. Runoff is slow and the erosion hazard is moderate.

Carsitas gravelly sand, 9 to 30 percent slopes (CdE)

This soil type is similar to Carsitas gravelly sand, 0 to 9 percent slopes, with some minor variations. This strongly to moderately sloping soil is located on valley fill and remnants of dissected alluvial fans. Shallow rills or channels are common in the valley fill, and occasional shallow gullies can disappear into areas of coarser debris, with some of the gullies being filled by windblown fine sand. Runoff for this soil type is slow with a moderate erosion hazard. Available water capacity is 2 to 4 inches.

Carsitas cobbly sand, 2 to 9 percent slopes (ChC):

This gently sloping to moderately sloping soil is located on alluvial fans, valley fill, and remnants of dissected alluvial fans along the east, north and west edges of the Coachella Valley. The soils has a profile similar to the one described as representative of the series, but cobbles and some stones cover 1 to 3 percent

of the surface. The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 300 days.

In a typical profile 0 to 10 inches is cobbly sand and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y4/2) and 10 to 60 inches olive gray (5Y 4/2) when moist; satisfied; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding or ponding frequency as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carrizo (4%), Chuckawalla (4%), and other unnamed soils (3%). Some small, entrenched stream channels form a lacy, shallow braided stream channel that starts where the primary channel is choked with coarse debris and spills out across the soils surface until it concentrates to form a new channel. Runoff is rapid and the erosion hazard is moderate.

Carsitas fine sand, 0 to 5 percent slopes, (CkB)

This nearly level to gently sloping soil is on alluvial fans and valley fill, similar to most Carsitas series soils. It has a similar profile to the other Carsitas series soils, but typically has a fine sand surface layer that is less than 15% coarse fragments. Runoff is slow with a slight erosion hazard. The hazard of soil blowing is high. Available water capacity is 3 to 4 inches. The effective rooting depth is 60 inches or more.

Myoma fine sand, 0 to 5 percent slopes (MaB)

This nearly level to gently sloping soil is on alluvial fans and valley fill, similar to most Carsitas series soils. It has a similar profile to the other Carsitas series soils, but typically has a fine sand surface layer that is less than 15% coarse fragments. Runoff is slow with a slight erosion hazard. The hazard of soil blowing is high. Available water capacity is 3 to 4 inches. The effective rooting depth is 60 inches or more.

Myoma fine sand, 5 to 15 percent slopes (MaD)

This soil type is similar to the Myoma series described above. This moderately sloping to rolling soil is on dunes and alluvial fans. Runoff is very slow with a slight erosion hazard. The hazard of soil blowing is high.

Riverwash (RA)

Riverwash soils were mapped immediately south of the historical Morongo Wash crossing underneath the railroad line, showing an approximately 560-foot wide corridor that extends from the crossing to the confluence with the Whitewater River, approximately 1.4 miles downstream/south. The soils map included in Appendix A, *Documentation*, shows the historic riverwash corridor within the project site.

4.6 HYDRIC SOILS LIST OF CALIFORNIA

The Hydric Soils List of California (USDA, 2021) was reviewed in an effort to verify whether on-site soils are considered to be hydric⁸. It should be noted that lists of hydric soils along with soil survey maps provide off-site ancillary tools to assist in wetland determinations, but they are not a substitute for field investigations. According to the soils list, Carsitas gravelly sand, 0 to 9 percent slopes (CdC) and 9 to 30 percent slopes (CdE); Carsitas cobbly sand, 2 to 9 percent slopes (ChC); Myoma fine sand 0 to 5 percent slopes (MaB) and 5 to 15 percent slopes (MaB); and Riverwash (RA) are listed as hydric.

4.7 NATIONAL WETLANDS INVENTORY

The USFWS National Wetlands Inventory maps were reviewed. According to the National Wetland Inventory, two riverine features occur within the project site boundary according to the National Wetland Inventory. One riverine feature is reported to be of the riverine system, intermittent subsystem, streambed class, intermittently flooded (R4SBJ). A second riverine feature is reported to be of the riverine system, stream, intermittent subsystem, streambed class, intermittently flooded, special modifier excavated (R4SBJx). Refer to Appendix A, *Documentation*.

4.8 FLOOD ZONE

The Federal Emergency Management Agency's (FEMA) National Flood Insurance Program was reviewed for available flood data within the project site. According to *Flood Insurance Rate Map (FIRM) Nos. 06065C1576G, 06065C1557G, 06065C0915G, and 06065C1557G*, the majority of the project site is located within Zone A which are special flood hazard areas subject to inundation by the one percent annual chance flood, generally without determined base flood elevations. The remaining areas onsite are mapped as Zone X (areas of 0.2% annual chance of flood hazard or areas of 1% annual chance of flood with average depth less than one foot or with drainage areas of less than one square mile). Refer to Appendix A, *Documentation*.

4.9 NATIONAL HYDROGRAPHY DATASET

The National Hydrography Dataset was reviewed for available hydrography data within the project site using the USGS The National Map Advanced Viewer. According to the National Hydrography Dataset, multiple ephemeral streams (the reaches of Morongo Wash) are noted throughout the project site generally flowing from northwest to southeast. Refer to Appendix A, *Documentation*.

⁸ A hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions.

Section 5 Site Conditions

Michael Baker regulatory specialists Wesley Salter, PWS, Daniel Cardoza, and Tim Tidwell visited the project site from approximately 8:30 a.m. to 3:30 p.m. on January 29, 2015 to verify existing site conditions as well as document the extent of jurisdictional areas within the boundaries of the project site. On September 22, 2021, Michael Baker regulatory specialists Tim Tidwell, PWS and April Nakagawa visited the project site from approximately 7:00 a.m. to 11:00 a.m. to verify site conditions and update the delineation as necessary. No significant rain events had occurred in the ten days prior to either site visit. Michael Baker encountered no substantial limitations to access during the site visits. Refer to Appendix B, *Site Photographs* taken throughout the project site.

5.1 MORONGO WASH

Morongo Wash is an earthen, ephemeral drainage that runs through the project site in a northwest to southeast direction. Morongo Wash historically flowed into the Whitewater River but is now considered to be an isolated feature. The soils map (refer to Appendix A, *Documentation*) shows a corridor directly south of the railroad bridge mapped as Riverwash, which implies that Morongo Wash historically flowed underneath the railroad bridge and into the Whitewater River. Because of the berming (build-up of fluvial material) at the railroad bridge crossing, Morongo Wash dissipates downstream between I-10 and the railroad and fails to connect to any other downstream features/waterways.

Sediment within Morongo Wash consists of sand and cobble. The low flow channel was primarily unvegetated, with creosote scrub increasing in density outside of the active floodplain. Vegetation associated with the creek (primarily on the active floodplain and low terrace) consisted of brittlebush (*Encelia farinosa*, NI), burro weed (*Ambrosia dumosa*, NI), burrobrush (*Ambrosia salsola*, NI), small seeded spurge (*Euphorbia polycarpa*, NI), Russian thistle (*Salsola tragus*, FACU), salt cedar (*Tamarix ramosissima*, FAC), annual yellow sweetclover (*Melilotus indicus*, FACU), and bladderpod (*Peritoma arborea*, NI). No surface water was present in the wash during the site visit. Evidence of an OHWM was observed via drift deposits, benches, changes in sediment size, and change in vegetation type and density. The OHWM ranged in width from one foot to approximately 300 feet.

The field investigation concluded that upland areas directly adjacent to Morongo Wash were dominated by terrestrial and aeolian features and lacked indicators of recent fluvial activity. The low flow channel for each reach of the wash north of I-10 is moderately incised within the project site, which allowed Michael Baker to delineate clear boundaries of the watercourse based on indicators of fluvial activity and inactivity. Upland islands within the watercourse were not treated separately from the watercourse since their landscape and ecosystem function did not differ from the watercourse.

The area of Morongo Wash south of I-10 and north of the railroad line required more reliance on the MESA indicators to determine areas of fluvial activity. Michael Baker identified several MESA indicators within and outside of the mapped watercourse in order to determine the extent of terrestrial and fluvial processes.

Upland indicators included bioturbation, active coppice dunes, and surface rounding. Fluvial indicators included the presence of mid-channel gravel and sand bars, bifurcated flow, flow lineations, mud cracks, mud curls, organic drift, out-of-channel flow, ripples, sediment ramps (gravel), small wrack on floodplain, cut bank (in sand), and headcuts in first order channels on terrace. Substrate staining was noted at the playa fringe or floodplain boundary. Upland areas were excluded from the mapped watercourse based on clear signs of upland processes, with topographic relief providing the most significant indicator of upland processes. Sheet flow is more common in this area of Morongo Wash due to the low magnitude events which result in a watercourse width of approximately 320 feet at some points. The sheet flow events cause sediment splays across the floodplain, which indicates that there is no specific low flow channel in this area to convey the low magnitude flows. Refer to Figure 4, *Jurisdictional Map*, for a depiction of the drainage areas located throughout the project site.

5.1.1 WETLAND FEATURES

No wetland features were noted within the boundaries of the project site. All areas either did not contain hydrophytic vegetation or were dominated by loose sandy substrate which indicates a lack of hydric soils.

Section 6 Findings

This delineation has been prepared in order to document the jurisdictional authority of the Corps, Regional Board, and CDFW within the project site. This report presents our best effort at determining the extent of jurisdictional features using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries.

6.1 U.S. ARMY CORPS OF ENGINEERS

6.1.1 NON-WETLAND WATERS OF THE U.S. DETERMINATION

Evidence of an OHWM was noted within the boundaries of the project site in association with Morongo Wash. However, aquatic features within the project site do not connect to downstream waters; therefore, Morongo Wash is considered an isolated feature. Morongo Wash is not within the 100-year floodplain of the Whitewater River and is physically restricted to the corridor between I-10 and the Union Pacific railroad line. Therefore, on-site aquatic features would not be subject to regulation under Section 404 of the CWA and would not be considered Corps' jurisdiction.

6.1.2 WETLAND DETERMINATION

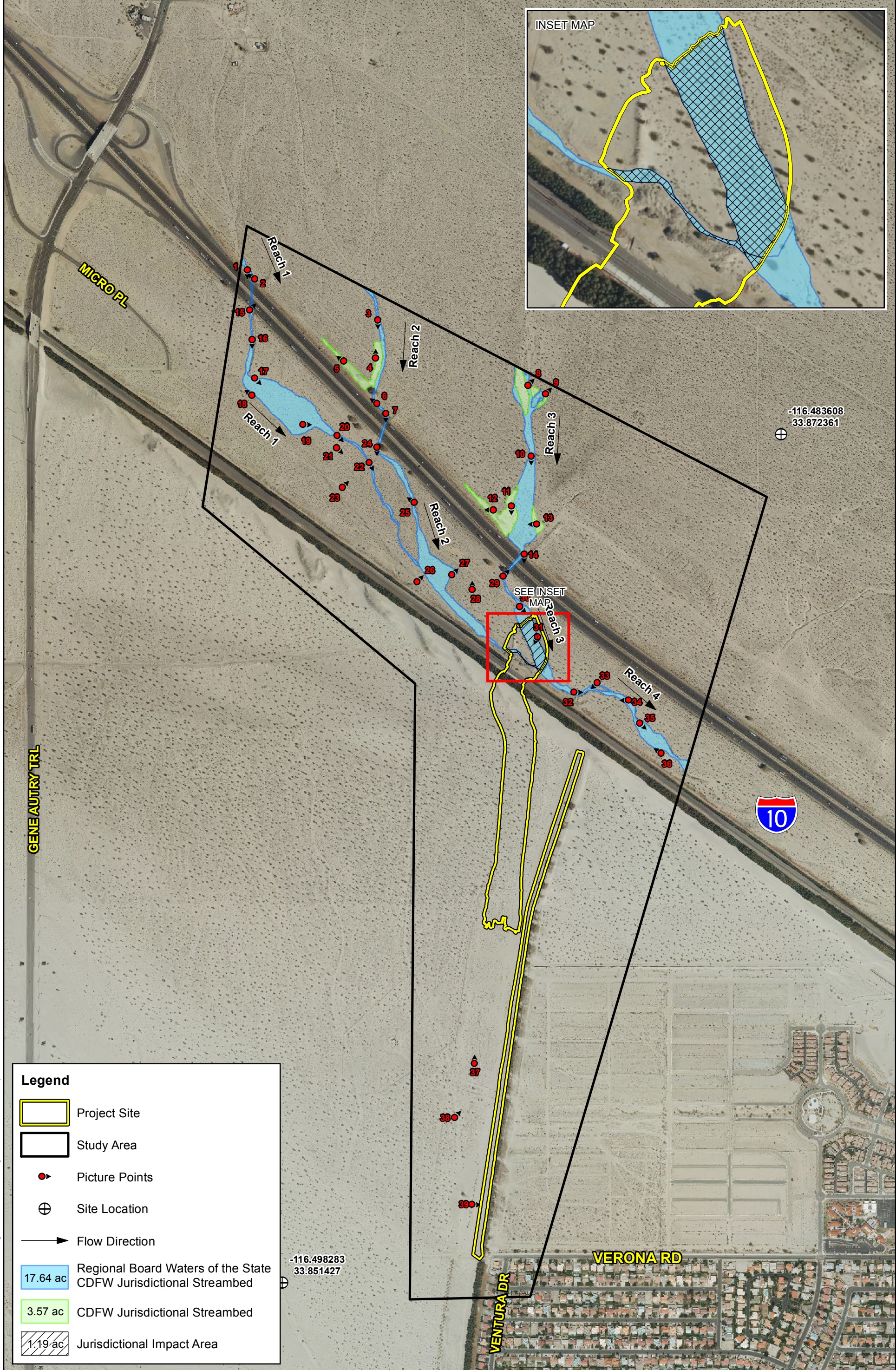
As previously noted, an area must exhibit all three wetland parameters described in the Corps Regional Supplement to be considered a jurisdictional wetland. Based on the results of the site visits, it was determined that no portion of the project site contained all three parameters, thus no Corps wetlands were observed onsite.

6.2 REGIONAL WATER QUALITY CONTROL BOARD

6.2.1 NON-WETLAND WATERS OF THE STATE DETERMINATION

Morong Wash exhibits evidence of an OHWM and is considered an isolated feature with no connection to downstream waters. Therefore, Morongo Wash is not jurisdictional to the Corps. However, in the absence of federal jurisdiction, Morongo Wash is jurisdictional to the Regional Board pursuant to the Porter-Cologne Act.

Approximately 17.64 acres of Morongo Wash are subject to Regional Board jurisdiction; refer to Table 1: *Jurisdictional Limits within the Project Site*. The proposed project is anticipated to result in 1.19 acres of permanent impacts to on-site jurisdictional portions of Morongo Wash. Refer to Table 2, *Summary of Impacts*, for a summary of proposed impacts to Regional Board jurisdictional areas and Exhibit 4, *Jurisdictional Map*, for an illustration of jurisdiction and proposed impacts.



Legend

- Project Site
- Study Area
- Picture Points
- ⊕ Site Location
- ➔ Flow Direction
- 17.64 ac Regional Board Waters of the State CDFW Jurisdictional Streambed
- 3.57 ac CDFW Jurisdictional Streambed
- 1.19 ac Jurisdictional Impact Area

-116.498283
33.851427

-116.483608
33.872361

6.2.2 WETLAND DETERMINATION

As previously noted, an area must exhibit all three wetland parameters described in the 2010 Regional supplement to the Corps Manual to be considered a Corps jurisdictional wetland. In addition, the State wetland definition and delineation procedures are largely consistent with the three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology implemented by the Corps. However, one exception is an area can lack vegetation and still satisfy the parameter for hydrophytic vegetation thus qualifying the area as a wetland water of the State if the hydric soil, and wetland hydrology parameters are also fulfilled. Based on the results of the field delineations, it was determined that no portion of the project site contained Regional Board wetlands. Refer to Table 1: *Jurisdictional Limits within the Project Site* and Exhibit 4, *Jurisdictional Map*.

Table 1: Jurisdictional Limits within the Project Site

Jurisdictional Feature	Location Lat/Long	Cowardin Type	Jurisdictional Limits					
			Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
			Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	33.873034° / -116.498285°	Riverine	--	--	5.22	3,528	5.22	3,528
Reach 2	33.870954° / -116.494777°	Riverine	--	--	4.36	4,077	5.52	4,077
Reach 3	33.870019° / -116.491198°	Riverine	--	--	5.97	2,849	8.39	2,849
Reach 4	33.865166° / -116.487873°	Riverine	--	--	2.09	1,680	2.09	1,680
TOTAL			--	--	17.64	12,135	21.22	12,135

Table 2: Jurisdictional Limits Impact Summary

Jurisdictional Feature	Impacts to Jurisdictional Limits					
	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage (permanent)	Linear Feet (permanent)	Acreage	Linear Feet
Morongo Wash	--	--	1.19	770	1.19	770
TOTAL	--	--	1.19	770	1.19	770

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Morongo Wash is considered a CDFW jurisdictional streambed. It was determined that 21.22 acres of CDFW jurisdictional streambed is located within the project site and the project is anticipated to result in 1.19 acre of permanent impact to CDFW jurisdiction (refer to Table 1 and Exhibit 4: *Jurisdictional Map*).

Section 7 Regulatory Approval Process

This report has been prepared for the Coachella Valley Water District to delineate the Corps, Regional Board, and CDFW jurisdictional authority within the project site. Below is a summary of the various permits/authorizations that would be required prior to temporarily or permanently impacting on-site jurisdictional features.

7.1 U.S. ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. Since no Corps jurisdictional areas occur within the project site, no permit will be required from the Corps prior to commencement of construction activities. The applicant is required to obtain an Approved Jurisdictional Determination from the Corps in order to confirm the findings of this report.

7.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne). In the absence of a Section 404 permit issued from the Corps, a Section 401 Water Quality Certification (WQC) is not applicable. However, a Waste Discharge Requirements (WDR) issued from the Regional Board would be required prior to commencement of any construction activities within Regional Board jurisdictional areas. The Regional Board also requires that California Environmental Quality Act (CEQA) compliance be obtained prior to issuance of the final WDR. Further, an application fee is required, which is based on both total temporary and permanent impact acreages (as applicable).

7.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates alterations to streambed under Section 1602 of the CFGC. Therefore, formal notification to, and subsequent authorization from CDFW, would be required prior to commencement of any construction activities within the CDFW jurisdictional areas. The CDFW also requires that CEQA compliance be obtained prior to issuing the final LSAA. In addition, a notification fee is required, which is calculated based on project costs within CDFW jurisdictional areas.

7.4 RECOMMENDATIONS

As part of the regulatory permitting process, this delineation will be forwarded to each of the regulatory agencies for their concurrence. The concurrence/receipt would be valid up to five years and would solidify findings noted within this report.

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Appendix A Documentation



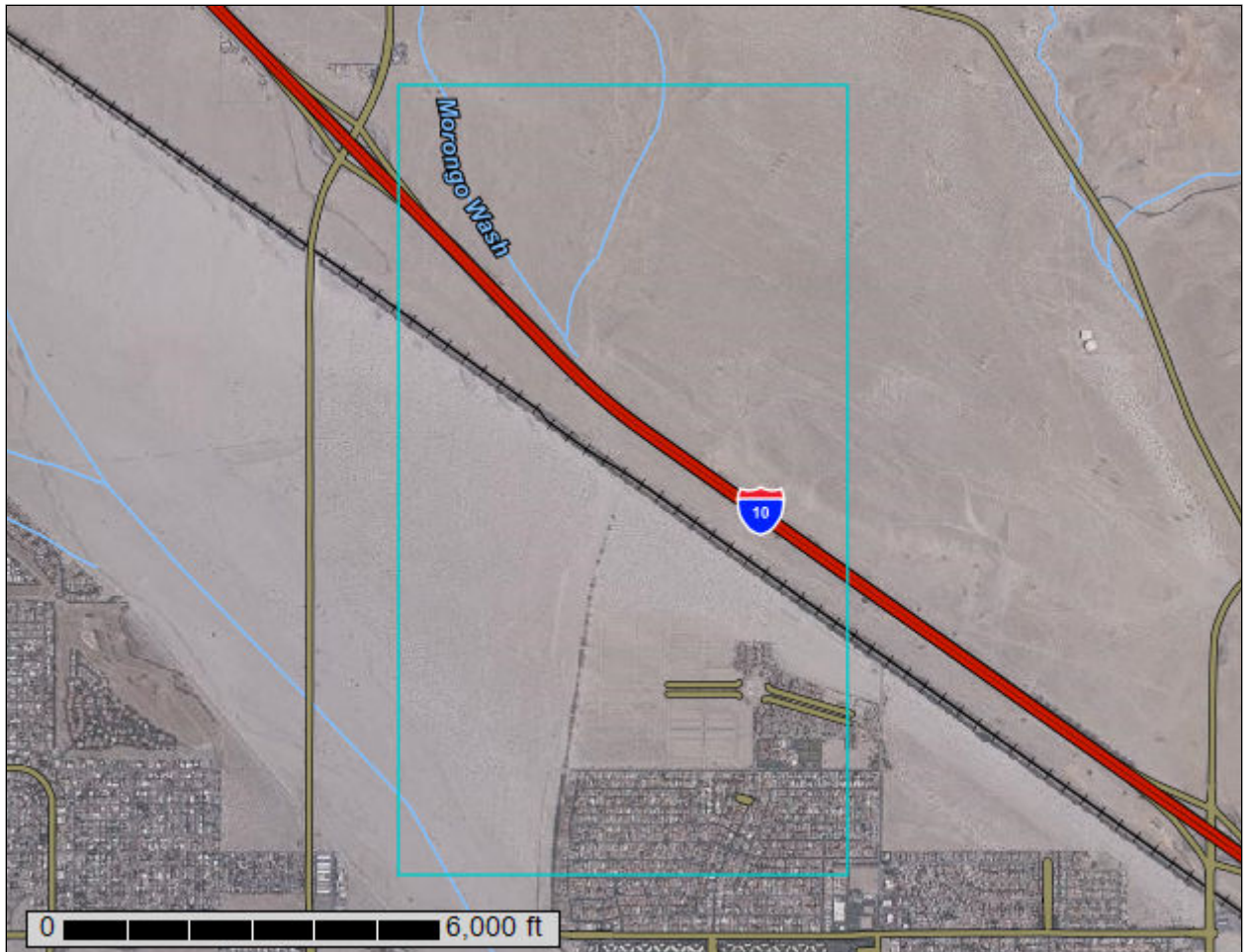
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Riverside County, Coachella Valley Area, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

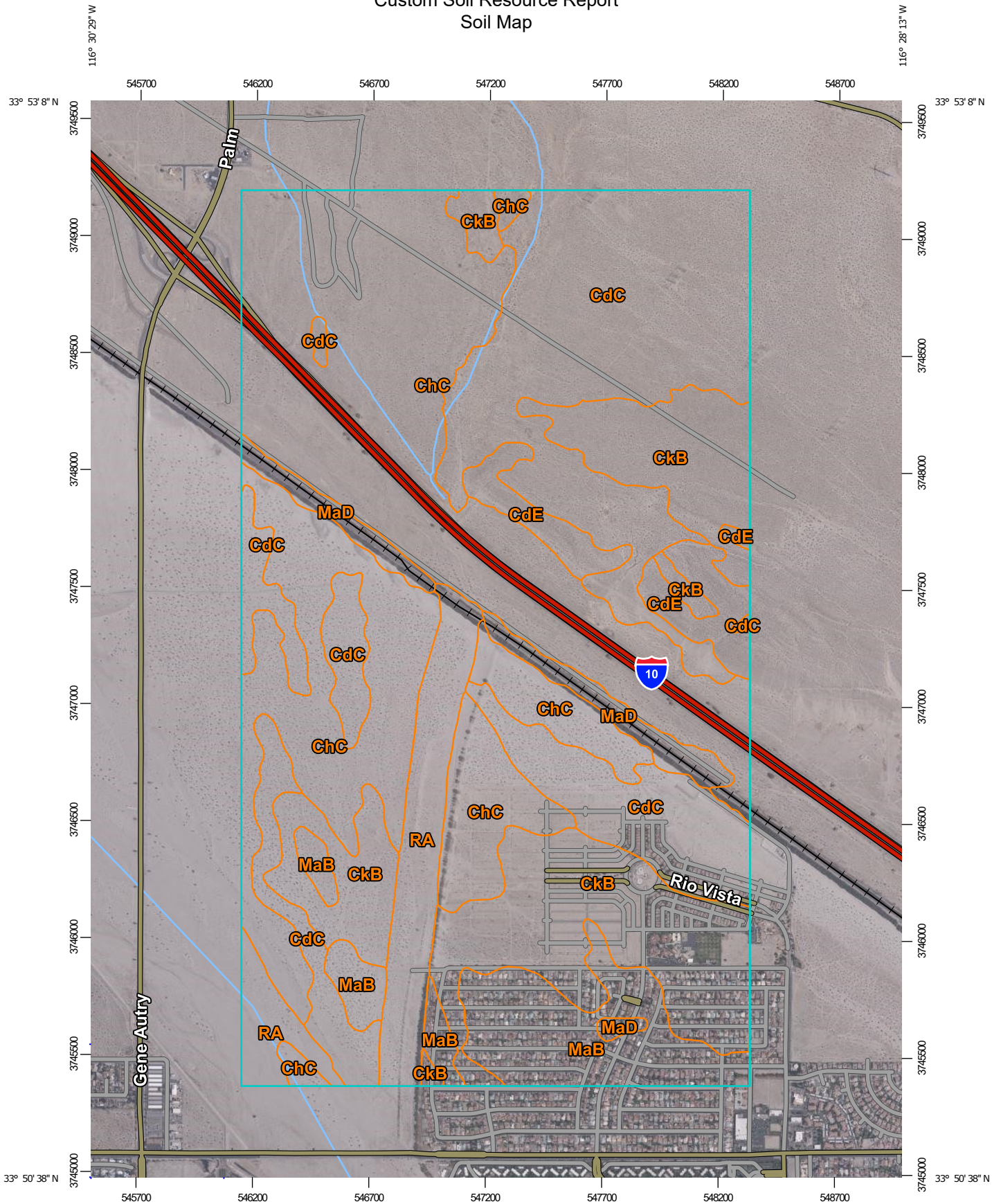
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

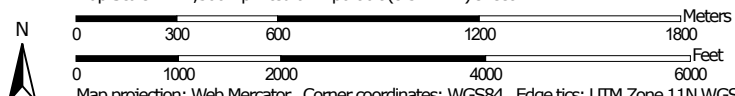
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:22,500 if printed on A portrait (8.5" x 11") sheet.




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


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

Soil Survey Area: Riverside County, Coachella Valley Area, California
 Survey Area Data: Version 13, Sep 15, 2021

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

Date(s) aerial images were photographed: Aug 18, 2018—Aug 22, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CdC	Carsitas gravelly sand, 0 to 9 percent slopes	545.5	26.3%
CdE	Carsitas gravelly sand, 9 to 30 percent slopes	65.8	3.2%
ChC	Carsitas cobbly sand, 2 to 9 percent slopes	773.9	37.3%
CkB	Carsitas fine sand, 0 to 5 percent slopes	363.8	17.5%
MaB	Myoma fine sand, 0 to 5 percent slopes	146.0	7.0%
MaD	Myoma fine sand, 5 to 15 percent slopes	54.0	2.6%
RA	Riverwash	125.4	6.0%
Totals for Area of Interest		2,074.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

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components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Riverside County, Coachella Valley Area, California

CdC—Carsitas gravelly sand, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv0
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: gravelly sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY200CA - Rarely Flooded Fans
Hydric soil rating: No

Minor Components

Riverwash

Percent of map unit: 4 percent

Custom Soil Resource Report

Landform: Channels
Hydric soil rating: Yes

Carsitas

Percent of map unit: 4 percent
Hydric soil rating: No

Myoma

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, stony or gravelly

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

CdE—Carsitas gravelly sand, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: hkv1
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: gravelly sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY200CA - Rarely Flooded Fans
Hydric soil rating: No

Minor Components

Badland

Percent of map unit: 10 percent
Hydric soil rating: No

Carrizo

Percent of map unit: 2 percent
Hydric soil rating: No

Riverwash

Percent of map unit: 1 percent
Landform: Channels
Hydric soil rating: Yes

Myoma

Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, cobbles or stones

Percent of map unit: 1 percent
Hydric soil rating: No

ChC—Carsitas cobbly sand, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv3
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: cobbly sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY200CA - Rarely Flooded Fans
Hydric soil rating: No

Minor Components

Riverwash

Percent of map unit: 4 percent
Landform: Channels
Hydric soil rating: Yes

Carrizo

Percent of map unit: 4 percent
Hydric soil rating: No

Chuckawalla

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

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

CkB—Carsitas fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkv4
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: fine sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY200CA - Rarely Flooded Fans
Hydric soil rating: No

Minor Components

Myoma

Percent of map unit: 10 percent
Hydric soil rating: No

Coachella

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

Unnamed, gravel surface

Percent of map unit: 2 percent
Hydric soil rating: No

MaB—Myoma fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkw3
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Myoma

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand
H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches

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Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY007CA - Lacustrine Basin and Large River Floodplain
Hydric soil rating: No

Minor Components

Coachella

Percent of map unit: 4 percent
Hydric soil rating: No

Carsitas

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, noncalcareous soils

Percent of map unit: 4 percent
Hydric soil rating: No

Riverwash

Percent of map unit: 3 percent
Landform: Channels
Hydric soil rating: Yes

MaD—Myoma fine sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hkw4
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Myoma

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope

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Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand
H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R031XY007CA - Lacustrine Basin and Large River Floodplain
Hydric soil rating: No

Minor Components

Coachella

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed, calcareous soils

Percent of map unit: 5 percent
Hydric soil rating: No

Riverwash

Percent of map unit: 3 percent
Landform: Channels
Hydric soil rating: Yes

Carsitas

Percent of map unit: 2 percent
Hydric soil rating: No

RA—Riverwash

Map Unit Setting

National map unit symbol: hkwb

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Elevation: 700 to 2,900 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Riverwash

Setting

Landform: Channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly alluvium

Typical profile

H1 - 0 to 6 inches: gravelly sand
H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydric soil rating: Yes

Minor Components

Carsitas

Percent of map unit: 5 percent
Hydric soil rating: No

Tujung

Percent of map unit: 5 percent
Hydric soil rating: No

Soboba

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

Unnamed

Percent of map unit: 2 percent
Landform: Drainageways
Hydric soil rating: Yes

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December 27, 2021

Wetlands

- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Lake
- Estuarine and Marine Wetland
- Freshwater Forested/Shrub Wetland
- Other
- Freshwater Pond
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Flood Hazard Layer FIRMMette



116°28'56"W 33°53'14"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000
 Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/27/2021 at 4:46 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

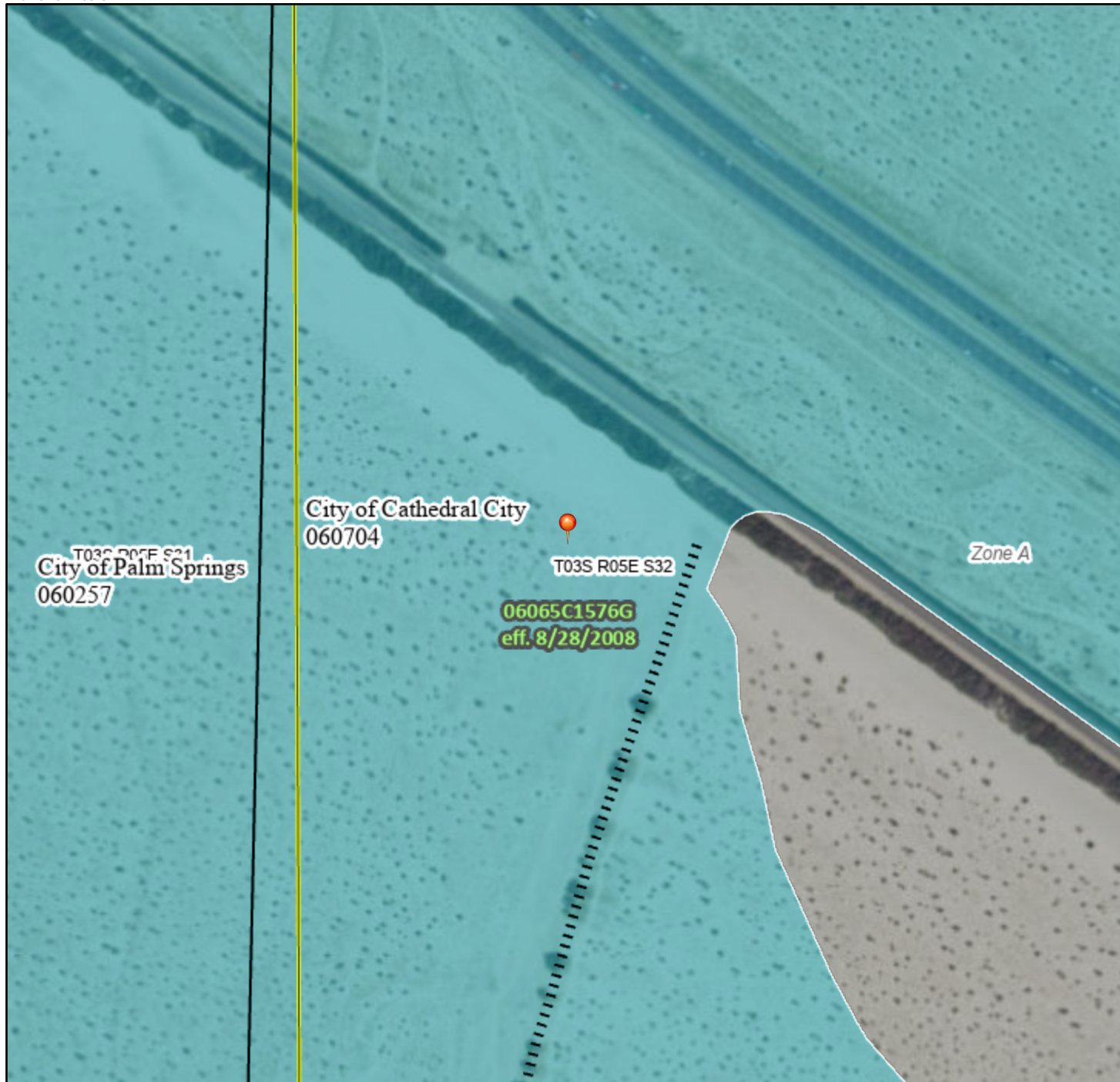
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



National Flood Hazard Layer FIRMette



116°29'45"W 33°52'7"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| MAP PANELS | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

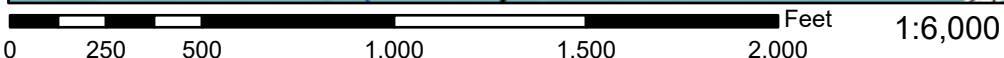
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/27/2021 at 3:26 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMMette



116°31'21"W 33°52'42"N



116°30'44"W 33°52'12"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		8 Coastal Transect
		5.13 Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

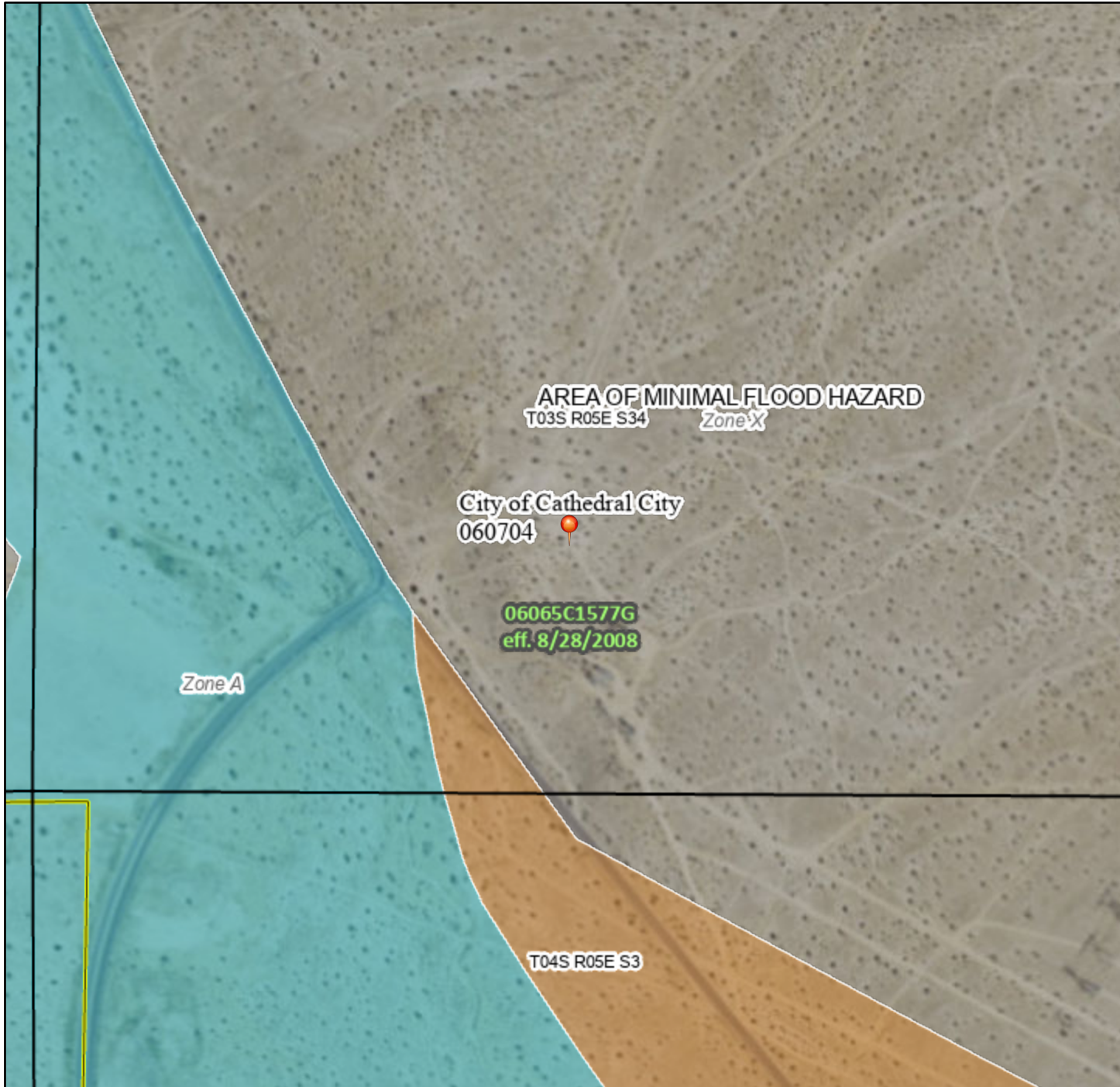
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/27/2021 at 3:54 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette



116°27'32"W 33°51'56"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

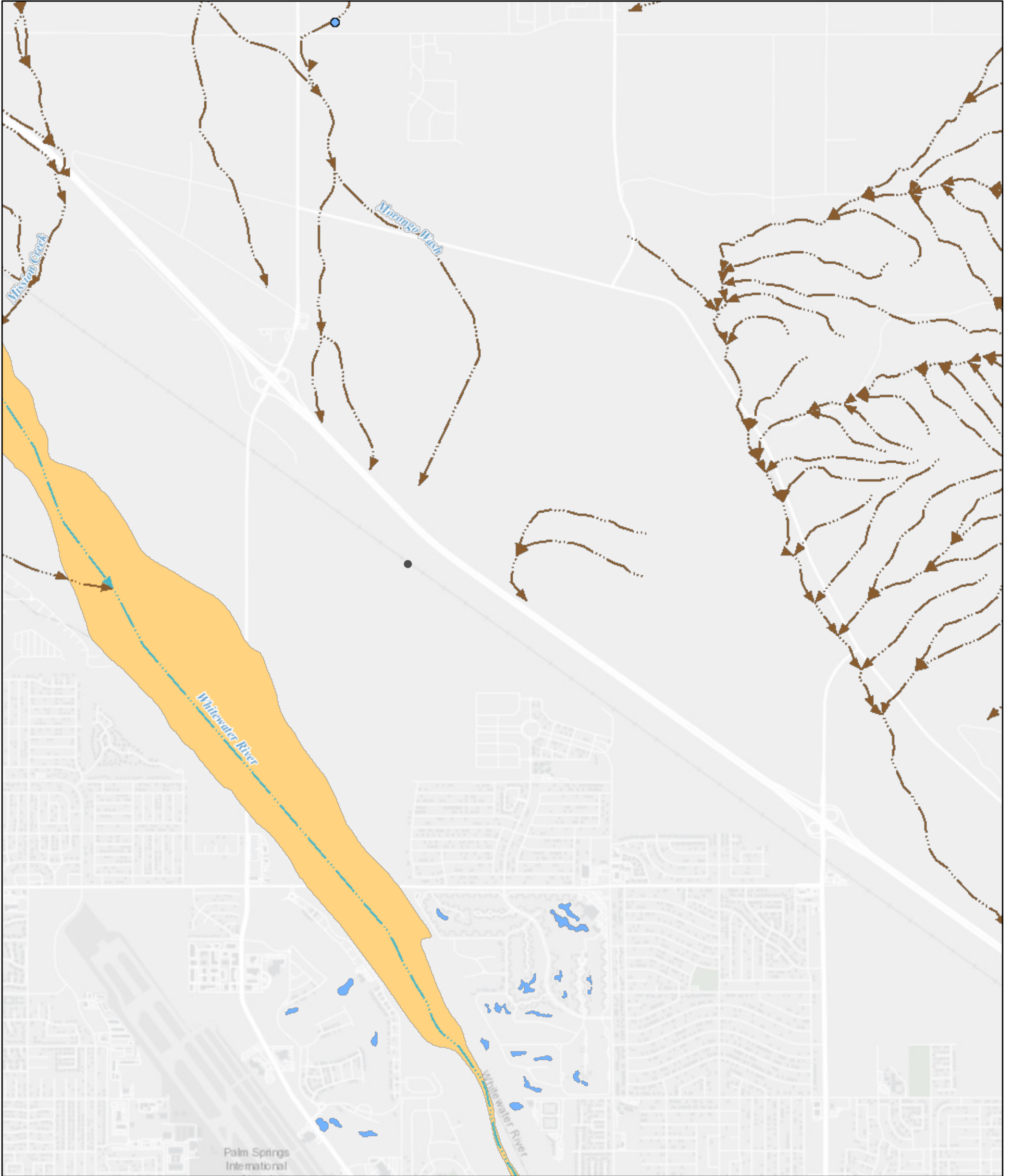


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The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/27/2021 at 4:44 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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The National Map Advanced Viewer



12/27/2021, 4:55:10 PM

Waterbody - Large Scale

- Estuary
- Ice Mass
- Lake Pond
- Playa
- Reservoir
- Swamp Marsh

Area - Large Scale

- Area of Complex Channels
- Area to be Submerged
- BayInlet
- Bridge
- CanalDitch
- DamWeir
- Flume

- Foreshore
- Hazard Zone
- Inundation Area
- Lock Chamber
- Rapids
- SeaOcean
- Special Use Zone
- Spillway
- StreamRiver
- Submerged Stream
- Wash
- Water Intake/Outflow

Flowline - Large Scale

- Perennial
- Intermittent

- Ephemeral
- Artificial Path
- CanalDitch
- Coastline
- Connector
- Pipeline
- Underground Conduit

Flow Direction

- Connector
- CanalDitch
- Underground Conduit
- StreamRiver
- StreamRiver - Perennial
- StreamRiver - Intermittent
- StreamRiver - Ephemeral

- Pipeline
- Artificial Path

Line - Large Scale

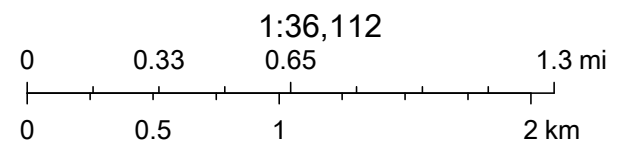
- Line
- Tunnel

Point Event

- Dam
- Gaging Station
- Divergence Structure
- Other

Point

- Dam/Weir
- Other



USGS TNM - National Hydrography Dataset. Data Refreshed October, 2021.
Esri, HERE
Loma Linda University, County of Riverside, Bureau of Land

Appendix B Site Photographs

Appendix B – Site Photographs - 2021



Photograph 1 – Looking northwest (upstream) at Reach 1 with the I-10 bridge crossing visible in the background.



Photograph 2 – Looking northwest (upstream) immediately upstream of the Reach 1 I-10 bridge crossing.



Photograph 3 – Looking south (downstream) at Reach 2. Clear low flow channel visible.



Photograph 4 – Looking north (upstream) within the active floodplain of Reach 2.

Appendix B – Site Photographs - 2021



Photograph 5 – Looking northwest (away from Reach 2) within the roadside basin connected to Reach 2. Flows primarily originate from the surface of I-10, though some flow is contributed by the Reach 2 drainage.



Photograph 6 – Looking northwest (upstream) of Reach 2.



Photograph 7 – Looking south (downstream) at the Reach 2 I-10 crossing.



Photograph 8 – Looking northeast (upstream) at an upland area outside of the Reach 3 watercourse.



Photograph 9 – Looking northeast (upstream) at a newly developed headcut area, showing a clear demarcation between the upland and the watercourse within Reach 3.



Photograph 10 – Looking south (downstream) at the wide low flow channel and active floodplain within Reach 3.



Photograph 11 – Looking south (downstream) within the active floodplain of Reach 3.



Photograph 12 – Looking west (away from Reach 3) at the roadside basin connected to Reach 3.



Photograph 13 – Looking west at the active floodplain within Reach 3. The low flow channel is visible in the top third of the picture.



Photograph 14 – Looking south (downstream) at the Reach 3 I-10 crossing.



Photograph 15 – Looking northeast at the southern side of the Reach 1 I-10 crossing.



Photograph 16 – Looking south at a confined stretch of the low flow channel of Reach 1.



Photograph 17 – Looking southeast (downstream) within Reach 1 as the low flow channel widens and sheet flow begins.



Photograph 18 – Looking northwest (upstream) along the southern border of Reach 1. The artificial berm confines Morongo Wash to a specific area.



Photograph 19 – Looking east (downstream) at an area that experiences wide sheet flows.



Photograph 20 – Looking southeast (downstream) within Reach 1. Sheet flows are funneled into this channel feature, which is surrounded by uplands.



Photograph 21 – Looking southeast within an upland area that does not experience fluvial activity. This area is topographically higher than the adjacent Reach 1 watercourse.



Photograph 22 – Looking south-southeast (downstream) within Reach 1.



Photograph 23 – Looking northeast into an area that does not experience fluvial activity.



Photograph 24 – Looking south (downstream) immediately downstream of the Reach 2 I-10 crossing.



Photograph 25 – Looking northwest (upstream) of a confined area of Reach 2, south of I-10.



Photograph 26 – Looking northeast from the southern berm that borders the railroad tracks. Flow patterns are evident across this wide portion of Reach 2.



Photograph 27 – Looking north at the end of a ponded area within Reach 2. Note lack of ponding and sediment size change in background.



Photograph 28 – Looking north within an upland area outside of the watercourse.



Photograph 29 – Looking northeast (upstream) at the southern end of the Reach 3 I-10 crossing.



Photograph 30 – Looking southeast (downstream) at the active floodplain of Reach 3.



Photograph 31 – Looking south-southwest (downstream) at the active floodplain of Reach 3.



Photograph 32 – Looking east (downstream) at a confined area of Reach 3.



Photograph 33 – Looking southwest (downstream) along a secondary channel of Reach 3.



Photograph 34 – Looking west (upstream) at a confined portion of Reach 3.



Photograph 35 – Looking southeast (downstream) where the Reach 3 floodplain begins to widen.



Photograph 36 – Looking northwest (upstream) from an artificial berm showing the larger landscape. The low flow channel is visible at the toe of the berm.



Photograph 37 – Looking north near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.



Photograph 38 – Looking northeast at sand barriers near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.



Photograph 39 – Looking east at the tamarisk-lined berm near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Assessment

Prepared For:

COACHELLA VALLEY WATER DISTRICT

75-515 Hovley Lane East
Palm Desert, California 92211
Contact: *Scott Strosnider P.E., CFM*
760.398.2661, ext. 2737

Prepared By:

MICHAEL BAKER INTERNATIONAL

5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: *Ryan Winkleman*
949.533.0918

October 2022
JN 179420

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Assessment

The undersigned certify that the statements furnished in this report and figures present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ryan Winkleman
Senior Biologist
Natural Resources and Regulatory Permitting

October 2022
JN 179420

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APPENDICES

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- Appendix B Plant and Wildlife Species Observed
- Appendix C CVWD Operations and Maintenance Manual

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
BRTR	Biological Resources Technical Report
CDCA	California Desert Conservation Act
CDFW	California Department of Fish and Wildlife
CMA	Conservation and Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVFTL	Coachella Valley fringe-toed lizard
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVMV	Coachella Valley milk-vetch
CVWD	Coachella Valley Water District
CWA	federal Clean Water Act
CY	cubic yards
EA/FONSI	Environmental Assessment/Finding of No Significant Impact
FESA	Federal Endangered Species Act
HUC	Hydrologic Unit Code
I	Interstate
IPaC	Information for Planning and Consultation
IS/MND	Initial Study/Mitigated Negative Declaration
JPR	Joint Project Review
LUPA	Land Use Plan Amendment
Michael Baker	Michael Baker International
NEPA	National Environmental Policy Act
OHV	off-highway vehicle
project	North Cathedral City Improvements Project, Phase 1
Restoration Plan	Plant Salvage and Restoration Plan
UPRR	Union Pacific Railroad
USDA	United States Department of Agriculture, Natural Resource Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WFCA	Whitewater Floodplain Conservation Area

Section 1 Introduction

The purpose of this biological assessment is to review the proposed North Cathedral City Improvements Project, Phase 1 (project) in sufficient detail to determine whether the proposed action may affect any of the federally listed species known to occur in and around the action area, defined as all areas that may be directly or indirectly impacted by the project. This biological assessment is prepared in accordance with legal requirements set forth under Section 7 of the Federal Endangered Species Act (FESA; 16 U.S.C. 1536(c)).

1.1 PROJECT LOCATION

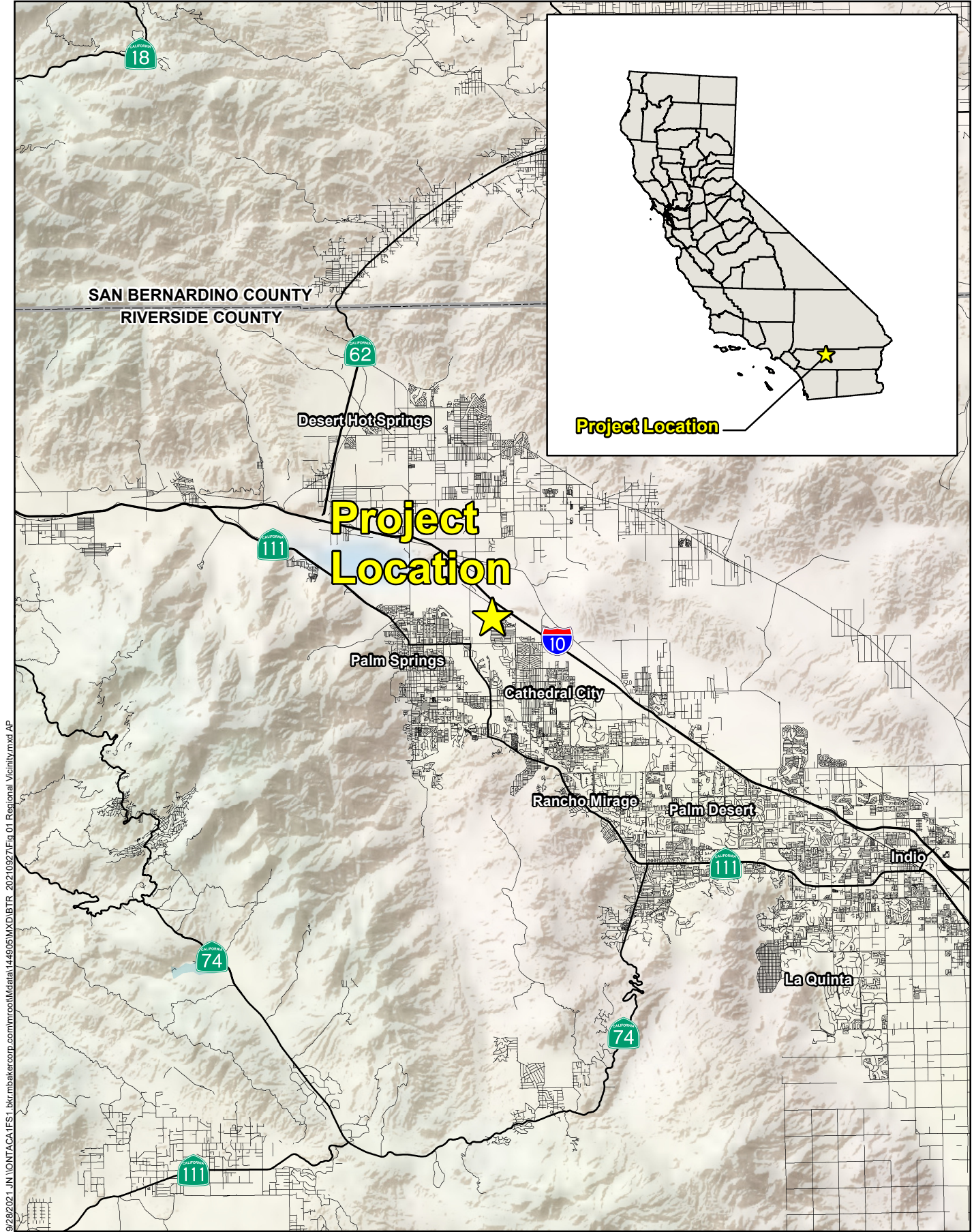
The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (refer to Figure 1, *Regional Vicinity*). The project site is depicted on the United States Geological Survey (USGS) *Cathedral City, California* 7.5-minute topographic map in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (refer to Figure 2, *Site Vicinity*). Specifically, the project site is located north of Ontina Road, west and south of I-10, and east of Gene Autry Trail, with the action area extending 500 feet outwards (refer to Figure 3, *Action Area*). The project site and action area are both variably located within lands managed by the Bureau of Land Management (BLM) and lands occurring within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Plan Area (refer to Figure 4, *Land Ownership*).

1.2 PROJECT DESCRIPTION

Morongu Wash flows extend from the foothills south towards I-10 where it is obstructed by the I-10 highway. A portion of the flows is conveyed through three (3) existing culverts (Salvia, Edom and Willow Wash culverts) beneath the highway, some flow overtops the highway (conveyed south) and the remaining flows eastwards (as the existing Union Pacific Railroad [UPRR] Bridge blocks the flows being conveyed south).

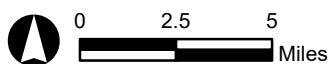
A previous report titled “North Cathedral City and Thousand Palms Stormwater Management Plan, Morongu Wash and Thousand Palms Watershed, Alternatives Analysis Report,” prepared by Northwest Hydraulics for the Coachella Valley Water District (CVWD) dated September 30, 2013 has identified recommended improvements along Morongu Wash to mitigate the identified flood risk east along the I-10 corridor.

This Project is to include the channel grading, concrete slope lining (east overbank) downstream of the UPRR Bridge along the residential development, training walls around UPRR bridge, and concrete lining from I-10 to 400-feet downstream of the UPRR bridge. This Project would incorporate components of the final recommended improvements (NHC 2013). The improvements will be designed and constructed to CVWD standards.



9/28/2021 J:\1\ONTACAFES1_bkr.mbakercorp.com\mrcalMdata\144905\MXD\BTR_20210927\Fig 01 Regional Vicinity.mxd AP

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BIOLOGICAL ASSESSMENT

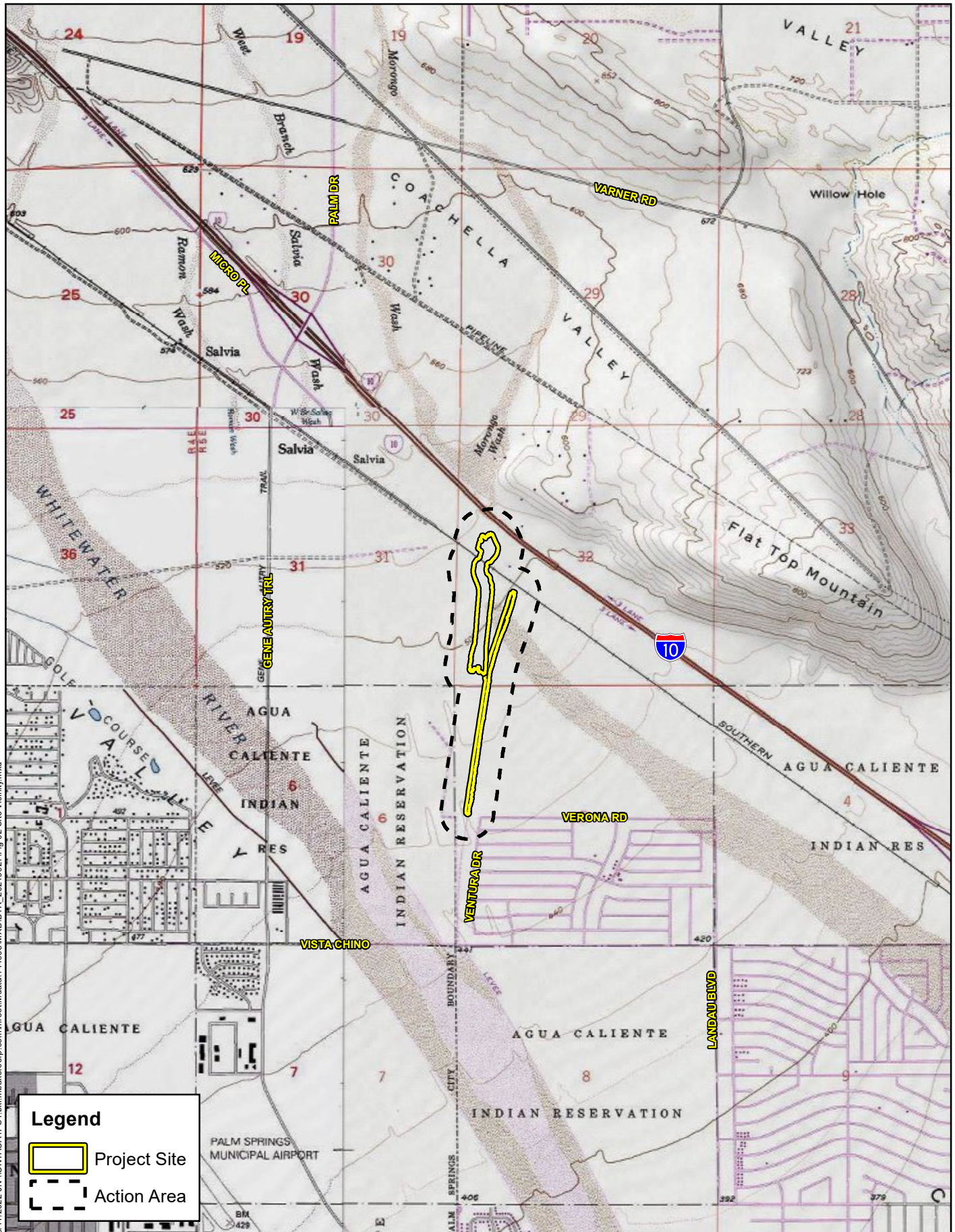


Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Figure 1

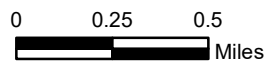
8/17/2022 J:\MONTACA\FS1\bkrcmbakercorp.com\mroon\Mapdata\144905\MXD\BTR_20210927\Fig 02 Site Vicinity.mxd



Legend

-  Project Site
-  Action Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 BIOLOGICAL ASSESSMENT
Site Vicinity



Source: ArcGIS Online, County of Riverside, County of San Bernardino

Figure 2



33.869665
-116.498194



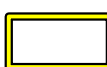


Union Pacific Railroad

Verona Rd

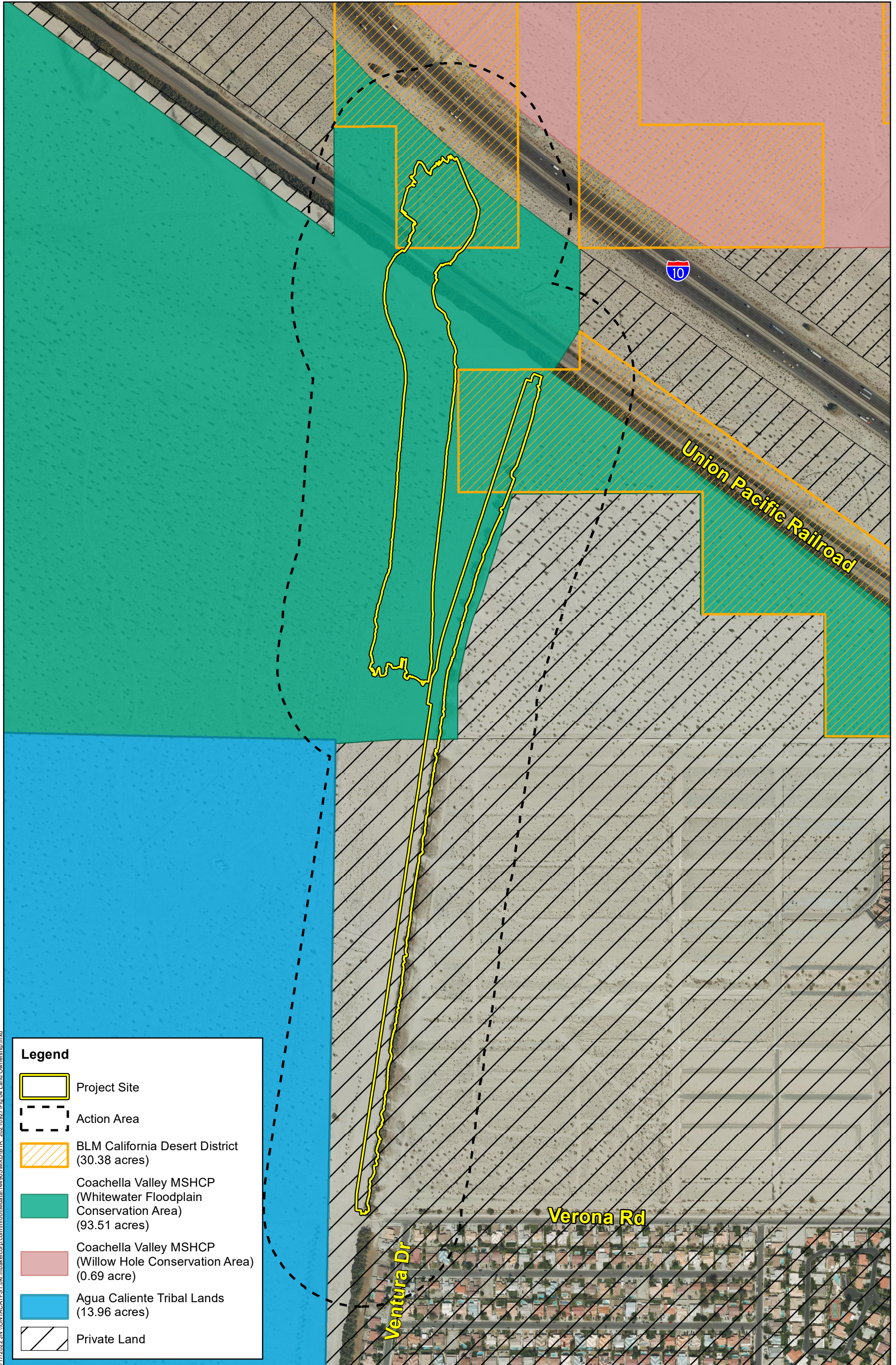
Ventura Dr

33.850402
-116.483667

Legend

-  Project Site (26.00 acres)
-  Action Area (196.78 acres)
-  Reference Point

8/17/2022 J:\MONTACA\FS1\br\mbacker\corp\mrc\mof\mdata\144905\WMD\BTR_20210927\Fig_03_Project_Site.mxd



8/17/2022 J:\MONTACA\FS1\bf\mbackcorp.com\mrc\mdata\144905\MXD\BTR_202210927\Fig 04_Land_Ownership.mxd

Legend

- Project Site
- Action Area
- BLM California Desert District (30.38 acres)
- Coachella Valley MSHCP (Whitewater Floodplain Conservation Area) (93.51 acres)
- Coachella Valley MSHCP (Willow Hole Conservation Area) (0.69 acre)
- Agua Caliente Tribal Lands (13.96 acres)
- Private Land

Ventura Dr

Verona Rd

Union Pacific Railroad



Figure 4

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR’s clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.

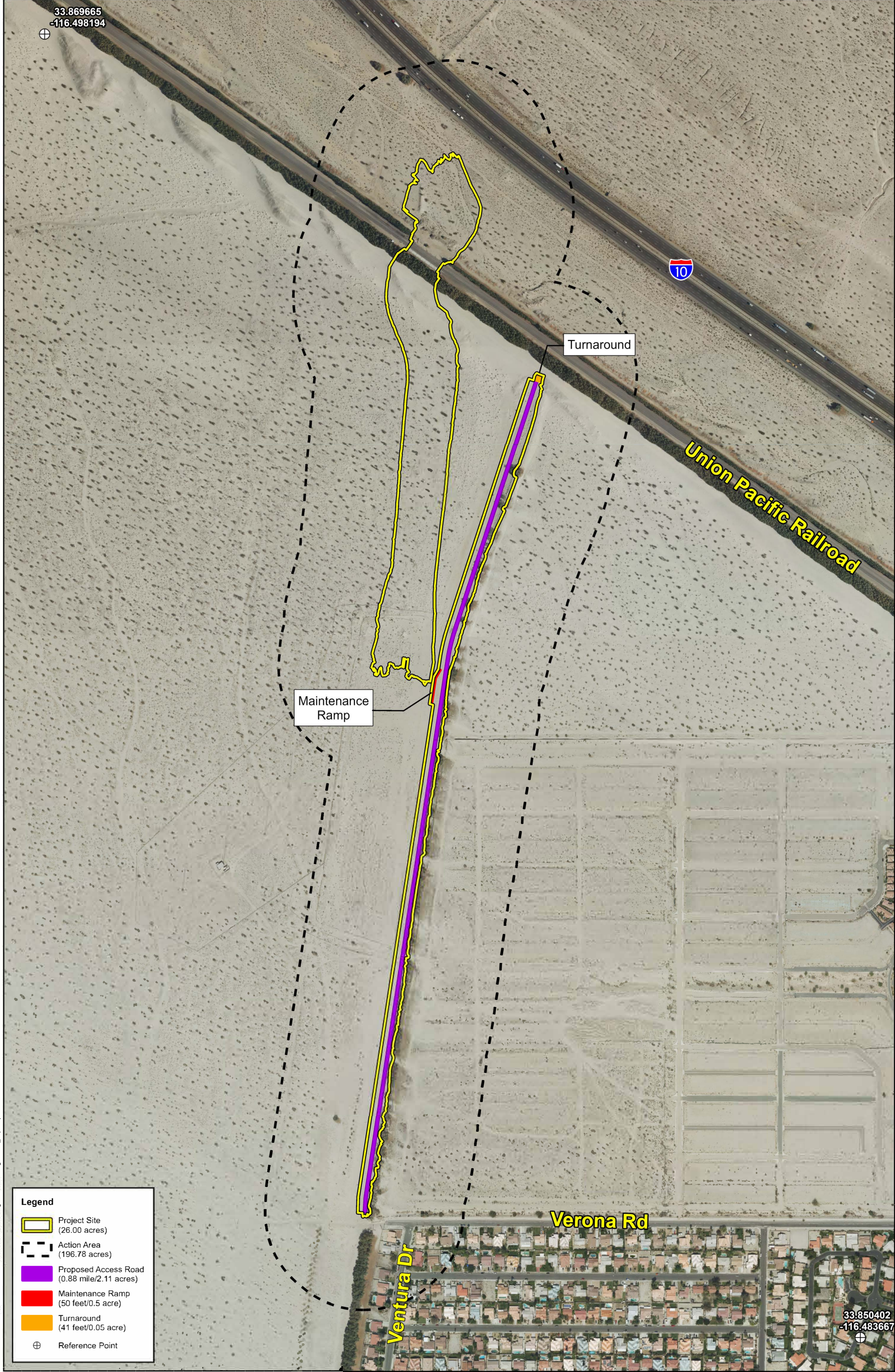
Table 1: Approximate Earthen Channel Grading Quantities (Cubic Yards)

CHANNEL		
Cut	223,813.66	CY
Fill	2,750.36	CY
Net Adjusted (Cut)	221,063.30	CY

- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet and will be constructed at a ratio of 1:1.5 (vertical: horizontal). The ultimate grade will be less than 10%. The bottom portion of it may ultimately be covered by blowsand. An access road (currently the only way to access the channel improvements is from Vista Chino which is approximately 1.5 miles south), maintenance ramp to the channel invert and turnaround area (as requested by the operations and maintenance staff) will be part of the slope protection (refer to Figure 5, *Proposed Access Improvements*).

Table 2: Approximate Slope Protection Grading Quantities (Cubic Yards)

SLOPE LINING		
Cut	17,932.49	CY
Fill	46,130.50	CY
Net Adjusted (Fill)	28,198.01	CY



33.869665
-116.498194



Turnaround

Union Pacific Railroad

Maintenance Ramp

Verona Rd

Ventura Dr

33.850402
-116.483667

Legend

- Project Site
(26.00 acres)
- Action Area
(196.78 acres)
- Proposed Access Road
(0.88 mile/2.11 acres)
- Maintenance Ramp
(50 feet/0.5 acre)
- Turnaround
(41 feet/0.05 acre)
- Reference Point

10/25/2022 \\C:\na\116\mrc\144905\APR\X\Morongo\Wash_02px.aprx

The types of impacts and approximate total impact acreages on BLM lands are displayed in Table 3 below.

Table 3: Impacts on BLM Lands (Acres)

Project Component	Temporary Impacts	Permanent Impacts
Access Road	-	0.33
Channel	-	3.48
Daylight Slope	0.52	-
Slope Lining	0.13	0.36
Swale	-	0.04
TOTAL	0.65	4.21

Operations and Maintenance

Maintenance activities would also include emergency maintenance following a large storm event to clear sediment and invasive species control measures to protect native habitat within the project area.

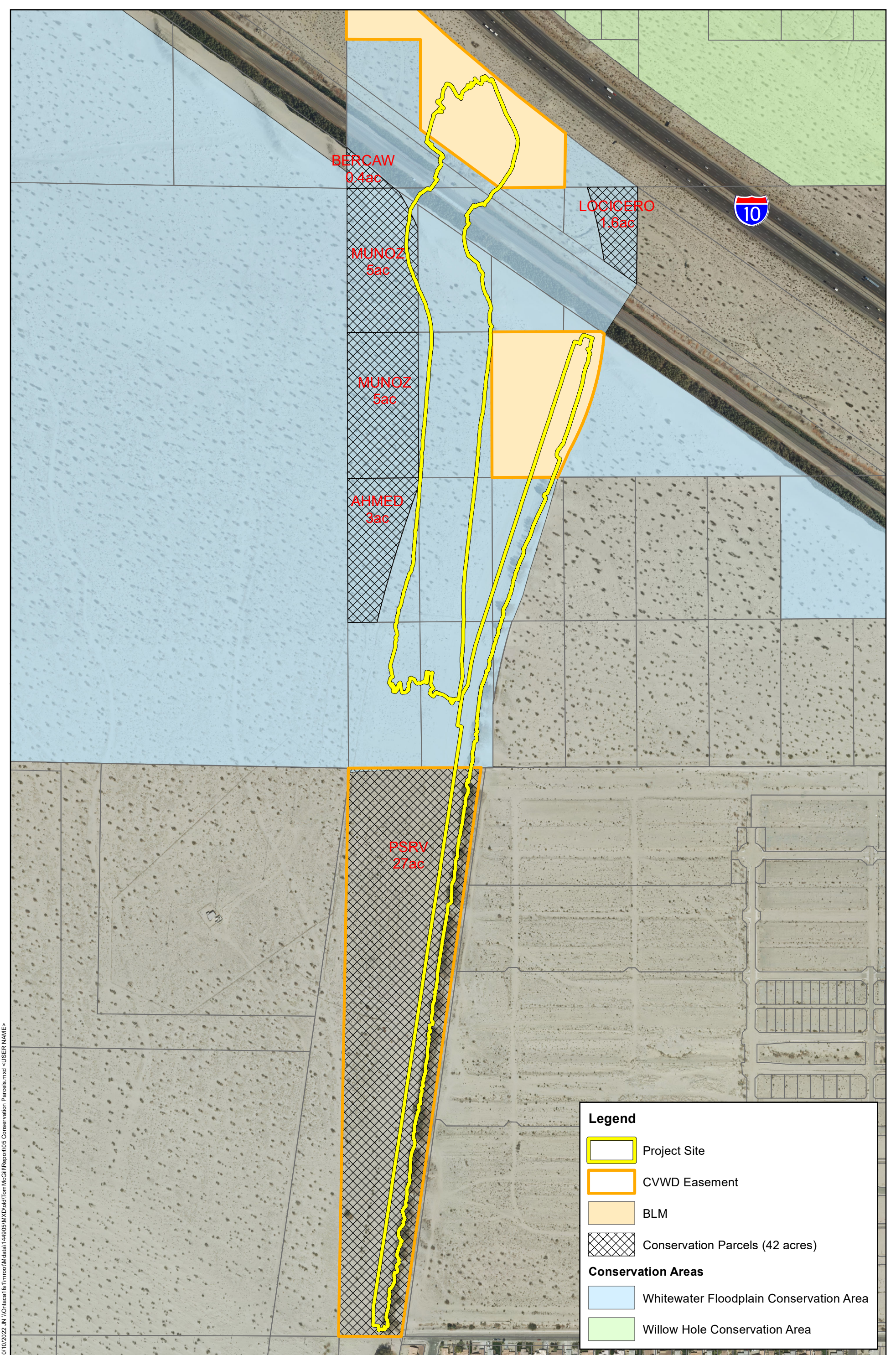
Construction Activities

The project would be constructed over approximately 12 months. Construction equipment is expected to include 5 scrapers, one water truck, up to two D9 bulldozers, one compactor, 40 dump trucks, one concrete mixer, one pump truck, two to three skip loaders, up to 20 personnel vehicles, and semi-trucks for materials delivery. It should be noted that not all equipment would be used every day. Although construction activities would generally occur during diurnal hours, if construction occurs in the summer concrete would likely be poured overnight.

1.3 CONSULTATION HISTORY

1.3.1 CVMSHCP JOINT PROJECT REVIEW

The project site is located within a conservation area associated with the CVMSHCP and the project has undergone review by the Coachella Valley Conservation Commission (CVCC) through the Joint Project Review (JPR) process. With submittal of the JPR application package on June 16, 2016, the project entered into a JPR with the CVCC, followed by an in-person presentation to the CVCC at the Coachella Valley Association of Governments (CVAG) on June 22, 2016. During the JPR process, CVWD consulted extensively with CVCC to review the project's potential impacts to sensitive biological resources and consistency with the CVMSHCP. The project as proposed would result in 23 acres of impacts (5.7 acres permanent and 17.3 acres temporary) to habitat within the CVMSHCP Whitewater Floodplain Conservation Area (WFCA). As a result, the CVWD agreed to place a conservation easement on 42 acres of land adjacent to the project and within the WFCA; of these 42 acres, 23 acres would be used to offset the project impacts, with the remaining 19 acres resulting in a net increase of conservation lands to the WFCA such that the proposed project would ultimately increase the acreage of conserved core habitat for species being impacted (refer to Figure 6, *Conservation Parcels*). The conserved lands would be proposed in a Like Exchange at a standard of biologically equivalent or superior conservation value to the lands that would be lost. An equivalency analysis analyzing the comparison of the lands was drafted in September 2016, updated in November 2016, and presented to the CVCC in a meeting on January 26, 2017. Following



10/10/2022_JN_V01aeca1s1mrcoc1Mdata114905MXDed1TomMcGillReport05 Conservation Parcels.mxd -USER NAME-

Legend

- Project Site
- CVWD Easement
- BLM
- Conservation Parcels (42 acres)

Conservation Areas

- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
BIOLOGICAL ASSESSMENT

Conservation Parcels

Michael Baker INTERNATIONAL

0 125 250 500 Feet

Source: County of Riverside, Eagle Imagery

Figure 6

CVCC review of the equivalency analysis and proposed Like Exchange, the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) approved the Like Exchange on March 15, 2017 via an email to the CVCC, which subsequently provided final approval of the Like Exchange on May 11, 2017, signifying completion of the JPR process.

It should be noted that in September 2021 the project underwent minor changes to the grading boundaries. These changes were needed in order to daylight the grading to the current, existing contours of the surrounding area; implement minor adjustments to the scour depth (due to updated hydraulic calculations using the mixed regime and for the entire channel improvement reach and soil D50 information); and add an access road (currently the only way to access the channel improvements is from Vista Chino which is approximately 1.5 miles south), maintenance ramp to the channel invert, and turnaround area (as requested by the operations and maintenance staff) to the project. This resulted in changes to both the temporary and permanent grading limits of the project. Within the WFCA, temporary impacts would decrease from 17.3 acres to 13.42 acres and increase permanent impacts from 5.7 acres to 8.56 acres, for an overall decrease of impacts in the WFCA from 23 acres to 21.98 acres. The CVWD is currently in negotiations with the CVCC to facilitate an administrative approval process of the acreage change. If approved, there would be a revised net increase of conserved lands in the WFCA from 19 acres to 20.02 acres. The BLM lands within the action area were not a part of the JPR process and are not covered under the CVMSHCP section 10 permit. Therefore, this BA will focus on those BLM managed lands in relation to project effects on federally listed species. Impacts to BLM lands include an estimated 0.65 acre of temporary impacts and 4.21 acres of permanent impacts (refer to Table 3, *Impacts on BLM Lands (Acres)*).

1.3.2 BUREAU OF LAND MANAGEMENT

The project's biological documentation has undergone review by several biologists from the BLM as the National Environmental Policy Act (NEPA) Lead Agency, including the following:

- Separate reviews of the project's Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment/Findings of No Significant Impact (EA/FONSI) by BLM biologists Danielle Ortiz and Kayla Brown.
- Review of the project's Biological Resources Technical Report (BRTR), written at the specific request of the BLM, by BLM biologist Greg Bjornstrom. Comments from the BLM's review of the IS/MND and EA/FONSI were incorporated into the BRTR, which was approved and accepted by Mr. Bjornstrom on March 24, 2022.

1.3.3 SECTION 7 ENDANGERED SPECIES ACT CONSULTATION

BLM biologist Mr. Bjornstrom began the process of informal consultation with USFWS biologist Felicia Sirchia under Section 7 of the FESA on January 20, 2022. On January 26, 2022 Mr. Bjornstrom and Ms. Sirchia proposed species-specific avoidance and minimization measures for the project, and following several revisions, the species-specific measures were finalized and incorporated into the BRTR on March 24, 2022 (refer to Section 5.2.3). Mr. Bjornstrom and Michael Baker International (Michael Baker) biologist

Mr. Ryan Winkleman held a phone call on April 14, 2022 to discuss project design and potential impacts. Following this call, Mr. Bjornstrom and Mr. Winkleman gathered material for Mr. Bjornstrom to submit a letter to Ms. Sirchia seeking concurrence that the project may affect, but would be unlikely to adversely affect federally-listed species within the action area. To make a final recommendation, an on-site field meeting occurred on May 26, 2022 between Mr. Bjornstrom, Ms. Sirchia, Mr. Winkleman, and CVWD biologist Mr. Solan Watts. Based on the results of this field meeting, the USFWS requested that the project proceed with formal Section 7 consultation with the BLM as the federal lead agency, to which the BLM agreed.

Section 2 Environmental Baseline

The following section provides a discussion of the action area and its physical and biological conditions at the time of this writing.

2.1 ACTION AREA

The action area consists of all areas that may be directly or indirectly affected by the proposed project, and is not necessarily restricted to the project site boundaries. As shown in Figure 3, *Action Area*, the action area identified for this project includes the project footprint and a 500-foot buffer. This 196.78-acre area includes 30.38 acres of land that is managed by the BLM, land that falls within the CVMSHCP (WFCA and Willow Hole Conservation Area), Agua Caliente Tribal lands, and private land. The area of direct effect is confined to BLM, CVMSHCP (WFCA), and private land. Representative photographs of the action area are provided in Appendix A.

2.2 PHYSICAL AND BIOLOGICAL CONDITIONS

2.2.1 PHYSICAL CONDITIONS

Local Climate

The project region is characterized by year-round desert climate, with warm, sunny, dry summers, and cool, cloudy, mild winters. According to the Western Regional Climate Center, climate measurements obtained from the Palm Springs weather station¹ at the Palm Springs Airport approximately 1.9 miles southwest of the project indicated that for the period covering March 1906 to June 2016 the average maximum temperature in this area of California was 88.6° F annually, and average minimum temperature was 57.2° F annually. The warmest month on average was July at a maximum of 108.2° F, and the coolest months on average were December and January, both at a minimum of 42.3° F. Most precipitation during this time period occurred between November and March in the form of rain, with occasional and steadily increasing precipitation through the fall and winter; the average total precipitation was 5.49 inches annually. Snowfall typically does not occur within the project region. More recent climatological data from this weather station is not available.

Surrounding Land Uses

Land uses in the vicinity of the project site include residential development to the south and west, as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex is located immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly reestablishing itself. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the

¹ <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635>

southwest, south, and southeast. The Morongo Wash passes through the action area, and the Whitewater River crosses south of the action area. Land managed by the BLM is present within the action area both south of I-10 and south of the UPRR tracks.

Topography and Soils

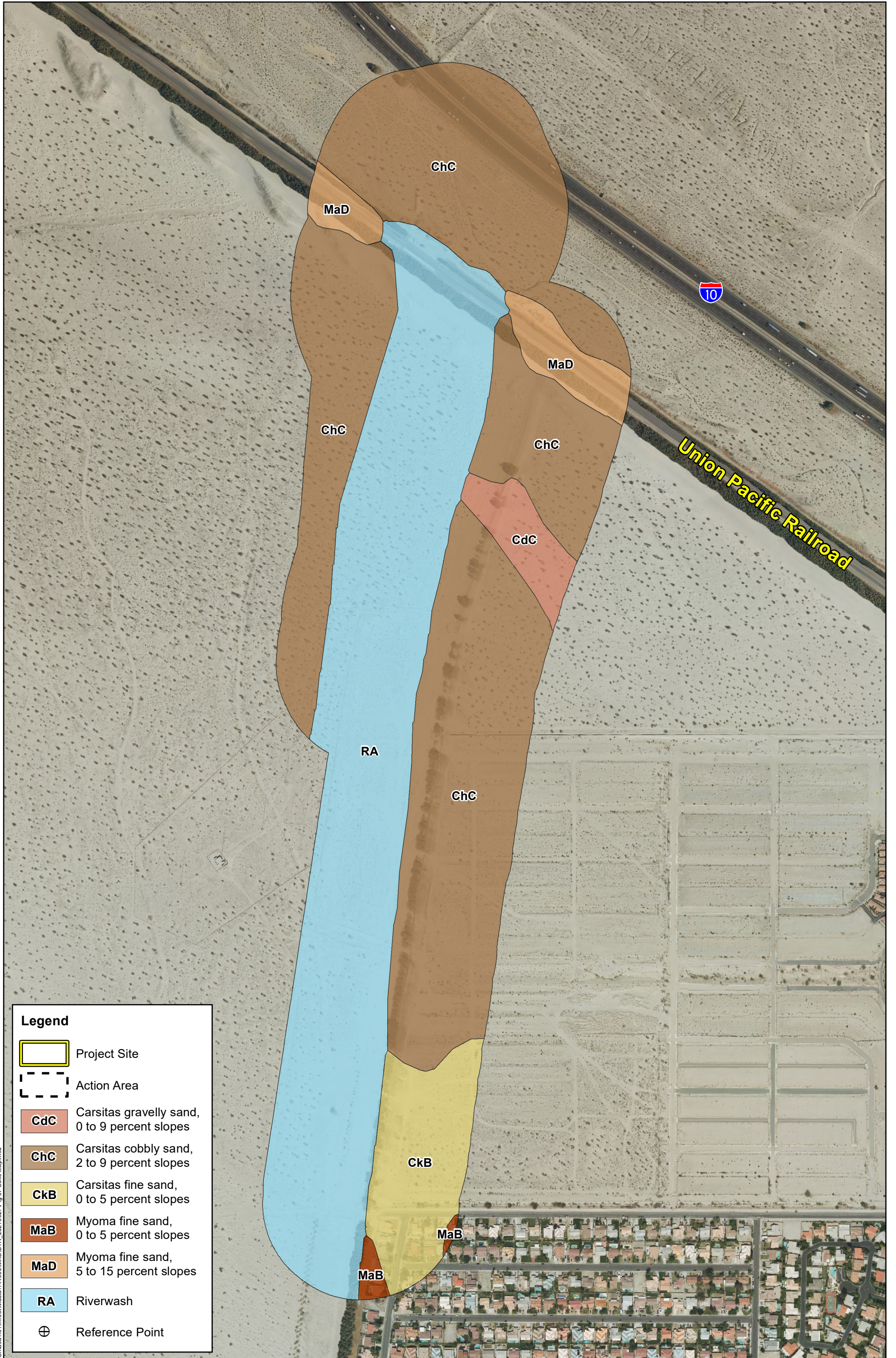
On-site surface elevation ranges from approximately 450 to 520 feet above mean sea level and generally slopes from north to south. The action area is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). On-site and adjoining soils were identified using the United States Department of Agriculture, Natural Resource Conservation Service (USDA) *Custom Soil Resource Report for Riverside County, Coachella Valley Area, California* (USDA 2022). Based on this report, the action area is underlain by the following soil units, as depicted in Figure 7, *Soils*:

- Carsitas gravelly sand, 0 to 9 percent slopes (CdC);
- Carsitas cobbly sand, 2 to 9 percent slopes (ChC);
- Carsitas fine sand, 0 to 5 percent slopes (CkB);
- Myoma fine sand, 0 to 5 percent slopes (MaB);
- Myoma fine sand, 5 to 15 percent slopes (MaD); and
- Riverwash (RA)

Watershed

The action area is located within the Morongo Wash (Hydrological Unit Code [HUC] 181002010602) sub-watershed of the larger Salton Sea watershed (HUC 18100200). The Morongo Wash has not been assessed as an Impaired Waterbody by the EPA. The Salton Sea watershed is located in the Sonoran desert region in the southeastern corner of California, encompassing one-third of the Colorado River Basin Region (about 8,260 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in southern California, south of Indio and north of El Centro. The basin is more than 200 feet below sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee break along the Colorado River resulted in river flows discharging into the basin for about 18 months. Since 1905, the Salton Sea has fluctuated in size with varying inflow and today has a surface area of about 343 square miles. The action area is approximately 35 miles northwest of the Salton Sea.

The action area occurs immediately northeast of Whitewater River/Coachella Valley Stormwater Channel. The Whitewater River is a tributary to the Salton Sea and is defined in the Basin Plan as the reach from headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near the Indian Avenue crossing in the City of Palm Springs. The reach of the Whitewater River from the Whitewater recharge basins near Indian Avenue to the Coachella Valley Stormwater Channel near Indio is defined as a Wash (Intermittent or Ephemeral Stream) in the Basin Plan. The Whitewater River is not currently listed as an Impaired Waterbody within the Whitewater River Region. Due to the small percentage



Legend

- Project Site
- Action Area
- CdC Carsitas gravelly sand, 0 to 9 percent slopes
- ChC Carsitas cobbly sand, 2 to 9 percent slopes
- CkB Carsitas fine sand, 0 to 5 percent slopes
- MaB Myoma fine sand, 0 to 5 percent slopes
- MaD Myoma fine sand, 5 to 15 percent slopes
- RA Riverwash
- Reference Point

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of the Whitewater River Watershed and the Whitewater River Region in urban land uses, urban runoff constitutes a minor percentage of the total flow in the Whitewater River under storm conditions.²

Sand Transport

There are two primary sand transport systems at work in the Coachella Valley and in the action area. “Fluvial sand transport” refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley. Occasional water flows on the ephemeral valley floor will maintain downstream fluvial transport. In addition, high winds will also pick up sediment and carry it through the area (“aeolian sand transport”). Aeolian sand transport is likely to carry lighter sediment in constantly shifting dune systems.

2.2.2 BIOLOGICAL CONDITIONS

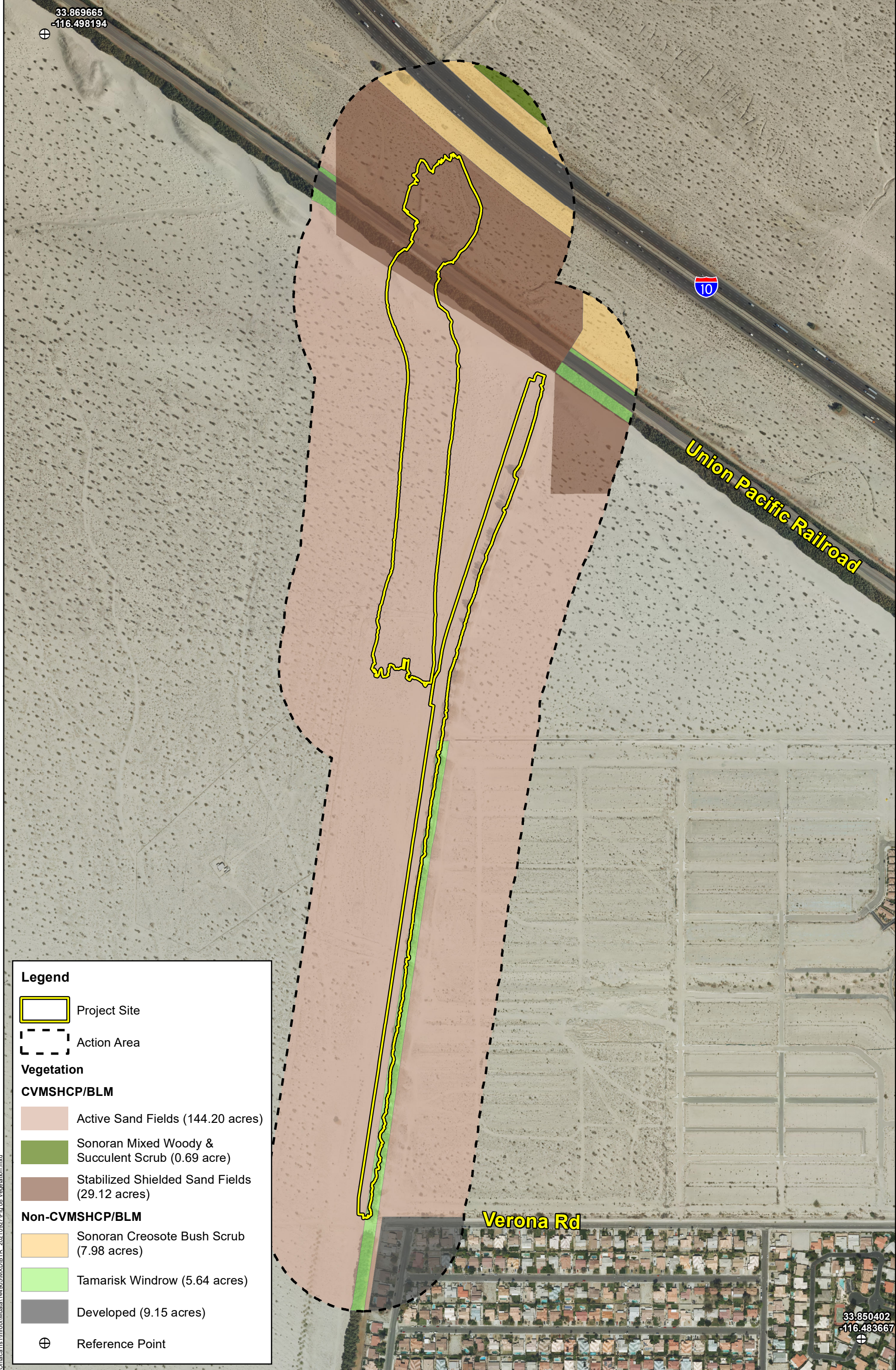
Vegetation

The action area is a combination of different communities and land uses. Outside of the boundaries of the CVMSHCP and BLM lands, vegetation can be characterized as Sonoran creosote bush scrub (refer to Figure 8, *Vegetation*). However, within the CVMSHCP boundaries and on BLM lands, CVMSHCP community types are required to be mapped. Therefore, on CVMSHCP and BLM lands, three (3) additional vegetation communities were mapped. The vegetation on-site in these areas can be characterized as sand dunes and sand fields within the CVMSHCP WFCA, which makes up the action area south of I-10, more specifically active sand fields south of the UPRR tracks and stabilized, shielded sand fields north of the tracks and south of I-10. North of I-10, vegetation within the action area falls into the CVMSHCP Willow Hole Conservation Area and is characterized as Sonoran mixed woody and succulent scrub. These sand fields are vegetated by species consistent with Sonoran creosote bush scrub. In addition, the action area contains two (2) land cover types that are not natural vegetation communities including, tamarisk windrow and developed. The vegetation community descriptions below include the dominant plant species; a full list of plant species that have been observed in the action area over all general and focused surveys is included in Appendix B.

Active Sand Fields

Approximately 144.20 acres of active sand fields are located within the entire action area, with 6.05 acres located on BLM lands in the action area; of these, approximately 1.38 acres are located within the project site on BLM lands. Active sand fields are defined in the CVMSHCP, which the BLM adheres to via the California Desert Conservation Area (CDCA), as areas of active sand movement with little or no vegetation. Accumulated sand is generally not of sufficient depth to form classic dune formations, but sand hummocks

² <https://mywaterway.epa.gov/community/181002010304/overview>



33.869665
-116.498194



Union Pacific Railroad

Verona Rd

33.850402
-116.483667

Legend

- Project Site
- Action Area

Vegetation

CVMSHCP/BLM

- Active Sand Fields (144.20 acres)
- Sonoran Mixed Woody & Succulent Scrub (0.69 acre)
- Stabilized Shielded Sand Fields (29.12 acres)

Non-CVMSHCP/BLM

- Sonoran Creosote Bush Scrub (7.98 acres)
- Tamarisk Windrow (5.64 acres)
- Developed (9.15 acres)

- Reference Point

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may form on the leeward side of shrubs or clusters of vegetation. Vegetation itself may range from scarce to dense shrubs or may be composed of smaller vegetation such as wildflowers. Within the action area, the CVMSHCP has mapped the area south of the UPRR tracks and east of the north-south tamarisk windrow, which includes BLM lands, as active sand fields. Vegetation within the active sand fields in the action area is dominated by Sonoran creosote bush scrub, as described below.

Stabilized, Shielded Sand Fields

Approximately 29.12 acres of stabilized, shielded sand fields are located within the entire action area, with 9.95 acres located on BLM lands in the action area; of these, approximately 3.48 acres are located within the project site on BLM lands. These sand fields are defined in the CVMSHCP as areas that are stabilized by evergreen and/or deciduous shrubs, scattered low annuals, and perennial grasses, with interrupted or shielded sand source and sand transport systems. Vegetation is typically characterized by creosote bush scrub or a creosote bush scrub matrix including primarily creosote bush (*Larrea tridentata*), fourwing saltbush (*Atriplex canescens*), California croton (*Croton californicus*), and indigo bush (*Amorpha fruticosa*). Within the action area, the CVMSHCP has mapped the area north of the UPRR tracks, which includes BLM lands, as stabilized, shielded sand fields. Vegetation within the stabilized, shielded sand fields in the action area is dominated by Sonoran creosote bush scrub, as described below.

Sonoran Mixed Woody and Succulent Scrub

Approximately 0.69 acre of Sonoran mixed woody and succulent scrub is located within the entire action area, with 0.43 acre located on BLM lands in the action area; this community is not located within the project site. This community is defined in the CVMSHCP as having substantial dominance of cacti and other stem succulents and is similar to creosote bush scrub, but with more variance and usually higher plant density. Vegetation is typically characterized by creosote bush (*Larrea tridentata*) and other associated perennial shrubs, as well as golden cholla (*Opuntia echinocarpa*), buckhorn cholla (*Opuntia acanthocarpa*), pencil cholla (*Opuntia ramosissima*), prickly pear (*Opuntia engelmannii*), and others. This community is mapped north of I-10 at the northern edge of the action area, but is outside of the project site.

Sonoran Creosote Bush Scrub

Approximately 7.98 acres of Sonoran creosote bush scrub occur within the entire action area, with 4.95 acres located on BLM lands in the action area; this community is not located within the project site on BLM lands. Plant species observed within this community include creosote bush, cheesebush (*Ambrosia salsola*), California croton, indigo bush, and Mediterranean grass (*Schismus* sp.). These species were observed as dominants throughout most of the action area, including in the vegetation communities mapped on CVMSHCP and BLM lands.

Tamarisk Windrow

Approximately 5.64 acres of tamarisk windrow is present within the entire action area, with 0.82 acre located on BLM lands in the action area; this community is not located within the project site on BLM

lands. This land cover type is entirely composed of athel tamarisk (*Tamarix aphylla*) that has been planted as a windrow. It runs north-south along the eastern edge of the primary project impact area, as well as east-west running parallel both north and south of the UPRR tracks.

Developed

Approximately 9.15 acres of developed land occur within the entire action area, with 3.23 acres on BLM lands in the action area; this land cover type is not located within the project site on BLM lands. This land cover type consists of housing and development associated with the adjacent residential neighborhood. Ornamental vegetation is present in landscaped areas on residential properties.

Common Wildlife

The action area is located within an ephemeral floodplain, and there is no standing or perennial water flow. As a result, fish and amphibians do not occur and were not documented during any of the field surveys that have been conducted for the proposed project. However, a variety of reptiles, birds, and mammals have been observed on-site during both general and focused surveys that have been conducted. The most commonly-detected class of animals in the action area are birds. Some of the species that have been detected most often in the action area include verdin (*Auriparus flaviceps*), rock pigeon (*Columba livia*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), Eurasian collared-dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), and white-crowned sparrow (*Zonotrichia leucophrys*). The two most common reptile species that have been observed within the action area include desert iguana (*Dipsosaurus dorsalis*) and zebra-tailed lizard (*Callisaurus draconoides*). Mammal species directly observed within the action area include black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*), with coyote (*Canis latrans*) scat and tracks observed as well. A full list of wildlife species that have been observed in the action area during all general and focused surveys is included in Appendix B.

Nesting Birds

No nesting birds or breeding behaviors were observed during any of the field surveys. However, on-site vegetation provides nesting opportunities for avian species, particularly in larger clumps of creosote bushes within the natural vegetation communities, in the tamarisk windrows along the eastern side of the action area, and in ornamental vegetation and structures associated with the nearby residential areas.

Migratory Corridors and Linkages

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one

species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The action area is partially located within a designated corridor related to the Morongo Wash. This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the WFCA (where the project site is located). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the action area.

Section 3 Status of Federally-Listed Species

The following section discusses the status of federally-listed species that may occur within the action area and the methodology behind the analysis.

3.1 LITERATURE REVIEW

Literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the action area. Previous federally-listed plant and wildlife species occurrence records within the region were obtained through a search of the USFWS Information for Planning and Consultation (IPaC) database (USFWS 2022a). In addition, occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* 7.5-minute quadrangles were obtained through a query of the California Natural Diversity Database (CNDDDB; CDFW 2022) and the CNPS Online Inventory (CNPS 2022).

In addition to the databases referenced above, Michael Baker reviewed publicly available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the action area to understand existing site conditions, previous species observations, and the extent of any disturbances that have occurred in the action area that would otherwise limit the distribution of special-status biological resources. In addition, reviews of the local geological conditions and historical aerial photographs were conducted to assess the ecological changes and disturbances that may have occurred within the action area over time.

Standard field guides and texts were reviewed for specific habitat requirements of special-status biological resources. Other resources reviewed include the following:

- USFWS Critical Habitat for Threatened & Endangered Species Mapper (USFWS 2022b);
- Recent and historical aerial photography (Google, Inc. 2021);
- *Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan – Final Major Amendment to the CVMSHCP* (CVAG 2016);
- *North Cathedral City Improvements Project, Phase 1 Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2016a);
- *North Cathedral City Improvements Project, Phase 1 Burrowing Owl Focused Survey Report* (Michael Baker 2016b);
- *Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California* (Michael Baker 2016c); and
- *North Cathedral City Improvements Project, Phase 1 Equivalency Analysis* (Michael Baker 2016d).
- *North Cathedral City Improvements Project, Phase 1 Biological Resources Technical Report* (Michael Baker 2022)

The literature review provided a baseline from which to inventory and evaluate the federally-listed biological resources potentially occurring within the action area.

3.2 FEDERALLY-LISTED PLANT SPECIES

The records search conducted for this effort indicated a total of three (3) federally-listed plant species have been reported in the general project vicinity, including:

- Coachella Valley milk-vetch (CVMV; *Astragalus lentiginosus* var. *coachellae*) – Endangered
- Triple-ribbed milk-vetch (*Astragalus tricarinatus*) – Endangered
- Slender-horned spineflower (*Dodecahema leptoceras*) – Endangered

The action area does not contain suitable habitat for triple-ribbed milk-vetch, which is typically associated with canyon slopes and rocky washes. Additionally, based on records in the CNDDDB (CDFW 2022) and Calflora (Calflora 2022), the only record of slender-horned spineflower on the desert slope is from 1876 and is listed in the CNDDDB as an uncertain location. As a result, triple-ribbed milk-vetch and slender-horned spineflower are determined to be unlikely to occur and are not analyzed further in this document.

3.2.1 COACHELLA VALLEY MILK-VETCH

Coachella Valley milk-vetch is endemic to the dune systems of the Coachella Valley area of Riverside County. It is federally listed as endangered and has been assigned a California Rare Plant Rank of 1B.2 by the CNPS, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. The WFCA has a total of 5,635 acres of modeled CVMV habitat, and under the CVMSHCP nearly all of the WFCA has been designated as core habitat for this species, including all of the action area within the WFCA's boundaries.

CVMV is a winter annual or short-lived perennial herb in the legume family (Fabaceae). It grows on sandy flats, outwash fans, loose wind-blown sand dunes, and partially stabilized and stabilized dunes and sand fields in Sonoran desert scrub, creosote bush scrub, and sagebrush-dominated communities. In sand dunes and sand fields, it is usually found in coarse sand along the margins, rather than in active blow sand areas with finer sand particles (CVAG 2016). This species can be found at elevations ranging from 131 to 2,149 feet above mean sea level and has a blooming period that ranges from February to May. Urban development is the primary threat to this species' survival, as well as off-highway vehicle (OHV) use, trampling, and the introduction of non-native plants (CVAG 2016). This species is subject to large annual fluctuations in population size and may persist in hundreds or thousands of individuals in one year to tens of individuals in other years.

Survey Results

Based on the known occurrence of special-status plant species within the general vicinity and the suitability of on-site habitat to support such plant species, four (4) focused rare plant surveys were conducted in spring 2016. Suitable habitat occurring within the project site and within 200 feet was extensively surveyed on

foot. Linear transects were walked throughout suitable habitat at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting special-status plant species known to occur within the general vicinity of the project site. CVMV was observed during all four focused surveys and in total, 266 individuals were observed throughout the action area, with 13 located on BLM lands (Michael Baker 2016c; refer to Figure 8, *Coachella Valley Milk-Vetch Habitat and Observations*).

Critical Habitat

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

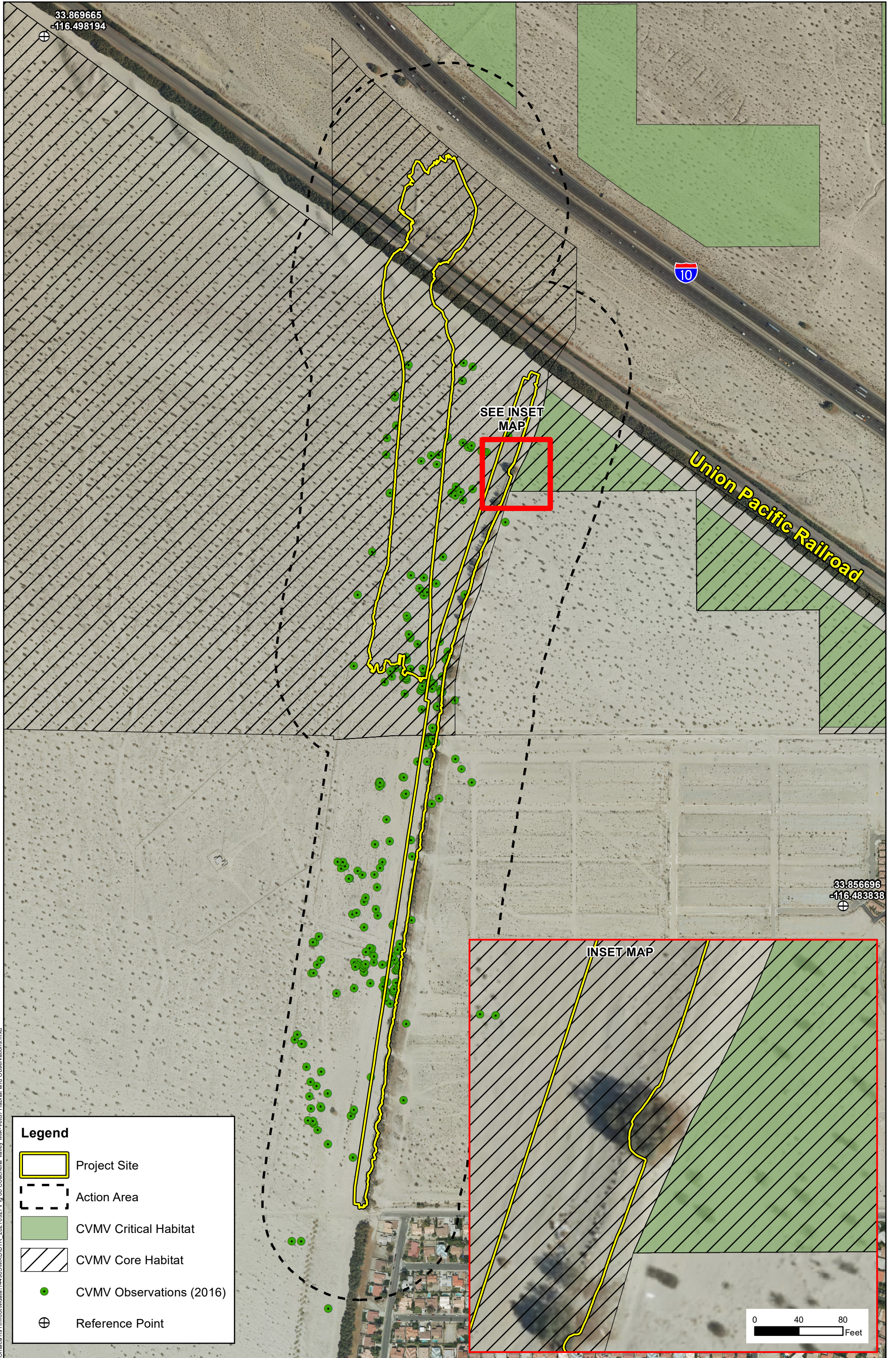
The project site does not coincide with any designated Critical Habitat; however, it is located within 100 feet west of CVMV Critical Habitat Unit 3 (USFWS 2013) (refer to Figure 9, *Coachella Valley Milk-Vetch Habitat and Observations*). This critical habitat unit occurs within the action area but is east of the north-south tamarisk windrow and outside of the project site and would not be directly impacted by the proposed project.

3.3 FEDERALLY-LISTED WILDLIFE SPECIES




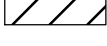


The records search conducted for this effort indicated a total of three (3) federally-listed wildlife species have been reported in the general project vicinity, including:

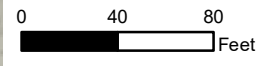
- Casey’s June beetle (*Dinacoma caseyi*) – Endangered
- Southwestern willow flycatcher (*Empidonax traillii extimus*) – Endangered
- Desert tortoise (*Gopherus agassizii*) – Threatened
- Peninsular bighorn sheep (*Ovis canadensis nelsoni*) – Endangered
- Coachella Valley fringe-toed lizard (CVFTL; *Uma inornata*) – Threatened
- Least Bell’s vireo (*Vireo bellii pusillus*) - Endangered

The action area does not occur within the known distribution range of Casey’s June beetle, which is only known to occur in Palm Canyon Wash and Tahquitz Creek, approximately 3 miles south of the action area



Legend

-  Project Site
-  Action Area
-  CVMV Critical Habitat
-  CVMV Core Habitat
-  CVMV Observations (2016)
-  Reference Point



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(USFWS 2021). The action area also does not contain suitable habitat for southwestern willow flycatcher and least Bell's vireo, which prefer moderate to dense riparian woodlands, often with standing water present, and is outside of the known distribution range of desert tortoise, which is not known to occur on the valley floor, but is instead known to occur in canyons and hillsides along the periphery of the Coachella Valley. Suitable habitat for peninsular bighorn sheep is also absent from the action area, as the project occurs at a lower elevation than is typically utilized by this species and lacks any typical forage or, for most of the year, any standing water required by the species. As a result, these five species are determined to be unlikely to occur and are not analyzed further in this document.

3.3.1 COACHELLA VALLEY FRINGE-TOED LIZARD

Coachella Valley fringe-toed lizard is federally listed as endangered. In addition, it is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite (*Prosopis glandulosa*), and four-winged saltbush which is often associated with disturbed areas that have experienced high human use (USFWS 2010a, CVAG 2016). This species is typically active from spring through fall, especially between April and October (CVAG 2016). Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Some of the primary stressors affecting this species include habitat loss, OHV use, sand stabilization, predation, and the spread of invasive plant species (Barrows and Heacox 2021). The spread of sahara mustard (*Brassica tournefortii*) has been identified as having a strongly inversed correlation with CVFTL, as it spreads easily and results in dune stabilization, making such areas unsuitable for this species (Barrows and Heacox 2021).

Nearly all of the suitable habitat within the WFCA (5,309 acres of 5,617 total acres) has been designated as core habitat for this species under the CVMSHCP, including all of the action area within the WFCA's boundaries. This species is abundant west of the action area on the Whitewater Floodplain Preserve. Regionally, the CNDDDB contains a total of 135 "presumed extant" records of CVFTL within the Coachella Valley, spread across the entire valley from west of White Water to the north of the project to Mecca to the south. One of the largest single remaining populations of the lizard is at the Coachella Valley National Wildlife Refuge/Coachella Valley Preserve, located approximately nine miles east of the action area (Ortiz 2020). In the more immediate area, the population of this species on the Whitewater Floodplain Preserve, which is located approximately 1.3 miles to the west of the action area, was estimated over the course of a long-term demographic study from 1985-2003 to be, on average, up to 28,684 lizards within the 1,230-acre preserve (CVAG 2016). However, due to various uncontrollable factors including individual movements into and out of the site, a more conservative estimate of the population is provided as half of the study's estimate, or 14,342 individuals (CVAG 2016) within the preserve. In a 20-year study of CVFTL throughout the Coachella Valley, the sampling points located within the WFCA, specifically in a discrete area just west of Gene Autry Trail, were found to have increased in local population size, potentially exceeding 1,000 individuals (Vandergast et al. 2019).

The CVMSHCP indicates an additional 371 acres of suitable habitat occur within the WFCAs, east of Gene Autry Trail. Although this area is not mapped in the CVMSHCP, because the WFCAs' boundary occurs just east of the action area, which is itself less than one mile east of Gene Autry Trail, it is assumed based on observations made that the habitat in and/or surrounding the action area is consistent with that referenced in the CVMSHCP.

Survey Results

Focused surveys for CVFTL were not conducted for this project. However, one lizard was incidentally observed on July 7, 2016 within the action area, east of the tamarisk windrow along the edge of the abandoned housing pads (refer to Figure 10, *Coachella Valley Fringe-Toed Lizard Habitat and Observations*). Although this species was not observed anywhere else in the action area during any of the other general or focused biological surveys that have been conducted, because of the availability of suitable habitat throughout and the number of CNDDDB records of this species in the immediate vicinity, this species is assumed to be present throughout the action area where suitable habitat is present.

Critical Habitat

The action area does not coincide with any designated CVFTL Critical Habitat. The nearest designated Critical Habitat for CVFTL occurs approximately 5.5 miles east of the action area (USFWS 1980).



33.869665
-116.498194


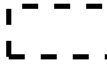
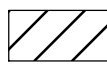




Union Pacific Railroad

Verona Rd

33.850402
-116.483667

Legend

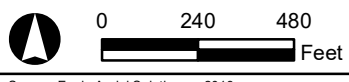
-  Project Site
-  Action Area
-  CVFTL Core Habitat
-  CVFTL Observation (2016)
-  Reference Point

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BIOLOGICAL ASSESSMENT

Coachella Valley Fringe-toed Lizard Habitat and Observations

Figure 10

Document Path: \\ontcaer151\mroot\mdata\144905\XD\BTR_20210927\Fig_10_Coachella_Valley_Fringe-toed_Lizard_Habitat_and_Observations.mxd



Source: Eagle Aerial Solutions -- 2013

Section 4 Project Effects

The following section discusses potential project effects on CVMV and CVFTL, as well as proposed avoidance and minimization measures to be incorporated.

4.1 COACHELLA VALLEY MILK-VETCH

4.1.1 DIRECT EFFECTS

The project will result in the temporary loss of 0.65 acre and the permanent loss of 4.21 acres of CVMV modeled core habitat on BLM lands. Temporary losses are primarily related to earthen grading improvements, but permanent losses are related to placement of concrete and riprap. Depending on the timing of construction in relation to the blooming season, individual plants above the surface may be lost, but much of the local population would remain in the seedbank.

4.1.2 INDIRECT EFFECTS

The use of heavy equipment and construction vehicles within the action area may result in the spread of non-native weed species into and/or throughout the action area, either from areas outside or from one part of the action area to another. If these species become established and proliferate within the action area, they can outcompete CVMV, resulting in long-term loss of the on-site population. The spread of fugitive dust related to ground disturbance can also result in long-term effects to local flora if the amount of dust is sufficient to impair photosynthetic processes. Contrarily, construction of the project will result in increased fluvial sand transport into the action area and into active sand fields in the northern part of Cathedral City. This increased fluvial sand transport will have a greater chance of dispersing CVMV seeds to new areas downstream that currently may primarily receive sand from the action area through aeolian means of sand transport. Ultimately the local distribution of CVMV may increase as a result of project construction and its positive benefits on local fluvial sand transport.

4.1.3 CUMULATIVE EFFECTS

The CVMSHCP and the BLM's Coachella Valley Plan Amendment to the CDCA serve as conservation plans that are intended to minimize cumulative impacts. Because the project would be consistent with both of these plans, cumulative effects to the CVMV are not expected.

4.2 COACHELLA VALLEY FRINGE-TOED LIZARD

4.2.1 DIRECT EFFECTS

The project will result in the temporary loss of 0.65 acre and the permanent loss of 4.21 acres of CVFTL modeled core habitat on BLM lands. Temporary losses are primarily related to earthen grading improvements, but permanent losses are related to placement of concrete and riprap. Construction activity

may result in the temporary or permanent displacement of individual lizards, injury or mortality of lizards that are either above the surface or subsurface or that otherwise are unable to escape, and/or increased stress to individual lizards. Lizards that are displaced from the area may encounter increased stress from being in a new environment, increased competition with other lizards, or increased risk of predation, any of which may result in injury or mortality.

4.2.2 INDIRECT EFFECTS

The use of heavy equipment and construction vehicles within the action area may result in the spread of non-native weed species into and/or throughout the action area, either from areas outside or from one part of the action area to another. If these species become established or spread enough within the action area, they can potentially result in the loss of the active dune habitat if their roots stabilize the soil and prevent natural aeolian processes from occurring. The degradation and eventual loss of the active dune or “blowsand” habitat can result in additional loss of habitat for CVFTL within the action area. Contrarily, construction of the project will result in increased fluvial sand transport into the action area and into active sand fields in the northern part of Cathedral City. The restored flow channel will also re-establish a movement corridor for wildlife under the UPRR tracks, connecting wildlife habitats above and below the UPRR Bridge and I-10. Although the stormwater improvements will result in temporary impacts during construction and minor losses of the natural plant communities in the area, the overall benefits of restoring flows and the fluvial transport of sand in the area will have superior positive impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport). Ultimately the project may result in increased local distribution of CVFTL and increased quality of blowsand habitat as a result of improved fluvial sand transport in the area.

4.2.3 CUMULATIVE EFFECTS

The CVMSHCP and the BLM’s Coachella Valley Plan Amendment to the CDCA serve as conservation plans that are intended to minimize cumulative impacts. Because the project would be consistent with both of these plans, cumulative effects to the CVFTL are not expected.

Section 5 Mitigation and Avoidance

This section discusses basic details of the project’s mitigation program, as well as the avoidance and minimization measures that will be implemented to reduce project effects on CVMV and CVFTL.

5.1 MITIGATION PROGRAM

5.1.1 LIKE EXCHANGE

Under the project’s approved Like Exchange, the CVWD has agreed to place a conservation easement on 42 acres of land adjacent to the project and within the WFCA. Of these 42 acres, the loss of on-site habitat within the project site would be replaced at a 1:1 ratio, with the remainder serving as a net increase of conservation lands to the WFCA. Refer to Section 1.3.1 for more details on the Like Exchange.

5.2 AVOIDANCE AND MINIMIZATION MEASURES

The following section discusses avoidance and minimization measures to be implemented by the project, as agreed to in the project’s Biological Resources Technical Report (Michael Baker 2022). This includes measures required throughout the BLM’s Land Use Plan Amendment (LUPA), measures required by the CDCA, measures discussed as part of the project’s informal Section 7 consultation (refer to Section 1.3.3), and the project’s own avoidance and minimization measures.

5.2.1 LUPA MEASURES

The following measures are required on BLM lands throughout the jurisdiction of the BLM’s LUPA and will reduce project impacts on a general scale:

LUPA-BIO-2 Designated biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during preconstruction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

LUPA-BIO-3 Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable [Conservation and Management Action (CMA)]. Allowable minor incursions as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

- The edge of each of the Desert Renewable Energy Conservation Plan desert vegetation types, including but not limited to those in the riparian or wetland

vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).

- The edge of the vegetation extent for specified Focus and BLM sensitive plant species.
- The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.

LUPA-BIO-4 For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities. No species-specific seasonal restriction dates are described in the applicable CMAs.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.

LUPA-BIO-5 All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.

- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

LUPA-BIO-6 Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:

- Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.
- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
- Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.

All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

- In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.

LUPA-BIO-9 Implement the following general LUPA CMA for water and wetland dependent resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
 - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
 - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
 - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:
 - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
 - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
 - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.

LUPA-BIO-10 Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.
- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.

LUPA-BIO-11 Implement the following CMAs for controlling nuisance animals and invasive species:

- No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.
- Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100- year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.
- Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.
- Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.
- When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

LUPA-BIO-13 Implement the following CMA for project siting and design:

- To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species.
- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.

- To the maximum extent practicable, restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.
- To the maximum extent practicable, confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.
- To the maximum extent practicable, any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.
- Use nontoxic road sealants and soil stabilizing agents.

LUPA-BIO-14 Implement the following general standard practices to protect Focus and BLM Special Status Species:

- Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.
- Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.
- Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.
- All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.
- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.

- Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

LUPA-BIO-15 Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

5.2.2 CDCA MEASURES

The following measures are taken from the Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement (BLM 2002) and apply specifically to species occurring in the Sand Dunes and Sand Fields Community type as mapped on BLM lands. Implementation of these measures will benefit both CVMV and CVFTL.

Dune 2 Avoid stabilization of sand dunes due to adjacent development and spread of invasive species.

Dune 3 Maintain, and enhance where feasible, aeolian and fluvial sand transport systems.

Dune 4 Minimize sand compaction to protect Jerusalem cricket and giant sand treader cricket habitat and to minimize crushing of Coachella Valley fringe-toed lizards.

Dune 5 Minimize roads within flat-tailed horned lizard habitat which are prone to crushing by vehicles.

Dune 7 Avoid disturbance and compaction of sandy habitats associated with Coachella Valley milk-vetch and avoid crushing Coachella Valley milk-vetch plants.

Dunes 10 Minimize loss of native vegetation, minimize habitat fragmentation and maintain habitat patch connectivity.

5.2.3 SECTION 7 INFORMAL CONSULTATION MEASURES

The following avoidance and minimization measures were provided by the BLM as part of the FESA Section 7 informal consultation process and are required to be implemented on BLM administered lands within the action area. These apply specifically to CVMV and CVFTL.

Coachella Valley Milk-Vetch

CVMV-1 A Qualified Biologist would conduct pre-construction focused surveys for CVMV within the Project footprint during the blooming season (generally February through May) prior to initiation of ground-disturbing activities. Areas where the plant is found will be marked for avoidance as Environmentally Sensitive Areas and Qualified

Biologists would be present throughout construction and decommission activities. The name and qualifications of the Qualified Biologist(s) would be submitted to the BLM and USFWS for approval at least 30 days prior to Project activities in CVMV designated critical habitat.

CVMV-2 CVMV locations identified during the pre-construction surveys would be delineated on the ground and on aerial photographs, incorporated into the construction management plans, and avoided to the maximum extent possible. Where avoidance is not possible, the Applicant would follow methods described in the Plant Salvage and Restoration Plan (Restoration Plan) to ensure seeds are salvaged appropriately and re-distributed within the action area.

CVMV-3 A Restoration Plan will be submitted to the BLM and USFWS for approval in the areas of CVMV modeled habitat within the action area. The Restoration Plan will describe topsoil salvage, recontouring and topsoil placement, and weeding maintenance for 5 years, or another period of time approved by the BLM and USFWS to ensure approximately 60 percent replacement of the affected CVMV modeled habitat. The Restoration Plan will include seed collection and storage at an appropriate facility (e.g., Rancho Santa Ana Botanic Garden), reseeded in appropriate existing or restored habitat, stockpile and reapplication of topsoil, or other similar activities. The Restoration Plan will be submitted to the BLM and USFWS for approval 30 days prior to ground disturbance activity.

Coachella Valley Fringe-Toed Lizard

CVFTL-1 Prior to the initiation of ground-disturbing activities, the Applicant will designate an Authorized Biologist who will be responsible for overseeing compliance with the conservation measures outlined in the project's Biological Opinion. The authorized biologist will retain a copy of all conservation measures readily available while conducting work on site and oversee coordination between workers. The authorized biologist will be on site for all work-related activities and would have the authority to halt work activities that are not in compliance with the conservation measures. The Authorized Biologist will have experience monitoring for, tracking, locating, and handling Coachella Valley fringe-toed lizards as well as successfully relocating fringe-toed lizards outside of project impact areas.

CVFTL-2 Prior to the start of construction, exclusion fencing will be installed along the perimeter of the work area and access route and maintained to keep CVFTL from entering work areas. Exclusion fencing will consist of a material suitable to withstand high winds, sun, and heat. The fence will be buried 12 inches below the sand surface and extend above ground a minimum of 24 inches. Fencing will be installed per manufacturer specifications. If the authorized biologist observes a CVFTL within the Project area

during fence installation, the lizard will be allowed to voluntarily exit the Project area. If a lizard is found within the fenced Project area during construction, the authorized biologist will ensure that construction equipment and personnel avoid the lizard or the lizard is relocated from the construction impact area (see measure 3 below). All workers will strictly limit activities and vehicles to the designated work areas within the project footprint. Once project activities have concluded, the fencing will be removed.

- CVFTL-2** Once the fence is installed, clearance surveys for CVFTL will be conducted within the excluded fence area. Focused surveys will be conducted when the lizards are active, generally greater than 95 degrees Fahrenheit and less than 110 degrees Fahrenheit. The authorized biologist and biological monitor(s) will slowly walk 5 meter transects and cover 100 percent of the fenced area searching for lizards and tracks. Six consecutive passes will be conducted to ensure most lizards have been detected and relocated out of harm's way.
- CVFTL-3** CVFTL that are captured within the exclusion fence area will be released immediately outside the Project impact area. Lizards will be released in the shade of a shrub. No lizards will be held in captivity or in transport for longer than 10 minutes after their initial capture within an enclosed construction area. If necessary, lizards will be transported in clean, white, plastic 5-gallon buckets.
- CVFTL-4** All work area boundaries associated with temporary and permanent disturbances will be conspicuously staked, flagged, or marked to minimize surface disturbance activities. All workers shall strictly limit activities and vehicles to the designated work areas.
- CVFTL-5** Should any CVFTL be injured or killed, all activities in the immediate area would be halted, and the authorized biologist would be contacted immediately to investigate the incident. The authorized biologist would be responsible for reporting the incident (via fax or email) to the USFWS and CDFW within 24 hours of the incident.
- CVFTL-6** During project activities, motor vehicles would be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint and adhere to 15 mile per hour speed limits.
- CVFTL-7** Perennial vegetation such as creosote bush will be avoided to the extent feasible.
- CVFTL-8** Staging areas will be located outside of CVFTL habitat (modeled, critical, or occupied habitat).
- CVFTL-9** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to CVFTL would be securely fenced or covered when unattended to prevent accidental death or injury. At the start and end of each workday, and just before backfilling, all

excavations would be inspected for trapped animals. If found, trapped animals would be removed by the authorized biologist and relocated to outside the Project footprint, as appropriate.

5.2.4 PROJECT AVOIDANCE AND MINIMIZATION MEASURES

The following measures are proposed by CVWD and are intended as avoidance, minimization, or mitigation to offset or reduce potential impacts to CVMV and CVFTL. The CVWD Project Engineer, Contractor, CVWD Environmental Specialist and/or Biological Monitor, and CVWD Inspector shall ensure implementation of all biological mitigation measures, including those not included in this list.

- BIO-1** **Habitat Preservation.** Following project completion, CVWD shall inspect the site for invasive weed species within the project site to help prevent habitat degradation and spread of invasive plants.
- BIO-2** **Conservation Easement.** CVWD shall place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA of the CVMSHCP and adjacent to the project site. A total of 21.98 of the 42 acres shall be used to offset the impacts to land within City of Cathedral City’s portion of the WFCA from implementation of the project, resulting in a net increase of 20.02 acres of land being added to the conservation area.
- BIO-3** **Continued Participation in the CVMSHCP.** The CVMSHCP includes implementation of avoidance, minimization, and mitigation measures on non-federal lands and management and monitoring programs which will help ensure the persistence of CVMV and CVFTL within areas of suitable habitat. CVWD maintains an Operations and Maintenance Manual for activities occurring in conservation areas (refer to Appendix C, *CVWD Operations and Maintenance Manual*). The Manual, which was approved by the CVCC in 2015, will be implemented post construction for the project.

Section 6 Effects Determination

6.1 EFFECTS OF THE ACTION

Revised regulations implementing the FESA (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see § 402.17).

The following federally-listed species were considered in the preparation of this report:

Table 4: Federally-listed Species and Effects Determinations

Common Name	Scientific Name	Federal Status	Critical Habitat	Effects Determination
Coachella Valley milk-vetch	<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Endangered	Unit 4 Designated	May Affect
Triple-ribbed milk-vetch	<i>Astragalus tricarinatus</i>	Endangered	None	No Effect
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	Endangered	None	No Effect
Casey's June beetle	<i>Dinacoma caseyi</i>	Endangered	Designated	No Effect
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Designated	No Effect
Desert tortoise	<i>Gopherus agassizii</i>	Threatened	Designated	No Effect
Peninsular bighorn sheep	<i>Ovis canadensis nelsoni</i>	Endangered	Designated	No Effect
Coachella Valley fringe-toed lizard	<i>Uma inornata</i>	Threatened	Designated	May Affect
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered	Designated	No Effect

Of these, the only species that were determined to likely occur within the action area are CVMV and CVFTL. Based on the potential impacts and potentials for take, it is Michael Baker's determination in concurrence with BLM and CVWD that the project:

- **May affect Coachella Valley milk-vetch.** Although the potential for take exists, with CVWD’s continued participation in the CVMSHCP as a permittee for the protection of this species, and implementation of the various avoidance and minimization measures described above, including placement of the conservation easement (to be transferred in title to the CVCC) over suitable CVMV habitat, all prudent measures will be taken to avoid adverse impacts to CVMV and as a result the project may affect this species.
- **May affect Coachella Valley fringe-toed lizard.** Although the CVWD will continue to participate in the CVMSHCP as a permittee for the protection of this species, and the project will implement a wide-ranging set of avoidance and minimization measures for this species including placement of a conservation easement (to be transferred in title to the CVCC) over suitable CVFTL habitat to mitigate for project-related impacts, the potential will still exist for take of CVFTL. CVFTL that are aboveground can be protected and avoided to the extent possible, but those that are buried in the ground, if any, cannot be fully avoided, and as a result the project may include take of this species and or impact suitable habitat for this species.

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Appendix A Site Photographs



Photograph 1: Standing in the southwestern portion of the action area, facing north. The north-south tamarisk windrow is visible on the right side of the photograph.



Photograph 2: Standing in the western-central portion of the action area, facing north.



Photograph 3: Standing in the southwestern portion of the action area, facing north.



Photograph 4: Standing in the northwestern portion of the action area within BLM lands, facing west. The east-west tamarisk windrow is visible to the north.



Photograph 5: Standing in the northern-central portion of the action area, facing south.



Photograph 6: A photograph of the east-west tamarisk windrow and railroad tracks located on the northern portion of the action area, facing west.



Photograph 7: A photograph of the railroad bridge located within the northern portion of the action area, facing southwest.



Photograph 8: A photograph of a spoils pile located within BLM lands to the north of the railroad bridge, facing north.



Photograph 9: Standing in the northern portion of the action area within BLM lands to the south of Interstate-10, facing east.



Photograph 10: Standing in the eastern portion of the action area, facing east.

Appendix B Plant and Wildlife Species Observed

Table B-1: Plant Species Observed List

<i>Scientific Name</i>	<i>Common Name</i>	<i>Cal-IPC Rating**</i>	<i>Special-Status Rank***</i>
<i>Abronia villosa</i>	desert sand verbena		
<i>Ambrosia acanthicarpa</i>	annual bursage		
<i>Ambrosia dumosa</i>	burweed / white bursage		
<i>Ambrosia salsola</i>	burrowbrush		
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella valley milk vetch		FE, 1B.2
<i>Atriplex lentiformis</i>	big saltbush		
<i>Brassica tournefortii</i> *	Saharan mustard	High	
<i>Camissonia californica</i>	California primrose		
<i>Camissoniopsis pallida</i>	pale yellow sun cup		
<i>Chorizanthe brevicornu</i>	brittle spine flower		
<i>Chorizanthe rigida</i>	devil's spineflower		
<i>Chylismia claviformis</i>	clavate fruited primrose		
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple clarkia		
<i>Cryptantha circumscissa</i>	cushion cryptantha		
<i>Cylindropuntia echinocarpa</i>	silver cholla		
<i>Dicoria canescens</i>	desert dicoria		
<i>Dithyrea californica</i>	California shieldpod		
<i>Encelia farinosa</i>	brittlebush		
<i>Encelia frutescens</i>	rayless encelia		
<i>Eriastrum eremicum</i>	desert woollystar		
<i>Ericameria nauseosa</i>	rubber rabbitbrush		
<i>Eriogonum thomasi</i>	Thomas eriogonum		
<i>Erodium cicutarium</i> *	red-stemmed filaree	Limited	
<i>Euphorbia micromera</i>	Sonoran sandmat		
<i>Larrea tridentata</i>	creosote bush		
<i>Lupinus shockleyi</i>	purple desert lupine		
<i>Oenothera californica</i>	California evening primrose		
<i>Palafoxia arida</i>	Spanish needle		
<i>Paritoma arborea</i>	bladderpod		
<i>Pectocarya recurvata</i>	arch nuted comb bur		
<i>Petalonyx thurberi</i>	sandpaper plant		
<i>Plantago ovata</i>	desert plantain		
<i>Prosopis glandulosa</i>	honey mesquite		
<i>Psathyrotes ramosissima</i>	velvet turtleback		
<i>Psorothamnus emoryi</i>	dyebush		
<i>Psorothamnus schottii</i>	indigo bush		
<i>Psorothamnus spinosus</i>	smoketree		
<i>Salsola paulsenii</i> *	barbwire Russian thistle	Limited	
<i>Salvia columbariae</i>	chia		
<i>Schismus arabicus</i> *	Arabian schismus	Limited	
<i>Stephanomeria pauciflora</i>	wire lettuce		
<i>Stillingia spinulosa</i>	annual stillingia		
<i>Tamarix aphylla</i> *	athel tamarisk	Limited	
<i>Tiquilia plicata</i>	fanleaf crinkleemat		

* **Non-native species**

** **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Limited These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent

*** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

1B Plants rare, threatened, or endangered in California and elsewhere.

Threat Ranks

.2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).

Table B-2: Wildlife Species Observed List

<i>Scientific Name*</i>	<i>Common Name</i>	<i>Special-Status Rank**</i>
Birds		
<i>Accipiter cooperii</i>	Cooper's hawk	WL
<i>Accipiter striatus</i>	sharp-shinned hawk	WL
<i>Anthus rubescens</i>	American pipit	
<i>Ardea alba</i>	great egret	
<i>Athene cunicularia</i>	burrowing owl	BLMS, SSC
<i>Auriparus flaviceps</i>	verdin	
<i>Buteo jamaicensis</i>	red-tailed hawk	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Calypte costae</i>	Costa's hummingbird	
<i>Columba livia*</i>	rock pigeon	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Corvus corax</i>	common raven	
<i>Eremophila alpestris actia</i>	California horned lark	WL
<i>Geococcyx californianus</i>	greater roadrunner	
<i>Haemorhous mexicanus</i>	house finch	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Passer domesticus*</i>	house sparrow	
<i>Quiscalus mexicanus</i>	great-tailed grackle	
<i>Sayornis saya</i>	Say's phoebe	
<i>Setophaga coronata auduboni</i>	Audubon's yellow-rumped warbler	
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Streptopelia decaocto*</i>	Eurasian collared-dove	
<i>Sturnus vulgaris*</i>	European starling	
<i>Tachycineta bicolor</i>	tree swallow	
<i>Zenaida asiatica</i>	white-winged dove	
<i>Zenaida macroura</i>	mourning dove	
<i>Zonotrichia leucophrys gambelii</i>	white-crowned sparrow (Gambel's)	
Reptiles		
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard	
<i>Coluber fragellum piceus</i>	red racer	
<i>Crotalus cerastes laterorepens</i>	Colorado desert sidewinder	
<i>Dipsosaurus dorsalis</i>	desert iguana	
<i>Uma inornata</i>	Coachella valley fringe-toed lizard	FT, SE
Mammals		
<i>Canis latrans</i>	coyote (scat and tracks)	
<i>Lepus californicus</i>	black-tailed jackrabbit	
<i>Sylvilagus audubonii</i>	desert cottontail	

* **Non-native wildlife species**

** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FT Federally Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Bureau of Land Management (BLM)

BLMS BLM Sensitive – BLM Manual §6840 states that “BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species.”

California Department of Fish and Wildlife (CDFW)

SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List – taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not meet SSC criteria, but for which there is a concern and a need for additional information to clarify status.

Appendix C CVWD Operations and Maintenance Manual

**OPERATIONS AND MAINTENANCE MANUAL FOR
COACHELLA VALLEY WATER DISTRICT
COVERED ACTIVITIES AND FACILITIES
WITHIN CONSERVATION AREAS**



Prepared by:
Coachella Valley Water District
Environmental Services Department
P.O. Box 1058
Coachella, CA 92236
(760) 398-2651

July 2015

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**CVWD OPERATIONS AND MAINTENANCE MANUAL ACRONYMS
AND DEFINIITONS**

List of Acronyms Used in This Manual

ACEC	Area of Critical Environmental Concern
ALERT	Flash Flood Alert Station in Santa Rosa Mtns
AOC	Area of Concern
BLM	Bureau of Land Management
BMP	Best Management Practice
CA	California
CSC	California Species of Special Concern
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Pesticide Regulations
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Committee
CVWD	Coachella Valley Water District
E	Federally Endangered
ESA	Endangered Species Act
ESD	Environmental Services Department
FWS	U.S. Fish and Wildlife Service
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
NCCP	Natural Communities Conservation Plan
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
SE	State Endangered
SSC	Federal Species of Special Concern
ST	State Threatened
T	Federally Threatened
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
µg/L	Microgram per Liter
mg/L	Milligram per Liter

1.0 INTRODUCTION

In October 2008, wildlife agencies issued permits for the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (CVMSHCP) which calls for the conservation and protection of threatened and endangered wildlife species and natural habitat communities within the Coachella Valley. The CVMSHCP was developed by the Coachella Valley Association of Governments (CVAG). CVAG fills the role of the Coachella Valley Conservation Commission (CVCC), which is a California joint powers authority created to implement the CVMSHCP. The CVMSHCP planning area encompasses approximately 1,206,000 acres. The planning area extends from the Cabazon area of the San Geronio Pass in the northwest to lands surrounding the northern reaches of the Salton Sea to the southeast excluding Indian Reservation Lands not covered by the CVMSHCP. The Coachella Valley Water District (CVWD) is a local permittee within the CVMSHCP. In addition to CVWD, member agencies of the CVMSHCP include: US Bureau of Land Management (BLM), US Forest Service (FWS), National Park Service, California Department of Fish and Wildlife (CDFW), California Department of Parks and Recreation, California Department of Transportation, Coachella Valley Mountains Conservancy, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Imperial Irrigation District, County of Riverside, and the following nine cities: Cathedral City, Coachella, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage.

CVWD and the remaining permittees are obligated to implement avoidance and minimization measures to ensure the protection of threatened and endangered species and their habitat on CVMSHCP conservation lands within the Coachella Valley. Conservation measures in the CVMSHCP include a requirement for CVWD to develop an Operations and Maintenance plan (O&M Manual) for its facilities (e.g., levees, flood control channels, groundwater recharge, roads, pump stations, reservoirs, and agricultural drains) in Conservation Areas that will minimize impacts to Covered Species and natural communities. This manual is a working document that will be updated when additional information becomes available that justifies modified avoidance and protection measures or changes in the presence and distribution of threatened and endangered species or their protected status. CVWD will acquire the necessary permits/authorizations as required for species surveys and use approved protocols where available.

1.1 ORGANIZATION AND USE OF THE OPERATIONS AND MAINTENANCE MANUAL

This O&M Manual serves as guidance for CVWD staff when planning or implementing covered operations and maintenance activities in Conservation Areas. The O&M Manual provides appropriate avoidance and protection measures that can be used by field personnel when conducting these activities. Appropriate sections of the document shall be reviewed by CVWD staff prior to initiating covered operation and maintenance activities as required under the CVMSHCP. In order to simplify the use of this operation and maintenance manual, a quick reference guide describing actions to be taken for covered activities occurring on CVWD lands within MSHCP Conservation Areas is provided in **Section 1.1.2** on page 2. This quick reference

guide will serve as a means to prepare for covered activities within each Conservation Area containing CVWD lands or infrastructure.

1.1.1 ORGANIZATION OF THE O&M MANUAL

Section 1.0 of the O&M Manual provides the objective and basis for developing the manual and how CVWD staff can use the manual to implement avoidance and minimization measures required by the CVMSHCP.

Section 2.0 of the O&M Manual describes the types of covered activities that are considered to be routine on CVWD lands within the CVMSHCP Conservation Areas (**Figures 2 – 13**). It also provides examples and information on the types of potential impacts to threatened and endangered species that may be caused by the various routine operations and maintenance activities, the standard activity-related avoidance and minimization measures to protect sensitive species and/or habitat, and supplemental information regarding the environmental regulations and pesticide use that may apply to certain operations and maintenance situations. **Figure 14** provides all Conservation Areas within the Coachella Valley MSHCP as well as those that contain CVWD lands.

Section 2.9 of the O&M Manual contains descriptions of the special-status species within the CVMSHCP, their habitat requirements, and Plan-wide occurrence/distribution information. **Tables 4 - 15** provide a list of species that may be encountered in each Conservation Area, and the associated avoidance and minimization measures used to protect these species when performing Covered Activities.

1.1.2 USE OF THE MANUAL

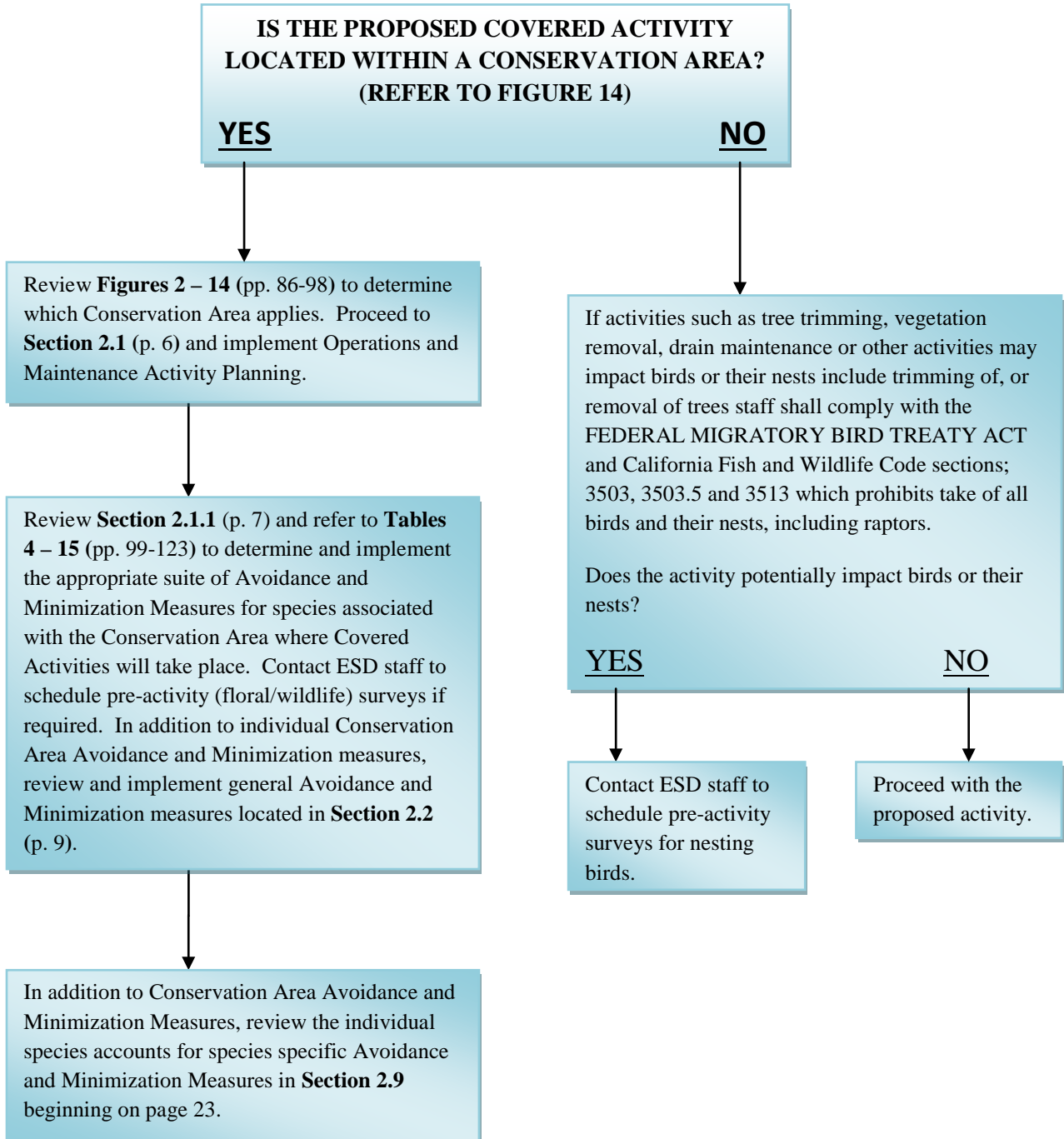
When planning operations and maintenance activities, supervisory personnel and their staff will use avoidance and minimization measures outlined in **Section 2.0** for the respective work activity (e.g., levee and channel maintenance, erosion control, weed control, pest control etc.). The supervisor should review the Valley Wide CVMSHCP Conservation Area Map (**Figure 14**) to determine if the planned activities are within a Conservation Area where threatened or endangered species may be present. If the planned activity is within a designated Conservation Area, refer to the Conservation Area maps (**Figures 2-13**) to identify the individual Conservation Area and associated habitat. Refer to **Tables 4 -15** for individual Conservation Area Avoidance and Minimization Measures. The supervisor must incorporate the activity-related and the species-specific or habitat-specific avoidance and minimization measures as part of the planned activities. The supervisor shall inform the field crews of the need to implement and follow such measures. Supervisors and staff should review the Coachella Canal Water Supply Quagga Mussel Monitoring and Control Program located in the appendix, and familiarize themselves with the program in the event that covered activities or other anticipated work takes place in areas where invasive quagga mussel sampling or monitoring occur. This should help minimize conflicts with sampling and monitoring staff and interference with the program.

If the planned activity is within a Conservation Area and the avoidance and minimization measures are problematic to implement, then the supervisor should contact CVWD's Environmental Services Department (ESD) staff for guidance. Some projects which are not considered to be Covered Activities may be required to undergo a Joint Project Review (JPR) with CVCC and the appropriate wildlife agencies. The JPR provides CVCC and the wildlife agencies an opportunity to review project elements, recommend avoidance and minimization measures and to oversee compliance with the requirements of the MSHCP and the Implementation Agreement (IA). A JPR is required by CVCC for all projects under the Local Permittees' jurisdiction in a Conservation Area that would result in disturbance to habitat, natural communities, biological corridors, or essential ecological processes.

Consistent with the CVMSHCP, this manual uses a "**habitat-based**" approach for addressing protection of federally-listed and other special-status species as these species are typically associated with distinct habitat types. Many of the species described within this manual are associated with distinct habitat types. Other species such as birds and bats can be found widely spread throughout the valley and potentially found in many different habitat types. In many instances, the manual uses the term "potential habitat." The term "potential habitat" is used to describe vegetation types, community associations, and/or specific habitat components that have the characteristics to support particular special-status species. In some instances, potential habitat for a species can also be limited by the species' range or distribution in the Coachella Valley. Assessing the presence or absence of many special-status species, and, therefore, determining if operations and maintenance activities would affect individuals of protected species can be difficult and time consuming. Many of the species in the Coachella Valley may only be identifiable for a short time period during the year (plant species for example), and for some species, they may not be detectable every year (Coachella Valley Giant Sand-Treader Cricket). Multiple years of surveys are often required to confirm presence or absence of any particular species. Thus, a habitat-based approach provides maximum flexibility for conducting routine operations and maintenance activities with minimum delay while still providing the required protection of threatened, endangered, and other special-status species. The following quick reference diagram will assist supervisors and staff in reviewing each Conservation Area which contains CVWD lands or infrastructure.



CVWD QUICK REFERENCE GUIDE TO OPERATIONS AND MAINTENANCE REQUIREMENTS WITHIN CVM SHCP CONSERVATION AREAS



1.2 SOURCES OF INFORMATION

The information and recommendations presented in this manual are based on discussions and consultation with the FWS, CDFW, CVCC, and CVMSHCP permittee representatives. Additionally, information has been adapted from the following sources:

- U.S. EPA Interim Measures for Use of Pesticides in Riverside County (USEPA 2000)
- Coachella Valley Multiple Species Habitat Conservation Plan
- Coachella Valley Natural Community Conservation Plan

The information in this manual will be updated as needed. Revisions to incorporate new information and/or include improved methods to protect listed species will be implemented as information becomes available.

2.0 ROUTINE COVERED ACTIVITIES, POTENTIAL IMPACTS, AND ACTIVITY-RELATED PROTECTION MEASURES

Operation and maintenance of existing CVWD facilities is needed to protect the integrity of existing infrastructure such as roads, reservoirs, wells, water control structures (pipes, conduits, culverts, etc.), pump stations, reservoirs, levees, canals, flood control channels, and distribution systems. These operational requirements are classified under the CVMSHCP as Covered Activities and are required so that existing facilities may operate efficiently and safely. Examples of CVWD's Covered Activities and facilities listed in the CVMSHCP include the following:

CVWD Flood Control Facilities

- The removal of sand, silt, sediment, debris, rubbish, woody, and herbaceous vegetation in existing flood control facilities, culverts and storm drains in order to maintain design capacity of the facility and or compliance with local fire regulations
- Control of weeds and vegetation by non-chemical means, and control of debris on all access roads and District rights-of- way
- The repair or replacement of *constructed flood control facilities*, such as channels, basins, drop structures, and levees as necessary to maintain the structural integrity and hydraulic capacity of the facility.
- For ALERT stations, an annual inspection visit
- For ALERT stations, emergency maintenance to replace batteries or make repairs on transmitters, solar panels, tipping buckets, etc. Emergency access may occur at any time of year via the Dunn Road, notwithstanding bighorn sheep avoidance measures.

CVWD Water Storage and Transmission Facilities

- Maintain reservoirs by removing interior and exterior coating; caulking joints as needed; repainting exterior roof, shell, and appurtenances; and recoating interior with an approved epoxy system.
- Maintain boosters by providing routine oil changes and obtaining samples; remove, repair, replace, or add booster pump as needed
- Maintain landscaping around reservoirs (where applicable) by maintaining irrigation pumps, performing routine repairs on irrigation system, trimming trees and shrubs as needed, and clearing brush from site
- Maintain altitude valves by checking water level with valve operation, check function of valves, and rebuild or replace as needed.
- Maintain pipelines by inspecting, repairing, or replacing as needed.
- Maintain sediment basin by inspecting, removing sediment as needed, and making any necessary repairs removal of sediment, vegetation, and debris from culverts, drains, canals, flood control channels, and reservoirs; replacement of utilities; backfilling of gullies and holes caused by soil erosion; trimming of over-grown or over-hanging vegetation and/or use of herbicides on trails, canal maintenance roads, or embankments to prevent excess growth of weeds and for fire control.

Brief descriptions of these Covered Activities, examples of the types of associated impacts, and ways to avoid and minimize such impacts are provided in **Sections 2.2** through **2.7.2**. These descriptions are intended to be categorical representatives, rather than exhaustive, detailed discussions of all possible activities and related impacts.

2.1 OPERATIONS AND MAINTENANCE ACTIVITY PLANNING

It is the responsibility of anyone participating in routine operations and maintenance activities to adhere to avoidance and minimization measures when working in Conservation Areas. Prior to initiating any covered activity, verify whether the area to be worked in is located within a Conservation Area by reviewing the Valley Wide CVMSHCP Conservation Area Map (**Figure 14**) which shows all Conservation Areas within the boundaries of the Plan. Managers and first-line supervisors should review operations and maintenance activities to ensure avoidance and minimization measures are used and when possible to schedule Covered Activities to avoid and minimize disturbance to species at a critical time; an example would be the timing of grading activities in areas known to harbor Burrowing Owls and their burrows during the breeding season. Contact CVWD's ESD staff to discuss potential species issues and impact assessment surveys following emergency repairs to any infrastructure or flood control conveyance facility.

2.1.1 CONSERVATION AREA REVIEW AND AVOIDANCE AND MINIMIZATION MEASURES

This section describes procedures for determining the necessary avoidance and minimization measures for Conservation Areas, evaluating site conditions, specific special-status species, and implementing avoidance and minimization measures during Covered Activities. In addition to the 11 Conservation Areas containing CVWD lands or infrastructure (**Figures 2 – 14**), there are ten (10) additional Conservation Areas within the CVMSHCP boundaries listed on the Valley Wide CVMSHCP Conservation Area Map. These lands shall be evaluated for wildlife and plant species in the event that Covered Activities are proposed in these areas. The applicable avoidance and minimization measures that apply to each species must be implemented if Covered Activities will take place within these Conservation Areas. The following procedures and criteria have been developed on a site-specific basis to evaluate the potential for occurrence of, and impacts to, species protected under the CVMSHCP. In addition to identifying the lands associated with the Conservation Areas, **Figures 2 - 14** provides the applicable APN parcel numbers to facilitate identification of CVWD owned lands.

Review of the individual Conservation Area species list provided in **Tables 4 – 15** will provide a list of the wildlife and plant species associated with each of the Conservation Areas and the avoidance and minimization measures required for each species. **Section 2.9** provides species account, seasonal occurrence and species specific avoidance and minimization measures for each species identified in the applicable Conservation Area. Review of the individual Conservation Area avoidance and minimization measures should be done well in advance of proposed Covered Activities in order to schedule any required surveys or implement seasonal avoidance and minimization measures. Refer to **Tables 4 – 15** and review the applicable Conservation Area avoidance and minimization measures for seasonal or Covered Activity restrictions. No impacts are anticipated as part of the following Covered Activities:

- Annual inspections for ALERT stations, or
- Emergency maintenance to replace batteries or make repairs on transmitters, solar panels, tipping buckets for ALERT stations, and
- Emergency access at any time of year via the Dunn Road, notwithstanding bighorn sheep avoidance measures.

If a special-status species or sensitive habitat are in question, contact ESD staff for more in-depth site evaluation. If needed, these activities should be performed well in advance of the Covered Activity initiation (30 days is recommended) to avoid delays due to conflicts with sensitive habitat, species and/or their breeding season. It should be noted that detection of many of the special-status species is time and/or season sensitive.

Field Supervisors

CVWD field supervisors will contact ESD staff to arrange avoidance and minimization training for field crews when performing Covered Activities within a conservation area. The field supervisors will be responsible for documenting onsite field observations of listed species and any impacts resulting from Covered Activities operations (or for delegating this responsibility to staff), requesting surveys if needed, and ensuring CVWD staff and contractors comply with the CVMSHCP. Field supervisors will assist ESD staff through annual forecasting of O&M work.

The crew supervisor or first-line managers shall undertake the following steps when planning of any of the routine operations and maintenance activities:

1. The project site will be evaluated to determine if the lands lie within a Conservation Area, in addition, if the site is located within a Conservation Area refer to the appropriate Conservation Area species list for each Conservation Area and determine what species are associated with the Conservation Area and what avoidance/minimization measures are required (**Tables 4 – 15**). For additional information on the listed species, including species specific avoidance and minimization measures and associated habitats that occur within the CVWD service area, see **Section 2.9**.
2. If the proposed activity is not located within a Conservation Area the activity may proceed as planned but must adhere to federal and state species regulations such as the Migratory Bird Treaty Act California Fish and Wildlife code section 1600, 3503, 3503.5, 3513, and any other mandatory regulations such as the Clean Water Act, NPDES or Air Quality regulations.
3. If special-status species may be present, the supervisor shall review the applicable avoidance and minimization measures for the Covered Activity (see **Section 2.2** through **2.7.2**) and the required avoidance and minimization measures for individual Conservation Areas (**Tables 4 – 15**). To protect special-status species and their habitat, activity avoidance and minimization measures will be implemented with the appropriate species-specific avoidance and minimization measures. If the activity or species specific avoidance and protection measures cannot be implemented, the supervisor should contact CVWD's ESD staff to conduct a more detailed site assessment and develop site-specific project recommendations. CVWD's ESD staff should be contacted in advance of Covered Activities (30 days is recommended; longer periods may be necessary if specific surveys are needed) to avoid delays due to conflicts with sensitive species and nesting birds.

If Covered Activities may result in impacts to Yuma Ridgway's Rail, California Black Rail, or Peninsular Bighorn Sheep seek guidance from CVWD's ESD staff prior to initiating any activity.

Although routine operation and maintenance activities undertaken by the CVWD are considered a Covered Activity under the CVMSHCP, some activities may require additional permitting which will be determined as required by consultation with appropriate agencies. Although generally not subject to evaluation and discretionary permitting, Covered Activities can affect threatened and endangered species and their habitats without proper planning.

For the purposes of this manual, Covered Activities include: maintenance related to the repair, rehabilitation, or replacement of any previously serviceable structure (flap gates, discharge pipes, siphons, weirs, drop structures, outfalls, intakes, or other water control devices) or facility, and removal of silt, debris, and vegetation from constructed channels, debris basins, and retention/detention basins provided that such work does not alter the maintenance baseline conditions of the feature (e.g., depth, width, length, location, configuration or design capacity). Minor changes to facilities are also considered routine where such changes result from changes in materials, construction techniques, or safety and building codes.

In addition to the avoidance and minimization measures included in this manual, construction or maintenance work on facilities not designated as Covered Activities may require a Joint Project Review, special mitigation conditions and/or an amendment to the CVMSHCP and shall be evaluated on a case by case basis by CVWD's ESD staff. Additionally, nothing in this manual obviates the need to obtain appropriate permits or authorizations for activities regulated by other agencies such as the USACE (Section 404 of the federal Clean water Act and Section 10 of the Rivers and Harbors Act), CDFW (Section 1600-1616, Lake and Streambed Alteration Program), or Regional Water Quality Control Board (Section 401 of the federal Clean Water Act, Porter-Cologne State Water Quality Act).

2.2 AVOIDANCE AND MINIMIZATION MEASURES FOR COVERED ACTIVITIES

In this context, Covered Activities primarily consist of routine repairs to, and maintenance of, existing facilities. These types of activities are routine in nature, and can involve a relatively small area or larger areas involving water conveyance infrastructure. Examples of minor routine activities include; grading, trenching, cleaning and removing debris from agricultural drains and inlet structures, temporary stock piling of removed sediment from drains adjacent to the drain where space permits, or trimming of over-grown and/or over-hanging vegetation, and vegetation clearing in agricultural drains. The replacement or reconstruction of existing structures and facilities can also be included within this category if the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity. The primary measure of a routine activity is that it involves negligible or no expansion of use beyond that pre-existing condition.

Impacts to sensitive species and their habitat can potentially occur as a result of minor routine activities. For example; grading activities in areas known to support Burrowing Owls may negatively impact the species through disturbance or direct impact to their burrows. Consequently, the owls could abandon young in the nest. Similarly, grading can alter the topography of an area such that drainage patterns and overall hydrology are affected. This could potentially result in the flooding of a Burrowing Owl burrow through ponding water or altered drainage patterns onsite. Disturbance of the soil can also crush or bury plants and animals. Even slight disturbances can destroy burrow openings, collapse below-ground tunnels, and prohibit the escape of animals. Animals that can be affected by maintenance activities include those, like the burrowing owl, that use burrows created by other species, and those that create their own burrows, like the Coachella Valley Round-Tailed Ground Squirrel and the Desert Tortoise. Although routine repairs and maintenance typically occur in areas that are previously disturbed

and therefore, less likely to be occupied by threatened and endangered species, impacts may still occur and attempts to avoid such impacts must be made. Refer to **Section 2.9** for details on the special-status species within the Plan Area, their suitable habitat, locations of occurrence, and species-specific avoidance and minimization measures.

The following avoidance and minimization measures have been established to protect threatened and endangered species and their habitats. When Covered Activities are to occur in a Conservation Area, the following activity-related avoidance and minimization measures are to be implemented in conjunction with the appropriate species-specific avoidance and minimization measures applicable to species found in each Conservation Area as provided in **Tables 4 – 15**.

Avoidance and Minimization Measures

Maintenance activities will be designed and implemented using the following avoidance and minimization measures to protect threatened species and their habitat:

- All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
- Use appropriate buffer zones when performing tree trimming and tree removal activities near active migratory bird nests or ground nesting birds such as Burrowing owl.
- No materials in concentrations deleterious to fish and wildlife including, but not limited to asphalt spoils, chemicals, pesticides/algaecides, and material that contain creosote may be placed in any receiving water.
- When working in sensitive areas (e.g., Conservation Areas, marsh and riparian habitats, Coachella Valley Storm Water Channel, Aeolian Sand Areas), the number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries outside of normal access roads shall be clearly delineated through fencing or flagging. These areas shall be outside of riparian, wetlands, and other sensitive areas.
- Food, trash, and other solid wastes shall be disposed of in raven proof/wildlife proof, covered refuse containers and regularly removed from the various structures and facilities on a daily basis to avoid offsite dispersal of waste and to avoid attracting wildlife onto the project site. Following covered activity work, all trash and debris shall be removed from the work area.
- The potential for wildfires will be reduced by parking vehicles away from vegetation and by the use of shields, protective mats, and other fire preventive methods when welding, grinding, or conducting other activities that are likely to create a fire hazard.

- Any contractor or employee who during routine operations and maintenance activities inadvertently impacts a listed species or a sensitive habitat shall immediately report the incident to their supervisor. The supervisor will then notify CVWD ESD staff. The report from the supervisor will be made within 24 hours of the incident and will include pertinent information including the date, time, location, species or description of organism, habitat, and possible cause of the impact (if known).
- The potential for increased soil erosion and sediment loading to receiving water will be minimized by limiting road improvements to those necessary for project construction, operation and maintenance.

Section 2.9 provides species-specific avoidance and minimization measures for use when performing Covered Activities on CVWD lands within or outside of Conservation Areas. Continue strict adherence to Federal Migratory Bird Treaty Act, California regulations including Section 1600-1616 for Streambed Alteration, Section 3503 and 3503.5 for protection of migratory birds, Clean Water Act and Air Quality regulations when working in the field.

2.3 LEVEE REPAIR, BANK PROTECTION, AND EROSION CONTROL ACTIVITIES

Activities in this category include repair of existing levees and/or replacement of existing bank protection materials to stabilize minor head-cuts or slip outs, blading of rills and gullies, repairing roads, stabilizing head-cuts or slumps, and replacement of existing bank protection materials with clean quarry rock, broken concrete free of rebar, and gabions, and replacement of concrete slope paving and channel lining, pipe and weir revetments, articulated concrete mats, and similar materials.

Standard protection measures have been established to prevent unnecessary and potentially serious impacts to sensitive species and their habitats. The avoidance and minimization measures required for erosion control activities are the same as those mentioned above in **Section 2.2**. They are to be implemented in conjunction with the appropriate species-specific avoidance and minimization measures presented in **Section 2.9**.

2.4 VEGETATION MANAGEMENT

Vegetation management activities include the use of herbicides, mowing, and other methods of reducing the amount of cover of terrestrial weeds or other vegetation that may interfere with the operation of facilities or to limit the spread of undesirable plants and nonnative species. It also includes various methods of controlling aquatic weeds, including algae. The following discussion of weed control is separated into the two main categories of plants, terrestrial versus aquatic, and focuses primarily on mechanical and chemical control of both types of vegetation. See **Section 2.6** for a discussion of mechanical means of weed control (e.g., mowing, disking) for O&M purposes.

2.4.1 CONTROL OF TERRESTRIAL WEEDS

Terrestrial vegetation control is important for the removal of exotic, or noxious, undesirable plants as well as native plants that may interfere with the operation of facilities. Typical methods of control include mowing or hand removal with power tools (e.g. chain saw, string trimmer or brush cutter), blading, excavating, disking, and herbicides. The elimination of weeds on channel banks has been a common practice because it facilitates the early detection of leaks and structural damage and in maintaining channel capacity. Weed control occurs along maintenance roads, road shoulders, and unpaved roads, mostly as a means of reducing fire hazard, reducing the spread of noxious weeds into right of way, and maintaining the integrity of the roads (plant growth can potentially crack and destroy pavement, canal lining, and compacted road shoulders). **Table 1** provides a summary of the herbicides typically used by CVWD. The information contained in this table serves as a guideline for the general herbicide use by CVWD throughout their service contract area. Applications of any herbicide will be made in accordance with the manufacturer's label information.

Although chemical control of terrestrial weeds is widespread, potential problems associated with the use of herbicides may occur. Following the product label directions and precautions will minimize the risk to listed species on CVWD lands within Conservation Areas.

In addition to the avoidance and minimization measures listed in **Section 2.2**, the following activity-related measures are to be implemented when conducting weed control activities in listed species habitat areas. These measures are to be implemented in conjunction with the appropriate species-specific avoidance and minimization measures presented in **Section 2.9**.

Avoidance and Minimization Measures

- Comply with the requirements specified on the pesticide product labeling; use of pesticides shall also comply with the guidelines and use restrictions for herbicides provided in the U.S. Environmental Protection Agency's "Interim Measures for Use of Pesticides in Riverside County."
- For spray-able or dust formulations, when air is calm or moving away from sensitive species and habitat, applications may commence on the side nearest the habitat and proceed away from the sensitive species/habitat. When air currents are moving toward sensitive species/habitat, do not make applications within 200 yards by air or 40 yards by ground upwind of the habitat.
- Ensure herbicide use near U.S. Waters is performed in accordance with state general permit provisions to protect sensitive habitats and areas where threatened and endangered species are observed. Consider alternate methods when feasible.

- Mix herbicides in areas not prone to runoff such as concrete mixing/loading pads, disked soil in flat terrain, or graveled mixing pads. Do not mix herbicides and/or fill application equipment tanks within the channel and/or in locations that may be subjected to high storm flows. Avoid mixing herbicides and/or filling application equipment tanks within 150 feet of receiving waters whenever possible. Use an appropriate method to contain spills and the rinsate. Properly empty and triple rinse pesticide containers at the end of each use.
- Prevent herbicide/pesticide runoff into U.S. Waters including rivers, creeks, lakes, streams, wetlands and marshes by providing a buffer zone of vegetation on which no pesticides are applied where feasible.

The application rate will vary depending upon the mode of action of the compound, the target species, the existence of Pest Management Zones, and the potential occurrence of sensitive species. Avoid impacts from the drift of spray-able or dust formulations away from the target locations. Appropriate spray devices and application methods, such as spray pressures, nozzle opening size, and additives such as spray retardants, will be used to prevent drift. Under no circumstances should any herbicide application occur when wind speed exceeds 10 miles per hour. When the air is moving toward the habitats, do not make applications within 200 yards by air or 40 yards by ground upwind from the sensitive habitat. These buffer zones may be reduced if there is an adequate physical barrier (e.g., hedgerow, wind break, or riparian corridor) that substantially reduces the probability of drift. Additionally, applications will not be made during rain so that organisms that respond to rainfall, such as amphibians and plant species, would not be subject to direct spray. It is possible that some residue in the soil could affect amphibians, reptiles, and plant species that are in contact with ground that has been treated. Accordingly, the least toxic herbicides will be used that will provide adequate control.

Mechanical control methods such as mowing are used as an alternative to the application of herbicides, whenever appropriate. The practicality of mechanical methods as a method of weed control will be determined on a site-by-site basis. The accepted approach to weed control in any one area will likely be a combination of techniques, using the best method for the conditions in a particular area.

For the routine trimming of over-grown and over-hanging vegetation that may pose a human safety threat along pathways or service roads leading to CVWD facilities contact CVWD ESD staff to survey for nesting birds. If no active nests are present, then trim trees and shrubs.

Avoidance and Minimization Measures for Mechanical Vegetation Clearance

- Contact ESD staff and arrange for pre-activity bird nesting survey if activity will occur from March 1 to September 1 for migratory birds, January 1 to July 31 for raptors (hawks, owls, eagles), and February 1 to August 31 for Burrowing owls.
- Mowing vegetation growing within the WWRSC/CVSC will be performed using a rubber tired vehicle.
- Conduct all equipment refueling and maintenance outside the channel, preferably in a staging area appropriate to the type of activities that will occur.

2.4.2 CONTROL OF AQUATIC WEEDS

Vegetation growing in channels, canals, and reservoirs can decrease volume of flow or storage capacity and make it difficult to calculate water availability and flow for deliveries. In lined canals, vegetation growing from panel seams can cause damage to the integrity of the lining. Large blooms of algae can clog drains and at times substantially reduce water quality when large-scale die-offs occur. Prevention of aquatic weed buildup is an important consideration of a weed control and management program, and early detection and eradication is a prime objective. Prevention and removal of sediment deposits within canals reduces suitable rooting substrate and deters the establishment of aquatic plants.

Current practices for the removal of aquatic weeds and grass within water conveyance canals and channels include the use of Triploid Grass Carp which has proven to be the safest for the environment, most effective and least costly. Herbicide, under the trade name Aquaneat, is also used to control nuisance vegetation and other weed growth in some facilities with Covered Activities. **Table 1** provides a summary of herbicide use by CVWD. The information contained in this table serves as a guideline for the general herbicide use throughout CVWD's service area.

Avoidance and minimization measures noted above for the chemical control of terrestrial weeds apply to the control of aquatic weeds, excluding the precautions related to surface water. Additionally, the following activity-related general measures are to be implemented where appropriate. These measures are to be implemented in conjunction with the pertinent species-specific avoidance and minimization measures presented in the individual Conservation Area species lists found in **Tables 4 – 15**.

Aquaneat is the recommended product for aquatic weed control within the restored habitats and/or native habitat and on CVWD lands within Conservation Areas that include wildlife management areas.

Habitat Restoration and Maintenance — when applied as directed, exotic and other undesirable vegetation may be controlled in habitat management areas. Applications may be made to allow recovery of native plant species, to open up water to attract waterfowl, and for similar broad-spectrum vegetation control requirements in habitat management areas. Spot treatments may be made to selectively remove unwanted plants for habitat enhancement. For spot treatments, care should be exercised to keep spray off of desirable plants.

The use of any herbicide or pesticide **shall comply with the requirements specified on the product labeling** and follow the guidelines and use restrictions provided in the U.S. Environmental Protection Agency's "Interim Measures for Use of Pesticides in Riverside County". Pesticide applications in U.S. Waters shall comply with the State Water Resources Control Board general NPDES permit for applying aquatic pesticides to control weeds. When chemical methods are used, the herbicides least toxic to aquatic animal life will be applied in order to obtain the required results. Herbicides are rated on the label according to the level of danger from toxicity, and toxicity rating should be reviewed with respect to target criterion and concentrations. For any application of herbicides applications must be made in compliance with the label requirements from the manufacturers. The actual choice of the chemical used for a

particular application should be made based on use restrictions and discussions with the California Department of Pesticide Regulations (CDPR). The CDPR pest management program is established to help water purveyors achieve the most effective and safe pest control program for their sites for a review of current regulations and discussion go to the CDPR website at <http://www.cdpr.ca.gov/>. Combination approaches of manual, mechanical, and chemical methods can be implemented in areas where various logistical and biological constraints must be considered. New formulations of aquatic herbicides will likely be developed to control aquatic weeds and will become available in the near future. The application of any new chemical product for aquatic weed control should be coordinated with CVWD ESD staff to minimize the risk to listed aquatic species that might be living in the habitat or area to be treated. Use the following avoidance and minimization measures and species-specific avoidance and minimization measures beginning in **Section 2.9** of this manual:

Avoidance and Minimization Measures

- Any herbicide use shall comply with the requirements specified on the product labeling. Use of pesticides shall also comply with the guidelines and use restrictions for herbicides provided in the California Department of Pesticide Regulations (CDPR).
- For spray-able or dust formulations, when air is calm or moving away from sensitive species/habitat, applications may commence on the side nearest the habitat and proceed away from the sensitive species/habitat. When air currents are moving toward sensitive species/habitat, do not make applications within 200 yards by air or 40 yards by ground upwind of the habitat.
- Ensure herbicide use in U.S. Waters is performed in accordance with state general permit provisions to protect sensitive habitats and areas where threatened and endangered species are observed. Consider alternate methods when feasible.
- Mass application of herbicide is discouraged in U.S. Waters and spot spraying or more localized applications are recommended. Where appropriate, selective herbicides should be used to eliminate only broad-leaved plants and encourage native vegetation.
- Mix herbicides in areas not prone to runoff such as concrete mixing/loading pads, disked soil in flat terrain, or graveled mixing pads. Use an appropriate method to contain spills and the rinsate. Properly empty and triple rinse application sprayers or containers at the end of each use.
- Prevent pesticide runoff into U.S. Waters including rivers, creeks, lakes, streams, wetlands and marshes by providing a buffer zone of vegetation on which no pesticides are applied where feasible.
- Herbicides shall not be applied to U.S Waters without first obtaining the applicable NPDES permit for this application. CVWD ESD staff shall be consulted to discuss the need for this type of permit.

Herbicide Safety BMPs

- Read and follow label safety directions, maintain appropriate Material Safety Data Sheets, and become certified prior to applying restricted use pesticides.
- Wear the appropriate protective equipment specified on the pesticide label to minimize unnecessary exposure to pesticide. Be sure to clean protective gear after each day's use.
- Provide emergency hand and eye wash facilities for personnel working in chemical storage, mixing, and treatment areas. Develop a safety plan that includes information about poison centers and emergency response phone numbers in highly visible places near areas where chemical handling occurs.
- Know what to do in case of accidental pesticide poisoning. Have an emergency response kit available when handling pesticides. Check the product label for instructions and call the nearest poison center in the event a pesticide is swallowed or when pesticide exposure has occurred. Product labels often include a telephone number where expert information is also available. Take the pesticide label to the attending physician if you need treatment.
- Follow all Worker Protection Standard (WPS) requirements and postings as specified by the CVWD Safety Department.

2.5 PEST CONTROL ACTIVITIES

Pest control activities include limited use of pesticides, and rodent control for Roof rats (*Rattus rattus*), Norway rats (*Rattus norvegicus*), and House mouse (*Mus musculus*) at CVWD facilities. Contract consultants are enlisted, as needed, to trap rodents such as California ground squirrels (*Otospermophilus beecheyi*) that may compromise the integrity of canal banks, agricultural drains, or other infrastructure to protect these facilities from damage. Prior to implementing any trapping, the target species will be identified to avoid/minimize impacts to species listed under the MSHCP. Rodenticides and insecticides are no longer used in the field as part of CVWD's nuisance pest control protocol but are utilized at CVWD office and water reclamation facilities as needed. Although rodenticides are no longer used during the course of field maintenance activities, rodent control is implemented at CVWD offices and water reclamation facilities in the form of bait stations. Use of these stations within CVWD facilities is not anticipated to impact listed plant or animal species due to the lack of suitable onsite habitat and level of disturbance associated with developed facilities. **Table 1** provides a summary of the pest control activities by CVWD. The information contained in this table serves as a guideline for the general control methods used by CVWD. If, in the future, chemical or bait methods are used to control rodents at additional facilities, the intended treatment areas will be evaluated for the potential occurrence of special-status species that are associated with burrow complexes, such as Desert Tortoise, Coachella Valley round tailed ground squirrel, and Burrowing owls. See **Section 2.9** for special-status species occurrences and distribution in the Coachella Valley.

Although most chemicals known for high rates of secondary poisoning have been banned in recent years, secondary poisoning can still occur if a predator feeds upon the carcass of an animal that has been poisoned by a rodenticide especially second generation anti-coagulants. Young animals are especially sensitive to secondary poisoning. Rodenticides can accumulate in the tissues of higher carnivores and scavengers. Sensitive species that are considered at risk from secondary poisoning include burrowing owl, other birds of prey and desert tortoise. Alternative (i.e., non-chemical) approaches should be considered for rodent control in areas potentially supporting threatened and endangered wildlife. Trapping may be very effective for control of rodents in CVWD facilities.

If feasible, use standard rodent traps as an alternative to chemical control for rodents in and around CVWD facilities. Traps will not be placed in open desert or outside of CVWD facilities to avoid impacting non-target species. Stake all traps during placement. Trapped rodents will be removed from traps and placed in the trash. The following avoidance and minimization measures apply to the use of insecticides and rodenticides and trapping. These measures are to be implemented where appropriate and in conjunction with the appropriate species-specific avoidance and minimization measures beginning in **Section 2.9**.

Avoidance and Minimization Measures for Trapping and Pesticide Use

- Comply with the requirements specified on the pesticide and bait station product labeling when using insecticides and rodenticides; use of such pesticides shall also comply with the guidelines and use restrictions for pesticides provided in the California Department of Pesticide Regulations (CDPR, Appendix B).
- Maintain application equipment in good working condition and calibrate equipment frequently to ensure that pesticides are applied at recommended rates. Replace all worn components of pesticide application equipment, especially nozzles, prior to application.
- Ensure that the pesticide applicator knows the exact field location to be treated. Post warning signs around fields that have been treated, in accordance with local, state, and federal laws. Follow the established re-entry interval as stated on the pesticide label.
- Employ application techniques that increase efficiency and allow the lowest effective labeled application rate. Use band and spot applications of pesticides where appropriate to reduce environmental hazards and treatment costs.
- Avoid unnecessary and poorly timed application of pesticides. Optimize pesticide rate, timing, and placement to avoid the need for re-treatment.
- Avoid overspray and chemical drift, especially when surface water is in close proximity to treatment area. Avoid applications if wind speed favors drift beyond the intended application area. Increasing nozzle size and/or lowering boom pressure will increase droplet size and help reduce drift. Always recalibrate following equipment adjustments or modifications.

- Time pesticide application in relation to soil moisture, anticipated weather conditions, and irrigation schedules to achieve the greatest efficiency and reduce the potential for off-site transport. Avoid pesticide application when soil moisture status or scheduled irrigation increases the possibility of runoff or deep percolation. After application, manage irrigation to reduce the possibility of erosion, runoff and/or leaching, which may transport pesticide from the target site.
- Establish buffer zones so pesticide is not applied within 50 feet of wells and surface water.
- Apply pesticides in a manner that will minimize off-target effects.
- Ensure that backflow prevention devices are installed and operating properly on irrigation systems used for applying pesticide or herbicide.
- When disposing of dead rodents do not touch them with bare hands, use gloves or a plastic bag to pick up the rat or to remove the rat from the trap.
- Do not place bait stations or rodent traps in open desert outside of CVWD facilities or field locations supporting CVWD infrastructure.

Pesticide Safety BMPs

- Read and follow label safety directions, maintain appropriate Material Safety Data Sheets (MSDS), and become certified prior to applying restricted use pesticides.
- Wear the appropriate protective equipment specified on the pesticide label to minimize unnecessary exposure to pesticide. Be sure to clean protective gear after each day's use.
- Provide emergency hand and eye wash facilities for personnel working in chemical storage, mixing, and treatment areas. Develop a safety plan that includes information about poison centers and emergency treatment centers. Post emergency response phone numbers in highly visible places near areas where chemical handling occurs.
- Know what to do in case of accidental pesticide poisoning. Have an emergency response kit available when handling pesticides. Check the product label for instructions and call the nearest poison center in the event a pesticide is swallowed or when pesticide exposure has occurred. Product labels often include a telephone number where expert information is also available. Take the pesticide label to the attending physician if you need treatment.
- Follow all Worker Protection Standard (WPS) requirements and postings as specified by the CVWD Safety Department.

2.6 TEMPORARY DE-WATERING AND REMOVAL OF SEDIMENT FROM WATER SUPPLY RESERVOIRS, DETENTION/RETENTION BASINS, AND CANALS

Accumulated sediment, silt, and aquatic vegetation needs to be periodically cleaned from water supply reservoirs, detention/retention basins, pipelines, and other water control structures in order to retain capacity, permit proper functioning, and maintain water quality. These sorts of activities are typically conducted on an as needed basis which is determined by irrigation staff (i.e., after or prior to the irrigation season). In some cases, it is also necessary to temporarily de-water facilities in order to conduct the maintenance activities outside of the normal periods when such facilities may normally be dry or drained as part of normal operations.

The following activity-related avoidance and minimization measures have been developed to protect listed species and their habitats. These measures are to be implemented in conjunction with the appropriate species-specific avoidance and minimization measures presented in **Section 2.9**.

Avoidance and Minimization Measures

If a work site is to be temporarily de-watered or filled, the de-watering and other required maintenance should be conducted as follows:

- Contact CVWD ESD staff to determine if any pre-activity surveys are required for Covered Activities within Conservation Areas.
- Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during the covered activity. Upon completion of Covered Activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
- Discharges of deleterious amounts of sediment shall be controlled to reduce the risk to listed species found in aquatic habitats.
- Be aware that sensitive species and other animals may hide under piles of trash, construction materials, or parked vehicles. Check for wildlife before moving these items.
- Conduct all equipment refueling and maintenance outside the stream channel, preferably in a staging area appropriate to the type of activities that will occur.
- The spread of or introduction of invasive, exotic plants, animals, invertebrates and mollusks should also be avoided to the maximum extent possible. CVWD accomplishes this by washing down and drying drain clearing equipment after use in the field.

2.7 FLOOD CONTROL AND DRAINAGE CHANNEL MAINTENANCE

CVWD also performs flood control channel maintenance. Maintenance of flood control channels is critical for the channel to convey flood waters as designed and is considered to be a Covered Activity under the CVMSHCP. This involves numerous activities for maintaining the channel's integrity, controlling vegetation, removing debris, and maintaining access roads. The following discussion is intended to address the nature, impacts, and impact avoidance measures for each type of activity.

The following measures have been developed to protect listed species and their habitats while conducting channel maintenance operations. These measures are to be implemented in conjunction with the avoidance and minimization measures described in **Section 2.2** and the appropriate species-specific avoidance and minimization measures presented in **Section 2.9** and **Tables 4 – 15**. Other associated specific activity measures described in **Sections 2.2** through **2.7.2** should be implemented if required.

2.7.1 AGRICULTURAL DRAIN CLEANING

Drain maintenance is required to remove sediment and emergent vegetation that has accumulated in the agricultural drains so that the capacity of each drain is maintained. Some agricultural drains occur within the Delta Conservation Area and therefore require avoidance and minimization measures to protect listed species, such as the Desert pupfish, Yuma Ridgway's Rail and California black rail, and migratory birds which may nest in the area.

Avoidance and Minimization Measures

The following avoidance and minimization measures are intended to protect species associated with the potential habitat found in the agricultural drains that occur along the Salton Sea and within the CVSC Delta Conservation Area. Further development of avoidance and minimization measures may be incorporated into this manual as new information regarding species occurrence and distribution within the Plan area is learned. The following avoidance and minimization measures may be used individually or in concert with each other depending upon the potential impacts the activity may involve:

- If covered drain activities will occur within a Conservation Area refer to the appropriate Conservation Area Species list for applicable avoidance and minimization measures; contact CVWD ESD staff and determine if any pre-activity surveys are required.
- If coffer dams and pumps are used to isolate and dry the work area, prevent the pumped water from reentering the stream channel unless/until deleterious amounts of sediment has settled out.
- Conduct all equipment refueling and maintenance outside the stream channel, preferably in a staging area appropriate to the type of activities that will occur.
- Deposit dredged material where water from this material is less likely to drain directly into the agricultural drain to minimize erosion and transport of the dredged material.

- In areas of Yuma Ridgway's Rail/California Black Rail habitat: Perform pre-activity nesting surveys between March 1 – September 1 to determine presence of nesting rails or other marsh/riparian bird species on the worksite. If nesting rails or other nesting bird species are present flag and create a buffer zone of at least 200 feet to avoid and minimize impacts to nesting birds or their offspring.
- Discharges of deleterious amounts of sediment shall be controlled to reduce the risk to listed species found in aquatic habitats.
- Be aware that sensitive species and other animals may hide under piles of trash, construction materials, or parked vehicles. Check for wildlife before moving these items.

2.7.2 FLOOD CONTROL CHANNEL MAINTENANCE

Current O&M activities for flood control channels include emergency repairs following major flooding events, mowing, and vegetation removal by hand, maintenance of access roads, and replacement of signage. CVWD is currently working with state and federal agencies to obtain Clean Water Act permits to perform expanded O&M activities to allow the Whitewater River and Coachella Valley Stormwater Channel (WWSC/CVSC) system and associated tributaries to operate under optimum conditions per design. The following avoidance and minimization measures will be used for these Covered Activities:

Avoidance and Minimization Measures

- Contact CVWD ESD staff to determine if any pre-activity surveys are required for Covered Activities within Conservation Areas.
- Have ESD staff perform a pre-activity survey of the site for the presence of nesting migratory/marsh birds having the potential to occur in this habitat and implement appropriate buffer zones for nesting birds.
- Implement BMPs and beneficial control measures identified in the drain maintenance study to minimize direct impacts to Desert pupfish.
- If coffer dams and pumps are used to isolate and dry the work area, prevent the pumped water from reentering the stream channel unless/until deleterious amounts of sediment have settled out.
- Conduct all equipment refueling and maintenance outside the flood control channel, preferably in a staging area appropriate to the type of activities that will occur. This will include washing of equipment and vehicles which occurs at the CVWD equipment storage yard following maintenance activities.
- Deposit dredged material where water from this material is less likely to drain directly into the flood control channel to minimize erosion and transport of the dredged material.

- Minimize the impacts associated with the Covered Activity site access roads, including (1) locating the roads so as to minimize the pruning or removal of vegetation, (2) using erosion control BMPs to stabilize the roads prior to the rainy season, and (3) closing the roads off following completion of the Covered Activity to prevent use by off-road vehicles.

2.8 SPECIAL-STATUS SPECIES

The Federal Endangered Species Act (ESA) prohibits the "taking" of threatened and endangered plant and animal species unless authorized by the FWS under Section 7 or Section 10(a) of the ESA and sections 3503, 3503.5, and 3513 of the California Fish and Game Code (FGC) prohibit the take of all birds and their nests, including raptors. "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Protection can also extend to the habitat of listed species meaning that modifications to or destruction of a listed species' habitat can also be considered "Take" under certain circumstances.

The covered operations and maintenance activities that are considered routine and necessary within the CVWD service area constitute actions that could potentially impact listed plants and animals. The following section provides guidance to protect state and federally-listed plants and wildlife within the CVWD service area. Review of the appropriate portions of this section prior to initiating routine activities will help to avoid violation of the "Take" provisions of the ESA while still providing for the continuance of routine operations and maintenance procedures.

It is important for all operations and maintenance personnel, including contractors, to be informed of the sensitive nature of listed species and the legal consequences of intentionally modifying or destroying them or the habitats in which they occur.

2.8.1 SPECIAL-STATUS SPECIES IN COACHELLA VALLEY MSHCP

Twenty seven species of plants and animals are listed as threatened or endangered under the federal Endangered Species Act (ESA) and include nine species which are jointly listed by the state of California. These listed species all occur in CVMSHCP boundary and CVWD's service area with the exception of the Desert Slender Salamander. An additional four species are listed as rare, threatened or endangered by the State. These plant and animal species along with their status are shown in **Table 2**.

Many of these sensitive species are associated aquatic or wetland habitats (perennial and/or seasonal) for much of the year or for critical life functions such as breeding and rearing/growth of young. However, many of these species also use uplands for other essential life functions such as refuge, aestivation, migration or dispersal and escape from floods. Thus, both wetlands and uplands within the range of special-status species are of concern for facilities operation and management activities.

2.8.2 CONSERVATION AREAS IN THE COACHELLA VALLEY

Twenty-one Conservation Areas have been identified within the Coachella Valley. Conservation Areas are habitat-based and represent the primary regions containing habitats that may support one or more of the listed species shown in **Table 2**. The Conservation Areas have been developed as general guidelines for locations that may support the 27 species covered under the CVMSHCP. Special-status species may also occur outside of the general mapped Conservation Area's and other factors such as habitat should be considered prior to commencement of Covered Activities. CVWD ESD staff shall survey sites within Conservation Area's prior to the start of Covered Activities likely to impact special-status species.

The Conservation Area map is intended to be used as a guide to indicate the locations of Conservation Area's and the associated CVWD owned lands within each Conservation Area. In addition to the Conservation Area Map the individual Conservation Area species lists are designed to provide an overview of avoidance and minimization measures applicable to species associated with each Conservation Area. The individual Conservation Area species list is designed to be used as an avoidance and minimization guide for CVWD staff and is not intended to identify all site-specific locations of threatened or endangered species habitats in the Coachella Valley. However, for two of the species – Yuma Ridgway's Rail, and California Black Rail- occurrence outside of their respective Conservation Areas is unlikely based upon the best available science. For these species, the applicable protection measures only apply to designated habitat areas.

The Conservation Area species lists and associated avoidance and minimization measures specific to each Conservation Area are provided in **Tables 4-15**. The following section provides natural history as well as additional reference for avoidance and minimization measures for each species covered under the CVMSHCP.

2.9 SPECIES ACCOUNTS AND AVOIDANCE MEASURES

The following sections provide information on the threatened and endangered species in the Coachella Valley that are most likely to be encountered during normal operations and maintenance activities. Specific avoidance measures for each species or group of species/habitat association are also described to prevent or minimize the potential for take of sensitive species. As per the terms and conditions of the CVMSHCP, these avoidance and minimization shall be implemented to the maximum extent possible. These procedures will be followed by CVWD staff in charge of maintenance activities to avoid unauthorized incidental take of threatened and endangered species. If the required avoidance and minimization measures outlined below cannot be followed, the project must be reviewed to determine if threatened or endangered species may be impacted.

The following steps should be followed prior to the start of a Covered Activity:

1. The relevant information in **Section 2.0** should be carefully reviewed regarding the type(s) of routine activity(s) to be initiated and the associated avoidance and minimization measures needed to protect sensitive species and habitats.

2. Once Step 1 has been completed, the Conservation Area map should be reviewed and the on-site and near-site conditions evaluated to determine if special-status species potentially occur.

If the results of these initial evaluation steps (i.e., Steps 1 and 2) indicate that special-status species may occur at or near a designated work site, the appropriate species accounts should be reviewed. These species accounts are intended to provide detailed information regarding species descriptions, their habitat requirements, general activity period, and the required avoidance measures to be implemented to prevent or minimize impacts to sensitive species.

It is important to note that the required species-specific avoidance and minimization measures presented in **Section 2.9** of the manual are intended to be implemented in conjunction with the activity-related avoidance and minimization measures outlined in **Section 2.0**.

3.0 PLANTS

The species accounts and avoidance and minimization measures presented below are designed for supervisors and field crews, and can be used for a variety of purposes such as planning and contractor awareness training, as well as use in the field by operations and maintenance staff.

3.1



Mecca Aster

Xylorhiza cognate

Status Federal: No official status

State: No official status

CNPS: List 1B

Species Account:

Mecca aster may be associated with two intergraded geologic formations found in these hills; the Palm Springs formation and the Canebrake formation (Stewart 1991). These formations are similar in age and are both fluvial deposits; the Palm Springs formation is composed of sandstones and clays while the Canebrake formation includes granitic conglomerates of larger materials. Stewart noted a strong correlation between the known occurrences of this species and the Palm Springs and Canebrake geologic formations. The original model for this species incorporated the mapped distribution of the Palm Springs formation. This formation includes a significant area in the Indio Hills west of the Thousand Palms Preserve where this species has never been observed. Conversely, the Palm Springs formation is not mapped in an area in the East Indio Hills, between Macomber Palms and Biskra Palms, where many known occurrences of Mecca aster have been recorded. So in October 2002, the model was revised to more accurately reflect the known distribution of the Mecca aster.

This species is located within the following Conservation Areas:

- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- East Indio Hills Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- For Covered Activities within Mecca Aster habitat in the Thousand Palms, Indio Hills, East Indio Hills, Desert Tortoise and Linkage, and Mecca Hills/Orocopia Mountains Conservation Areas, surveys by ESD staff will occur prior to ground disturbance activities during the growing and flowering period from February 1 - May 15.
- Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Mecca Aster where it may occur in appropriate habitat along roads or wash bottoms.
- CVWD will continue to control and manage access to Mecca aster habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access.
- Avoid the use of herbicides outside of CVWD facilities in areas that are known to support Mecca Aster.

What to Do If Found

- Immediately stop all work in the vicinity of the plant and create a 25-foot buffer zone which will allow for avoidance of the plant and reduce potential impacts from Covered Activities. Notify ESD staff that a Mecca Aster was observed and what actions were taken to avoid impacts.

3.2



Coachella Valley Milkvetch

Astragalus lentiginosus var. coachellae

Status Federal: Endangered

State: No official status

CNPS: List 1B

Species Account:

The Coachella Valley Milkvetch (CVM) occurs in dunes and sandy flats, along the disturbed margins of sandy washes, and in sandy soils along roadsides where they occur adjacent to existing sand dunes. Within the sand dunes and sand fields, this Milkvetch tends to occur in the coarser sands at the margins of dunes, not in the most active blow sand areas. As this species is strongly affiliated with sandy substrates, it may occur in localized pockets where sand has been deposited by wind or by active washes. It may also occur in sandy substrates in creosote bush scrub, not directly associated with sand dune habitats. In the Plan Area, populations are known from the Snow Creek area (in the sandy areas on either side of Snow Creek Road east toward Windy Point and scattered along Tipton Road, north of Highway 111), on the Whitewater Floodplain Preserve, the Willow Hole-Edom Hill Preserve/ACEC, and the Thousand Palms Preserve. Other concentrations of the species occur along Gene Autry Trail near the airport in Palm Springs, on and around Flat Top Mountain, along Varner Road at the base of Edom Hill, on remnants of the Big Dune south of Interstate 10, and in scattered locations in the southern parts of Desert Hot Springs (including at the wastewater treatment plant). In the area of the Big Dune, Habitat viability has been much reduced by roads, fragmentation, and disturbance (C. Barrows 1987, CNDDDB/CDFW 1997). Though suitable habitat appears to be present in the Indio and La Quinta areas, this species has not been recorded there. Within the Plan Area, the easternmost occurrence for CVM is on the Thousand Palms Preserve.

This species is located within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Whitewater Canyon Conservation Area
- Whitewater Floodplain Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Edom Hill Conservation Area
- Indio Hills/Joshua Tree National Park Linkage Conservation Area
- Indio Hills Palms Conservation Area
- East Indio Hills Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- For Covered Activities within modeled CVM habitat in the Whitewater Canyon, Whitewater Floodplain, Cabazon, Stubbe and Cottonwood, Upper Mission Creek/Big Morongo Canyon, Edom Hill, Indio Hills/Joshua Tree National Park Linkage, Indio Hills Palms, East Indio Hills, and Santa Rosa and San Jacinto Mountains Conservation Areas, pre-activity surveys by the ESD staff will be required for ground disturbance activities during the growing and flowering period from February 1 - May 15.
- Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms.
- If CVM is found to be within the footprint of any covered activity contact ESD staff to determine if salvage of plant and/or seeds is feasible.
- CVWD will continue to control and manage access to CVM habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access.
- Avoid the use of herbicides outside of CVWD facilities in areas that are known to support CVM.

What to Do If Found

Immediately stop all work in the vicinity of the plant and create a 25-foot buffer zone which will allow for avoidance of the plant and reduce potential impacts from Covered Activities. Notify ESD staff that a Coachella Valley Milk-vetch was observed and what actions were taken to avoid impacts.

3.3



Triple-Ribbed Milk-vetch

Astragalus tricarinatus

Status Federal: Endangered

State: No official status

CNPS: List 1B

Species Account:

The Triple-Ribbed Milk-vetch is an endemic species found in a narrow range primarily from the northwestern portion of the Coachella Valley, from the vicinity of Whitewater Canyon, the type locality, in Mission Creek Canyon across Highway 62 to Dry Morongo Wash and Big Morongo Canyon. Another location where the species has been collected is Agua Alta Canyon, a branch of Martinez Canyon in the Santa Rosa Mountains in the southern portion of the Plan Area; this record is for one individual collected by Jon Stewart and identified by Andy Sanders of the U.C. Riverside herbarium. Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. In particular, known occurrences on a map maintained by CVCC shall not be disturbed.

This species is found within the following Conservation Areas:

- Whitewater Canyon Conservation Area
- Whitewater Floodplain Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- For Covered Activities within Triple-Ribbed Milk-vetch habitat in the Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, and Santa Rosa and San Jacinto Mountains Conservation Areas, surveys by ESD staff will occur for ground disturbance activities during the growing and flowering period from February 1 - May 15.
- Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Triple-ribbed Milk-vetch where it may occur in appropriate habitat along roads or wash bottoms.
- If Triple-Ribbed Milk-vetch is found to be within the footprint of any covered activity contact ESD staff to determine if salvage of plant and/or seeds is feasible.
- Avoid the use of herbicides outside of CVWD facilities in areas that are known to support Triple-Ribbed Milk-vetch.

What to Do If Found

- Immediately stop all work in the vicinity of the plant and create a 25-foot buffer zone which will allow for avoidance of the plant and reduce potential impacts from Covered Activities. Notify ESD staff that a Triple Ribbed Milk-vetch was observed and what actions were taken to avoid impacts.

3.4



Orocopia Sage

Salvia greatae

Status Federal: No official status

State: Special Plant, California Species of Special Concern

CNPS: List 1B

Species Account:

The preferred habitat of Orocopia sage is in gravelly or rocky soils on broad bajadas or fans, often adjacent to desert washes or on the rocky slopes of canyons. It may occur on alluvial terraces and sandy or rocky benches elevated above the flood plain of a wash, as in the Salt Creek Wash along the Bradshaw Trail. The species does not appear to occur within the immediate wash zone. This species has also been recorded up to 2,800 feet in the Orocopia Mountains. Though Orocopia sage is patchy in its distribution, it is typically one of the dominant members of the vegetation where it occurs. Plants may be 3 to 4 feet tall and usually form dense, rounded clumps, sometimes as large as 4 or 5 feet in diameter. Multiple branching from near ground level results in a very bushy appearance. This species is associated with desert dry wash woodland and Sonoran creosote bush scrub.

This species occurs within the following Conservation Areas:

- Mecca Hills/Orocopia Mountains.
- Desert Tortoise and Linkage.

Species Specific Avoidance and Minimization Measures are described below:

- For Covered Activities within Orocopia Sage habitat in the Mecca Hills/Orocopia Mountains, and Desert Tortoise Linkage Conservation Areas, surveys by ESD staff will occur ground disturbance activities during the growing and flowering period from February 1 - May 15.
- Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Orocopia sage where it may occur in appropriate habitat.
- If Orocopia sage is found to be within the footprint of any covered activity contact the ESD to determine if salvage of plant and/or seeds is feasible.
- Avoid the use of herbicides outside of CVWD facilities in areas that are known to support Orocopia Sage.

What to Do If Found

- Immediately stop all work in the vicinity of the plant and create a 25-foot buffer zone which will allow for avoidance of the plant and reduce potential impacts from Covered Activities. Notify ESD staff that an Orocopia Sage was observed and what actions were taken to avoid impacts.

3.5



Little San Bernardino Mountains Linanthus

Linanthus maculatus (also *Gilia maculata*)

Status Federal: Species of Concern

State: Species of Special Concern

CNPS: List 1B

Species Account:

The preferred habitat of Little San Bernardino Mountains Linanthus is in loose soft sandy soils on low benches along washes, generally where the substrate shows some evidence of water flow. It seems to occur in areas where few or no competing species are found, with little shrub or tree cover in the immediate vicinity. The sand is loose and well-aerated, soft and unconsolidated (Sanders 1999). The occurrences within the Plan Area are on the margins of washes on shallow sandy benches, not on areas where a hard surface layer occurs, and not on loose blow sand away from washes. It is associated with creosote bush scrub, but avoids growing in the shadow of other plants. The elevation range of the species is from 500 to 4,000 feet. Little is known of the life history of this species. Its pollinators, germination requirements, seed longevity, and population parameters have not been described. The flower form and color are indicative of insect pollination but no information on pollination ecology is available. The plants are very small, generally reaching a height of only 0.8 to 1.2 inches. They have a slender, little-branched tap root that may extend over 3 inches into the sand, probably allowing the plants to tap subsurface supplies of moisture and thus avoid atmospheric drying. They are nevertheless very ephemeral.

Associated Covered Species. Within the Plan Area, other species of concern who's Core Habitat overlaps with that of the Little San Bernardino Mountains Linanthus include Triple-Ribbed Milk-vetch, Palm Springs Pocket Mouse, Desert Tortoise, and Burrowing Owl.

This species is found within the following Conservation Areas:

- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Morongo Wash Special Provisions Area within the Upper Mission Creek/Big Morongo Canyon Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- For Covered Activities within Linanthus habitat in the Whitewater Canyon Conservation Area, Upper Mission Creek/Big Morongo Canyon Conservation Area, and Morongo Wash Special Provisions Area within the Upper Mission Creek/Big Morongo Canyon Conservation Area perform surveys by ESD staff will be required for ground disturbance activities during the growing and flowering period from February 1 - May 15.
- Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Little San Bernardino Mountains Linanthus where it may occur in appropriate habitat.
- If Little San Bernardino Mountains Linanthus is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible.
- Avoid the use of herbicides outside of CVWD facilities in areas that are known to support Linanthus.

What to Do If Found

- Immediately stop all work in the vicinity of the plant and create a 25-foot buffer zone which will allow for avoidance of the plant and reduce potential impacts from Covered Activities. Notify ESD staff that a Little San Bernardino Mountain Linanthus was observed and what actions were taken to avoid impacts.

4.0 INSECTS

This section contains species accounts, including habitat parameters and significant threats, for each of the two insect species currently covered under the CVMSHCP/NCCP. Neither of the target insect species has any state or federal status, however they are protected under the CVMSHCP and therefore require appropriate avoidance and minimization efforts to deter impacts to these species. These insects, the Coachella Valley Giant Sand-Treader cricket and the Coachella Valley Jerusalem cricket, are endemic to the Coachella Valley and the Plan Area. Some of the features of the biology of insect species warrant special note with regard to these conservation strategies. General measures common to both of these insects are listed below, and measures specific to either species are considered in the individual species description.

4.1



Coachella Valley Giant Sand-Treader Cricket

Macrobaenetes valgum

Status Federal: Species of Concern (No official status)

State: No official status

Species Account:

As previously noted, the Coachella Valley Giant Sand-Treader cricket depends on the active dunes and ephemeral sand fields at the west end of the Coachella Valley. They can be found in appropriate habitat west of Palm Drive at least to Snow Creek Road, adjacent to the Whitewater River and San Gorgonio River washes. Suitable habitat also occurs within the Whitewater Floodplain Preserve. Despite the low numbers reported below from pit-trap samples at the Thousand Palms Preserve, burrows of these crickets are commonly observed in the more active portions of the Aeolian sands in the southern dunes (C. Barrows 1998). The distinctive, cone-shaped excavation tailings of this species' diurnal burrows can be easily identified and used to confirm this species' occurrence at a given location (C. Barrows 1998). They were not as common at Willow Hole, and were not observed at a La Quinta site and at the east end of the Indio Hills. The east end of the Indio Hills also includes suitable active blow sand habitat, and, although comprehensive surveys have not been conducted, this species has not been observed there. Perennial shrubs, including creosote bush, burrobush, honey mesquite, Mormon tea, desert willow, and sandpaper bush, dominate the preferred habitat of this species in windblown environments. The Coachella Valley Giant Sand-Treader cricket has its primary period of activity during the spring. They are nocturnal, coming to the surface to forage on detritus blown over the dunes, or to look for mates. During the day they conceal themselves in self-dug burrows from five to 20 meters deep in the sand. These burrows are often associated with the roots of perennial shrubs or are found under boards, rocks, and other hiding places. The adult and juvenile instars disappear during the warm months of the year, suggesting that individuals spend the summer in the egg stage. Activity of small juvenile instars begins in the late fall through early winter. By mid to late spring the adults have disappeared.

Associated Covered Species. Within the Plan Area, other species of concern whose habitat overlaps with that of the Coachella Valley Giant Sand-Treader cricket include Coachella Valley Milkvetch, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Palm Springs pocket mouse, Coachella Valley round-tailed ground squirrel, Coachella Valley Jerusalem cricket, and burrowing owl.

This species is found within the following Conservation Areas:

- Snow Creek/Windy Point Conservation Area
- Whitewater Floodplain Conservation Area
- Thousand Palms Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Perform pre-activity surveys for this species in areas of unpaved soil during the winter and spring emergence and breeding periods.
- Maintenance activities will be designed and implemented using Best Management Practices (BMPs) in a way that minimize new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Giant Sand-Treader crickets.
- All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
- No pesticide use shall occur outside of CVWD facilities in habitat occupied by this species.

What to Do If Found

- Allow the cricket to leave the area and notify ESD staff that a Coachella Valley Giant Sand-Treader cricket was observed and what actions were taken to avoid impacts.

4.2



Coachella Valley Jerusalem Cricket

Stenopelmatus californicus

Status Federal: No official status

Status State: No official status

Species Account:

The Coachella Valley Jerusalem cricket is known from the Snow Creek area from Fingal's Finger east to Windy Point, and from remnants of sand dune habitat around the Palm Springs Airport. The easternmost known occurrence is a record from the Thousand Palms' area in the vicinity of Bob Hope Drive and Interstate 10. In spring 2003 surveys by the University of California found this cricket west from Fingal's Finger to nearly the Plan boundary. They occur in sandy to somewhat gravelly sandy soils and have been called an obligate sand species (G. Ballmer, pers. comm.). They do not necessarily require active blow sand habitat but have been found in loose windblown drift sands, dunes, and sand in vacant lots if native vegetation exists. According to Hawks (1995), these Jerusalem crickets require high humidity; most observations have followed winter and spring storms while the soil substrate remains moist. They are most often located beneath surface debris during the cooler and wetter months of the year. During the summer months, they spend daylight hours in deep burrows in the ground; they may rarely be encountered at the surface during the night (Hawks 1995). Because these Jerusalem crickets have been observed more widely at the western edge of the Coachella Valley and because of their affiliation with cool, moist conditions, it has been suggested that they may be limited in distribution by temperature and moisture regimes (Tinkham 1968, Hawks 1995). They have not been found in the vicinity of the Whitewater Floodplain Preserve and Hawks (1995) suggests that suitable habitat does not exist in this area. The easternmost occurrence is in the vicinity of Thousand Palms, near Bob Hope Drive and Interstate 10. This location may no longer be extant, as the area is increasingly developed. Greg Ballmer suggests this record is probably an outlier. The lack of observations of this species east of Windy Point suggests that they may not occur in significant numbers in the central Coachella Valley.

Associated Covered Species. Within the Plan Area, other species of concern whose habitat overlaps with that of the Coachella Valley Jerusalem cricket include Coachella Valley Milk-vetch, Coachella Valley Fringe-Toed lizard, Flat-Tailed horned lizard, Palm Springs pocket mouse, Coachella Valley round-tailed ground squirrel, Coachella Valley Giant Sand-Treader cricket, and burrowing owl.

This species occurs within the following Conservation Areas:

- Snow Creek/Windy Point Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Perform pre-activity surveys for this species in areas of unpaved soil during the winter and spring emergence and breeding periods.
- Avoid stockpiling construction materials, lumber, or other sources of artificial cover (AC) at CVWD facilities if feasible, within the known range of this species.
- Maintenance activities will be designed and implemented using Best Management Practices (BMPs) in a way that minimize new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Jerusalem cricket.

- All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat, vegetation or burrows.
- No pesticide use shall occur outside of CVWD facilities in habitat occupied by this species.

What to Do If Found

- Allow the cricket to leave the area and notify ESD staff that a Coachella Valley Jerusalem cricket was observed and what actions were taken to avoid impacts.

5.0 FISH

This section contains a species account and conservation approach, including habitat parameters and significant threats, for the one fish species proposed for coverage under this Plan, the desert pupfish. Conservation measures specific to the desert pupfish are also included here.

5.1



Desert Pupfish

Cyprinodon macularius

Status Federal: Endangered

State: Endangered

Species Account:

Historically, desert pupfish occurred in the lower Colorado River in Arizona and California, from about Needles downstream to the Gulf of California and into its delta in Sonora and Baja. In California, pupfish inhabited springs, seeps, and slow-moving streams in the Salton Sink basin, and backwaters and sloughs along the Colorado River (Black 1980). The Salton Sea, its tributary streams, irrigation drains, and shoreline pools, supported large pupfish populations until sharp declines began in the mid- to late-1960s. Currently, in the Plan Area, pupfish are found in upper and lower Salt Creek, the mouth of Salt Creek (Sutton 1999), many of the irrigation drains emptying into the Salton Sea (Imperial and Riverside County), some shoreline pools, and several refugia; Dos Palmas; Oasis Springs Ecological Reserve; The Living Desert; and Salton Sea State Recreation Area. The Plan Area contains a substantial portion of remaining pupfish habitat, including one of only two natural tributary streams, as well as shoreline pools and irrigation drains. A stable population exists in Salt Creek in both the upper and lower portions of the creek. Adequate water quantity and quality must be maintained in desert streams, springs, irrigation drains, and shoreline pools. Surface and groundwater from upper Salt Creek Canyon and other canyons in the Orocopia and Chocolate Mountains may contribute to the groundwater system. Groundwater pumping, channel erosion, water diversion, contaminants, and other threats must be reduced.

Associated Covered Species. Other species of concern whose range overlaps that of the Desert pupfish within the Plan Area include California black rail, Yuma Ridgway's Rail, as well as other riparian species occurring in similar habitat, including the Yellow-Breasted Chat, Summer Tanager, Least Bell's vireo, and Yellow Warbler.

This species occurs within the following Conservation Areas:

- Coachella Valley Stormwater Channel and Delta Conservation Area including; Dos Palmas

Species Specific Avoidance and Minimization Measures are described below:

- In accordance with the Coachella Valley MSHCP, CVWD is developing a drain maintenance study which will evaluate potential impacts associated with drain maintenance activities.
- Maintenance activities will be designed and implemented using BMPs in a way that minimize new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Desert pupfish.
- All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
- Ensure herbicide near U.S. Waters is performed in accordance with state general permit provisions to protect sensitive habitats and areas where threatened and endangered species are observed. Consider alternate methods when feasible.

What to Do If Found

- If the pupfish are moving out of the area, allow them to leave the immediate area before resuming work. Notify ESD staff if pupfish are observed and what actions were taken to avoid impacts.

6.0 REPTILES

This section contains species accounts, including Species Conservation Goals and Objectives, significant threats, and life history information, for each of the three species of reptile proposed for coverage under this Plan. These species include the desert tortoise, listed as threatened by the federal and state governments, the Coachella Valley fringe-toed lizard, listed as a state Endangered and a federal Threatened Species, and the flat-tailed horned lizard, a species proposed for federal listing. General measures common to all of these reptiles are listed below, and measures specific to a given species are included under mandatory avoidance and minimization measures.

6.1



Desert Tortoise

Xerobates agassizii (or *Gopherus agassizii*)

Status Federal: Threatened

State: Threatened

Species Account:

The Desert Tortoise (DT) is widely distributed through an exceptionally broad array of habitats that span 1,100 kilometers from northern Sinaloa State, Mexico where it occupies deciduous forest, across the Sonoran (including the Colorado Desert Subdivision in California) and Mojave Deserts, to the edge of the Colorado Plateau in arid southwestern Utah (Ernst et al. 1994, Germano 1994). Populations north and west of the Colorado River were listed as federal threatened in April 1990. The species is listed by California as a Threatened Species, and it is the official state reptile. In California, the desert tortoise is naturally absent from most areas west of the Salton Sea. Thus the Imperial Valley and portions of the southern Coachella Valley may not support native populations of desert tortoises. DT, however, are found naturally along the northern, eastern, and western rim of the Coachella Valley in the foothills of the Little San Bernardino Mountains, the Painted and Whitewater Hills (in the latter they are common), and the San Jacinto and northern Santa Rosa Mountains.

The Plan Area represents a small, but perhaps biologically significant portion of the DT's overall range. DT in the foothills of the southeastern San Bernardino Mountains (especially in the Whitewater Hills) represents the western-most reproductively active population of desert tortoises in the Colorado Desert ecosystem (Lovich et al. 1999). The western-most records of live tortoises in the San Gorgonio Pass are from T2S, R3E, Sec. 31 near the north end of Verbenia Avenue (J. Lovich, pers. comm.). This may explain the relatively high density of desert tortoises in the Whitewater Hills, as the area is situated in a transition zone between plant communities from the San Bernardino Mountains, the Mojave and Colorado Deserts, and coastal assemblages. The clustered nature of DT burrows in the western Coachella Valley environs is consistent with the observations of others throughout the range of the tortoise; DT frequently exhibit a contiguous distribution, with clusters of individuals in some areas and large intervening areas of what appears to be suitable habitat without desert tortoises.

Associated Covered Species. Other Covered Species with ranges overlapping the modeled habitat for the DT include Peninsular bighorn sheep, Palm Springs pocket mouse, Burrowing owl, Triple-Ribbed Milk-vetch, Little San Bernardino Mountains Linanthus, and Gray vireo.

This species occurs within the following Conservation Areas:

- Stubbe and Cottonwood Canyons Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Indio Hills/Joshua Tree National Park Linkage Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for DT using accepted USFWS survey protocol which provides 100% coverage of the survey site including a 500' buffer zone.
- In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season on CVWD lands that occur within this species habitat if feasible.
- Establish a 100-foot buffer around each suspected DT burrow identified in the pre-activity survey.
- Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed.
- Before moving, burying, or capping, inspect for DT in any pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the covered activity site.
- Inspect excavations for tortoises before filling. If a DT is found, have the biological monitor relocate it to a safe place offsite.
- Prior to the initiation of Covered Activities, all personnel will be instructed on the protection of the DT. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities.
- All movement of vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads.
- All Covered Activity sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.
- Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of DT falling into them.
- Covered Activity sites and access roads shall be surveyed by ESD staff no more than 15 days prior to the initiation of Covered Activities. Surveys shall provide 100 percent coverage of the work area.
- During periods of high DT activity (approximately March through October) ESD staff shall be present to monitor Covered Activities in areas not previously cleared or stabilized.
- Personnel on the right-of-way, within DT habitat, will be required to check under their vehicles prior to moving them.
- All DT burrows located will be flagged or marked.

- All DT burrows, and other species' burrows that may be used by DT, will be examined to determine the occupancy of the burrow if possible.
- USFWS and CDFW will be notified, within 72 hours, of any DT death or injury caused by Covered Activities. Notification will include the date, time, circumstances, and location.
- Dead tortoises will be marked and left on-site for CDFW/USFWS staff.
- Injured tortoises will be transported to a qualified veterinarian and the CDFW/USFWS will determine their disposition.

What to Do If Found

- Immediately stop all work near the tortoise's location and notify the biological monitor, if present. If the tortoise is moving stop work and allow it to leave the site. If the tortoise is not moving, have an authorized biological monitor relocate the tortoise to an appropriate location off site.
- If no authorized biological monitor is present onsite, call CVWD's ESD staff to notify them that a DT was observed and what actions (if any) were taken to avoid impacts.
- Desert tortoises shall not be handled by unauthorized personnel.

6.2



Coachella Valley Fringe-Toed Lizard

Uma inornata

Status Federal: Threatened

State: Endangered

Species Account:

The Coachella Valley fringe-toed lizard (CVFTL) is restricted to the Coachella Valley and was found historically from near Cabazon at the northwestern extreme to near Thermal at the southeastern extreme. It is associated with a substrate of Aeolian (wind-blown) sand to which it has developed morphological and behavioral adaptations (Heifetz 1941, Stebbins 1944, Norris 1958), and it occurs wherever there are large patches of the appropriate substrate (England and Nelson 1976, La Pre and Cornett 1981, Turner et al. 1981, England 1983, C. Barrows 1997). As Development of the Coachella Valley progressed, fringe-toed lizard habitat declined from roughly 171,000 acres, historically (The Nature Conservancy 1985) to 63,360 acres in 1980 (Federal Register 1980) to 27,206 acres estimated by the model in 2000.

The CVFTL is omnivorous, and diet changes as a function of food availability. During normal to wet years, it eats primarily flowers and plant dwelling arthropods. During dry periods, the diet shifts to primarily leaves and ants (Durtsche 1987, 1995). The dietary content differs also between breeding and non-breeding seasons for males, but does not differ significantly for females. During late summer, the diets of the two sexes are indistinguishable (Durtsche 1992). CVFTL differ sexually in their spatial use of the habitat. Males have a significantly larger home range size than do females. The average sizes are 1,070m² (11,518 ft²) for males and 437m² (4,704 ft²) for females (Horchar 1992). A home range is the area within which an animal conducts its normal daily and seasonal activity. A territory, on the other hand, is a portion of a home range that is defended. Muth and Fisher (pers. comm.) saw no evidence of territoriality in 16 years, contrary to Carpenter's (1963) observations of captive lizards. CVFTL are active from March to mid-November (and sometimes into December when the weather is accommodating), although adults are primarily active from April to October with a peak in May-June (Mayhew 1965, Muth and Fisher, pers. comm.). Springtime activity is triggered when subsurface temperatures exceed the minimum voluntary temperature at -5 cm (-2 inches) where the lizards hibernate, and end when these temperatures drop below minimum voluntary in the fall (Cowles 1941, Brattstrom 1965, Muth and Fisher 1991). Daily activity is also associated with temperature: Mayhew (1964) found them active when their body temperatures ranged from 25.8-44.0° C (78-111° F); the mean is 38.0° C (100° F).

Associated Covered Species. Other target species whose habitat overlaps with that of the CVFTL include the Flat-Tailed Horned lizard, Coachella Valley Milk-vetch, Palm Springs Pocket mouse, Coachella Valley Round-Tailed ground squirrel, Coachella Valley Giant Sand-Treader cricket, Coachella Valley Jerusalem cricket, and the Burrowing owl.

This species occurs within the following Conservation Areas:

- Where the AAC traverses the Algodones Dunes (Imperial Sand Dunes).
- Snow Creek/Windy Point Conservation Area
- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for CVFTL.
- Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed.
- Coordinate with the ESD staff to examine Covered Activities areas for lizards when surface temperatures exceed 30°C (86°F).
- Inspect trenches, holes, or other excavations before filling. If a CVFTL is found have the biological monitor relocate the lizard.
- Exercise caution while driving on the project site and be on the lookout for CVFTL when onsite temperature exceeds 30°C (86°F).
- Before moving, burying, or capping, inspect for CVFTL in any construction pipes, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the work site.
- Prior to the initiation of Covered Activities, all personnel will be instructed on the protection of the CVFTL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities.
- All movement of vehicles outside of the right-of-way will be restricted to pre-designated access roads.
- All covered activity sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.
- Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL falling into them.
- During periods of high CVFTL activity (May through September) ESD staff shall be present to monitor Covered Activities in areas not previously cleared or stabilized.
- Personnel on the right-of-way, within CVFTL habitat, will be required to check under their vehicles prior to moving them.

What to Do If Found

- Immediately stop all work near the CVFTL location and allow the lizard to leave the area.
- If the CVFTL is not moving, authorized CVWD staff will relocate the lizard offsite to the nearest available habitat.
- Lizards may not be handled by unauthorized or unpermitted personnel.
- If no biological monitor is present onsite, call ESD staff to notify them that a CVFTL was observed and what actions were taken to avoid impacts.

6.3



Flat-Tailed Horned Lizard

Phrynosoma mcallii

Status Federal: No official status

State: California Species of Special Concern

Species Account:

The Flat-tailed horned lizard (FTHL) has a wide, flattened body with a short tail and dagger-like spines on its head. It can be distinguished from other horned lizards by a dark stripe running down the back and the presence of two slender, elongated horns. FTHL are pale colored to closely match the soils on which they live. Typically, the FTHL is often associated with sand flats and sand dunes, although it is rare on more active dunes. It also occurs far from blow sand on concreted silt and gravel substrates (Beauchamp et al. 1998, Cameron Barrows, pers. comm., Muth and Fisher 1992). The most common perennial plants associated with habitat for this lizard are creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) (Turner et al. 1980, Muth and Fisher 1992). Within the Plan Area, the FTHL occurs at low elevations in the valley. This lizard is found in two protected areas created by the CVMSHCP: the Thousand Palms Preserve and the Whitewater Floodplain Preserve. Another population is known from an unprotected area at the east end of the Indio Hills on the north side of the Coachella Canal.

Within the Plan Area, the FTHL occurs at low elevations in the valley. Nearly all sightings in California and Arizona were below 800 feet (250 m) elevation (Mayhew and Carlson 1986, Turner et al. 1980, M. Fisher, pers. comm.). A potential habitat corridor was identified between the east end of the Indio Hills and the Thousand Palms Preserve. In a survey conducted to evaluate the suitability of this corridor in 1999 it was concluded that the corridor is not presently suitable for FTHL (Hays, LaPointe, and Wright 1999). The FTHL is relatively active for a desert lizard. More than half (54%) of the day is spent in some kind of activity, including feeding, digging burrows, and running (Muth and Fisher 1992). They dig burrows to escape hot midday temperatures, and for winter hibernation. When approached by a potential predator, a FTHL usually stops running and flattens its body against the ground. It relies on cryptic coloration to avoid predation and will usually remain immobile until after the threat has passed. They hibernate from mid-November to mid-February in shallow burrows, although at least some juveniles are active on warm days during the winter (Cameron Barrows, pers. comm.).

Reproductive activity begins in the spring and the first clutch of eggs hatches in late July. A second cohort may hatch in September.

This species occurs within the following Conservation Areas:

- Thousand Palms Conservation Area
- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area
- East Indio Hills Conservation Area
- Dos Palmas Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Within the Plan Area, other species of concern whose habitat overlaps with that of the flat-tailed horned lizard include the Coachella Valley Milk-vetch, Palm Springs pocket mouse, Coachella Valley Fringe-Toed lizard, Coachella Valley Round-Tailed Ground squirrel, Coachella Valley Giant Sand-Treader cricket, Coachella Valley Jerusalem cricket, and burrowing owl.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for FTHL.
- Environmental staff/biological monitor will possess authorization for relocation and handling of FTHL.
- Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed.
- Coordinate with the ESD staff to examine covered activity work areas for lizards when surface temperatures exceed 30°C.
- Inspect trenches, holes, or other excavations before filling. If a FTHL is found, have the biological monitor relocate the lizard.
- Inspect excavations for FTHL before filling. If FTHL is found, have the biological monitor relocate it to a safe place offsite.
- Before moving, burying, or capping, inspect for FTHL in any pipes, culverts, or similar structures that are stored on the site for one (1) or more nights. Alternatively, cap structures before storing on the covered activity work site.
- Prior to the initiation of Covered Activities, all personnel will be instructed on the protection of the FTHL. The training will address: life history, listing status, applicable state and federal laws.

- All movement of vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads.
- All covered activity work sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.
- Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of FTHL falling into them.
- Personnel on the right-of-way, within FTHL habitat, will be required to check under their vehicles prior to moving them.

What to Do If Found

- Immediately stop all work near the FTHL location and allow the lizard to leave the area. Notify ESD staff, if present.
- If the FTHL is not moving, authorized ESD staff or biological monitor will relocate the lizard offsite to the nearest available habitat.
- If no biological monitor is present onsite, call ESD staff to notify them that a FTHL was observed and what actions were taken to avoid impacts.

7.0 BIRDS

This section contains species accounts, including Species Conservation Goals and Objectives, significant threats, and life history information, for each of the bird species covered under the Plan. Many of these species are listed as threatened or endangered by the federal and state governments. General measures common to all of these species are listed below, and measures specific to a given species are included under mandatory avoidance and minimization measures.

7.1



Burrowing Owl



Burrowing Owl Burrow

Burrowing Owl

Athene cunicularia

Status Federal: Species of Concern (No official status)

State: Species of Special Concern

Species Account:

The burrowing owl (BUOW) is a small, ground-dwelling owl with a round head and long, stilt like legs. BUOW typically inhabit open areas, such as grasslands, pastures, coastal dunes, desert scrub, and the edges of agricultural fields. The BUOW has a broad distribution that includes open country throughout the Midwest and western United States, Texas and southern Florida, parts of central Canada, and into Mexico and the drier regions of Central and South America. In Southern California, it is known from lowlands over much of the region, particularly in agricultural areas. Within the Plan Area, BUOW are scattered in low numbers on open terrain throughout the lowlands. They occur in open desert areas, in fallow fields, along irrigation dikes and levees, wherever burrows (generally dug by ground squirrels) are available away from intense human activity. They can occur adjacent to residential Development, as evidenced by regular observations of these owls in sandy substrates along Washington Avenue in Bermuda

Dunes (prior to development of empty lots) (Cameron Barrows, pers. comm.), and around the Palm Springs Airport (J. Cornett, pers. comm.). Burrowing owls are notably common in Imperial County, along roads and levees in the agricultural areas. They may occur along roads and levees in agricultural areas at the eastern end of the Coachella Valley, within the Plan Area. However, efforts to locate reliable records for burrowing owls in these agricultural areas met with limited success. BUOW typically occupy burrows dug by others, primarily ground squirrels. Lutz and Plumpton (1999) have found that broods from previous years were significantly larger for females that reused a site than for those that selected a new nest site. If left undisturbed, owls from southern localities will reuse the same burrow while northern migrating populations typically do not utilize the same burrow each year (Lutz and Plumpton 1999). A clutch of seven to nine eggs is laid between March and July (Dechant et al. 1999, revised 2002, p. 3). Both parents take part in incubation for about 28 days. The young emerge from the nest and spend daylight hours at the burrow entrance with one or both adults. Their distress call is a low rattle, said to be a mimic of a rattlesnake. The burrows selected by these owls are typically abandoned rodent burrows; however, they also commonly use old pipes, culverts or other debris that simulates a hole in the ground. Though their occurrence, distribution, and habitat preferences in the Coachella Valley are not well documented BUOW are well studied elsewhere. BUOW follow a crepuscular habit, being most active during the early morning and evening hours. They are often observed perched on fence posts or utility wires. They typically live 8 years or more. Their diet is predominantly large insects and small rodents, but they will also take small birds, reptiles, amphibians, fish, scorpions, and other available prey. Impacts to BUOW can include temporary and permanent levels of disturbance. Temporary impacts to BUOW may include disturbance from storm water channel maintenance activities and emergency repairs. Permanent impacts may include loss of burrows during emergency repairs following storm events

This species occurs within the following Conservation Areas:

- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Floodplain Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Willow Hole Conservation Area
- Edom Hill Conservation Area
- Thousand Palms Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Within the Plan Area, other species of concern whose habitat overlaps with that of the BUOW include the Flat-Tailed horned lizard, the Coachella Valley Milk-vetch, Palm Springs Pocket mouse, Coachella Valley Fringe-toed lizard, Coachella Valley Round-Tailed Ground squirrel, Coachella Valley Giant Sand-Treader cricket, Coachella Valley Jerusalem cricket, and Desert Tortoise.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for BUOW prior to initiating any O&M activities.
- Caution in use of pesticides in the vicinity of burrowing owl burrows is also important. Other measures that may enhance potential habitat in agricultural areas should be evaluated. Proactive habitat enhancement in agricultural areas could benefit burrowing owls if they are using berms along agricultural drains.
- Immediately prior to initiating drain, or channel cleaning operations where burrowing owl may be present, have ESD staff visually inspect banks for burrows and mark active burrows with lathe and colored tape and determine adequate buffer zones..
- Establish a 250-foot buffer zone during the breeding season (February 1 – August 31); 160 feet outside of the breeding season. This buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species.
- Avoid collapsing or filling active burrows during drain and canal cleaning.
- Exercise care when removing sediment from the drain or canal and depositing spoils on the bank so as to avoid impacting any marked burrows.
- Leave active burrows in levees, dikes, and drain and canal banks where possible.
- Prior to replacing facilities or constructing new facilities, coordinate with CVWD ESD staff to determine if burrows occupied by burrowing owls would be filled or collapsed.
- Avoid collapsing or filling active burrows during drain and canal cleaning. CVWD does not anticipate removing burrows, however if a BUOW burrow is made inaccessible, CVWD will mitigate with creation of two artificial burrows in the project vicinity.
- ESD staff will provide annual training on general species ecology and avoidance and minimization measures as part of the O&M Manual training program.

What to Do If Found

- If an occupied burrow or dead owl is found during Covered Activities, stop all work and notify the ESD staff.
- Avoid work near the burrow until the ESD staff approves work resumption.

ESD staff will mark occupied burrows with a 4' stake that has a colored tape streamer to provide good visibility. Ground disturbance activities will be restricted to a 160-foot buffer area of an active burrow outside of breeding season and 250 feet of an active burrow during the breeding season (February 1- August 31).

7.2



Yuma Ridgway's Rail

Rallus obsoletus yumanensis

Status Federal: Endangered

State: Threatened

SPECIES ACCOUNT:

Yuma Ridgway's Rails are found in marsh habitats of cattails (*Typha domingensis*) and bullwhip/California bulrush (*Scirpus californicus*). In habitats found along and adjacent to the lower Colorado River, these rails selected some combination of cattails and bulrush for breeding. There was a post-breeding shift at some sites concurrent with a rise in water level, to higher elevation willows, arrowweed and salt cedar dominated habitats. Common reed (*Phragmites communis*) was also used as habitat, but usually occurred in areas too dry for breeding and foraging. Water depth appears to be an important habitat characteristic, with average preferred depths varying from 6.5 cm to 20 cm, depending on the study site. In deeper water, a residual mat of decaying vegetation was important to allow the rails to have access and use throughout their home range. The rails also preferred habitat edges and generally less dense habitat to facilitate mobility and access. Home ranges for male birds were found to average 7.7 +/- 5.9 ha, and for females 9.9 +/- 9.6 ha. The Yuma Ridgway's Rail occurs at the Salton Sea State Recreation Area at the mouth of Salt Creek. Yuma Ridgway's Rails occur within the Dos Palmas marshland complex in unknown numbers. The Dos Palmas area may have particular importance in that it may be one of the few occupied sites throughout this bird's entire range that is relatively free of chemical contaminants. Both Dos Palmas and the Whitewater River delta/Salton Sea could, if managed appropriately, provide additional habitat to what already exists there. The population size of Yuma Ridgway's Rails within this area is not known, nor is the trend in its population numbers, but it is likely that this population will require immigration from occupied habitat to the south to maintain long term viability.

This species occurs within the following Conservation Areas:

- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area

Associated Covered Species. California Black rails are often found in association with Yuma Ridgway's Rail habitat. Conservation measures for one species will benefit the other. Desert puffin and riparian birds may be found in associated wetland habitat.

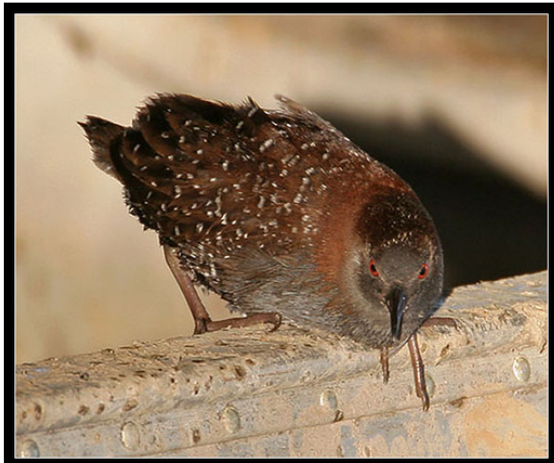
Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, contact ESD staff to arrange pre-activity surveys.
- In areas where Yuma Ridgway's Rails occur, operations and maintenance activities shall establish a minimum 200-foot buffer zone between work activities, if the maintenance activity must be performed due to capacity or vegetation issues within drains. This buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the colony.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biologist is present onsite, call ESD staff and seek direction.

7.3



California Black Rail
Laterallus jamaicensis
Status Federal: No official status
State: Threatened

Species Account:

California Black Rails are birds of dense coastal and inland marsh habitat. Based on radio telemetry data gathered on the lower Colorado River, California Black Rails selected habitat dominated by California bulrush (*Scirpus californicus*) and three square bulrush (*S. americanus*). They either avoided cattails (*Typha domingensis*) or utilized cattail habitat in proportion to its availability. However, nests were often constructed of cattail leaf blades, even though cattails were rarely the dominant vegetation type surrounding the nest. Preferred habitat sites had a shallow water depth of <2.5 cm, with 25% of the substrate covered in water. They preferred areas closer to the shoreline than would have been expected in random distribution.

Depending on sex and time of year, home range size in appropriate habitat along the lower Colorado River varied from 0.43 to 0.55 hectares, which are three to four times smaller than those described for the Eastern Black Rail and may result from more stable water levels than found in tidal habitats. The rails were found to be entirely diurnal in their activity and resident year-round. California Black Rails are omnivorous, eating both invertebrates and bulrush seeds. Predators include house cats, short-eared owls, northern harriers, great blue herons, great egrets, and exotic bullfrogs.

This species occurs within the following Conservation Areas:

- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area

Associated Covered Species. California Black Rails are often found in association with Yuma Ridgway's Rail habitat. Conservation measures for one species will benefit the other species; however, additional information is needed on how these two species partition the habitat. Other associated species may include riparian birds and Desert pupfish.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for California Black Rail.
- In areas where Black Rails occur, operations and maintenance activities shall establish a minimum 200-foot buffer zone between work activities and the active nests if the maintenance activity must be performed due to capacity or vegetation issues within drains. This buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biologist is present onsite, call ESD staff and seek direction.

7.4



Southwestern Willow Flycatcher

Empidonax traillii extimus

Status Federal: Endangered

State: Endangered

Species Account:

The southwestern willow flycatcher (SWWF) is restricted to dense riparian woodlands and forests along the river and stream systems of Southern California, primarily in Kern, San Diego, San Bernardino, and Riverside Counties. Their breeding range also includes southern Nevada, Arizona, New Mexico, Utah, western Texas, and possibly southwestern Colorado. They are reported as breeding birds in Mexico, in extreme northern Baja California and Sonora. They winter in Mexico, Central America, and northern South America. This flycatcher can be found at sites where a dense growth of willows (*Salix* sp.), *Baccharis*, arrowweed (*Pluchea* sp.), or other plants occurs in thickets. These thickets are often associated with a scattered over story of cottonwood (*Populus fremontii*) and other riparian trees. This species has also been found nesting in Southern California in relatively narrow bands of riparian habitat and can utilize extremely small remnant riparian areas (one medium size willow tree) during migration (T. Newkirk-Gonzales, pers. comm.). In surveys by biologists from the University of California, Riverside, Center for Conservation Biology (Center for Conservation Biology, University of California, Riverside 2004) willow flycatchers were detected at Cottonwood Springs in Joshua Tree National Park, Dos Palmas Preserve, Mission Creek, Thousand Palms Oasis, and Whitewater Canyon. It is not known whether these individuals were *Empidonax traillii extimus*, the subspecies that breeds in southern California (Unitt 1987; Sedgwick 2000), or whether they were a different subspecies that occurs as migrants in southern California but breed farther north (e.g., *E. t. brewsteri*). The breeding status of the southwestern willow flycatcher within the Plan Area is not well known. Suitable breeding habitat is present in a number of locations where riparian habitat exists, in Chino, Andreas, Murray, Palm, Millard, and Whitewater Canyons, and possibly in Stubbe and Cottonwood Canyons. Suitable breeding habitat may also occur at Oasis de los Osos, along the Whitewater River near the Salton Sea, at the Thousand Palms Preserve,

and at Dos Palmas Preserve/ACEC. The birds begin to arrive in Southern California to breed late in the spring, generally from mid-March through the summer months, until August.

Associated Covered Species. Other riparian species occurring in similar habitat, including the Yellow-Breasted chat, Summer Tanager, Least Bell's vireo, and Yellow Warbler, will benefit from conservation and Adaptive Management actions for southwestern willow flycatcher. Riparian bird species will be considered as a guild in the Plan with regard to their general presence in riparian areas. However, each of these riparian bird species may require slightly different structural features or succession stages for optimal breeding habitat, which may require different management strategies.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Morongo Wash Special Provisions Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for SWWF.
- If an active nest is located, a 200-foot buffer zone will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity following consultation with CDFW. No covered activity work will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biologist is present onsite, call ESD staff and seek direction.

7.5



Crissal Thrasher

Toxostoma crissali

Status Federal: No official status

State: Species of Special Concern

Species Account:

The Crissal Thrasher is a ground-dwelling relative of the mockingbird that occurs in the Plan Area. The distribution of habitat for the Crissal Thrasher is quite patchy, particularly in the vicinity of the Salton Sea where areas occupied by mesquite hummocks and desert saltbush scrub are highly fragmented. They occupy arid habitats and are year-round residents in the CVMSHCP area, though they may make seasonal elevation migrations (up to 40 km) (Sheppard 1996). Crissal Thrashers are associated with desert washes, riparian brush and mesquite thickets at lower elevations and dense scrub in arroyos at higher elevations (Cody 1999). In the Coachella Valley (low elevation) the species occurs in areas dominated by mesquite hummocks and thickets with acacias, arrow weed, and in desert saltbush scrub (Hanna 1933). The species commonly nests in mesquite (Gilman 1902, Hanna 1933). The mean territory size for Crissal Thrasher in the Granite Mountains was estimated to be 4.92 ha, although the defended area is thought to be larger (Cody 1999). Like the Le Conte's thrasher, Crissal Thrashers are secretive, feeding under the cover of dense vegetation making them difficult to locate with the exception of singing males that often perch on taller vegetation. Crissal Thrashers have dark brown bodies with a dark chestnut crissum (the feathers also known as the under-tail coverts) and lack the contrast between the tail and body seen in Le Conte's thrashers. The nest of Crissal Thrasher is an open cup rather large twiggy nest built low to the ground and well hidden in dense mesquite or other thick desert vegetation. Crissal Thrasher clutch size is typically two to three eggs with an incubation time of 14 days and fledging after 11 to 13 days (Erhlich et al. 1988). The Crissal Thrasher seldom flies in the open, but moves furtively among streamside mesquite thickets, willows, and other tangles. This bird resembles the California Thrasher in its habit of gathering food by hacking the ground with its heavy curved bill, but their ranges do not overlap. Except

during the hottest months and briefly after molting, it delivers its loud melodious song year-round. The peak for mating and vocalizations for Crissal Thrashers appears to be between February and April (Center for Conservation Biology, University of California, Riverside 2004). The breeding season is protracted, extending at least from February to July, and in the winter rainfall part of the range, to the northwest, a second brood may be produced in the fall (Cody 1999).

This species occurs within the following Conservation Areas:

- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area

Associated Covered Species. Crissal Thrashers are found in habitat that also may be used by riparian bird species during migration, including the Least Bell's vireo, Summer Tanager, Yellow Warbler, Yellow-Breasted Chat, and Southwestern Willow Flycatcher. Conservation measures for one species will benefit the other; however, additional information is needed on how these two species partition the habitat. In mesquite hummock areas, Coachella Valley round-tailed ground squirrels would occur with Crissal Thrashers. Other species including the Coachella Valley Fringe-Toed lizard, Flat-Tailed horned lizard, and Palm Springs Pocket mouse may occur within the same habitat as the Crissal Thrasher.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Crissal thrasher.
- Within the Conservation Areas that harbor this species, Essential habitat will be avoided to the maximum extent practical.
- If an active nest is located, a 200 foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

7.6



Le Conte's Thrasher

Toxostoma lecontei

Status Federal: No official status

State: Species of Special Concern

Species Account:

Le Conte's thrasher is a relatively small bird, up to approximately 9 inches in length, and has a long, curved bill. This thrasher is grayish brown with a long, dark tail. It has dark legs, dark eyes, and a pale throat. Le Conte's thrasher occurs in open desert washes and desert scrub habitats on sandy and often alkaline soils. They occur in Desert Scrub, Desert Succulent Shrub, Desert Wash, and Alkali Desert Scrub habitats. Desert shrubs and cacti are frequently used for cover. This species often inhabits areas with sandy soils and where the topography is flat and open, including dunes and gently rolling hills. Surface water rarely exists anywhere within several miles of most of its territories, except temporarily following infrequent rains. For nesting, Le Conte's thrasher prefers thick, dense, and thorny shrubs or Cholla cactus. Cholla cactus and saltbush were used in 85% of 289 nest sites throughout the distribution of the species. The remaining 15% were in a large variety of desert shrubs, small trees, and yucca. Within the Plan Area, there are historical records in the CNDDDB and a few recent records. Nests are known to persist for several years and are often easier to find than the birds.

Modeled habitat within the following CVMSHCP Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Canyon Conservation Area
- Highway 111/I-10 Conservation Area
- Whitewater Floodplain Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Morongo Wash Special Provisions Area
- Willow Hole Conservation Area

- Edom Hill Conservation Area
- Thousand Palms Conservation Area
- Indio Hills/Joshua Tree National Park Linkage Conservation Area
- Indio Hills Palms Conservation Area
- East Indio Hills Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel and Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area
- Dos Palmas Conservation Area

Associated Covered Species: Le Conte’s thrashers are found in habitat that also may be used by riparian bird species during migration, primarily desert dry wash woodland, including the Least Bell’s vireo, Summer Tanager, Yellow Warbler, Yellow-Breasted chat, and Southwestern Willow Flycatcher. They also may be associated with Crissal Thrasher, Desert Tortoise, Palm Springs Pocket mouse, Coachella Valley Round-Tailed Ground squirrel, Flat-Tailed horned lizard, and Coachella Valley Milk-vetch among other species.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Le Conte’s thrasher.
- All grading or brushing taking place within riparian habitats of the Le Conte’s thrasher during Covered Activities will occur following a pre-activity survey by ESD.
- If an active nest is located, a 200 foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.



Least Bell's Vireo

Vireo bellii pusillus

Status Federal: Endangered

State: Endangered

Species Account:

The Least Bell's vireo (LBV) inhabits riparian woodland habitats along the riverine systems of Southern California, primarily in San Diego, Santa Barbara, and Riverside Counties. They also breed in northern Baja California and are seen in migration in southern Baja California. This vireo species occurs at sites with two primary features: (1) a dense shrub cover within 1 to 2 meters (3 to 6 feet) off the ground, where nests are typically placed, and (2) a dense, stratified canopy for foraging (Goldwasser 1981, USFWS 1998). Typical riparian habitats are those which may include cottonwoods (*Populus fremontii*), oak woodlands, and a dense understory of species such as willow (*Salix* spp.), Mulefat (*Baccharis salicifolia*), and California wild rose (*Rosa californica*); in desert areas, arrow-weed (*Pluchea sericea*) and wild grape (*Vitis girdiana*) may be dominant species in these riparian woodlands. The LBV is known to occur as a breeding bird in Chino Canyon and in Andreas Canyon. Other suitable breeding habitat may occur in Millard Canyon, Whitewater Canyon, Mission Creek, Palm Canyon, Murray Canyon, at Oasis de los Osos, at the Willow Hole-Edom Hill Preserve/ACEC, along the Whitewater River near the Salton Sea, and at Dos Palmas. LBVs also migrate through the Plan Area en route to other breeding areas. In migration, they may use desert fan palm oasis woodland, mesquite hummocks, mesquite bosque, arrowweed scrub, desert dry wash woodland, southern sycamore-alder riparian woodland, Sonoran cottonwood-willow riparian forest, and southern arroyo willow riparian forest. The LBV typically arrives in Southern California to breed from mid-March to early April and remain until late September. During the breeding season, male vireos establish and defend territories; they maintain a stubborn attachment to these sites throughout the breeding season. Nests are constructed in dense thickets of willow or Mulefat, one to two meters from the ground. These vireos may also make their nests in other riparian tree and shrub species.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel & Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Other riparian species that occur in similar habitat, including the Yellow-Breasted Chat, Southwestern Willow Flycatcher, Summer Tanager, and Yellow Warbler, will benefit from conservation and Adaptive Management actions for least Bell's vireo. Riparian bird species will be considered as a guild in the Plan with regard to their general presence in riparian areas. However, each of these riparian bird species may require slightly different structural features or successional stages for optimal breeding habitat, which may require different management strategies. Birds begin returning to southern California breeding sites in mid- to late-March; Grinnell and Miller (1944) reported later arrival (early April) for historic northern California populations. Males arrive in advance of females by several days, and observations of banded birds suggest that returning adult breeders may arrive earlier than first-year birds by several weeks (Kus, unpublished. data).

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Least Bell's vireo.
- If an active nest is located, a 200-foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

7.8



Gray Vireo

Vireo vicinior

Status Federal: No official Status

State: Species of Special Concern

Species Account:

The Gray Vireo is a small passerine about the size of a house sparrow that inhabits arid, shrub-covered slopes in Pinyon-Juniper, and chemise-redshank chaparral habitats on foothills and mesas. Suitable habitat typically occurs from 2,000 to 6,500 feet (600-2,000 m) (Zeiner et al. 1990). In its preferred habitat it is found in areas with sparse to moderate cover and scattered small trees. Although junipers are the dominant trees in gray vireo habitat, oaks may also be common. The summer range of the gray vireo is from New Mexico, southern Nevada, southern Utah, southern Colorado, western Texas, Arizona, and southeastern California. This species winters primarily south of the Mexican border and in southwestern Arizona. In California, breeding gray vireos are known from the northeastern slopes of the San Bernardino Mountains in the vicinity of Rose Mine and Round Valley, in the San Jacinto and Santa Rosa Mountains from Mountain Center to Pinyon Flat and Sugarloaf Mountain, and on the southern slopes of the Laguna Mountains near Campo and Kitchen Creek. Descriptions by Grinnell and Swarth (1913) indicate that the gray vireo was a common summer resident on the slopes of the Santa Rosa and San Jacinto Mountains. While it is not known how many birds may still exist in the area, sightings are rare. Regular surveys for this species have not been conducted in the Plan Area. The gray vireo usually arrives from its wintering areas in Mexico from the end of March to early May. It generally departs by the end of August. The nest of the gray vireo is an open cup of plant fibers, bits of leaves, spider silk, and bark strips, often hung from twigs or a forked branch in a shrub or small tree, usually two to eight feet above ground (Zeiner et al. 1990). Eggs are laid from mid-May to mid-June. Gray vireos feed by gleaning insects and invertebrates from bushes and small trees. In New Mexico, territories encompass 100 acres or more (Schwarz 1991).

This species occurs within the following Conservation Areas:

- Whitewater Canyon Conservation Area
- Joshua Tree National Park Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Another Covered Species that occurs in similar habitat is the Peninsular Bighorn sheep, which occurs in Pinyon-Juniper dominated woodlands up to about 4,000 feet. Desert tortoise may also occur in the same habitat at elevations to approximately 3,800 feet.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Gray vireo.
- If an active nest is located, a 200 foot buffer zone will be established around each nest site; however, there may be a reduction of this buffer zone depending on site-specific conditions or the existing ambient level of activity. The Applicant will contact Wildlife Agencies to determine the appropriate buffer zone. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

7.9



Yellow Warbler

Dendroica petechia brewsteri

Status Federal: No official status

State: Species of Special Concern

Species Account:

The yellow warbler occurs in riparian areas throughout Alaska, Canada, the United States, and parts of Mexico. A tropical subspecies occurs in Central and South America. The yellow warbler prefers wetlands and mature riparian woodlands dominated by cottonwoods, alders, and willows. It also uses well-watered, second growth woodlands and gardens. The species breeds throughout the United States and Canada. It was once a locally abundant summer resident in riparian areas throughout California. Currently, populations are reduced and locally extirpated (e.g., Sacramento Valley and San Joaquin Valley). This species was once a common resident in San Francisco; however, there are no recent breeding records for that area. The yellow warbler has declined significantly as a breeding bird in the coastal lowlands of Southern California and is believed to be extirpated from the Colorado River. Destruction of riparian habitats and cowbird parasitism are the major causes of the decline. The yellow warbler is known or believed to occur as a breeding bird at Whitewater Canyon, Mission Creek, Chino Canyon, Andreas Canyon, in the Whitewater River near the Salton Sea, and at Cottonwood Spring in Joshua Tree National Park. Many yellow warblers also migrate through the Plan Area en route to other breeding areas. No conservation measures are proposed in urban areas; however, it is anticipated that suitable landscape trees and shrubs will continue to thrive in urban areas. Yellow warblers typically arrive from their wintering areas from late March to May and typically begin nest building activities in April and continue nesting through early summer (June) in appropriate habitat. They tend to nest in locations of intermediate height and shrub density. The nest is built in an upright fork or crotch of a large tree, or sometimes a sapling or bush, generally 6 to 8 feet above the ground. The nest is a well-formed cup of interwoven plant fibers and down, fine grasses, lichens, mosses, spider silk, hairs, etc. Usually four to five eggs are laid in spring or early summer. Incubation is 11 days, and the young leave the nest at 9 to 12 days old. The yellow warbler feeds on caterpillars, cankerworms, moth larvae, bark beetles, borers, weevils, small moths, aphids, grasshoppers, and spiders, and occasionally feeds on a few species of berries.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area

- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel & Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Other riparian species that occur in similar habitat, including the Least Bell’s vireo, Southwestern Willow Flycatcher, Summer Tanager, and Yellow-Breasted Chat, will benefit from conservation and Adaptive Management actions for the Yellow Warbler. Riparian bird species will be considered as a guild in the Plan with regard to their general presence in riparian areas.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow warbler.
- If an active nest is located, a 200 foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

7.10



Yellow-Breasted Chat

Icteria virens

Status Federal: No official status

State: Species of Special Concern

Species Account:

The yellow-breasted chat is found throughout most of the United States, southern Canada, parts of Mexico, and south to Panama in the appropriate habitat. It is more often heard than seen, preferring to stay under cover in dense riparian thickets. The yellow-breasted chat nests in dense riparian thickets and brushy tangles in the lower portions of foothill canyons and in the lowlands. Its nest is a cup of dried leaves, coarse straw, and bark, lined with grasses, fine plant stems and leaves, built low in a bush, vine, or briar; there are typically three to five eggs laid from early May to mid-July. It is primarily an insect eater but also eats wild berries and wild grapes. This species is known to breed or is likely to breed in Whitewater Canyon, Mission Creek, Chino Canyon, and the Whitewater River between Mecca and the Salton Sea. It is possible that it breeds elsewhere in the Plan Area as well. In migration, the yellow-breasted chat may use desert fan palm oasis woodland, mesquite hummocks, mesquite bosque, arrowweed scrub, desert dry wash woodland, desert sink scrub, desert saltbush scrub, southern sycamore alder riparian woodland, Sonoran cottonwood-willow riparian forest, coastal and valley freshwater marsh, and cismontane alkali marsh in the Plan Area. It has been observed at Dos Palmas, the Thousand Palms Preserve, and Willow Hole. It has also been observed in Andreas Canyon on the Agua Caliente Indian Reservation. Individuals observed in these locations may have been in migration to other breeding areas outside the Plan Area. The yellow-breasted chat is in a general state of decline. The primary threat is loss of habitat, mainly due to flood control activities; the chat is also subject to cowbird parasitism. Human activities, including golf courses and agriculture, attract cowbirds, thereby increasing the threat to the species.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel & Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Other riparian species that occur in similar habitat, including the Least Bell's vireo, Yellow-Breasted Chat, Summer Tanager, and Yellow Warbler, will benefit from conservation and Adaptive Management actions for the yellow-breasted chat. Riparian bird species will be considered as a guild in the Plan with regard to their general presence in riparian areas.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow-Breasted chat.
- If an active nest is located, a 200-foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

7.11



Summer Tanager

Piranga rubra cooperi

Status Federal: No official status

State: Species of Special Concern

Species Account:

The North American breeding population of summer tanagers has remained generally stable since the mid-1970s, although some populations in the eastern United States and along the Colorado River have declined. It was formerly considered common in the lower Colorado River valley by Grinnell (1914), but only 216 individuals were estimated to be present by 1976 (Rosenberg et al. 1991). Habitat destruction is the likely cause of the decrease. Little is known of the breeding biology of the species. Summer tanagers nest in mature riparian groves dominated by cottonwoods and willows. Early arrivals from wintering grounds may appear in late March, but the main migration is April through early May. Nesting is primarily May through June. The nest is built on a horizontal limb of large trees including cottonwoods, usually 10 to 35 feet above the ground, and often over an opening such as a creek bed. The nest is a loosely built, shallow cup of weed stems, leaves, bark, and grasses, lined with fine grasses. From three to five, but usually four eggs are laid. Incubation is approximately 12 days. Tanagers eat insects, including bees and wasps, and small wild fruits. This species is known or suspected to nest in the Plan Area in Mission Creek, the Whitewater Canyon, and Palm Canyon, and also migrates through the area on its way to more coastal and northern habitats. There are also records from the Whitewater River delta and the Thousand Palms Preserve, but whether it nests in these areas or only uses them in migration is not known.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Snow Creek/Windy Point Conservation Area
- Whitewater Canyon Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Coachella Valley Stormwater Channel & Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Other riparian species that occur in similar habitat, including Least Bell's vireo, Yellow-Breasted Chat, Southwestern Willow Flycatcher, and Yellow Warbler, will benefit from conservation and Adaptive Management actions for summer tanager. Riparian bird species will be considered as a guild in the Plan with regard to their general presence in riparian areas. However, each of these riparian bird species may require slightly different structural features or successional stages for optimal breeding habitat, which may require different management strategies.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Summer Tanager.
- If an active nest is located, a 200 foot buffer zone will be established around each nest site; however, this buffer zone may be reduced if ESD staff in consultation with CDFW determines that a narrower buffer zone will adequately protect the species. No Covered Activities will take place within this buffer until the nest is no longer active, unless there are physical or safety constraints.

What to Do If Found

- Immediately stop all work within a 200 foot radius of an active nest during breeding season (March 1 – September 1) and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

8.0 MAMMALS

This section contains species accounts, including Species conservation goals and objectives, significant threats, and life history information, for each of the mammal species covered under this Plan. These species include the Southern Yellow bat, Peninsular Bighorn Sheep, Palm Springs round-tailed ground squirrel, and Palm Springs Pocket Mouse. General measures common to all of these mammals are listed below, and measures specific to a given species are included under mandatory avoidance and minimization measures.

8.1



Southern Yellow Bat

Lasiurus ega

Status Federal: No official status

State: Species of Special Concern

Species Account:

The Southern Yellow Bat roosts in trees, primarily palm trees. It appears to prefer the dead fronds of palm trees as a refugium and daytime roost. It feeds on flying insects such as beetles and true bugs, and forages over water and among trees. This species is thought to be non-colonial, although aggregations of up to 15 have been found in the same roost site. Yellow bats probably do not hibernate; activity has been observed year-round in both the southern and northern portions of the range. This species probably forms small maternity groups in trees and palms. Pregnancy occurs from April to June, with lactation occurring in June and July. Females carry from one to four embryos. In Texas, bat pups have been found on fronds that have been trimmed from trees (Mirowsky 1997). There is very little information available on the life history of this species.

This species occurs within the following Conservation Areas:

- Whitewater Canyon Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area
- Indio Hills Palms Conservation Area
- Joshua Tree National Park Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Associated Covered Species. Because riparian birds may also use palm oases in migration, protection of the oases for the Southern Yellow Bat may benefit Least Bell's vireo, Southwestern Willow Flycatcher, Yellow-Breasted Chat, Summer Tanager, and Yellow Warbler.

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow Bat if palm trees will be trimmed or removed.
- Avoid removal or trimming of palm trees with a well-developed “petticoat” of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.

What to Do If Found

- Immediately stop all work on a palm tree if a Southern Yellow Bat is observed and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

8.2



Coachella Valley Round-Tailed Ground Squirrel

Spermophilus tereticaudus chlorus

Status Federal: Candidate

State: Species of Special Concern

Species Account:

The Coachella Valley round-tailed ground squirrel is typically associated with sand fields and dune formations (Bradley and Deacon 1971), although it does not require active blow sand areas. This small ground squirrel seems to prefer areas where hummocks of sand accumulate at the base of large shrubs that provide burrow sites and adequate cover (Grinnell and Dixon 1918, Cameron Barrows, pers. comm.). Various authors have referred to the use of mesquite habitat by round-tailed ground squirrels (Allen and Price 1895, Elliot 1904, Grinnell and Dixon 1918, Vorhies 1945, Drabek 1973, Dunford 1975). In surveys for this Plan, Dodero (1995) reported observing this squirrel at Willow Hole in the central portion of the dune as well as at the southern periphery, at the edge of mesquite clumps. The Coachella Valley round-tailed ground squirrel occurs in small colonies widely scattered in suitable sandy habitats (Ryan 1968). According to Jaeger (1961), 10 to 15 animals per square mile (0.01 to 0.02/acre) is probably an average number. Based on input from various observers, including members of the Planning Team, areas where the Coachella Valley round-tailed ground squirrel occurs in relatively high density have been identified. This squirrel occurs in good populations in the vicinity of Snow Creek, from Fingal's Finger to Windy Point; it has also been observed further west near Cabazon. It occurs around the Whitewater River channel north and west of Palm Springs, including the Whitewater Floodplain Preserve. It has been observed along the Mission Creek wash and likely occurs in suitable habitat in the southern parts of Desert Hot Springs. The burrows of the Coachella Valley round-tailed ground squirrel are typically located at the base of a large creosote bush or other shrub, often on a small mound or hummock. The entry is several inches across leading to tunnels that are not usually deep or over five or six feet in length (Jaeger 1961). Young are born in March or April in litters of four to 12. In winter, they remain in their underground burrows for much of the time. They feed on seeds and green leaves of desert plants, including the stems of Mormon tea (*Ephedra* sp.), leaves and beans of mesquite, cactus fruit, ocotillo blossoms (Hoffmeister 1986), and agricultural crops, but may occasionally take small lizards (including flat-tailed horned lizards) and insects; they have also been observed to feed on carrion.

Associated Covered Species. Within the Plan Area, other species of concern whose habitat overlaps with that of the Palm Springs Round-Tailed Ground squirrel include Flat-Tailed Horned lizard, Palm Springs Pocket mouse, Coachella Valley Fringe-Toed lizard, Coachella Valley Milk-vetch, Coachella Valley Giant Sand-Treader cricket, Coachella Valley Jerusalem cricket, and Burrowing owl.

This species occurs within the following Conservation Areas:

- Snow Creek/Windy Point Conservation Area
- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area

Additional habitat located in the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Whitewater Canyon Conservation Area
- Highway 111/I-10 Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Edom Hill Conservation Area
- Thousand Palms Conservation Area
- Indio Hills/Joshua Tree National Park Linkage Conservation Area
- Indio Hills Palms Conservation Area
- East Indio Hills Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed Covered Activity will take place within a Conservation Area known to harbor this species, have ESD staff perform pre-activity surveys (using track detection, sighting counts and vocalization) for Coachella Valley round tailed ground Squirrel.
- If a Round-Tailed ground squirrel burrow is observed during grading or brushing activities within a Conservation Area contact ESD staff.
- Work related materials and wastes shall be removed from the Project site upon completion of the Project.

What to Do If Found

- Immediately stop all work if a Round-tailed ground squirrel is observed onsite and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

8.3



Palm Springs Pocket Mouse

Perognathus longimembris bangsi

Status Federal: No official status

State: Species of Special Concern

Species Account:

The Palm Springs pocket mouse is one of seven subspecies of *Perognathus longimembris*, the “little pocket mouse” that occurs in Southern California. The species is the smallest of the Heteromyidae family that also includes kangaroo rats, kangaroo mice, and spiny pocket mice. The Palm Springs pocket mouse was originally described by Mearns (1898) with the type locality in Palm Springs. This subspecies occurs in the lower Sonoran life zone from the San Geronio Pass area east to the Little San Bernardino Mountains and south along the eastern edge of the Peninsular Range to Borrego Valley and the east side of San Felipe Narrows (Hall 1981). There is no evidence that this subspecies’ range is different than what has been described in the past (Dodd 1996), although its habitat has been greatly reduced by urbanization and agriculture in the Coachella Valley. The Palm Springs pocket mouse is known to hybridize with the Los Angeles pocket mouse (*P.l. brevinasus*) along its western boundary. Although the extent is not known, hybridization also occurs with other subspecies, including the Jacumba pocket mouse (*P. l. internationalis*) to the south and the little pocket mouse (*P. l. longimembris*) to the north. Generally, their habitat is described as having level to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils. The species was found broadly distributed in the Plan Area on slopes ranging from 0% to approximately 15% (Dodd 1996). The Plan Area contains the major portion of the range of this species, including the western, northern, and eastern limits of the species’ range. Dodd (1996, 1997) conducted extensive trapping for this species within the Coachella Valley and surrounding region, and found much higher PSPM densities in the northern and western Coachella Valley. The species also occurs on three existing preserves: the Thousand Palms Preserve, the Whitewater Floodplain Preserve, and the Willow Hole-Edom Hill Preserve/ACEC. It occurs at the highest reported densities for the Plan Area in the Snow Creek area. Surveys completed for this Plan (Dodd 1999) confirmed that the species also occurs at Dos Palmas Preserve/ACEC and in the Cottonwood Canyon area of Joshua Tree National Park. This species generally breeds from January to August, with a peak of activity from March to May (Dodd 1996). Several studies suggest that reproduction in heteromyids may be dependent on availability of annual vegetation. Studies of other subspecies of the little pocket

mouse indicate that they hibernate in winter and are active above ground in spring, summer, and fall (Bartholomew and Cade 1957).

Associated Covered Species. This species is generally associated with sandy soils. The Palm Springs Pocket mouse is a near-endemic to the Plan Area; the type locality for the species is from Palm Springs (Mearns 1898). It does, however, occur in the vicinity of Borrego Springs and on the east side of the San Felipe Narrows (Hall 1981), which are not within the Plan Area. Other target species whose habitat overlaps with that of the Palm Springs Pocket mouse include the Flat-Tailed Horned lizard, Coachella Valley Round-Tailed Ground squirrel, Coachella Valley Giant Sand-Treader cricket, Coachella Valley Milk-vetch, Coachella Valley Jerusalem cricket, Coachella Valley Fringe-Toed lizard, and the Burrowing owl.

This species occurs within the following Conservation Areas:

- Snow Creek/Windy Point Conservation Area
- Whitewater Floodplain Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Morongo Wash Special Provisions Area
- Willow Hole Conservation Area
- Thousand Palms Conservation Area

Additional habitat located in the following Conservation Areas:

- Cabazon Conservation Area
- Stubbe and Cottonwood Canyons Conservation Area
- Whitewater Canyon Conservation Area
- Highway 111/I-10 Conservation Area
- Upper Mission Creek/Big Morongo Canyon Conservation Area
- Mission Creek/Morong Wash Conservation Area
- Edom Hill Conservation Area
- Indio Hills/Joshua Tree National Park Linkage Conservation Area
- Indio Hills Palms Conservation Area
- East Indio Hills Conservation Area
- Joshua Tree National Park Conservation Area
- Desert Tortoise and Linkage Conservation Area
- Mecca Hills/Orocopia Mountains Conservation Area
- Dos Palmas Conservation Area

- Coachella Valley Stormwater Channel and Delta Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Species Specific Avoidance and Minimization Measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, implement pre-activity surveys to determine presence.
- PSPM surveys will include visual surveys, and examination of BUOW scat for PSPM remains.
- Prior to covered activity work, CVWD's ESD staff should assist work crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible).
- During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable.
- Work related materials and wastes shall be removed from the Covered Activity site upon completion of the O&M work.

What to Do If Found

- Immediately stop all work if a suspected PSPM is observed in the project site and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

8.4



Peninsular Bighorn Sheep

Ovis canadensis nelsoni

Status Federal: Endangered

State: Threatened

Species Account:

The Peninsular bighorn sheep is restricted to the east-facing, lower elevation slopes (below 1,400 meters) of the Peninsular Ranges in the Sonoran desert life zone. Range-wide estimates of abundance for the U.S. population, from the San Jacinto Mountains to the Mexican border, began in the 1970s. The highest population estimate was 1,171 in 1974 (Weaver 1975). Surveys in the 1970s, 1980s, and 1990s indicate that significant declines have occurred in multiple ewe groups. The synergistic effects from habitat loss, disease, human disturbance, and predation are believed to have caused the decline. The 1998 range-wide population was estimated to be 334 animals (excluding lambs). Approximately half of these were in the Plan area in four subpopulations, or ewe groups. The San Jacinto (Recovery Region 1) and Northern Santa Rosa (Recovery Region 2) ewe groups have the smallest populations, excluding lambs. These two groups are especially vulnerable. In contrast to most mountain sheep, Peninsular Ranges bighorn sheep tend to favor the lower elevation habitat which makes them particularly vulnerable to habitat loss and human disturbance (Ostermann 2001).

The Essential habitat for bighorn sheep in the northern portion of the Peninsular Ranges which is within the Plan Area borders the rapidly urbanizing Coachella Valley area. Urban encroachment into alluvial fans, bajadas, and canyons within Peninsular bighorn sheep habitat in the San Jacinto and northern Santa Rosa Mountains began in the 1950s and continues today (Ostermann 2001). DeForge and Scott (1982) described the situation of bighorn sheep using urban areas during the hot summer months in the mid-1950s. Urbanization was considered the leading cause of mortality for Peninsular bighorn sheep from 1991 to 1996 (Bighorn Institute 1999). Bighorn sheep in the Peninsular Ranges were listed as threatened by the State of California in 1971 and endangered by the U.S. Fish and Wildlife Service in 1998 (USFWS 1998).

Associated Covered Species. Other species of concern which occur in the same general area as Bighorn Sheep include Gray Vireo, Desert Tortoise, and some riparian bird species.

This species occurs within the following Conservation Areas:

- Cabazon Conservation Area
- Snow Creek/Windy Point Conservation Area
- Santa Rosa and San Jacinto Mountains Conservation Area

Species Specific Avoidance and minimization measures are described below:

- Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys to determine if the site contains water sources.
- Primary risks to Peninsular bighorn sheep during O&M and Covered Activities include disturbance to, or exclusion from, water sources.
- In San Jacinto and Santa Rosa Mountains, avoid activities that could impact Bighorn sheep during the lambing season from approximately January 31 through June 29 in our region.

What to Do If Found

- Immediately stop all work if a Peninsular bighorn sheep is observed onsite and notify the ESD staff if present.
- If no biological monitor is present onsite, call ESD staff and seek direction.

TABLES AND FIGURES

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Table 3	CVWD Covered Activities and Required Avoidance and Minimization Measures
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Tables 4 -15	Coachella Valley MSHCP Conservation Areas and Avoidance and Minimization Measures

Table 1. Vegetation, Algae, Pest and Invasive Species Control at CVWD Facilities and Infrastructure

CVWD Activity	Control Method	Industry Name	Notes
Vegetation Control on service roads and facilities	Herbicide	Aqua Neat	Preferred for use in sensitive habitats
Aquatic Vegetation control in channels and canals	Triploid Grass Carp	Grass Carp	Integrated algae/grass control
	Herbicide	Aqua Neat	Used in agricultural drain channels
Quagga Mussel Control	Sodium Hypochlorite	Chlorine	Coachella Canal treatment for invasive (Quagga) mussels
Insect and Rodent Control	Bait Station Insecticide	Fast Track Temprid SC Nibor D	Used at CVWD office facilities and water reclamation plants

Table 2. Coachella Valley Multiple Species Habitat Conservation Plan Covered Species

Species	Conservation Status	Habitat Associations
	California	Coachella Valley
Plants		
<i>Xylorhiza cognate</i> Mecca Aster	US: CA: CNPS: List 1B	Mecca aster may be associated with two intergraded geologic formations found in local hills; the Palm Springs formation and the Canebrake formation (Stewart 1991).
<i>Astragalus lentiginosus</i> var. <i>cochellae</i> Coachella Valley Milkvetch	US: FE CA: CNPS: List 1B	The Coachella Valley Milkvetch occurs in dunes and sandy flats, along the disturbed margins of sandy washes, and in sandy soils along roadsides.
<i>Astragalus tricarinatus</i> Triple-Ribbed Milkvetch	US: FE CA: CNPS: List 1B	The triple-ribbed Milkvetch is found in a narrow range primarily from the northwestern portion of the Coachella Valley, from the vicinity of Whitewater Canyon, the type locality, across Highway 62 to Dry Morongo Wash and Big Morongo Canyon.
<i>Salvia greatae</i> Orocopia Sage	US: CA: CSC CNPS: List 1B	The preferred habitat of Orocopia sage is in gravelly or rocky soils on broad bajadas or fans, often adjacent to desert washes or on the rocky slopes of canyons.
<i>Linanthus maculatus</i> (also <i>Gilia maculata</i>) Little San Bernardino Mountains Linanthus	US: SSC CA: CSC CNPS: List 1B	The occurrences within the Plan Area are on the margins of washes on shallow sandy benches.
Insects		
<i>Macrobaenetes valgum</i> Coachella Valley Giant Sand -Treader Cricket	US: CSC CA:	Coachella Valley Giant Sand -Treader cricket depends on the active dunes and ephemeral sand fields at the west end of the Coachella Valley.
<i>Stenopelmatus cahuilaensis</i> Coachella Valley Jerusalem Cricket	US: CA:	The Coachella Valley Jerusalem cricket is known from the Snow Creek area east to Windy Point, and from remnants of sand dune Habitat around the Palm Springs Airport.
Fish		
<i>Cyprinodon macularius</i> Desert pupfish	US: FE CA: SE	Desert backwater areas, springs, streams, and pools. In California, found in the Salton Sea and some of its tributaries (San Felipe Creek, San Sebastian Marsh, and Salt Creek) in Riverside and Imperial Counties.
Reptiles		
<i>Gopherus (Xerobates) agassizii</i> Desert Tortoise	US: FT CA: ST	Historically found throughout the Mojave and Sonoran Deserts into Arizona, Nevada, and Utah. Occurs throughout the Mojave Desert in scattered populations. Found in creosote bush scrub, saltbush scrub, thorn scrub (in Mexico), and Joshua tree woodland.
<i>Phrynosoma mcallii</i> Flat-Tailed Horned lizard	US: – CA: CSC	Fine sand in desert washes and flats with vegetative cover generally below 180 meters' (600 feet) elevation in Riverside, San Diego, and Imperial Counties.
<i>Uma inornata</i> Coachella Valley Fringe-Toed lizard	US: FT CA: SE	Fine, loose, windblown sand (dunes), interspersed with hardpan and widely spaced desert shrubs; known only from the Coachella Valley.

Table 2 (continued). Coachella Valley Multiple Species Habitat Conservation Plan Covered Species

Birds	Conservation Status California	Habitat Associations Coachella Valley
<i>Athene cunicularia</i> burrowing owl	US: – CA: CSC	Lives in dry, open areas along agricultural fields and berms along the CVSC.
<i>Dendroica petechia brewsteri</i> Yellow Warbler	US: – CA: CSC	The yellow warbler prefers wetlands and mature riparian woodlands dominated by cottonwoods, alders, and willows. It also uses well-watered, second growth woodlands and gardens.
<i>Toxostoma crissale</i> Crissal thrasher	US: – CA: CSC	The distribution of habitat for the Crissal Thrasher is quite patchy, particularly in the vicinity of the Salton Sea where areas occupied by mesquite hummocks and desert saltbush scrub are highly fragmented.
<i>Toxostoma lecontei</i> Le Conte's thrasher	US: – CA: CSC	Le Conte's thrasher occurs in open desert washes and desert scrub habitats on sandy and often alkaline soils. They occur in Desert Scrub, Desert Succulent Shrub, Desert Wash, and Alkali Desert Scrub habitats.
<i>Icteria virens</i> Yellow-Breasted Chat	US: – CA: CSC	The yellow-breasted chat nests in dense riparian thickets and brushy tangles in the lower portions of foothill canyons and in the lowlands.
<i>Empidonax traillii extimus</i> Southwestern Willow Flycatcher	US: E – CA: E	The southwestern willow flycatcher is restricted to dense riparian woodlands and forests along the river and stream systems of Southern California, primarily in Kern, San Diego, San Bernardino, and Riverside Counties.
<i>Rallus obsoletus yumanensis</i> Yuma Ridgway's Rail	US:E – CA:T	Yuma Ridgway's Rails are found in marsh habitats of cattails (<i>Typha domingensis</i>) and California bulrush (<i>Scirpus californicus</i>).
<i>Laterallus jamaicensis</i> California Black Rail	US: – CA:T	California black rails are birds of dense coastal and inland marsh habitat. California black rails are usually associated with habitat dominated by California bulrush (<i>Scirpus californicus</i>) and three square bulrush (<i>S. americanus</i>).
<i>Vireo bellii pusillus</i> Least Bell's Vireo	US: E – CA: E	The Least Bell's vireo inhabits riparian woodland habitats along the riverine systems of Southern California, primarily in San Diego, Santa Barbara, and Riverside Counties.
<i>Vireo vicinior</i> Gray Vireo	US: – CA: CSC	Suitable habitat typically occurs from 2,000 to 6,500 feet (600-2,000 m). Preferred habitat is found in areas with sparse to moderate cover and scattered small trees. Although junipers are the dominant trees in gray vireo habitat, oaks are common.
<i>Dendroica petechia brewsteri</i> Yellow Warbler	US: – CA: CSC	The yellow warbler prefers wetlands and mature riparian woodlands dominated by cottonwoods, alders, and willows. It also uses well-watered, second growth woodlands and gardens.
<i>Piranga rubra cooperi</i> Summer Tanager	US: – CA: CSC	Summer tanagers nest in mature riparian groves dominated by cottonwoods and willows. Early arrivals from wintering grounds may appear in late March, but the main migration is April through early May.

Table 2 (continued). Coachella Valley Multiple Species Habitat Conservation Plan Covered Species

Mammals	Conservation Status California	Habitat Associations Coachella Valley
<i>Lasiurus xanthinus</i> Western Yellow Bat	US: – CA: CSC	The southern yellow bat roosts in trees, primarily palm trees. It appears to prefer the dead fronds of palm trees as a refugium and daytime roost.
<i>Xerospermophilus tereticaudus chlorus</i> Palm Springs Round-Tailed Ground squirrel	US: – CA: CSC	The Coachella Valley round-tailed ground squirrel is typically associated with sand fields and dune formations (Bradley and Deacon 1971), although it does not require active blow sand areas.
<i>Perognathus longimembris bangsi</i> Palm Springs Pocket mouse	US: – CA: CSC	Generally, their habitat is described as having level to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils.
<i>Ovis canadensis nelson</i> Peninsular Bighorn	US: E – CA: T	The Peninsular bighorn sheep is restricted to the east-facing, lower elevation slopes (below 1,400 meters) of the Peninsular Ranges in the Sonoran desert life zone. Fully protected in California.
<p>USFWS = USFWS CSC = State Species of Special Concern T = State Threatened CA = California SSC = Federal Species of Special Concern E = State Endangered E = Federally Endangered T =Threatened California Native Plant Society = CNPS 1B Rare, Threatened or Endangered plants in the state of California</p>		

Table 3. CVWD Covered Activities and Required Avoidance and Minimization Measures

Facility	Conservation Area Where Located	Avoidance/Minimization Measures Required
a) ALERT stations, all except Upper Bear Creek	Santa Rosa & San Jacinto Mts.; Whitewater Canyon Whitewater Floodplain; Thousand Palms; CVSC and Delta; Desert Tortoise and Linkage Area.	None
b) CVSC, including increased flows from the WMP	CVSC and Delta	Provision of replacement habitat; burrowing owl
c) East Valley drains, including increased flows from the WMP	CVSC and Delta	Desert pupfish, Yuma Ridgway's Rail, California black rail
d) Oasis area drains, including increased flows from the WMP	CVSC and Delta	Desert pupfish, Yuma Ridgway's Rail, California black rail
e) Coachella Canal; canal siphons & overshoots; East Side dike & evacuation channels	Dos Palmas, Mecca Hills/Orocopia Mountains; East Indio Hills	None
f) WRP-7 recharge facility (construction and O&M)	East Indio Hills	Tamarisk removal; Mesquite restoration
g) ALERT Station, Upper Bear Creek	Santa Rosa & San Jacinto Mts.	Bighorn sheep
h) Deep Canyon training dikes & channel	Santa Rosa & San Jacinto Mts.	None
i) Dead Indian Canyon debris basin	Santa Rosa & San Jacinto Mts.	Bighorn sheep
j) East La Quinta detention basins, channels & dikes	Santa Rosa & San Jacinto Mts.	Bighorn sheep
k) Magnesia Canyon detention basin	Santa Rosa & San Jacinto Mts.	Bighorn sheep
l) Stormwater drain inlets	Santa Rosa & San Jacinto Mts.	Bighorn sheep
m) Dike No. 4 recharge facility [Levy facility] (construction and O&M)	Santa Rosa & San Jacinto Mts.	Bighorn sheep
n) Martinez Recharge Facility, (construction and O&M)	Santa Rosa & San Jacinto Mts.	Minor Amendment with criteria; Bighorn sheep
o) Reservoirs & associated booster stations & transmission mains (existing)	Santa Rosa & San Jacinto Mts.	Bighorn sheep
p) Reservoirs & associated booster stations & transmission mains (construction and O&M)	Santa Rosa & San Jacinto Mts.	Minor Amendment with criteria; Bighorn sheep
q) Reservoirs & associated booster stations & transmission mains (existing)	Thousand Palms	Fluvial sand transport
r) Reservoirs & associated booster stations & transmission mains (construction and O&M)	Thousand Palms	Fluvial sand transport

Table 3 (continued). CVWD Covered Activities and Required Avoidance and Minimization Measures

Facility	Conservation Area Where Located	Avoidance/Minimization Measures Required
s) Transmission water mains	Thousand Palms; West Deception Canyon	None
t) Whitewater River flood control levees (construction and O&M)	Thousand Palms	Subject to terms & conditions of FESA Section 7 consultation
u) CRA turnout & recharge channel (O&M)	Whitewater Canyon; Whitewater Floodplain	None
v) Spreading area for CRA water (O&M)	Whitewater Floodplain	Blow Sand removal & placement in deposition area
w) Cathedral City transmission mains	Santa Rosa & Santa Jacinto Mts	Bighorn sheep

Figure 1. Coachella Valley Water District Covered Activities Locations

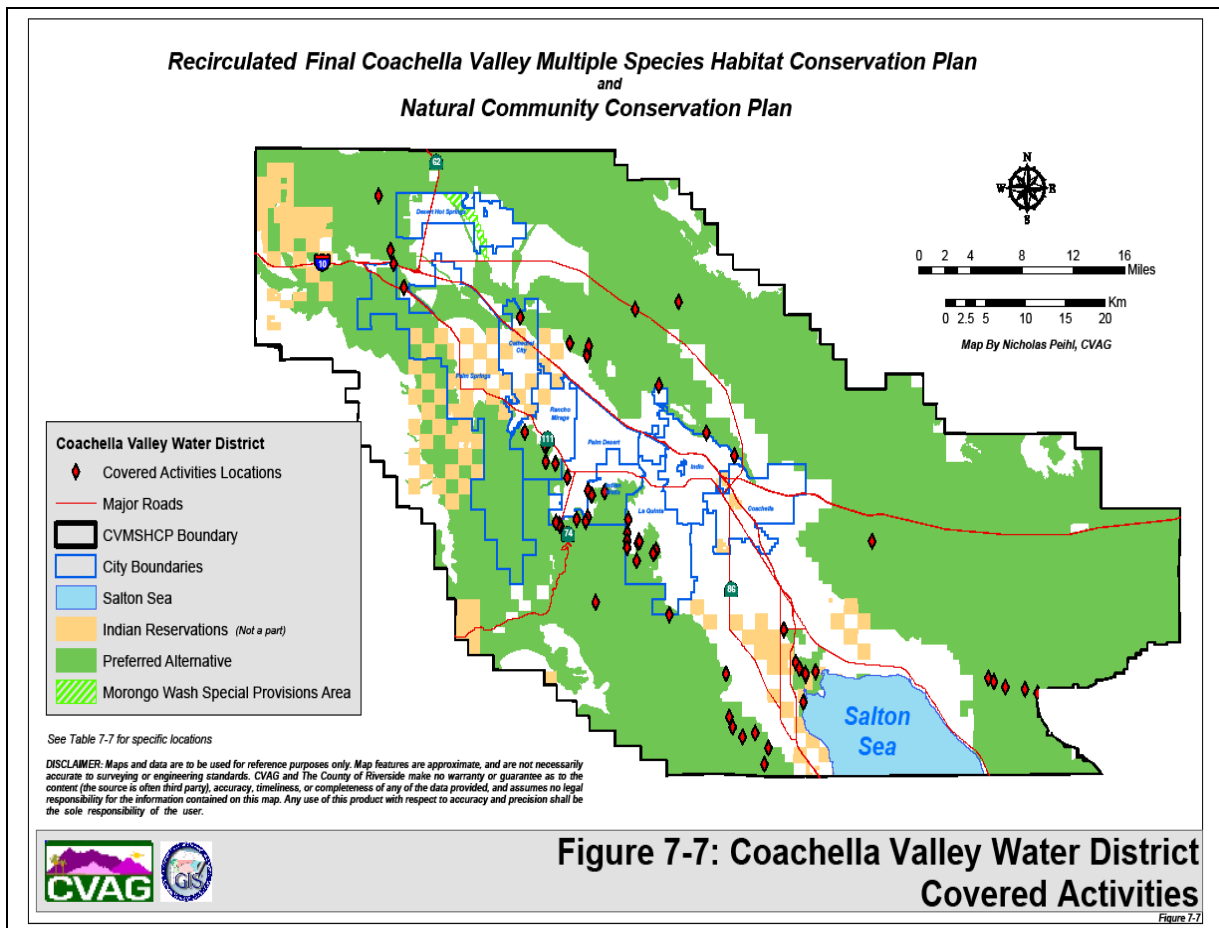


Figure 2. CVWD Lands within the Coachella Valley Stormwater and Delta Conservation Area

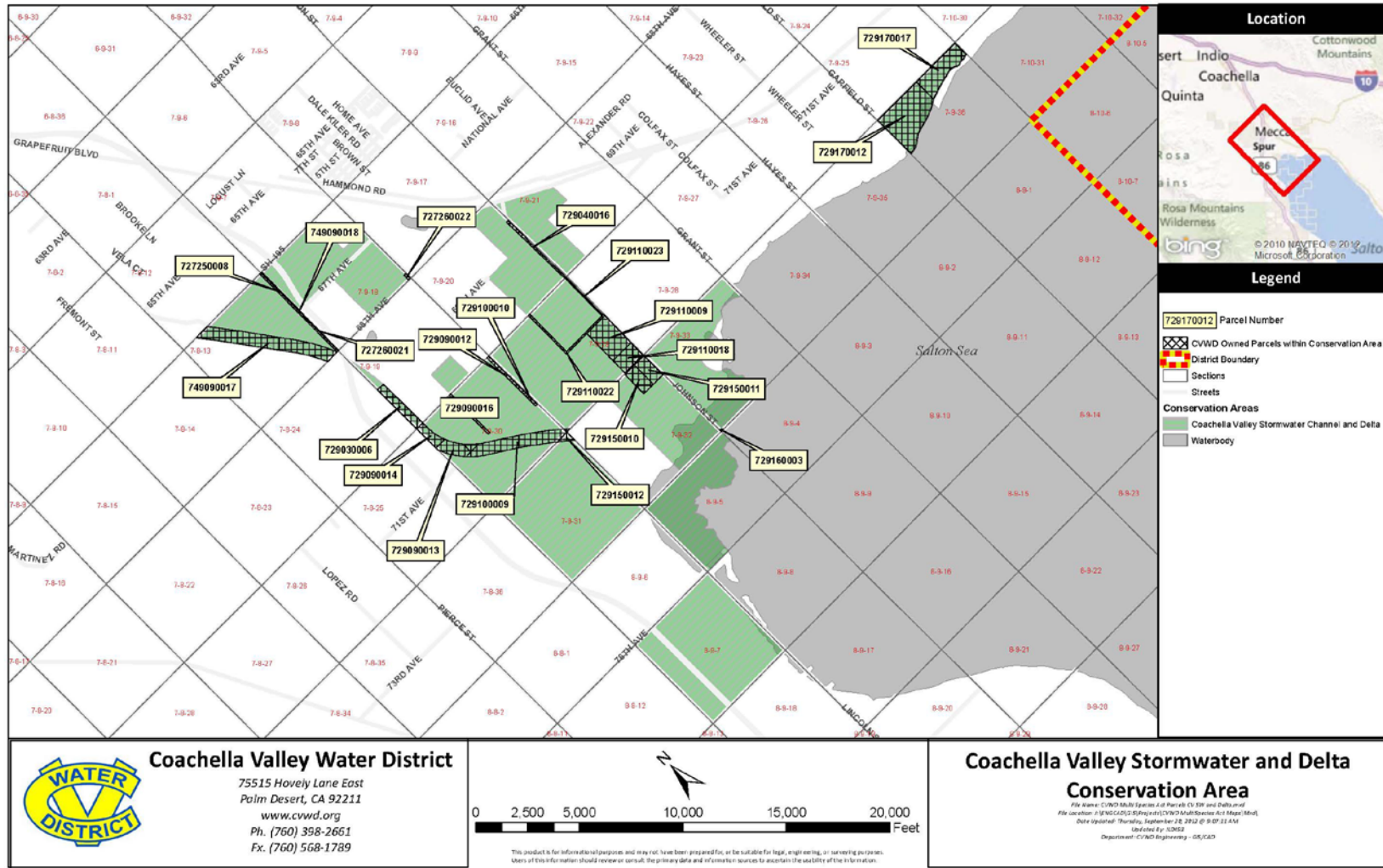


Figure 3. CVWD Lands within the Desert Tortoise Linkage Conservation Area

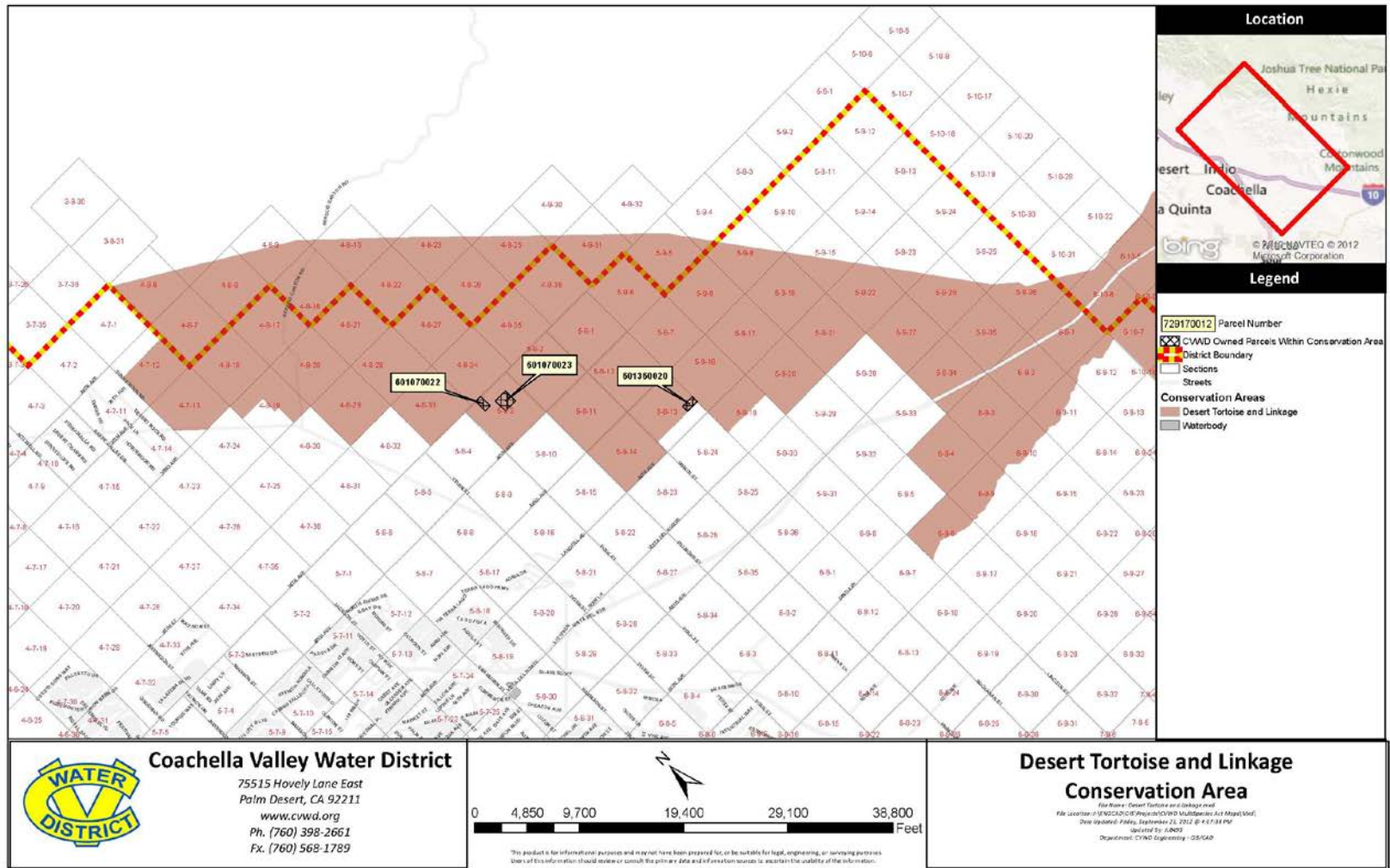


Figure 4. CVWD Lands within the East Indio Hills Conservation Area

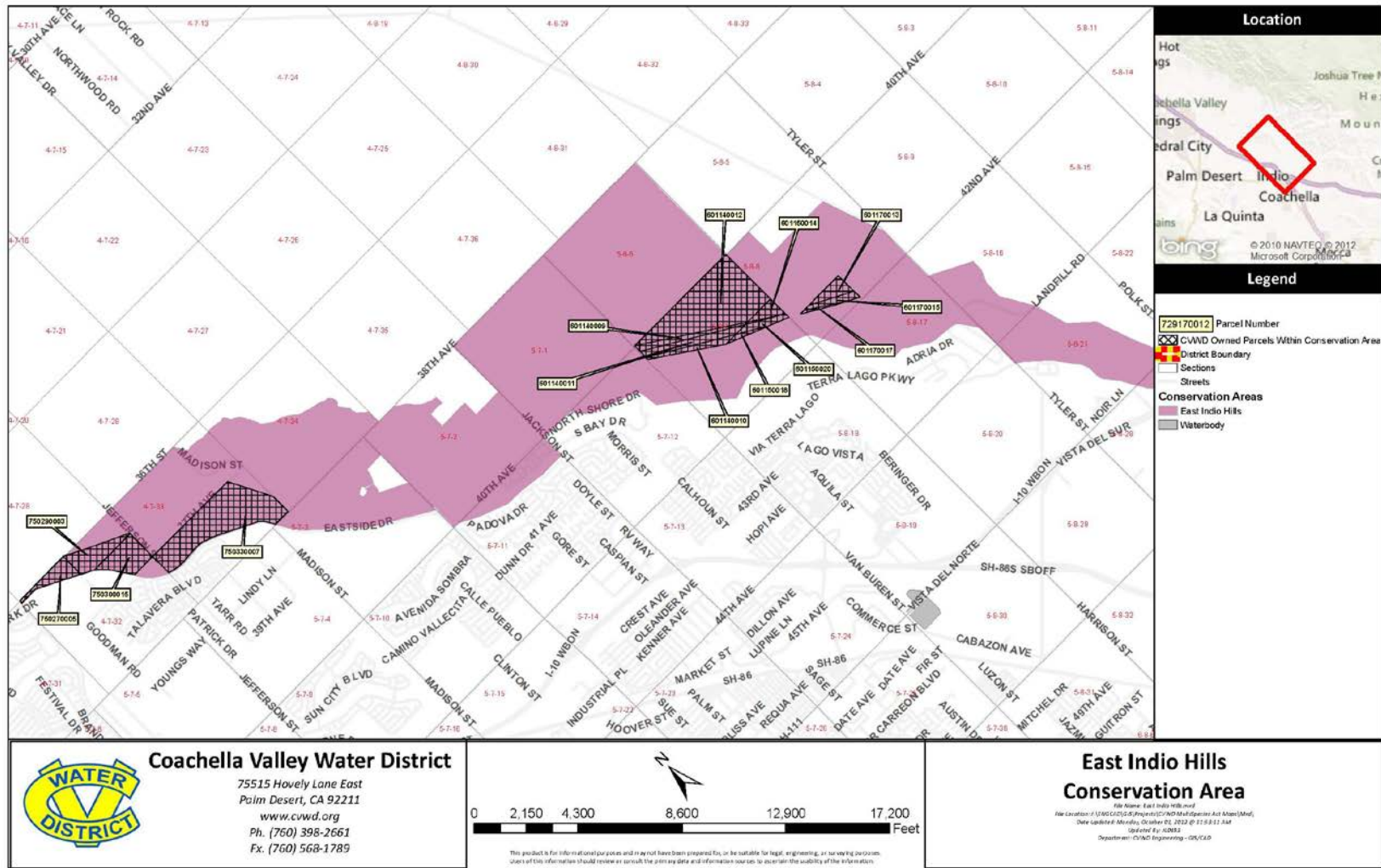


Figure 5. CVWD Lands within the Indio Hills/Joshua Tree National Park Conservation Area

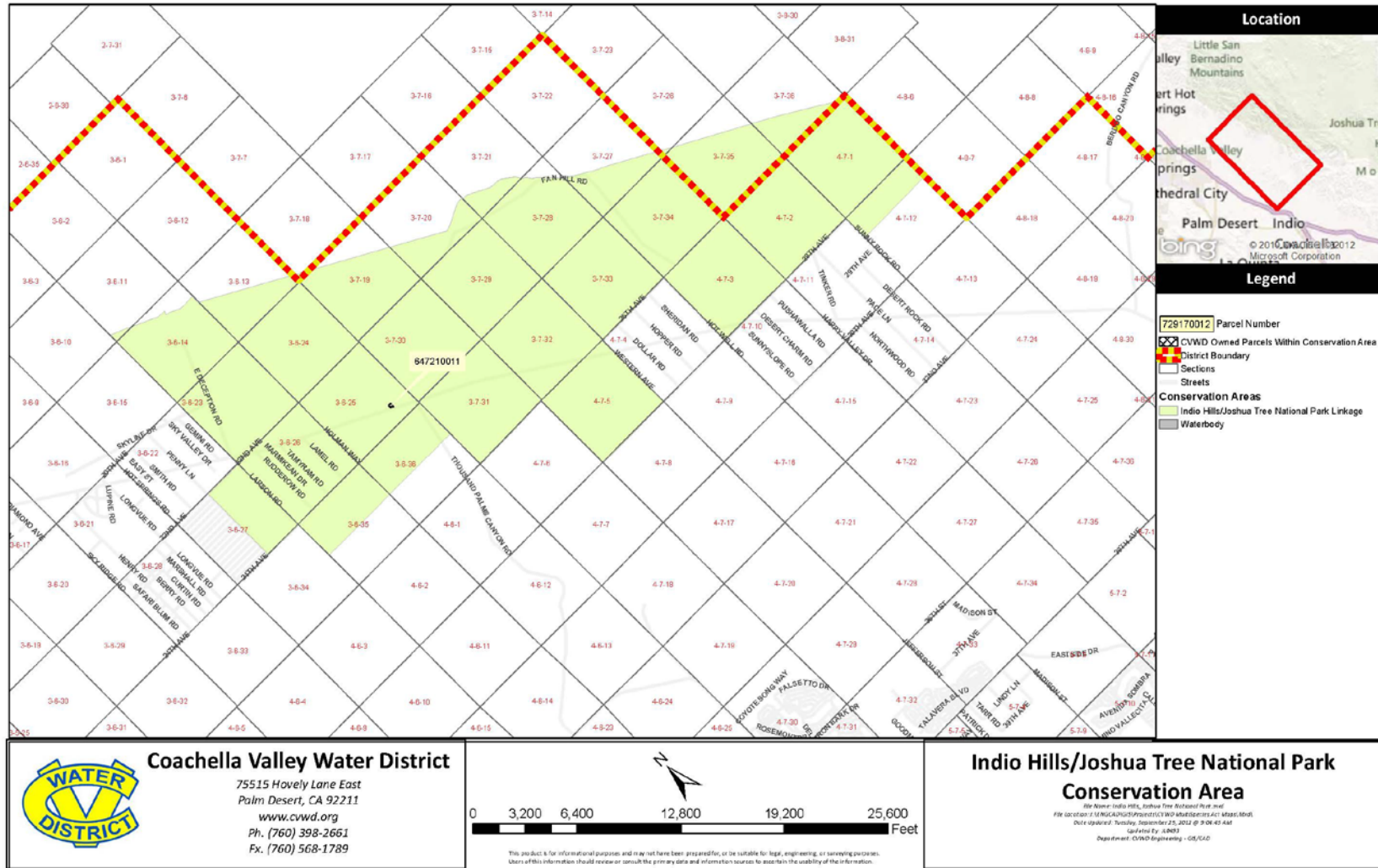


Figure 6. CVWD Lands within the Joshua Tree National Park Conservation Area

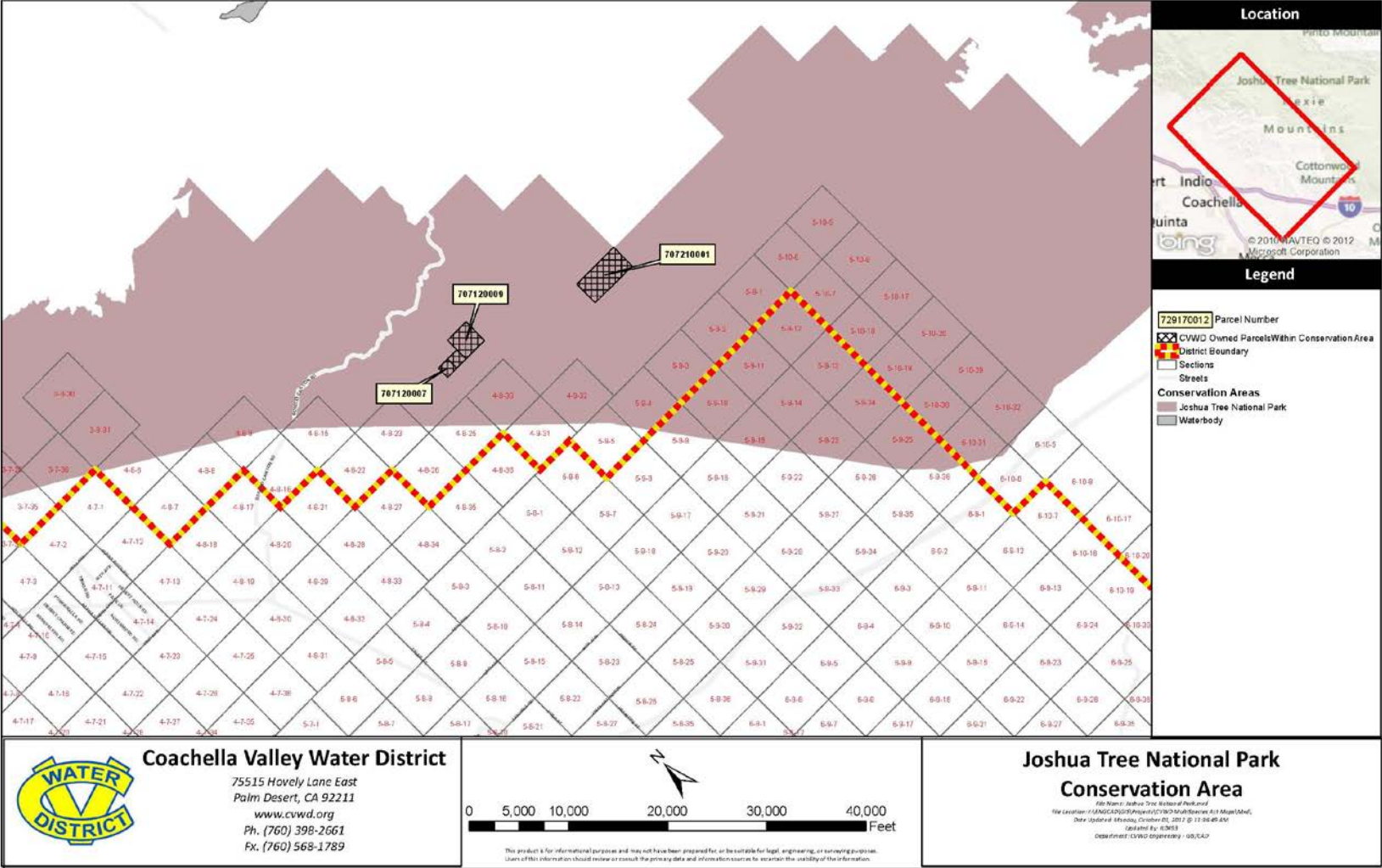


Figure 7. CVWD Lands within the Mecca Hills/Orocopia Mountains Conservation Area

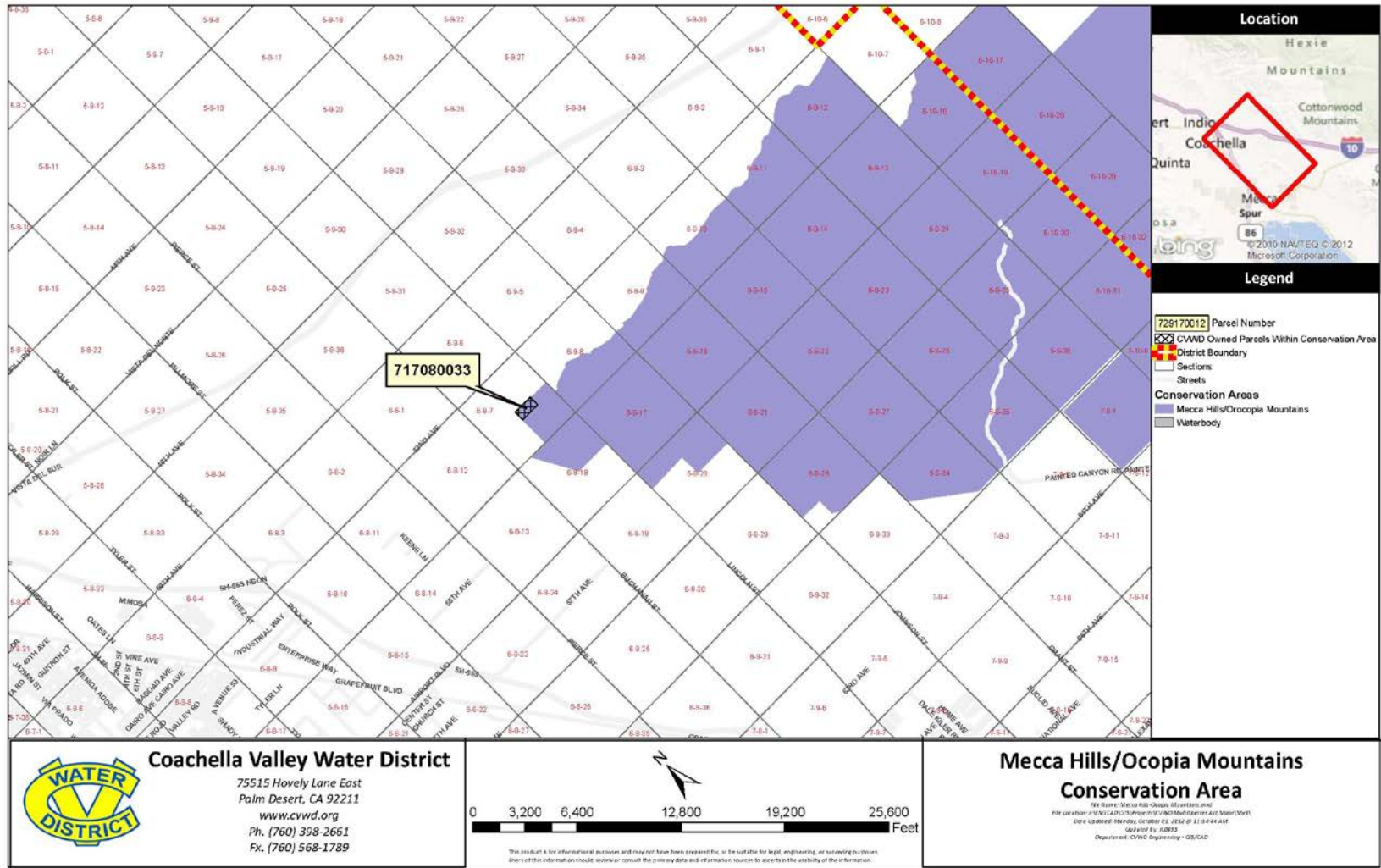


Figure 8. CVWD Lands within the Mission Creek/Morongo Wash Conservation Area

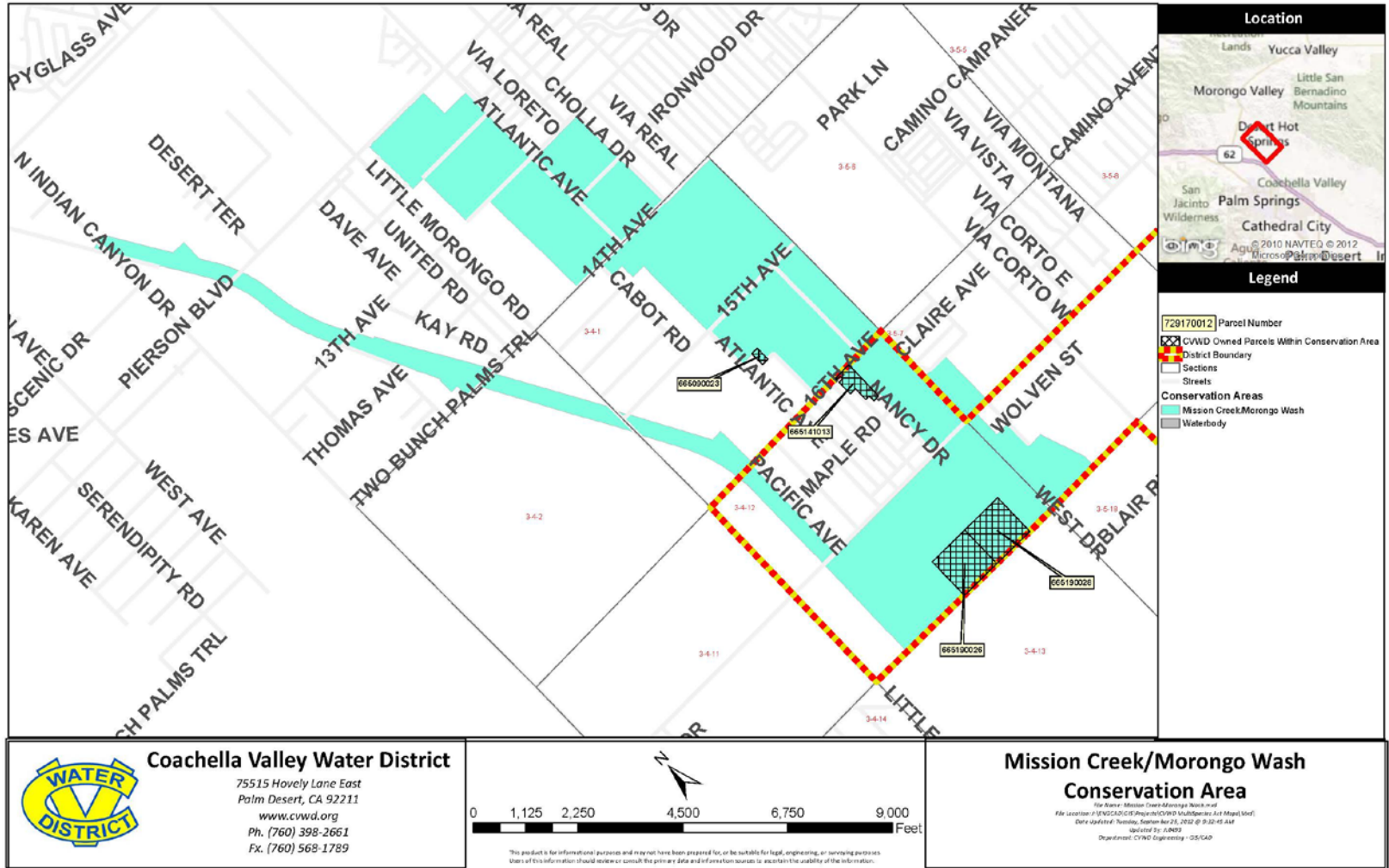


Figure 9. CVWD Lands within the Santa Rosa/San Jacinto Mountains Conservation Area

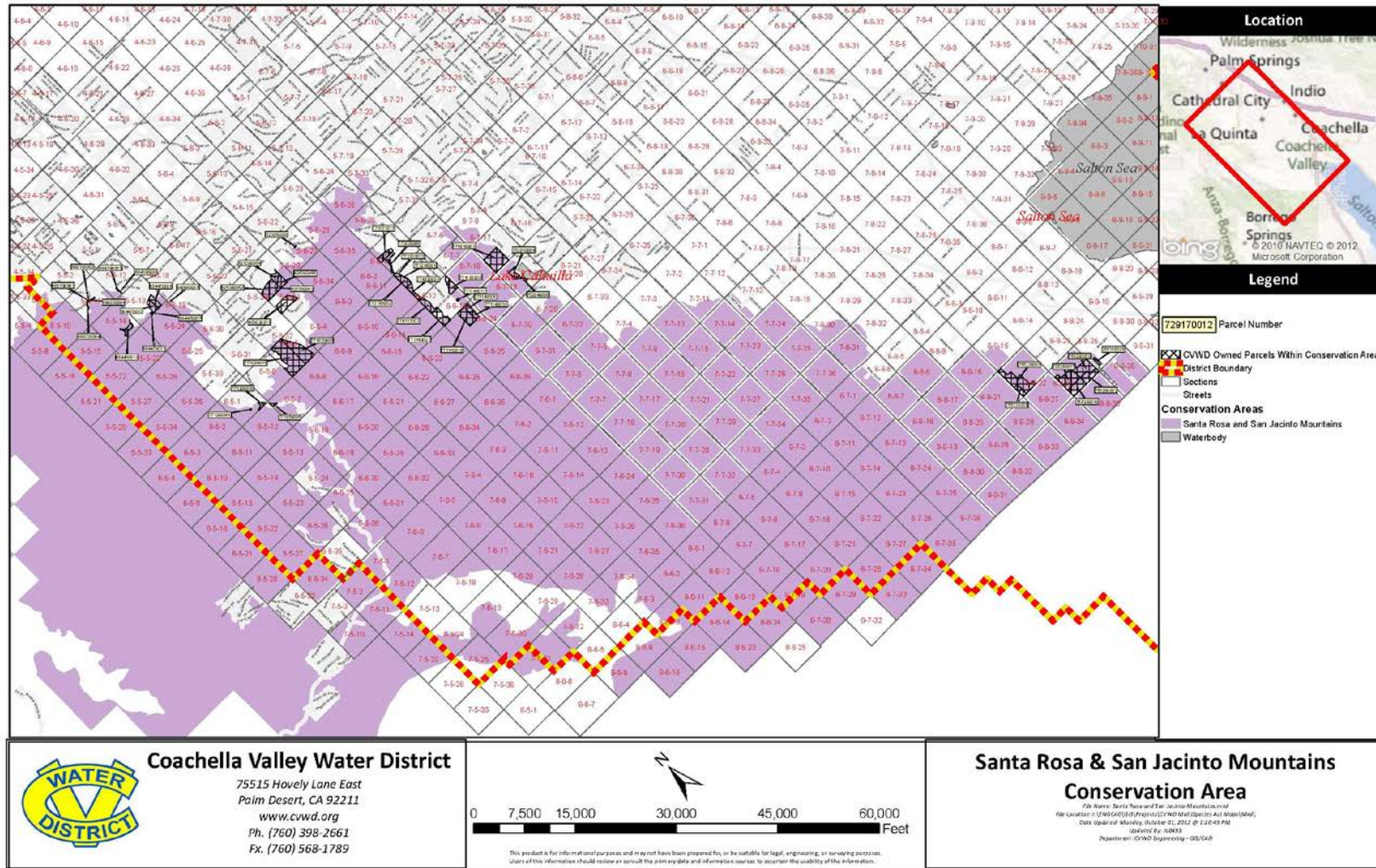


Figure 10. CVWD Lands within the Thousand Palms Conservation Area

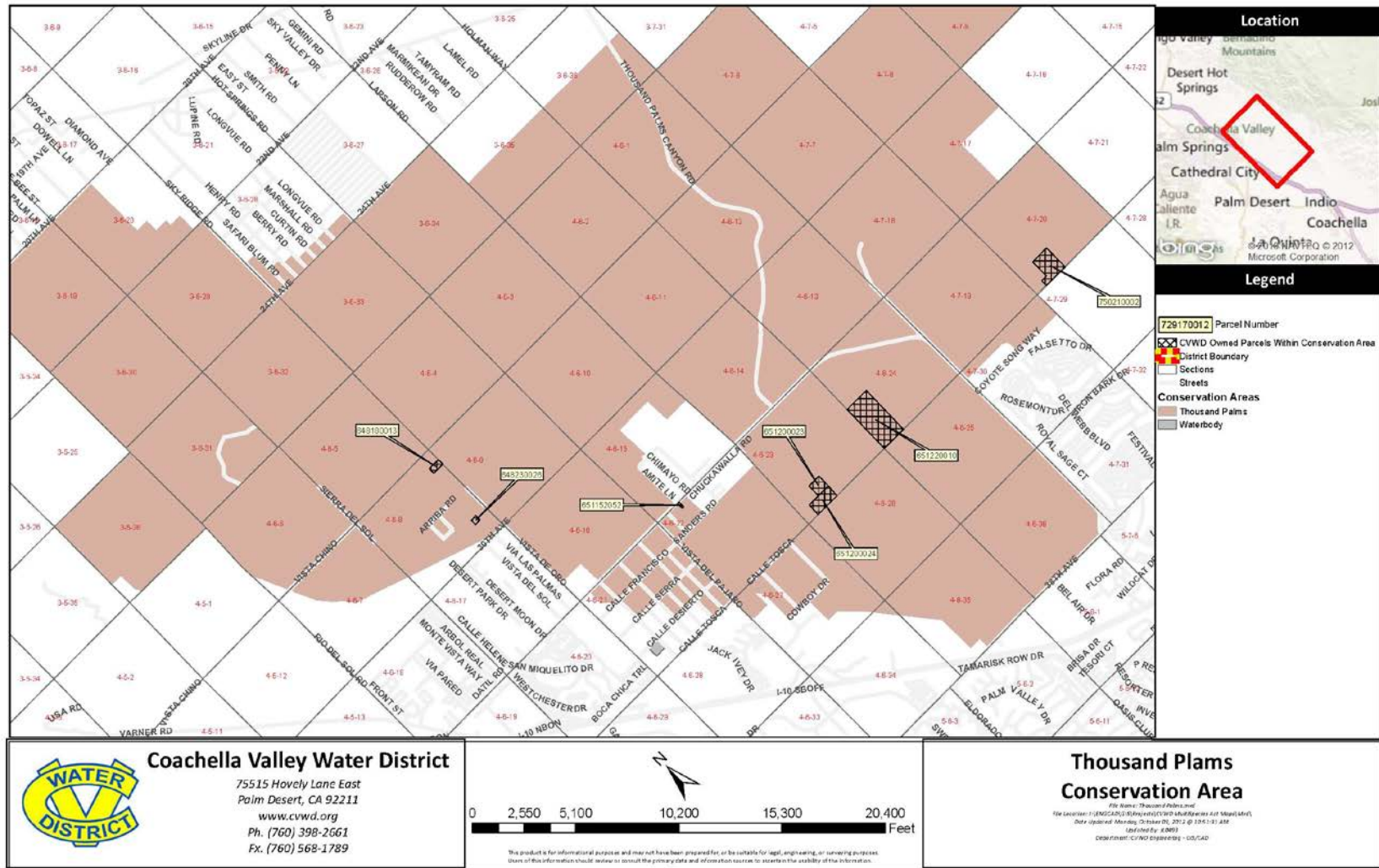


Figure 11. CVWD Lands within the Whitewater Floodplain Conservation Area

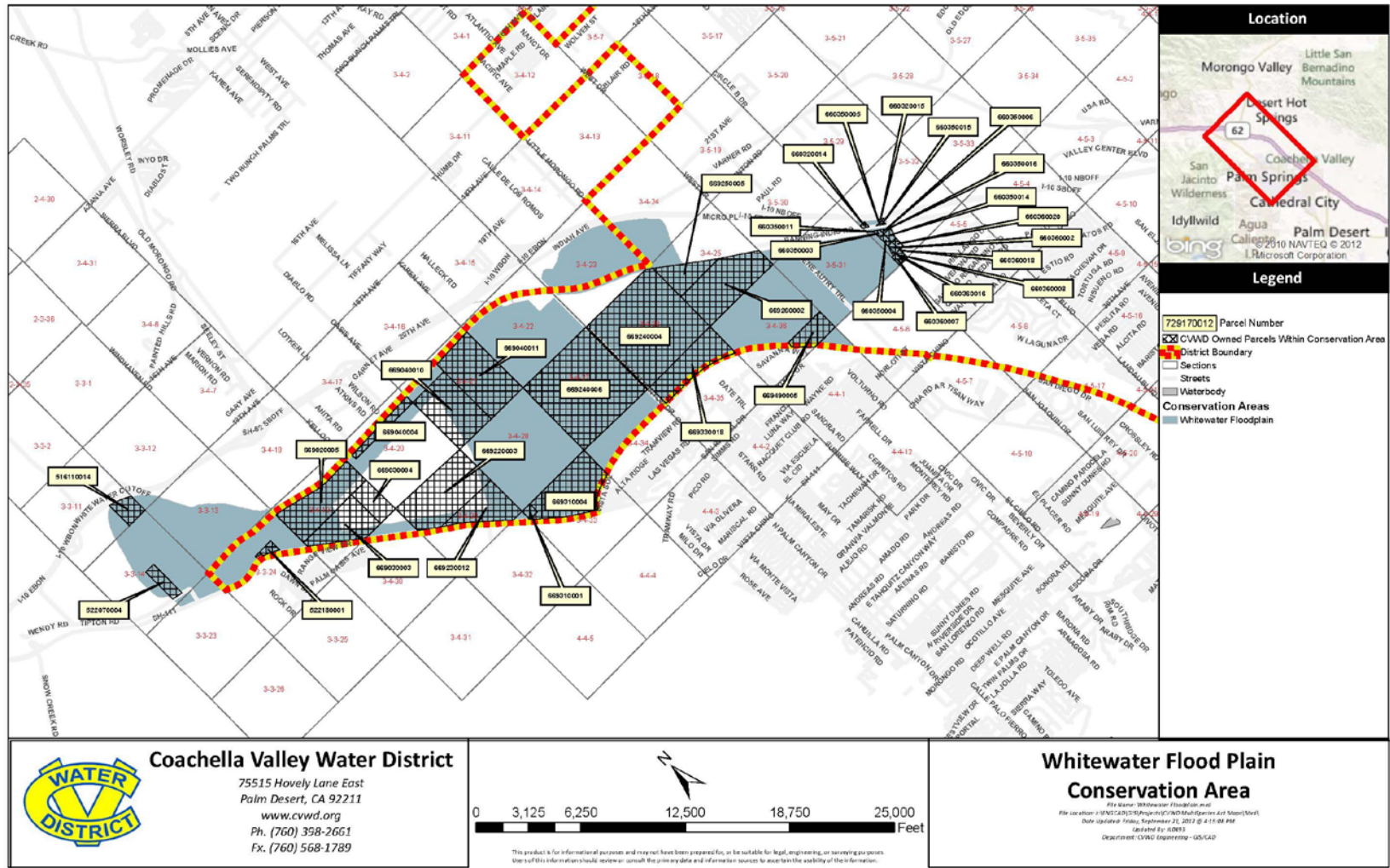


Figure 12. CVWD Lands within the Willow Hole Conservation Area

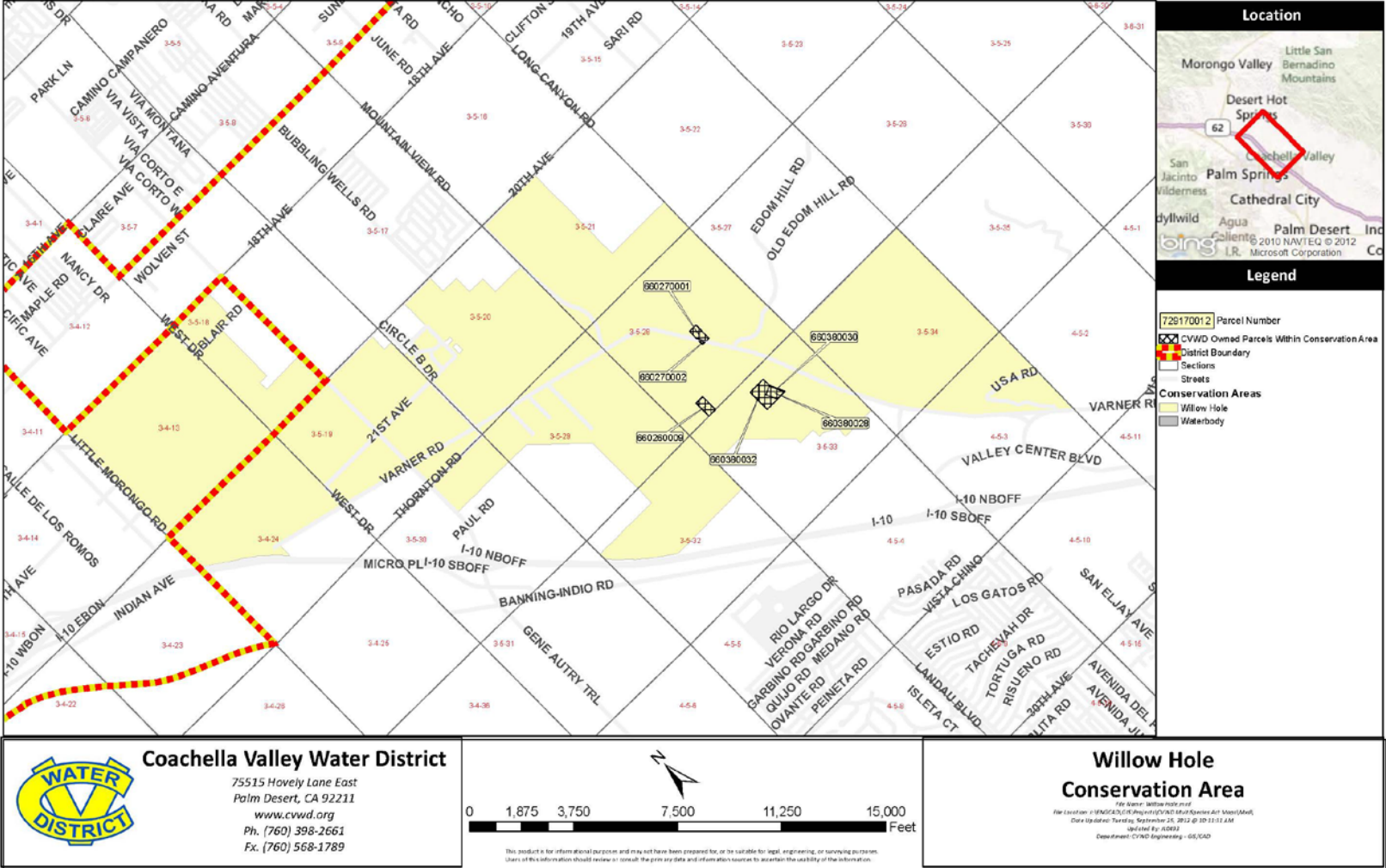


Figure 13. CVWD Lands within the Dos Palmas Conservation Area

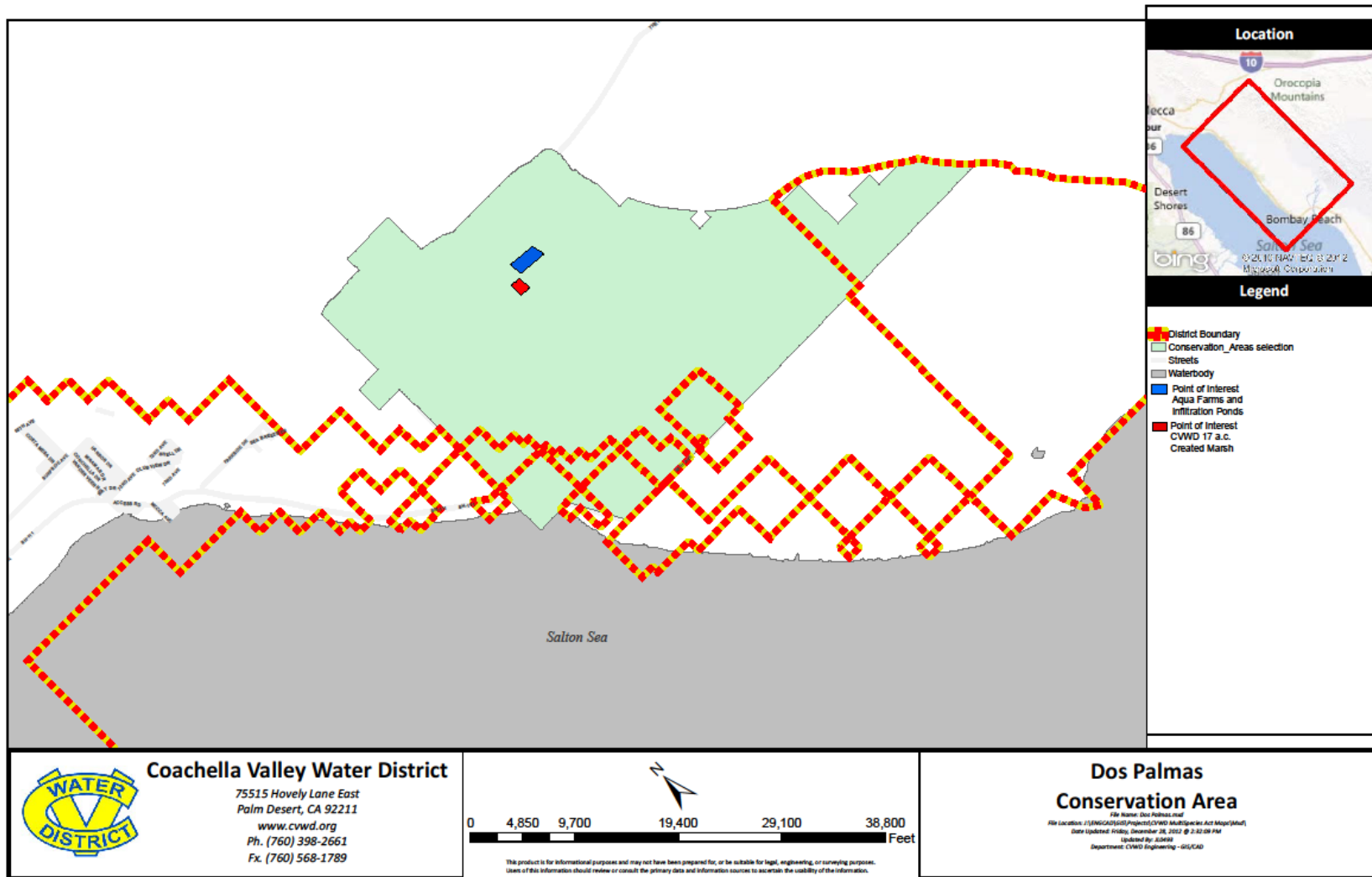


Figure 14. Coachella Valley MSHCP Valley-Wide Conservation Area Map

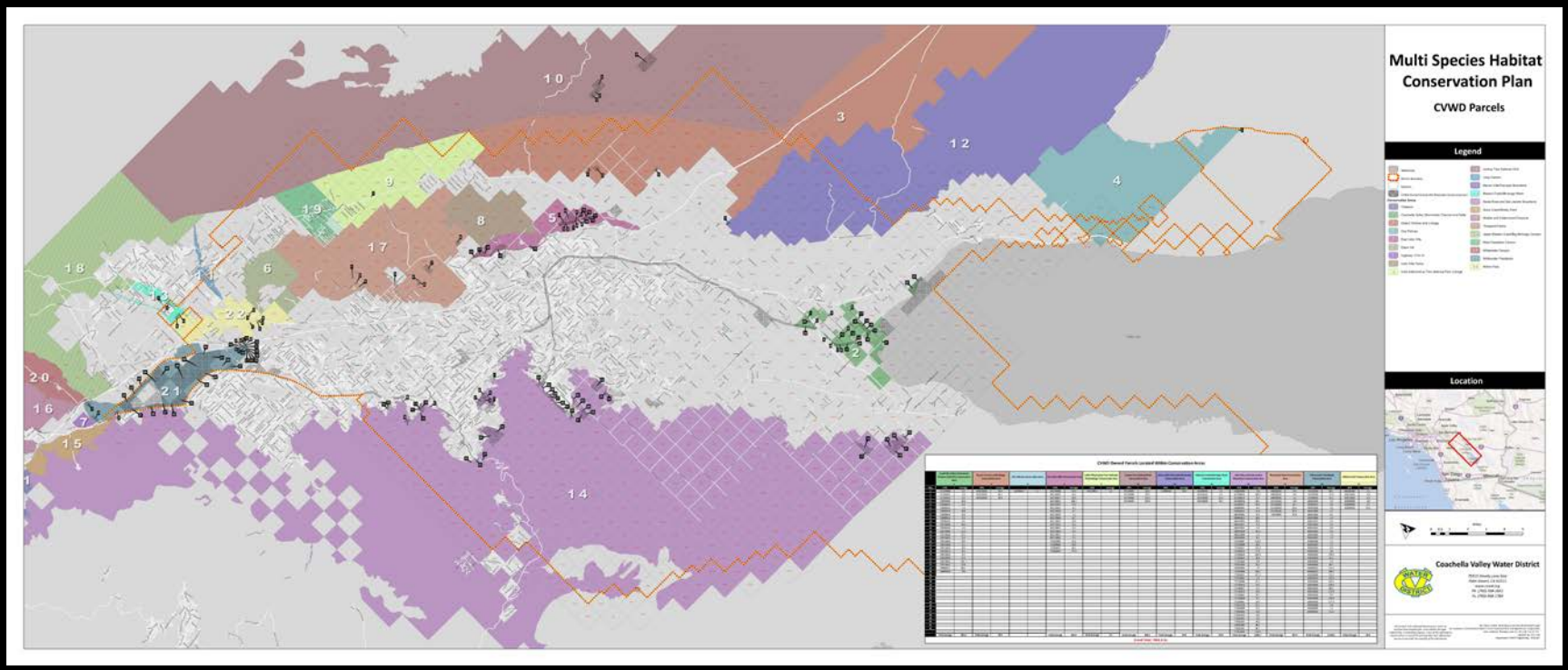


Table 4. Coachella Valley Stormwater Channel and Delta Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Desert Pupfish	<ul style="list-style-type: none"> • CVWD is developing a drain maintenance study the results of which will be used to evaluate current drain maintenance practices and potential impacts of changing drain maintenance approach. • Maintenance activities will be designed and implemented using Avoidance and Minimization measures in a way that minimizes new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Desert pupfish. • All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat, including agricultural drains, Coachella Valley Stormwater Channel, and proposed 25 acre created habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
Crissal Thrasher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Southwestern Willow Flycatcher Burrowing Owl California Black Rail Yuma Ridgway's Rail	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, ESD staff should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. Remove any materials or waste from the site upon completion of the Covered Activity.

Table 5. Desert Tortoise and Linkage Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
<p>Mecca Aster Orocopia Sage</p>	<ul style="list-style-type: none"> • For Covered Activities within Mecca Aster/Orocopia Sage habitat in the Desert Tortoise Linkage Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Mecca Aster/Orocopia Sage where it may occur in appropriate habitat along roads or wash bottoms. • If Mecca Aster/Orocopia Sage is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • Avoid the use of herbicides in areas that are known to support Mecca Aster and Orocopia Sage.
<p>Desert Tortoise</p>	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If a proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for DT. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. •

Table 5 (continued). Desert Tortoise and Linkage Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • During periods of high tortoise activity, approximately March through October) a biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within Desert Tortoise habitat, will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows and other species' burrows will be examined to determine the occupancy by tortoises.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable.

Table 6. East Indio Hills Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
<p>Mecca Aster Orocopia Sage</p>	<ul style="list-style-type: none"> • For Covered Activities within Mecca Aster/Orocopia Sage habitat in the Desert Tortoise Linkage Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Mecca Aster/Orocopia Sage where it may occur in appropriate habitat along roads or wash bottoms. • If Mecca Aster/Orocopia Sage is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • Avoid the use of herbicides in areas that are known to support Mecca Aster and Orocopia Sage.
<p>Desert Tortoise</p>	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for DT. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October) a biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized.

Table 6 (continued). East Indio Hills Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Personnel on the right-of-way, within Desert Tortoise habitat, will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows and other species' burrows will be examined to determine the occupancy by tortoises.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.

Table 7. Indio Hills/Joshua Tree National Park Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Milk- vetch	<ul style="list-style-type: none"> • For Covered Activities within Coachella Valley Milkvetch (CVM) habitat in the Indio Hills/Joshua Tree National Park Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms. • If CVM is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • Avoid the use of herbicides in areas that are known to support CVM.
Desert Tortoise	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for DT. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized.

Table 7 (continued). Indio Hills/Joshua Tree National Park Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows, and other species' burrows that may be used by Desert Tortoises, will be examined to determine occupancy.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Palm Springs Pocket Mouse Palm Springs Round-tailed Ground Squirrel	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.
Southern Yellow Bat	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed "petticoat" of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.

Table 8. Joshua Tree National Park Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Desert Tortoise	<ul style="list-style-type: none"> • Perform pre-activity surveys for Desert Tortoise. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows, and other species' burrows that may be used by Desert Tortoises, will be examined to determine occupancy.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Gray Vireo Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.

Table 8 (continued). Joshua Tree National Park Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Southern Yellow Bat	<ul style="list-style-type: none">• Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed.• Avoid removal or trimming of Palm trees with a well-developed “petticoat” of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.

Table 9. Mecca Hills/Orocopia Mountains Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
<p>Mecca Aster Orocopia Sage</p>	<ul style="list-style-type: none"> • For Covered Activities within Mecca Aster/Orocopia Sage habitat in the Desert Tortoise Linkage Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Mecca Aster/Orocopia Sage where it may occur in appropriate habitat along roads or wash bottoms. • If Mecca Aster/Orocopia Sage is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • CVWD will continue to control and manage access to Mecca Aster/Orocopia Sage habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access. • Avoid the use of herbicides in areas that are known to support Mecca Aster and Orocopia Sage.
<p>Desert Tortoise</p>	<ul style="list-style-type: none"> • Perform pre-activity surveys for Desert Tortoise. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them.

Table 9 (continued). Mecca Hills/Orocopia Mountains Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows, and other species' burrows that may be used by Desert Tortoises, will be examined for tortoise
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff. .
Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.
Southern Yellow Bat	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed "petticoat" of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.

Table 10. Mission Creek/Morongu Wash Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Milk-vetch Triple-Ribbed Milk-vetch Little San Bernardino Mountains Linanthus	<ul style="list-style-type: none"> • For Covered Activities within modeled Coachella Valley Milk-vetch, Little San Bernardino Mountains Linanthus and Triple Ribbed Milk-vetch habitat in the Mission Creek/Morongu Wash Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms. • If these plant species are found within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • CVWD will continue to control and manage access to these species habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access. • Avoid the use of herbicides in areas that are known to support these species.
Desert Tortoise	<ul style="list-style-type: none"> • Perform pre-activity surveys for Desert Tortoise. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area.

Table 10 (continued). Mission Creek/Morongu Wash Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows, and other species' burrows that may be used by Desert Tortoises, will be examined to determine occupancy.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff..
Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting <ul style="list-style-type: none"> ○ conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.

Table 11. Santa Rosa and San Jacinto Mountains Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Milk-vetch	<ul style="list-style-type: none"> • For Covered Activities within modeled Coachella Valley Milk-vetch habitat in the Mission Creek/Morongro Wash Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms. • If CVM is found within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • CVWD will continue to control and manage access to CVM habitat on district owned lands within the CVMSHCP area. Avoid the use of herbicides outside of CVWD facilities in areas that are known to support CVM.
Desert Tortoise	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Desert Tortoise. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area.

Table 11 (continued). Santa Rosa and San Jacinto Mountains Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked. • All Desert Tortoise burrows and other species' burrows will be examined to determine the occupancy by tortoises.
Flat-Tailed Horned Lizard	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor these species, perform pre-activity surveys for FTHL. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the CVFTL/FTHL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities. Inspect trenches, holes, or other excavations before filling. If a CVFTL/FTHL is found, have the biological monitor relocate the lizard. • CVWD staff driving to and from facilities where these species may be present will not exceed 25 mph when onsite temperatures exceed 30°C (86°F). • Before moving, burying, or capping, inspect for CVFTL/FTHL in any construction pipe, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL/FTHL from falling into them. • During periods of high CVFTL/FTHL activity (May through September) a biologist shall be present to monitor construction activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within CVFTL/FTHL habitat, will check under their vehicles prior to moving them.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Gray Vireo Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff..

Table 11 (continued). Santa Rosa and San Jacinto Mountains Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Southern Yellow Bat	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed “petticoat” of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.
Peninsular Bighorn Sheep	<ul style="list-style-type: none"> • If Covered Activities will take place within a Conservation Area known to harbor this species, perform pre-activity surveys to determine if the site contains water sources. • In San Jacinto and Santa Rosa Mtns, avoid activities that could impact Bighorn sheep during the lambing season from approximately January 31 through June 29 in our region.

Table 12. Thousand Palms Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Milk-Vetch Mecca Aster	<ul style="list-style-type: none"> • For Covered Activities within modeled Coachella Valley Milk Vetch and Mecca Aster habitat in the Thousand Palms Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms. • If listed plant species are found within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • CVWD will continue to control and manage access to CVM habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access. • Avoid the use of herbicides in areas that are known to support these species.
Coachella Valley Giant Sand-Treader Cricket	<ul style="list-style-type: none"> • Control and manage activities that degrade Coachella Valley Giant Sand-Treader cricket habitat. In particular, control and manage those activities that result in sand compaction or may crush burrows, which may include OHV travel except on designated routes of travel. • Restrict human access to occupied habitat during the emergence period in the winter months and during the breeding season in the spring. • Control and manage activities that degrade potential Coachella Valley Giant Sand-Treader cricket habitat on CVWD lands: In particular, these activities include alteration of the natural vegetation, fragmentation, and construction equipment impacts. • Restrict human access to occupied habitat during the emergence and breeding season from January through March on CVWD lands if feasible and required. • Identify actions to reduce impacts from, and control where feasible, invasive species if it is determined that there are impacts to giant sand-treader cricket habitat. • Avoid stockpiling construction materials, lumber, or other sources of artificial cover (AC) at CVWD facilities if feasible, within the known range of this species. • Maintenance activities will be designed and implemented using Best Management Practices (BMPs) in a way that minimize new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Jerusalem cricket. • All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. • No pesticide use shall occur in habitat occupied by this species. • Perform pre-activity surveys for this species in areas of unpaved soil during the winter and spring emergence and breeding periods

Table 12 (continued). Thousand Palms Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Desert Tortoise	<ul style="list-style-type: none"> • Review Conservation Area map which illustrates lands owned by CVWD within Conservation Areas. If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for DT. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October, a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked.
Flat-Tailed Horned Lizard Coachella Valley Fringe-Toed Lizard	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor these species, perform pre-activity surveys for FTHL. Surveys will include looking for tracks, scat, visual observation of lizards between April and October (inclusive of both months) between 7:30-11:00 a.m. when the temperature 1 centimeter above the open (unshaded) sand surface is greater than 95 degrees Fahrenheit and less than 110 degrees Fahrenheit (35 to 43 degrees Celsius). • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Coordinate with the ESD staff to examine construction areas for lizards when surface temperatures exceed 30°C (86°F). • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed.

Table 12 (continued). Thousand Palms Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the CVFTL/FTHL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities. Inspect trenches, holes, or other excavations before filling. If a CVFTL/FTHL is found, have the biological monitor relocate the lizard. • CVWD staff driving to and from facilities where these species may be present will not exceed 25 mph when onsite temperatures exceed 30°C (86°F). • Before moving, burying, or capping, inspect for CVFTL/FTHL in any construction pipes, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL/FTHL from falling into them. • During periods of high CVFTL/FTHL activity (May through September) a biologist shall be present to monitor covered activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within CVFTL/FTHL habitat, will check under their vehicles prior to moving them.
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Gray Vireo Yellow Breasted Chat Summer Tanager Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff..
Southern Yellow Bat	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed "petticoat" of fronds from March 1 – July 31 to avoid impacts to pregnant bats and/or lactating pups.
Coachella Valley Round Tailed Ground Squirrel Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls.

Table 12 (continued). Thousand Palms Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Prior to Covered Activities, CVWD’s ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls. • Prior to Covered Activities, CVWD’s ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.

Table 13. Whitewater Floodplain Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Milk-vetch Mecca Aster	<ul style="list-style-type: none"> • For Covered Activities within modeled Coachella Valley Milk-vetch and Mecca Aster habitat in the Thousand Palms Conservation Area, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of CVM where it may occur in appropriate habitat along roads or wash bottoms. • If listed plant species are found within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • CVWD will continue to control and manage access to CVM habitat on district owned lands within the CVMSHCP area. In addition, CVWD does not allow OHV use on its lands and prohibits public access. • Avoid the use of herbicides in areas that are known to support CVM.
Coachella Valley Giant Sand-Treader Cricket	<ul style="list-style-type: none"> • Control and manage activities that degrade Coachella Valley Giant Sand-Treader cricket habitat. In particular, control and manage those activities that result in sand compaction or may crush burrows, which may include OHV travel except on designated routes of travel. • Restrict human access to occupied habitat during the emergence period in the winter months and during the breeding season in the spring. • Control and manage activities that degrade potential Coachella Valley Giant Sand-Treader cricket habitat on CVWD lands: In particular, these activities include alteration of the natural vegetation, fragmentation, and construction equipment impacts. • Restrict human access to occupied habitat during the emergence and breeding season from January through March on CVWD lands if feasible and required. • Identify actions to reduce impacts from, and control where feasible, invasive species if it is determined that there are impacts to Giant Sand-Treader cricket habitat. • Avoid stockpiling construction materials, lumber, or other sources of artificial cover (AC) at CVWD facilities if feasible, within the known range of this species. • Maintenance activities will be designed and implemented using Best Management Practices (BMPs) in a way that minimize new disturbances, to prevent erosion, off-site degradation, and reduce direct impacts to Jerusalem cricket. • All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. • No pesticide use shall occur in habitat occupied by this species. • Perform pre-activity surveys for this species in areas of unpaved soil during the winter and spring emergence and breeding periods.
Flat-Tailed Horned Lizard Coachella Valley Fringe-Toed Lizard	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor these species, perform pre-activity surveys for FTHL and CVFTL. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed.

Table 13 (continued). Whitewater Floodplain Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • Coordinate with the ESD staff to examine construction areas for lizards when surface temperatures exceed 30°C (86°F). • Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the CVFTL/FTHL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities. Inspect trenches, holes, or other excavations before filling. If a CVFTL/FTHL is found, have the biological monitor relocate the lizard. • CVWD staff driving to and from facilities where these species may be present will not exceed 25 mph when onsite temperature exceeds 30°C (86°F). • Before moving, burying, or capping, inspect for CVFTL/FTHL in any construction pipes, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL/FTHL from falling into them. • During periods of high CVFTL/FTHL activity (May through September) a biologist shall be present to monitor construction activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within CVFTL/FTHL habitat, will check under their vehicles prior to moving them.
Le Contes Thrasher Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active Le Conte’s Thrasher nest is located, ESD will tag the tree containing the nest. All tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Coachella Valley Round-Tailed Ground Squirrel Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls. • Prior to Covered Activities, CVWD’s ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.

Table 14. Willow Hole Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Flat-Tailed Horned Lizard Coachella Valley Fringe-Toed Lizard	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor these species, perform pre-activity surveys for CVFTL/FTHL. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Coordinate with the ESD staff to examine construction areas for lizards when surface temperatures exceed 30°C (86°F). • Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the CVFTL/FTHL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities. Inspect trenches, holes, or other excavations before filling. If a CVFTL/FTHL is found, have the biological monitor relocate the lizard. • CVWD staff driving to and from facilities where these species may be present will not exceed 25 mph when onsite temperatures exceed 30°C (86°F). • Before moving, burying, or capping, inspect for CVFTL/FTHL in any construction pipes, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL/FTHL from falling into them. • During periods of high CVFTL/FTHL activity (May through September) a biologist shall be present to monitor construction activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within CVFTL/FTHL habitat, will check under their vehicles prior to moving them.
Burrowing Owl Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.

Table 14 (continued). Willow Hole Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Coachella Valley Round Tailed Ground Squirrel Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls. • Prior to Covered Activities, CVWD’s ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.
Southern Yellow Bat	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed “petticoat” of fronds from March 1–July 31 to avoid impacts to pregnant bats and/or lactating pups.

Table 15. Dos Palmas Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Orocopia Sage	<ul style="list-style-type: none"> • For Covered Activities within Orocopia Sage habitat, surveys by ESD staff will be required for activities during the growing and flowering period from February 1 - May 15. • Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent feasible. • Limit off road vehicle travel when performing Covered Activities to avoid unnecessary take of Orocopia Sage where it may occur in appropriate habitat along roads or wash bottoms. • If Orocopia Sage is found to be within the footprint of any covered activity contact ESD to determine if salvage of plant and/or seeds is feasible. • Avoid the use of herbicides in areas that are known to support Orocopia Sage.
Desert Pupfish	<ul style="list-style-type: none"> • CVWD is developing a drain maintenance study the results of which will be used to evaluate current drain maintenance practices and potential impacts of the current drain maintenance approach. • All fueling and maintenance of vehicles and other equipment as well as location of staging areas shall be located as far as practicable from any potential habitat, including agricultural drains, Coachella Valley Storm water Channel, and proposed 25 acre created habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
Flat-Tailed Horned Lizard	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor these species, perform pre-activity surveys for CVFTL/FTHL. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Coordinate with the ESD staff to examine construction areas for lizards when surface temperatures exceed 30°C (86°F). • Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the CVFTL/FTHL. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities. Inspect trenches, holes, or other excavations before filling. If a CVFTL/FTHL is found, have the biological monitor relocate the lizard. • CVWD staff driving to and from facilities where these species may be present will not exceed 25 mph when onsite temperatures exceed 30°C (86°F). • Before moving, burying, or capping, inspect for CVFTL/FTHL in any construction pipes, culverts, or similar structures that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas. • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or fencing will be installed to prevent the possibility of CVFTL/FTHL from falling into them.

Table 15 (continued). Dos Palmas Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
	<ul style="list-style-type: none"> • During periods of high CVFTL/FTHL activity (May through September) a biologist shall be present to monitor construction activities in areas not previously cleared or stabilized. • Personnel on the right-of-way, within CVFTL/FTHL habitat, will check under their vehicles prior to moving them.
Desert Tortoise	<ul style="list-style-type: none"> • Perform pre-activity surveys for Desert Tortoise. • Surveys for this species will follow accepted USFWS protocol which provides 100% coverage of survey site. The survey approach will also use appropriate seasonal surveys, and buffer zones. • In the western Coachella Valley, the nesting season extends from April through at least July. Schedule Covered Activities involving grading and trenching outside of the breeding season if feasible. • Establish a 100-foot buffer around each suspected desert tortoise burrow identified in the pre-activity survey. • Erect exclusion fencing around trenches, pits, pipe materials and other potential hazards and provide escape ramps if feasible until excavation activities are completed. • Before moving, burying, or capping, inspect for tortoises in any construction pipes, culverts, or similar structures with a diameter of 3 to 12 inches that are stored on the site for 1 or more nights. Alternatively, cap structures before storing on the construction site. • Inspect excavations for tortoises before filling. If a tortoise is found, have the biological monitor relocate it to a safe place offsite. • Prior to the initiation of Covered Activities, all construction personnel will be instructed on the protection of the Desert Tortoise. • All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor acquired access, or public roads. • All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas • Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them. • Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area. • During periods of high tortoise activity, approximately March through October) a tortoise biologist shall be present to monitor Covered Activities in areas not previously cleared or stabilized. • Personnel within Desert Tortoise habitat will be required to check under their vehicles prior to moving them. • All Desert Tortoise burrows located will be flagged or marked.

Table 15 (continued). Dos Palmas Conservation Area

SPECIES	AVOIDANCE AND MINIMIZATION MEASURE
Southwestern Willow Flycatcher Le Contes Thrasher Least Bell's Vireo Yellow Warbler Yellow Breasted Chat Summer Tanager Le Contes Thrasher Crissal Thrasher Burrowing Owl	<ul style="list-style-type: none"> • Contact ESD staff to perform pre-activity surveys within riparian habitats of the bird species associated with this Conservation Area prior to implementing Covered Activities to assure that no active nest or owl burrow is present. • If an active nest is located, ESD will tag the tree containing the nest and establish a 200-foot buffer zone around the tree; all tagged trees will be left in place until the nest is determined to be inactive. • If an active BUOW burrow is located immediately stop all work within a 160 foot radius of burrow outside of the breeding season and a 250-foot radius of the burrow during the breeding season and notify the ESD staff.
Coachella Valley Round Tailed Ground Squirrel Palm Springs Pocket Mouse	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor PSPM, implement pre-activity surveys to determine presence. PSPM surveys will include visual surveys and an examination of BUOW scat for PSPM remains. • If proposed covered activity will take place within a Conservation Area known to harbor RTGS, implement pre-activity surveys to determine presence. RTGS surveys will include visual surveys, track detection and listening for calls. • Prior to Covered Activities, CVWD's ESD staff should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). • During Covered Activities, the biological monitor should ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. • All temporary facilities and impacts shall be removed and restored to the preexisting conditions and contours to the extent practicable. • Covered Activities related materials and wastes shall be removed from the site upon completion of the Project.
Southern Yellow Bat	<ul style="list-style-type: none"> • If proposed covered activity will take place within a Conservation Area known to harbor this species, perform pre-activity surveys for Yellow bat if palm trees will be trimmed or removed. • Avoid removal or trimming of Palm trees with a well-developed "petticoat" of fronds from March 1–July 31 to avoid impacts to pregnant bats and/or lactating pups.

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APPENDIX

COACHELLA CANAL WATER SUPPLY QUAGGA MUSSEL MONITORING AND CONTROL PROGRAM



Prepared by:
Coachella Valley Water District
Environmental Services Department
P.O. Box 1058
Coachella, CA 92236
(760) 398-2651

March 2015

Introduction

The Coachella Valley Water District (CVWD) initiated a Quagga mussel (*Dreissena bugensis*) monitoring and control program in 2007 for the Coachella Canal water supply following reports that this invasive species had colonized locations within the Colorado River upstream of the All American Canal diversion that supplies water to the Coachella Canal. Quagga mussels were found in January 2007 in Lake Mead and since then quagga or zebra mussels have been found in Arizona, California, Colorado, Texas and Utah. Metropolitan Water District (MWD) has observed Quagga mussels throughout their 240 mile Colorado River Aqueduct conveyance system. Quagga mussel are established in 15 of the lakes served by this water supply and have been collected from 10 reservoirs in the southern California area (USGS 2012, <http://nas2.er.usgs.gov/viewer/omap.aspx?SpeciesID=95>). The Coachella Canal (Canal) conveys Colorado River water north to the Coachella Valley via a 123 mile open water canal from the All American Canal in El Centro. The Canal is fenced for the majority of its length as it travels north and access is controlled through the use of locked service road gates. No recreation is permitted in or along the Canal. There are subsurface irrigation laterals along the Canal that deliver water to farms and ranches. Several emergency waste-way channels are located along the Canal. These drain to the Salton Sea and Coachella Valley Storm Water Channel and are used in emergency situations such as earthquake damage to the Canal. Lake Cahuilla is a terminal storage reservoir. There are no tributaries downstream of Lake Cahuilla. All water exiting Lake Cahuilla is conveyed via pipeline to farms, ranches and the Thomas E Levy Groundwater Replenishment Facility. Recreational fishing from the shoreline occurs at Lake Cahuilla. Riverside County Parks Department also hosts an annual fishing derby at Lake Cahuilla with rainbow trout supplied by the California Department of Fish and Wildlife (CDFW). No rental boats or concessions for rental boats exist at Lake Cahuilla, and no boats are allowed on the lake. In addition, no swimming, diving or other direct body contact is allowed in the lake. Lake Cahuilla and portions of the surrounding lands are owned by the Bureau of Reclamation (BOR) and are operated and maintained by CVWD. Riverside County Parks Department has a lease for Lake Cahuilla and the camp ground area with CVWD, and leases remaining portions of the surrounding land from the BOR. Riverside County Parks Department is responsible for any outreach and education related to quagga mussels or other aquatic invasive species at Lake Cahuilla. The arrival of Quagga and zebra mussels (often referred to as Dreissenids) to western waters brings the potential to extend with devastating impacts into a geographical area already challenged with water-related problems. This monitoring and control program has been implemented to prevent the colonization of CVWD's Coachella Canal and the irrigation and groundwater replenishment facilities supplied from the Canal.

Existing Quagga Mussel Control Measures

CVWD has implemented a multi-barrier approach with the goal of preventing Quagga mussel colonization of CVWD's Colorado River water conveyance infrastructure. This multi-barrier approach was established following the reports of the initial Dreissenid invasion at Lake Mead in 2007. The Lake Cahuilla and Canal water sample analysis performed by the CDFW has shown low numbers of veligers (larval mussels) present during cooler times of the year; however, the analysis is unable to determine whether these veligers are viable. Monthly inspection of monitoring blocks and monthly water samples along the length of the Canal and in Lake Cahuilla

have not shown colonization by mussels since quagga mussels were discovered at Lake Mead in 2007. CVWD has not observed any colonization within its infrastructure or water conveyance system but has observed low veliger density sporadically in samples since monitoring began in August of 2007. One initial response to early reports of Quagga mussels found in Colorado River consisted of installing chlorination facilities at the Drop 1 structure where Colorado River water delivered from the All-American Canal enters the Canal. The chlorination station runs continuously 24 hours a day 7 days a week. There are three 10,000 gallon chlorine tanks onsite that provide additional storage in order to avoid interruptions to the dosing regimen. A remote generator is maintained onsite to provide power to the dosing pumps in the event of a power supply interruption. In addition to implementing disinfection at Drop 1, control measures include a boating ban at Lake Cahuilla and hydraulic jumps within the Canal. This multi-barrier approach is further augmented by naturally occurring high temperatures during the summer months which is expected to reduce the Quagga mussels' ability to spawn successfully (from Mills et al., 1996, citing Antonov and Skorbatov, 1990). These natural and artificial control measures are summarized below:

1. Chlorination:

In July, 2008, CVWD installed a chlorine dosing station at Mile Post 0.2 adjacent to the Canal turn out. **Figure A1** shows the dosing station used to add chlorine to Colorado River water entering the Canal to kill or inactivate the juvenile stage (veliger) of the Quagga mussel prior to colonization. It has been shown that chlorine affects the ability of veligers and adult mussels to attach to substrate suitable for colonization (Simms, La Bounty, Johnson, Roeffer, Southern Nevada Water Authority, 2007). Sodium hypochlorite is added to achieve a target free chlorine residual of 1.5 milligrams per liter (mg/L) at the Drop 1 structure. Residual chlorine levels diminish to less than detection (0.08 mg/L) approximately 1.5 miles downstream of Drop 1. **Table A1** summarizes the chlorine residual levels downstream of the chlorine dosing station.

2. Hydraulic Jumps:

Turbulent eddies are created by lowering check gates down along the Canal at several points depending upon how water is conveyed and delivered to customers. When lowered, the gate forces water to flow through wing walls thereby creating a hydraulic jump or turbulent eddy. Gate 16.3 is kept in this lowered position permanently creating a hydraulic jump via the wing walls within the Canal. The lowered gate also creates a venturi effect as water passes under the gate which creates turbulent eddies for a short distance. In theory, the energy generated by these hydraulic jumps can create turbulences small enough and with great enough occurrence to effectively inactivate Quagga veligers by damaging their undeveloped bodies (U.S. Bureau of Reclamation 2008).

3. Ambient Water Temperature:

Studies show Quagga mussels have a temperature tolerance between 0°C (32°F) and 30°C (86°F). **Figure A2** shows that Canal water temperatures typically exceed 86°F during the hottest summer months. During 2011, water temperatures within the canal exceeded 86°F for approximately 101 days. There is some concern that over time Quagga mussels could adapt to higher water temperatures, however, recent research

investigating veligers exposed to 30 degrees C for 4.5 days revealed that their mortality rate approached 100% (Craft and Myrick 2011). Based on this existing research, elevated water temperatures should act to help prevent Quagga mussel colonization during this period of the year.

4. Prohibition of Boats on Lake Cahuilla:

Very soon after the initial 2007 invasion of Quagga mussels into Lake Mead, CVWD extended a prohibition originally implemented by County Parks Department, to launching any boats onto Lake Cahuilla in order to eliminate the risk of Dreissenids being introduced from boating activities. Many kinds of aquatic pests, including both plants and animals, are easily carried by trailered boats which are considered the largest vector for spreading Aquatic Nuisance Species (ANS) into new waterways.

Existing Quagga Mussel Monitoring Measures

Based on an initial vulnerability assessment, CVWD's system can be divided into five separate environments for mussel colonization: (1) Coachella Canal, (2) Subsurface irrigation lines, (3) Siphons, (4) Groundwater recharge basins, and (5) Lake Cahuilla. Each of these components provides a different environment for colonization by Quagga mussels. CVWD's Quagga monitoring program targets life stages that could colonize each of these environments. (See "CVWD Sample Collection and Decontamination Procedures for the Quagga Mussel Control and Monitoring Program," pp. A6-A11.)

CVWD's current Quagga mussel monitoring program consists of microscopic examination of monthly water samples for infant mussels (veligers) and monthly inspection for older mussels that can be observed visually on colonization blocks placed within the Canal and Lake Cahuilla. All equipment, pumps and nets are decontaminated between sample sites and at the end of sampling activities.

1. Monitoring of Colonization Blocks/Plates:

Monitoring for presence/absence of Quagga mussel is accomplished by monthly inspection of monitoring blocks. Quagga mussel monitoring blocks are composed of concrete blocks (CMU), and are suspended in the Canal starting at the Flume at the Coachella Valley Turn Out (MP 0.15) and continuing up to Lake Cahuilla at MP 123.45 as shown in **Figure A3**. These blocks are suspended in the canal approximately 1-2 feet off the bottom in an area of quiet water, usually just above or just below a gate structure and are checked by Canal staff once a month (**Figure A4**). The blocks can provide a suitable location for veligers to attach and colonize, but large amounts of biological growth on the blocks can inhibit an inspector's ability to see newly attached mussels. **Table A2** summarizes the locations for the monitoring blocks.

2. Microscopic Exams:

Monthly water sampling for mussel veligers is currently conducted at three locations shown in **Figure A5**. The monitoring point at the inlet to Lake Cahuilla is proposed to be moved to a deeper section of the lake that is more representative of the water column.

Samples consisting of the filtrate from between 1000 liters of water are submitted to the CDFW Bodega Marine Laboratory for analysis using polymerase chain reaction analyses (PCR) followed by cross-polarization microscopy (CPLM). PCR and CPLM are believed to be of equal sensitivity on a per volume basis. However it is easier to examine more volume using CPLM. Veligers identified by CPLM will also be tested by PCR for confirmation. In this way CPLM and PCR will be used together to support the findings.

This monitoring activity provides an initial warning in terms of detecting veligers within the Canal although it is not known whether these veligers are viable or not. In general, veligers are either not found, or are detected at levels orders of magnitude less than the levels seen in colonized water bodies. Reports from CDFW analysts indicates partial veliger material is more likely to be found in samples from CVWD conveyances when compared to samples collected from colonized water bodies. Results from microscopic veliger monitoring are provided in **Figure A6**. Early detection through monitoring of settlement blocks for invasive mussels is paramount to a successful control and monitoring program since it will give an agency a window of opportunity to evaluate the most at risk locations within their infrastructure and to direct treatment efforts with the highest level of effect. CVWD maintains 13 monitoring blocks along the Canal and at Lake Cahuilla as shown in **Figure A7**.

Discussion

Following the initial invasion at Lake Mead, Southern Nevada Water Authority and MWD hosted a workshop on Quagga mussels involving a diverse set of regional stakeholders and agencies. Individuals with direct experience using the best available control methods convened at a forum for a directed exchange of ideas, opinions, research results, technical applications and future perspectives involving technologies and strategies for controlling quagga mussels in water conveyance systems and in source waters used for drinking water, such as rivers, lakes or reservoirs. Workshop attendees discussed information and data gaps, research priorities and implications for “real world” application of quagga mussel control and monitoring activities. This workshop resulted in many of the current control strategies currently implemented in the western United States. CVWD attended a workshop in 2012 and discussed its current quagga mussel monitoring and control activities with several aquatic invasive species experts to elicit feedback on the approach and to see if any other monitoring or control methods should be incorporated into the current program. Based on these discussions and the lack of viable mussel colonies within CVWD’s water conveyance system it is believed that current monitoring and control efforts coupled with environmental constraints are successfully keeping quagga mussel from colonizing CVWD infrastructure and water conveyance system.



Coachella Valley Water District Sample Collection and Decontamination Procedures for the Quagga Mussel Control and Monitoring Program

1. Scope and applications:

The **quagga mussel** (*Dreissena bugensis*) is one of seven *Dreissena* species. This species is indigenous to the Dnieper River drainage of Ukraine. The quagga mussel was first observed in North America in September 1989 when it was discovered in Lake Erie near Port Colborne, Ontario. It was not identified as a distinct species until 1991. The species was called the quagga mussel after the quagga, an extinct subspecies of African zebra, possibly because, like the quagga, its stripes fade. These mussels are filter feeders that consume large portions of the microscopic plants and animals that form the base of the food web. The removal of significant amounts of phytoplankton from the water can cause a shift in native species and a disruption of the ecological balance of the lake. These mussels often settle in massive colonies that can block water intake and affect municipal water supply and agricultural irrigation and power plant operation. In the United States, Congressional researchers estimated that zebra mussels alone cost the power industry \$3.1 billion in the 1993-1999 period, with their impact on industries, businesses, and communities more than \$5 billion (http://www.azgfd.gov/h_f/zebra_mussels.shtml#5). The quagga also causes many of the same problems (damaging boats, power plants, and harbors and destroying the native mussel population) as the equally invasive Zebra mussel of Russia. The quagga mussel shell is striped, as is that of the Zebra mussel, but the quagga shell is paler toward the hinge (http://en.wikipedia.org/wiki/Quagga_mussel).

The following sample collection procedure is based on the procedure provided by the Bureau of Reclamation's Technical Service Center in Denver, Colorado and are designed to collect the veligers or the free-swimming larval form of zebra and quagga mussels (*Dreissena* spp.) as plankton samples for laboratory detection using cross polarized light microscopy. The volumes of water sampled through the plankton net are needed both for sample size standardization and for calculating the number of veliger density by microscopic methods to confirm the results.

2. Sample collection locations:

The samples will be collected from three locations along the Coachella Canal (**Figure A5**). The first location is where the canal ends at Lake Cahuilla. The second location is at the 88.6 Irrigation Lateral; this is where the first irrigation line splits off of the canal. The third location is from the Avenue 56 bridge where it crosses the canal.

3. Equipment needed:

- Three 63 um Plankton Tow Nets (one dedicated for each location)
- Three spray bottles (one dedicated for each location)
- Ethanol (lab grade, 200 proof for sample preservation)
- Four sample collection bottles (1000 mL Nalgene leak-proof poly (HDPE))

- Disposable diapers
- Plastic electrical tape
- Ziploc bags (1 gallon)
- Plastic garbage bags (large enough to hold 3 sample bottles)
- Waterproof markers and labels
- Chain of Custody
- Ice chest with ice
- Large trash can (decontamination container for sampling equipment)
- 5% acetic acid solution (12L-16L enough to cover the equipment for decontamination)
- Two trucks (to carry all of the equipment)
- Generator (get in advance from stores)
- Three extension cords
- Submersible pump and fittings for hose
- Clear hose (one dedicated for each location)
- Rope (enough to suspend the pump, 100 ft.)
- 5 gallon bucket and stop watch (to determine flow from hose)
- Calculator
- Conversion equations
- Measuring tape (for determining depth of the pump)
- One thin carabineer (to hang the net in place) or zip ties

4. Summary of collection method:

The sample collection equipment must be decontaminated from previous sampling events before using.

Set up the sample collection equipment properly according to the sample location. In order to avoid cross contamination, each location has its own equipment and the pump is disinfected between uses.

The Lake Cahuilla sample is collected at the end of the canal (GPS 33°38.05, 116°16.66). The bed of the truck holding the generator needs to be closest to the door so that the extension cord will reach. The net will need to be attached to a point where water can flow through it without being blocked. A rope is securely tied onto the pump handle and the correct hose fitting is attached to the pump. Lift the grate on the floor of the platform to submerge the pump.

At the 88.6 Lateral, the pump is submerged in the water between the trough and the white tank on the South side of the canal (GPS 33°33.35, 116°56.76). It is a tight fit, but it works and the water in this area is calm, shaded and deeper than going under the grate on the south side of the tank.

At the Avenue 56 Bridge, the pump is submerged in the water west of the bridge or downstream from the bridge (GPS 33°38.55, 116°05.46). This allows for easier removal of the pump when it is being removed from the water.

While submerged, the pump should not sit on the bottom of the canal. The bottom of the pump should be raised at least three feet off of the bottom to half way down into the water. Be sure to secure the rope from the pump to an immovable source so that it will hang at the same depth in the water for the entire sampling procedure. Record the depth of the pump on the COC.

Completely purge the supply line of any stagnant water. Use a five gallon bucket and a stop watch to determine the flow rate (gallons/minute) through the hose. Calculate the average of at least three replicate runs for determining the flow rate. Record the amount of time in seconds it takes to fill the five gallon bucket with canal water. Divide 5 gallons by the amount of time in seconds recorded and then multiply by 60 seconds/1 minute to get gallons per minute. This number is then divided into 264 gallons. This will give you the amount of time in minutes that it will take to allow 1000 L of water to pass through the hose and through the net (see Calculations below for the formula). A minimum of 1,000 L must pass through the net.

Place the end of the hose into the opening of the plankton tow net, in order to collect all of the water flowing out of the hose without the water splashing out. Keep accurate measures of the volume of water flowing into the net by observing the elapse time. Record the total volume of water going into the net on the COC.

Carefully unscrew the 100 ml collection cup and pour the sample into a 1,000 mL Nalgene leak-proof poly bottle. Using the appropriate spray bottle filled with water from the sample collection location (use the water in the 5 gallon bucket used to determine flow), spray down the net from the outside to concentrate veligers into the collection cup. Again, carefully unscrew the collection cup and pour the rinse water into the 1000 mL bottle. Repeat this step until the net is clean from silt, etc. Thoroughly rinse the collection cup with the spray bottle with minimal volume of water and transfer the rinses into the same sample bottle. Be sure not to exceed 750mls of sample water since the sample must be preserved with 25% of the total volume of sample with ethanol. **Mark the water level on the sample bottle with permanent ink.** (Draw a line on the bottle and label "Level 1.")

The pump and any other equipment being used at each location must be decontaminated for at least one hour in acetic acid between uses. There is a 44 gallon trashcan that can be filled with 12-16L of the acid that the pump can soak in while moving from location to location (it may be necessary to remove the elbow on the pump so that all parts are completely submerged). Please keep track of how much acetic acid is left in the lab so that we can order more when needed. Also, the acid will need to be removed from the lab the night before sampling occurs, since it is kept in the main area of the lab, which is secured by punch code and locked doors.

After all of the samples have been collected, the volume of sample collected in each 1000 ml bottle will need to be determined. The best way to determine how much sample has been collected is to weigh the 1000 ml sample bottle with the sample in it and subtract the weight of an empty sample bottle. This will be an estimated volume.

Next, add the appropriate volume of ethanol (25% of the total volume of sample). This is a visual estimate; it does not have to be exact. Use three parts canal water and one part ethanol. After determining the amount of sample volume is in the 1000ml bottle, multiply this by 0.25 to determine how much ethanol to be added. Replace the bottle cap snugly. (The volume of ethanol will need to be used in the calculation of number of veligers per unit volume; therefore be sure that the sample bottle is marked with a second line to indicate total volume [sample + ethanol] so that the lab can also determine the volume of ethanol that was added.) **Mark the water level on the sample bottle with permanent ink.** (Draw a line on the bottle and label “Level after ETOH.”) Tape the secured bottle cap with black electrical tape to cover the seam between the cap and bottle to prevent leakage.

Use a waterproof pen for bottle labels. Be careful to avoid spillage of ethanol (Sharpie ink will run if contacted with ethanol). Insert a piece of paper with the information on the bottle label also be put in the Ziploc bag with the sample, as a backup. Record the following information on both sample bottle and data sheet:

- Sample date
- Sample location (GPS if available)
- Sample depth or pump intake depth
- Volume of water filtered through the plankton net
- Preservative used
- Sampler ID

Put the COC in a Ziploc bag. Wrap the bottle in the disposable diaper and place it in a Ziploc bag (push all air out of the bag before closing). Put on ice in cooler for transport. Samples must be kept cool at all times. Samples may be stored under refrigeration for a few days if a delay is necessary to avoid shipping over a weekend.

5. Decontamination protocol for equipment used to collect plankton tow samples for quagga mussel larvae detection analysis

Decontamination procedures approved by California Department of Fish and Wildlife shall be used to decontaminate equipment (CDFW, 2014). After the tow samples have been collected from a water body all equipment coming into contact with the water will be decontaminated prior to the next sampling event. Each sample point has a dedicated tow net and water pump which will still require decontamination when sampling activities are complete. For thorough decontamination, equipment will be soaked in an acetic acid solution (vinegar) and then sprayed with a 10% bleach solution. The vinegar dissolves the veliger’s shell but will not denature DNA so following the acetic acid bath the equipment will be sprayed with the 10% bleach solution to denature the veligers DNA. Vinegar and bleach can present safety hazards if not used properly. Material Safety Data Sheets (MSDS) for both vinegar and bleach should be reviewed prior to decontamination procedures. Heed all MSDS precautions and follow all MSDS procedures, practices, safeguards and requirements when using vinegar and bleach.

Protocol:

1. Place items to be decontaminated in the 55 gallon Rubbermaid tote.
2. Fill the tote with enough household vinegar to completely cover all of the items.
3. Soak the items in vinegar for a minimum of 2 hours (24 hours is preferred).
4. After soaking in vinegar thoroughly rinse the items in tap water.
5. Spray the items with a 10% bleach solution and allow the items to sit for 15 minutes.
6. Alternatively, a 10% bleach solution can be prepared in a Rubbermaid tote or a similar type of container and used to soak items for 15 minutes following the vinegar soak.
7. After the bleach treatment, thoroughly rinse all of the items off with tap water and allow them to air dry.

The vinegar can be reused multiple times. It's recommended that vinegar be poured back into the original container for storage. The pH of the vinegar should be checked periodically to make sure the value is approximately 2 to 3. This can be done with pH paper.

6. Sample Shipping:

The samples are to be shipped using FedEx Overnight Express (avoiding weekend deliveries) to James Snider, California Department of Fish and Wildlife – Fisheries Branch, Bodega Bay Marine Lab, 2099 Westside Road Bodega Bay, CA 94923. Be sure to give a copy of the shipping invoice to the project manager.

If needed, contact James Snider by email at James.Snider@wildlife.ca.gov, or by phone at (707) 875-2066.

7. Safety Issues:

Use sure footing and walk very carefully around the canal so as not to slip into the water. Use your legs rather than your back when pulling the pump from the canal. Keep away from the fumes of the acetic acid and ethanol.

8. Calculations:

To determine how many gallons per minute are being pumped:

$$\frac{5 \text{ gallons (volume of bucket)}}{\text{Seconds it takes to fill the bucket}} \quad \times \quad \frac{60 \text{ seconds}}{1 \text{ minute}} = \frac{? \text{ gallons}}{\text{minute}}$$

To determine how much time to for 1000 L of the water to flow through the net (1000 L = 264 gallons) use the gallons/minute determined above:

$$\frac{264 \text{ gallons}}{? \text{ gallons/minute}} = \textit{Total minutes to allow water to flow through the net}$$

For example:

$$\frac{5 \text{ gallons (volume of bucket)}}{5.9 \text{ seconds}} \quad \times \quad \frac{60 \text{ seconds}}{1 \text{ minute}} = \frac{50.85 \text{ gallons}}{\text{minute}}$$

$$\frac{264 \text{ gallons}}{50.85 \text{ gallons/minute}} = 5.19 \text{ minutes}$$

$$0.19 \text{ minutes} \times 60 \text{ seconds} = 11 \text{ seconds}$$

Allow the water to flow through the net for 5 minutes and 11seconds.

To determine the amount of ethanol to add:

Weight of the bottle and the sample – weight of an empty sample bottle and lid =
estimated volume of sample

Estimated volume of sample x 0.25 = volume of ethanol to add

For example:

$$465.21 \text{ (with sample) g} - 88.17\text{g (empty)} = 337.04 \text{ g}$$

$$337.4 \text{ g} \times 0.25 = 94.26 \text{ g}$$

Add 94 mls of ethanol to the sample for preservation. Again, this is only an estimated value.

Table A1. Chlorine Residual Down Stream of Dosing Station

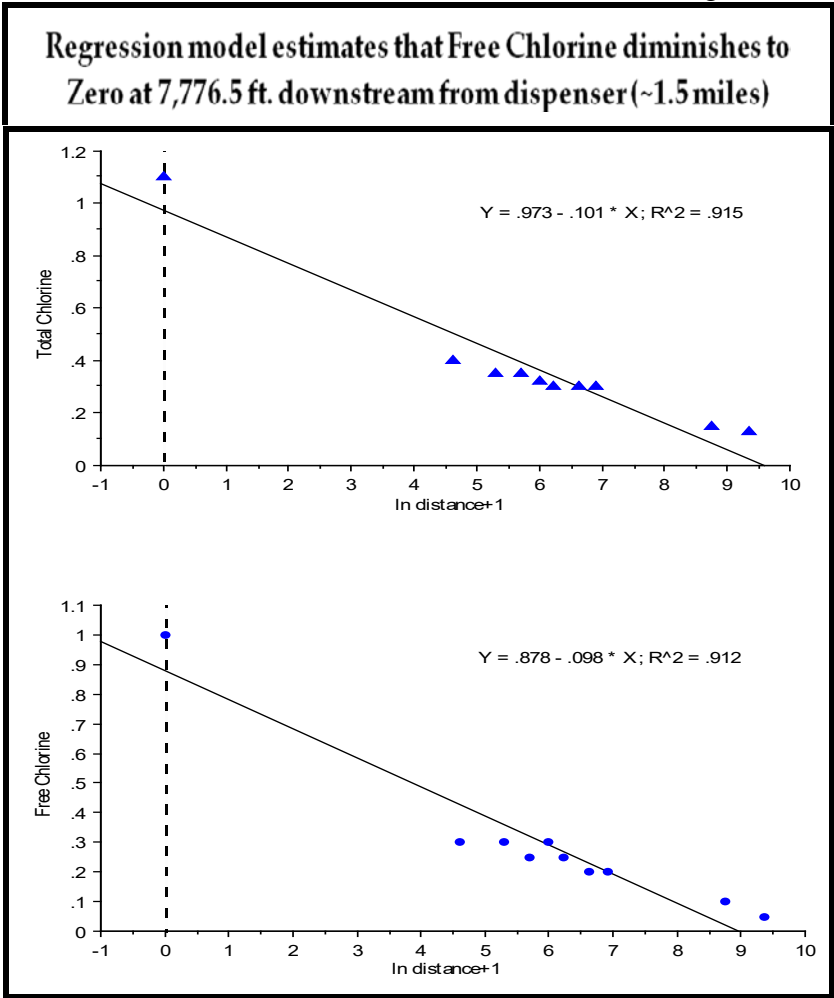


Table A2. Location of Monitoring Blocks within the Coachella Canal

Canal Mile Post	Structure
0.15	Flume C.V.T.O
3.8	Gate Structure
11.4	Gate Structure
23.1	Glamis Road HWY 78
37.8	Scheu Ranch
41.9	Siphon 2
48.3	Flume Slab City
88.6	Demossing Screen
97.1	Gate Structure
108.2	Gate Structure
115.5	Gate Structure
123.45	Lake Cahuilla next to two Traveling Screens
123.50	Lake Cahuilla outfall to irrigation lateral

Figure A1. Chlorination Dosing Station at Drop One (Tanker offloading Chlorine)



Figure A2. Maximum Daily Coachella Canal Water Temperature

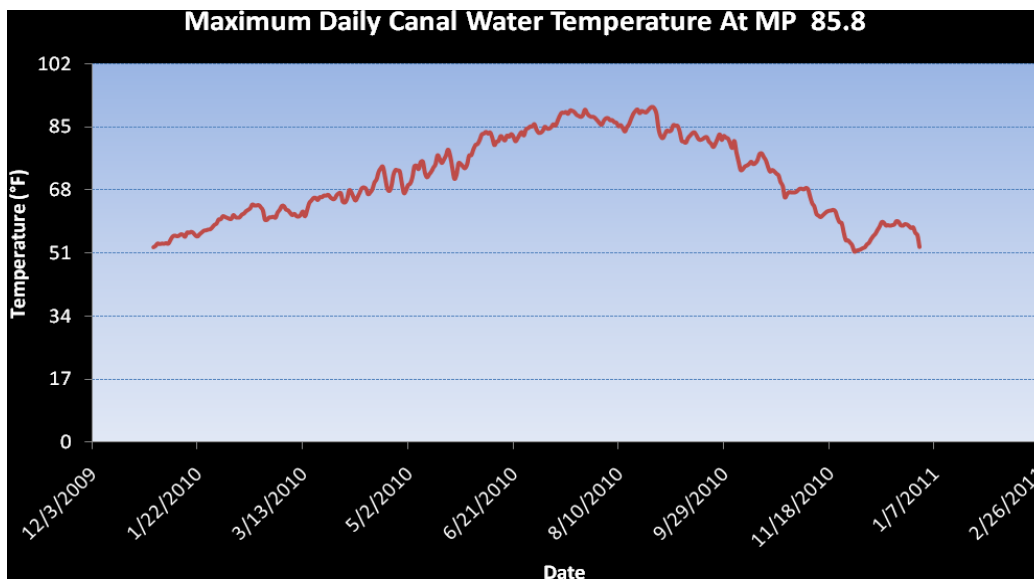


Figure A3. Quagga Monitoring Locations Along the Coachella Canal



Figure A4. Typical Monitoring Block Location in Coachella Canal

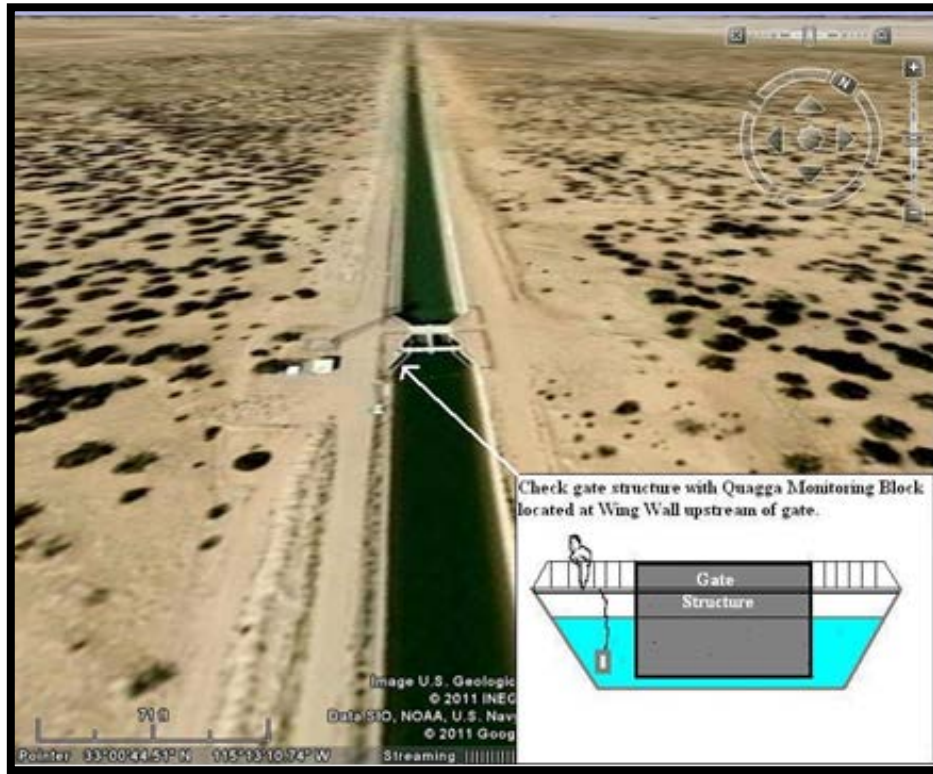


Figure A5. Veliger Sampling Points

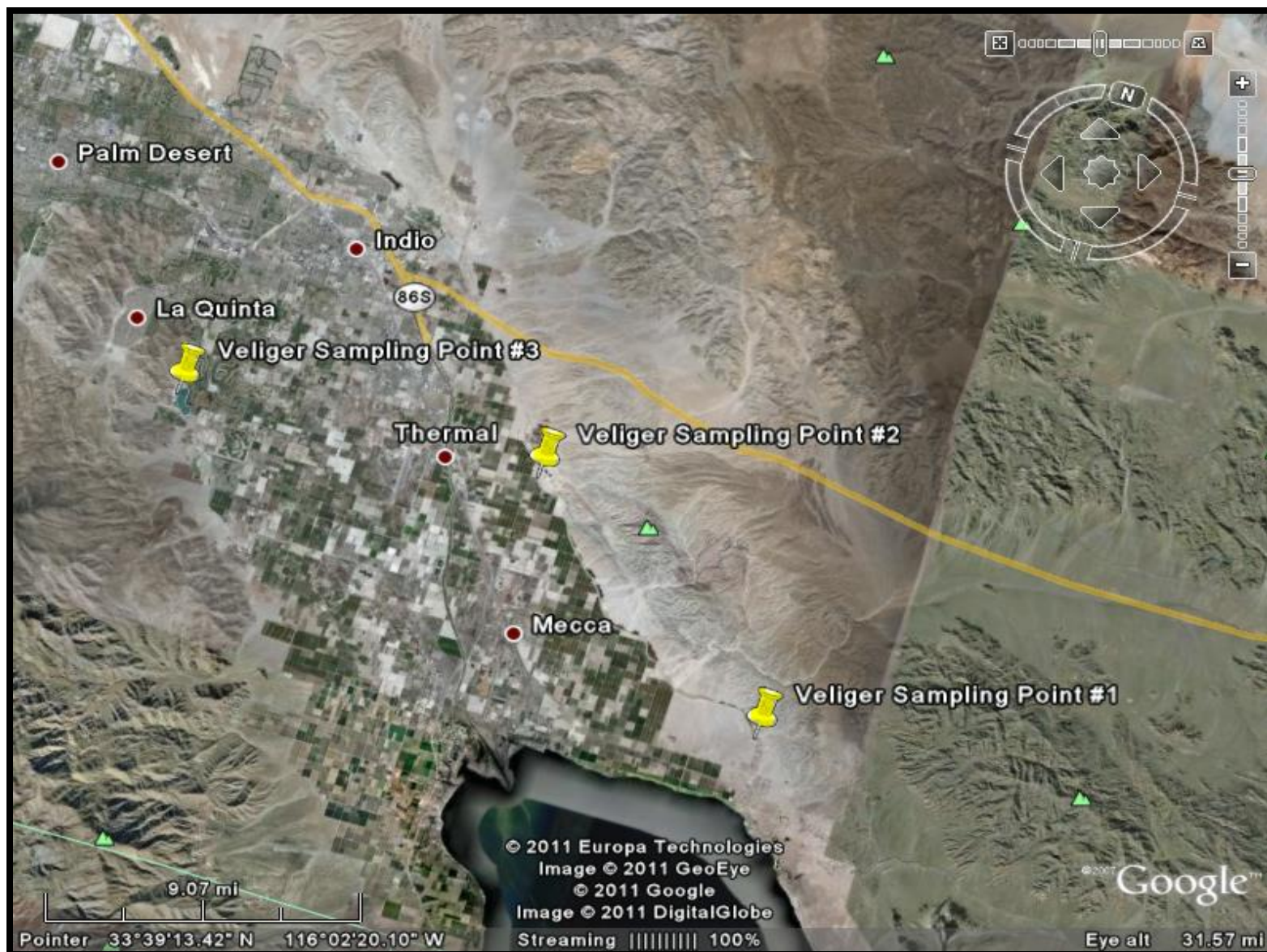


Figure A6. CVWD *Dreissena* Veliger Monitoring Summary

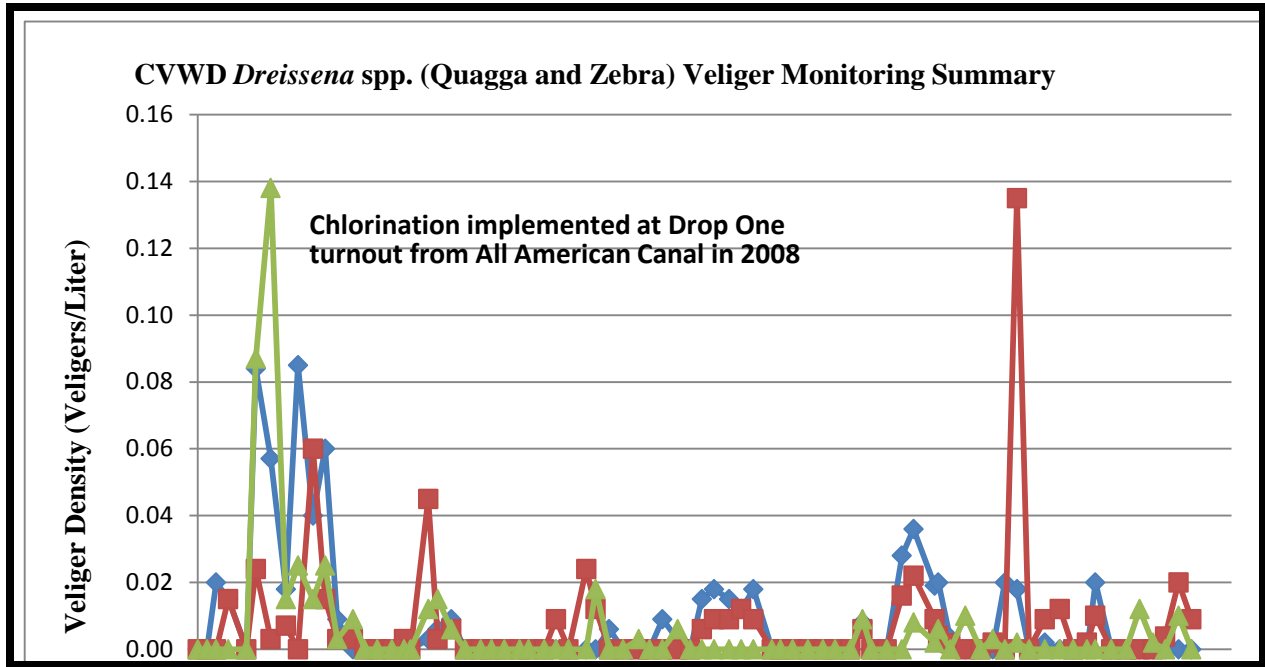


Figure A7. Additional Monitoring Points within Lake Cahuilla



Figure A8. Buildup of Organic Growth on Monitoring Block





Figure A9. Coachella Canal Quagga Mussel Monitoring Block Inspection Record

Date:							
Inspector(s):							
Procedure: Inspect all surfaces of the block and tether for adult and juvenile stages of Quagga mussel							
Block #	Mile Post	Location	Monitoring Block Present / Absent	Quagga Mussel Observation	Observed Block Condition	Estimated # of Mussels	NOTES/COMMENTS
Block 1	0.15	Flume CVTO	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 2	3.8	Gate	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 3	11.4	Gate	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 4	23.1	Hwy 78	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 5	37.8	Scheu Ranch	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 6	41.9	Siphon 2	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 7	48.3	Flume Slab City	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 8	88.6	Demossing Screen	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 9	97.1	Gate Structure	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 10	108.2	Gate Structure	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 11	115.5	Gate Structure	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 12	123.45	Lake Cahuilla Traveling Screen	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Block 13	123.50	Lake Cahuilla	<input type="checkbox"/> Present <input type="checkbox"/> Missing	<input type="checkbox"/> Present <input type="checkbox"/> Absent	<input type="checkbox"/> Intact <input type="checkbox"/> Damaged		
Other organisms present:							

APPENDIX REFERENCES

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Resources Technical Report

Prepared For:

COACHELLA VALLEY WATER DISTRICT

75-515 Hovley Lane East
Palm Desert, California 92211
Contact: *Scott Strosnider P.E., CFM*
760.398.2661, ext. 2737

Prepared By:

MICHAEL BAKER INTERNATIONAL

5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: *Ryan Winkleman*
949.533.0918

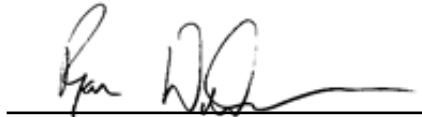
March 2022
JN 179420

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

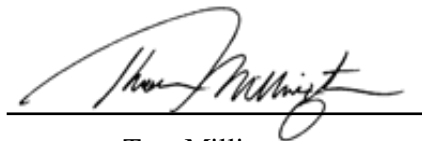
CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Resources Technical Report

The undersigned certify that the statements furnished in this report and figures present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and experience.



Ryan Winkleman
Senior Biologist
Natural Resources and Regulatory Permitting



Tom Millington
Senior Biologist
Natural Resources and Regulatory Permitting

March 2022
JN 179420

Executive Summary

This report contains the findings of Michael Baker International’s (Michael Baker) biological resource surveys for the proposed North Cathedral City Improvements Project, Phase 1 (project or project site) located in the City of Cathedral City, County of Riverside, California. Michael Baker biologists conducted a series of habitat assessments and focused surveys between August 2015 and October 2020. The field surveys were conducted to characterize existing site conditions and assess the potential for special-status¹ biological resources to occur within the project site that could pose a constraint to implementation of the proposed project. This report focuses particularly on those resources that the Bureau of Land Management (BLM) will consider during National Environmental Policy Act reviews and approvals, and is only intended to discuss surveys that have been conducted and their results.

Four (4) natural vegetation communities were observed and mapped within the boundaries of the survey area, defined as the project site and a 500-foot survey buffer: Sonoran creosote bush scrub within land not managed by the BLM or included within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), and active sand fields; stabilized, shielded sand fields; and Sonoran mixed woody and succulent scrub within BLM/CVMSHCP lands. In addition, the survey area contains two (2) land cover types classified as tamarisk windrow and developed.

Michael Baker biologists observed one (1) federally-listed special-status plant species on-site during the 2016 focused surveys, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*; federally listed as endangered, California Rare Plant Rank (CRPR) 1B.2, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP). No other special-status plant species were observed during any of the biological surveys, including rare plant focused surveys, conducted between 2015 and 2020. Based on the results of comprehensive records searches and literature reviews repeated over the course of the site investigations (between 2015 and 2020), a review of existing site conditions during previous field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status plant species, Michael Baker determined that the overall survey area has a moderate potential to support Borrego milk-vetch (*Astragalus lentiginosus* var. *borreanus*; CRPR 4.3) and a low potential to support Little San Bernardino Mountains linanthus (*Linanthus maculatus* ssp. *maculatus*; CRPR 1B.2 and BLM sensitive species). All remaining special-status plant species identified by the records searches and literature reviews are not expected to occur within the survey area.

Michael Baker biologists observed one (1) federally-listed special-status wildlife species, Coachella Valley fringe-toed lizard (*Uma inornata*; federally listed as threatened, State listed as endangered, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP), on-site

¹ As used in this report, “special-status” refers to species that are either Federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; species designated as sensitive or target sensitive species by the Bureau of Land Management; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan.

during 2016 focused surveys for burrowing owl (*Athene cunicularia*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC), and a covered species under the CVMSHCP). Other special-status wildlife species that were observed within the survey area between 2015 and 2020 included Cooper's hawk (*Accipiter cooperii*; CDFW Watch List (WL)), sharp-shinned hawk (*Accipiter striatus*; CDFW WL), burrowing owl, horned lark (*Eremophila alpestris*; CDFW WL if the *actia* subspecies), and loggerhead shrike (*Lanius ludovicianus*; CDFW SSC). Based on the specific results of the records searches and literature reviews, a review of existing site conditions during the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status wildlife species, Michael Baker determined that the overall project site has a high potential to support prairie falcon (*Falco mexicanus*; CDFW WL), American peregrine falcon (*Falco peregrinus anatum*; BLM sensitive species and CDFW fully protected (FP) species), Coachella giant sand treader cricket (*Macrobaenetes valgum*; BLM target sensitive species within sand dunes and sand fields and a covered species under the CVMSHCP), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP) and a moderate potential to support pocketed free-tailed bat (*Nyctinomops femorosaccus*; CDFW SSC), flat-tailed horned lizard (*Phrynosoma mcallii*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). In addition, the project site has a low potential to support Crotch bumble bee (*Bombus crotchii*; CDFW candidate for State listing as endangered), Swainson's hawk (*Buteo swainsoni*; State listed as threatened), desert tortoise (*Gopherus agassizii*; State and federally listed as threatened, and a covered species under the CVMSHCP), golden eagle (*Aquila chrysaetos*; BLM sensitive species, CDFW FP, CDFW WL), Lucy's warbler (*Oreothlypis luciae*; BLM sensitive and CDFW SSC), and Le Conte's thrasher (*Toxostoma lecontei*; BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). All remaining special-status wildlife species identified by the records searches and literature reviews are not expected to occur within the survey area.

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- Appendix B: Site Photographs
- Appendix C: Plant and Wildlife Species Observed List
- Appendix D: Potentially Occurring Special-Status Biological Resources

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
CDCA	California Desert Conservation Act of 1980
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CMA	Conservation and Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CRPR	California Rare Plant Rank
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVWD	Coachella Valley Water District
CWA	Federal Clean Water Act
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FP	Fully Protected
GIS	Geographic Information System
GPS	Geographic Positioning Systems
I	Interstate
IPaC	Information for Planning and Consultation
IS	Initial Study
JPR	Joint Project Review
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
Michael Baker	Michael Baker International
NEPA	National Environmental Policy Act
Procedures project	Procedures for Discharges of Dredged or Fill Material to Waters of the State North Cathedral City Improvements Project, Phase 1
Regional Board	Regional Water Quality Control Board
SSC	Species of Special Concern

TNW	Traditionally Navigable Water
UPRR	Union Pacific Railroad
USC	United States Government Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WHMA	Wildlife Habitat Management Area
WL	Watch List
WoS	Waters of the State
WoUS	Waters of the U.S.
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

This report contains the findings of Michael Baker International’s (Michael Baker) habitat assessments and focused surveys for the proposed North Cathedral City Improvements Project, Phase 1 (project or project site). The proposed project involves the restoration and re-establishment of a historic flow channel in the Whitewater River. Michael Baker biologists conducted a series of field surveys between 2015 and 2020 in support of the proposed project. The habitat assessment surveys were conducted to characterize existing site conditions and assess the potential for special-status² biological resources to occur within the survey area, defined as the project site and a 500-foot buffer, that could pose a constraint to implementation of the proposed project as a whole or implementation of maintenance activities at specific locations within the project site. Special attention was given to the suitability of the habitat within the survey area and its potential to support special-status biological resources that were identified during a record search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CNDDDB; CDFW 2021a), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (Online Inventory; CNPS 2021), the Calflora Database (Calflora 2021), and the United States Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IPaC) database (USFWS 2021a) as potentially occurring in the vicinity of the project site. Additional focused surveys were conducted to identify the presence or absence of special-status species.

1.1 PROJECT LOCATION

The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (refer to Figure 1, *Regional Vicinity*, in Appendix A). The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (refer to Figure 2, *Site Vicinity*, in Appendix A). Specifically, the project site is located north of Ontina Road, west and south of I-10, and east of Gene Autry Trail (refer to Figure 3, *Project Site*, in Appendix A). The project site and survey area are both variably located within lands managed by the Bureau of Land Management (BLM) and lands located within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Plan Area (refer to Figure 4, *Land Ownership*, in Appendix A).

1.2 PROJECT DESCRIPTION

The Coachella Valley Water District (CVWD) proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific railroad (UPRR) bridge, and under the bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of CVWD’s stormwater infrastructure. This proposed project (also

² As used in this report, “special-status” refers to species that are either Federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; species designated as sensitive or target sensitive species by the Bureau of Land Management; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan.

referred to as the “proposed action”) would provide a reliable and engineered channel under the bridge to provide a long-term solution for conveying flows downstream to the WWRSC. As such, the proposed project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the Thousand Palms planning unit.

1.2.1 ALTERNATIVE 1 – PROPOSED ACTION

The primary components of the project include the placement of concrete channel protection upstream and downstream of the UPRR bridge, bridge improvements, channel grading, and levee slope protection. Additional detail is provided below:

- ***Concrete Channel Lining:*** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- ***Bridge Improvements:*** The project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g., bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR’s clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- ***Earthen Channel Grading:*** The project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- ***Concrete Levee Slope Protection:*** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge and is currently delineated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Map No. 06065C1576G as a levee. This levee, however, is only a sand berm and, under a future 100-year storm event, would likely fail. Thus, the project proposes to install a concrete slope at this location, consistent with current levee design criteria identified in 44 CFR 65.10, in order to reinforce the levee and better protect residents downstream during a 100-year storm event. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately nine months. Nighttime construction may be required. Temporary construction access would be provided via Vista Chino, located approximately 0.5 mile south of the project site. A temporary construction access road would be extended from Vista Chino, extending north to the project site. All staging activities would occur within the proposed grading footprint for the drainage facility or within the footprint of the proposed temporary access road.

Operations and Maintenance

Maintenance activities would also include emergency maintenance to clear sediment deposits threatening infrastructure integrity and flow conveyance following a large storm event and invasive species control measures to protect native habitat within the project area. It is anticipated an invasive species control program would be implemented as part of the Habitat Mitigation and Monitoring Plan required under the Section 1602 Streambed Alteration Agreement anticipated for the project. The program would include measures such as a five-year period where non-native species are controlled/removed, photo documentation, a project completion report, and annual reporting to ensure compliance with the plan.

Whitewater Floodplain Conservation Area

In addition to improved conditions related to regional stormwater flows and flood protection, the project would also provide biological benefits within the site vicinity. Currently, wildlife cannot cross the UPRR at the project site, given the existing sediment that has built up at the bridge undercrossing. The creation of a permanent, unimpeded channel crossing beneath the UPRR bridge would re-establish wildlife movement between the northern and southern sides of the UPRR tracks. The project would not include any fencing, structures, or other facilities that would impede wildlife movement under the UPRR bridge. By providing a connection to the WWRSC, the project would allow for stormwater flows and associated sand transport, resulting in an increase in sand habitat within the project area.

The project site is located within a conservation area associated with the CVMSHCP, and the project underwent review by the Coachella Valley Conservation Commission (CVCC) under the Joint Project Review (JPR) process. Through the JPR review process, CVWD consulted extensively with CVCC to review the project’s potential impacts to sensitive biological resources and consistency with the existing CVMSHCP. The JPR review resulted in a “Like Exchange” under the CVMSHCP, where land would be acquired by CVWD and deeded to CVCC or placed under a conservation easement in order to compensate for lands improved under the proposed project. Through CVCC, USFWS and CDFW concurred with the Equivalency Analysis prepared for the Like Exchange in a letter dated March 15, 2017.

1.2.2 ALTERNATIVE 2 – NO ACTION ALTERNATIVE

Currently, sediment build-up under the UPRR bridge is causing existing flows to become trapped between the UPRR and I-10, resulting in flow downstream to the southeast, into the Thousand Palms planning unit. With the No Action Alternative, the stormwater improvements, including placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection,

would not be constructed. Thus, stormwater flows would not be conveyed beneath the bridge and floodplain impacts would not be reduced for tributary areas to the project site, including existing and planned future development. With the No Action Alternative, implementation of the Thousand Palms Flood Control Project, situated downstream of the existing flows, would only achieve flood control for approximately 3 to 4 square miles of flows and 100-year flood flows would continue to impact existing development and impede future planned development within the Thousand Palms planning unit.

Section 2 Methodology

For the purposes of this report, the term “project site” refers to the project’s grading footprint, while the term “survey area” refers to the project site and an additional 500-foot survey buffer. Michael Baker conducted thorough literature reviews and record searches to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site prior to conducting the general habitat assessments. The surveys were conducted in order to document existing biological conditions and determine the potential for special-status plant and wildlife species to occur within the survey area.

2.1 LITERATURE REVIEW

Prior to conducting the field surveys, literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previous special-status plant and wildlife species occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* 7.5-minute quadrangles were obtained through a query of the CNDDDB (CDFW 2021a), the CNPS Online Inventory (CNPS 2021), the Calflora Database (Calflora 2021), and the IPaC database (USFWS 2021a). Species conservation statuses were verified through the *Special Animals List* (CDFW 2021b) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021c).

In addition to the databases referenced above, Michael Baker reviewed publicly available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site to understand existing site conditions, previous species observations, and the extent of any disturbances that have occurred in the project site that would otherwise limit the distribution of special-status biological resources. On-site and adjoining soils were researched prior to conducting the habitat assessment using the United States Department of Agriculture, Natural Resource Conservation Service (USDA) *Custom Soil Resource Report for Riverside County, Coachella Valley Area, California* (USDA 2021). In addition, reviews of the local geological conditions and historical aerial photographs were conducted to assess the ecological changes and disturbances that may have occurred within the survey area over time.

Standard field guides and texts were reviewed for specific habitat requirements of special-status biological resources. Other resources reviewed include the following:

- USFWS Critical Habitat for Threatened & Endangered Species Mapper (USFWS 2021b);
- Recent and historical aerial photography (Google, Inc. 2021);
- USFWS National Wetland Inventory (USFWS 2021c);
- FEMA 100 Year Flood Zones (FEMA 2021);

- *Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan – Final Major Amendment to the CVMSHCP* (Coachella Valley Association of Governments (CVAG) 2016);
- *North Cathedral City Improvements Project, Phase 1 Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2016a);
- *North Cathedral City Improvements Project, Phase 1 Burrowing Owl Focused Survey Report* (Michael Baker 2016b);
- *Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California* (Michael Baker 2016c);
- *North Cathedral City Improvements Project, Phase 1 Equivalency Analysis* (Michael Baker 2016d);
- BLM Palm Springs-South Coast Field Office Special-Status Plants List (BLM 2020a); and
- BLM Palm Springs-South Coast Field Office Special-Status Animals List (BLM 2020b).

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the survey area. Additional occurrence records of those species that have been documented on or near the overall project site were derived from database queries. The CNDDDB was used, in conjunction with Geographic Information System (GIS) ArcView software, to identify and map reported special-status species occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley California* 7.5-minute quadrangles.

2.2 HABITAT ASSESSMENTS

Two habitat assessment surveys were conducted within the survey area aside from the focused surveys that were conducted. Michael Baker biologists Ashley Barton, Ryan Winkleman, Tom Millington, and Travis McGill conducted an initial field survey on August 5, 2015 to document the extent and conditions of the vegetation communities occurring within the boundaries of the survey area and to assess the potential for special-status species to occur the survey area. Vegetation communities preliminarily identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the vegetation communities and along boundaries between vegetation communities.

During the field survey, Michael Baker extensively surveyed all naturally vegetated areas where accessible. Naturally vegetated areas typically have a higher potential to support special-status plant and wildlife species than areas that are highly disturbed or developed, which usually have lower quality and/or reduced amounts of habitat for wildlife. All plant and wildlife species observed during the habitat assessment, as well as dominant plant species within each vegetation community, were recorded in a field notebook, as described below. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and the overall condition of on-site vegetation communities were recorded.

Following extensive discussions with BLM staff including BLM biologist Kayla Brown in September 2020, Michael Baker biologists Jeremy Rosenthal and Ryan Winkleman conducted a second habitat assessment survey on October 20, 2020. The goal of the second survey was to determine if site conditions had changed since the last time the survey area was visited in 2016, to provide a fresh perspective on the environmental conditions, and to assess the survey area for its potential to support BLM sensitive species as noted in BLM 2020a and BLM 2020b. BLM sensitive species are species listed or proposed for listing under the Federal Endangered Species Act (FESA), or species that require special management consideration to promote their conservation and reduce the likelihood and need for future listing under the FESA. As was done previously, Michael Baker biologists recorded all plant and wildlife species observed and assessed current on-site vegetation and soil conditions.

2.3 VEGETATION COMMUNITIES

Vegetation communities within the survey area were classified in accordance with multiple vegetation mapping systems. On land that is not part of the CVMSHCP and is not managed by the BLM, vegetation was classified according to vegetation descriptions provided in the *Manual of California Vegetation* (MCV; Sawyer et al. 2009) and cross referenced with the vegetation communities described in the CNDDDB, which generally follow Holland (1986), to determine if any special-status vegetation communities recognized by CDFW and the CNDDDB were present. However, on land either falling within the CVMSHCP boundaries and/or managed by the BLM, vegetation was classified according to the eight (8) vegetation community types described by the BLM (BLM 2002) and the CVMSHCP (CVAG 2016). These community types include sand dunes and sand fields, desert scrub communities, chaparral communities, desert alkali scrub communities, marsh communities, dry wash woodland and mesquite communities, riparian communities, and woodland and forest communities.

2.4 PLANTS

Plant species observed during the habitat assessment were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and identified later using plant taxonomic guides such as *The Jepson Desert Manual: Vascular Plants of Southeastern California* (Baldwin et al. 2002). Plant nomenclature used in this report follows the Jepson Flora Project (2021). In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.5 WILDLIFE

Wildlife species detected during the habitat assessment by sight, calls, tracks, scat, burrows, nests, or other types of sign were recorded in a field notebook. Field guides used to assist with identification of species during the habitat assessment included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid 2006) for mammals. Although common names of wildlife species are generally well

standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union’s *Checklist of North American Birds* (Chesser et al. 2020), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature for mammals follows the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

2.6 OTHER FIELD STUDIES

Focused surveys were conducted for a limited number of species within the survey area in 2016, including both rare plants and wildlife. The extent of focused surveys was based on the potential for special-status species to occur in the survey area, as well as which species are required to be surveyed for under the CVMSHCP. Under the CVMSHCP, focused surveys are required for triple-ribbed milk-vetch (*Astragalus tricarinatus*), desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), Le Conte’s thrasher (*Toxostoma lecontei*), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*). However, the project site was excluded from the requirement for triple-ribbed milk-vetch and desert tortoise surveys because it is not within modeled habitat for these species. Le Conte’s thrasher surveys would occur jointly as part of general pre-construction nesting bird clearance surveys and would not require a separate focused survey effort. The project site is not within a stated survey area for Palm Springs pocket mouse. Burrowing owl surveys were required to be conducted for the proposed project and are described below. In addition, general rare plant surveys targeting a variety of species were also conducted and are described below.

During a review of the project’s Initial Study/Environmental Assessment (IS/EA), BLM biologist Danielle Ortiz identified the need to evaluate BLM sensitive species and conduct focused surveys for all BLM sensitive species that could occur within the project site. Follow-up communication and coordination with the BLM, including BLM biologist Kayla Brown, on September 14, 2020 confirmed that no additional focused surveys would be necessary if CVWD elected to assume presence of all special-status species that could occur on-site. Following CVWD’s decision to assume presence of all remaining special-status species that could feasibly occur on-site, no additional focused surveys for BLM sensitive species were performed in 2020 or 2021.

2.6.1 RARE PLANT FOCUSED SURVEYS

Based on the special-status plant species known to occur within the general vicinity and the suitability of the on-site habitat to support those plant species, four (4) surveys were conducted. Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted the four surveys on April 14, April 19, May 4, and June 15, 2016. Suitable habitat occurring within the project site footprint and within 200 feet was extensively surveyed on foot. Linear transects were walked throughout suitable habitat from west to east and spaced at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting sensitive plant species known to occur within the general vicinity of the project site. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and

recorded in a field notebook. Unusual and less familiar plants were photographed on-site and identified later using taxonomical guides. A handheld geographic positioning systems (GPS) device and standard field data sheets were used to record all populations of chaparral sand-verbena (*Abronia villosa* var. *aurita*), pygmy lotus (*Acmispon haydonii*), Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), triple-ribbed milk-vetch, Parry's spineflower (*Chorizanthe parryi* var. *parryi*), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), flat-seeded spurge (*Euphorbia platysperma*), Little San Bernardino Mountains Linanthus (*Linanthus maculatus*), Latimer's woodland-gilia (*Saltugilia latimeri*), and Mecca-aster (*Xylorhiza cognata*), if found.

2.6.2 BURROWING OWL FOCUSED SURVEYS

The burrowing owl is a California species of special concern and BLM sensitive species (CDFW 2021b, BLM 2020b). It is also a covered species under the CVMSHCP (CVAG 2016). For focused surveys, the CDFW, BLM, and CVMSHCP all follow the *Staff Report on Burrowing Owl Mitigation*, published by the then-California Department of Fish and Game (now CDFW) in 2012. The 2012 protocol requires the following:

- Habitat assessment: at least one site visit covering the entire potential project area and areas of direct/indirect effect, as well a minimum 150-meter buffer, to identify vegetation and habitat types potentially supporting burrowing owls in the project area or its vicinity.
- Breeding season surveys: surveyors must conduct four (4) survey visits, with at least one site visit between 15 February and 15 April, and a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Surveys must be conducted in all portions of the project site that were identified in the Habitat Assessment, and surveyors should walk straight-line transects spaced 7 to 20 meters (23 to 66 feet) apart, adjusting for vegetation height and density. All potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration should be recorded. Surveys are discouraged when wind speed is greater than 20 kilometers (12 miles) per hour and there is precipitation or dense fog. Surveys have a greater chance of detecting owls if conducted when ambient temperatures are between 20 degrees Celsius (68 degrees Fahrenheit) and 26 degrees Celsius (79 degrees Fahrenheit), less than 12 kilometers per hour (7 miles per hour) winds, and cloud cover is less than 75 percent (Conway et al. 2008, CDFW 2012). Surveys are encouraged to occur between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight.
- Non-breeding season surveys: for non-breeding season surveys, the protocol is the same as breeding season surveys, but a total of four (4) surveys should be conducted at roughly equal spacing between September 1 and January 31.

Michael Baker's August 5, 2015 field survey served as the habitat assessment for burrowing owl. While the vegetation within the project site is generally open and provides clear line-of-site opportunities favored by burrowing owls, the project site is located within a sand transport corridor and on-site soils are dominated

by loose, friable sandy material that does not provide favorable conditions for burrow construction. During a focused burrow survey conducted on April 19, 2016 by Michael Baker biologists within the project site and a 500-foot survey buffer, it was determined this burrowing owl survey area provided a limited amount of suitable burrows for burrowing owls. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provided a favorable substrate for burrow construction. The burrow survey doubled as the first of four (4) focused owl surveys. An additional three (3) focused owl surveys were conducted on May 12, June 8, and July 7, 2016. Areas providing potential habitat for burrowing owls were surveyed for suitable burrows consisting of natural and non-natural substrates in areas with low, open vegetation. All burrows encountered were examined for shape, scat, pellets, white-wash, feathers, tracks, and prey remains. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, with a hand-held GPS unit. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (e.g., pellets, whitewash, feathers, or prey remains). Suitable burrows/cavities, including rock piles and non-natural substrates, were thoroughly examined for signs of presence.

Discussions with BLM biologist Kayla Brown in September 2020 determined that a second round of focused owl surveys in 2020 or 2021 would not be required. Under Measure LUPA-BIO-IFS-13 of the BLM’s *Land Use Plan Amendment [LUPA] to the Desert Renewable Energy Conservation Plan (DRECP; BLM 2016)*, the proposed project could instead elect to only require pre-construction surveys and implement passive burrow exclusion should owls be present on-site outside of the nesting season. As a result, additional focused burrowing owl surveys were not conducted under the assumption that the proposed project will require pre-construction burrowing owl surveys and a relocation and/or monitoring plan for any owls that are found on-site.

2.7 REGULATORY SETTING

The following regulations, ordinances, and policies are relevant to this project and its biological analysis and implementation.

2.7.1 FEDERAL

National Environmental Policy Act

The National Environmental Policy Act (NEPA) directs a “systematic, interdisciplinary approach” to planning and decision making and requires environmental statements for “major Federal actions significantly affecting the quality of the human environment”. Implementing regulations by the Council of Environmental Quality (40 Code of Federal Regulations [CFR], Parts 1500–1508) require Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts.

Federal Endangered Species Act of 1973

As defined within the FESA of 1973, an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the “take” of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The term “harm” has been clarified to include “any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” Enforcement of FESA is administered by the USFWS.

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Federal Clean Water Act (CWA) Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

Whenever Federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the FESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses Federal funds, or requires Federal authorization or permits (i.e., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) of 1918, as amended in 1972, Federal law prohibits the taking of migratory birds or their nests or eggs (16 USC 703; 50 CFR 10, 21). The statute states:

“Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill,

attempt to take, capture, or kill...any migratory bird, any part, nest, or egg of any such bird...included in the terms of the [Migratory Bird] conventions...”

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered a “take.” This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

Clean Water Act

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) jointly regulate discharges of dredged or fill material into “waters of the U.S.” (WoUS), including wetland and non-wetland aquatic features, pursuant to Section 404 of the CWA. Section 404 is founded on the findings of a significant nexus (or connection) between the aquatic or other hydrological feature in question and interstate commerce via Relatively Permanent Waters (RPW), and ultimately Traditional Navigable Waters (TNW), through direct or indirect connection as defined by Corps regulations. However, the limits to which this is applied have changed over time as discussed below.

SWANCC and Rapanos

In 1984, the Migratory Bird Rule enabled the Corps to expand jurisdiction over isolated waters, and in 1985, the U.S. Supreme Court upheld the inclusion of adjacent wetlands in the regulatory definition of WoUS. However, in 2001, the Corps’ jurisdiction was narrowly limited following the *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) in which the U.S. Supreme Court held that the use of “isolated” non-navigable intrastate ponds by migratory birds was not, by itself, sufficient basis for the exercise of Federal regulatory authority under the CWA. In 2006, a majority of the U.S. Supreme Court overturned two Sixth Circuit Court of Appeals decisions in the consolidated cases of *Rapanos v. United States* and *Carabell v. United States* (collectively referred to as Rapanos), concluding that wetlands isolated by surface connection are WoUS nonetheless if they significantly affect the chemical, physical, and biological integrity of other covered waters (significant nexus). The Navigable Waters Protection Rule eliminated the case specific application of the significant nexus test articulated in the Rapanos decision³.

³ Federal Register, Vol. 85, No. 77, Tuesday, April 21, 2020, Department of the Army, Corps of Engineers, 33 CFR Part 328, *The Navigable Waters Protection Rule: Definition of “Waters of the United States”* (22325).

2015 Clean Water Rule

In 2015, the Corps and EPA published the “Clean Water Rule” clarifying the scope of coverage of the CWA. Upon issuance however, numerous lawsuits were filed and consolidated in the Sixth Circuit, immediately putting a “stay” on its implementation. In January 2018, the U.S. Supreme Court ruled that the Sixth Circuit did not have jurisdiction over the case, and in February 2018, dismissed it and dissolved the stay. In August 2018, a Federal judge found that the suspension failed to give an adequate public notice and therefore violated the Administrative Procedure Act. The 2015 Clean Water Rule remained in effect in 22 states, including California, the District of Columbia, and the U.S. territories until the December 23, 2019.

Repeal of 2015 Clean Water Rule

On October 22, 2019, the EPA and the Corps published a final rule to repeal the 2015 Clean Water Rule and restore the regulatory methodology that existed prior to the 2015 Rule. Under this rule, which became effective on December 23, 2019, jurisdictional WoUS were defined by the 1986/1988 regulatory definition of WoUS under CWA regulations 40 CFR 230.3(s).

Navigable Waters Protection Rule

On January 23, 2020, the EPA and the Corps finalized the Navigable Waters Protection Rule to define WoUS. On April 21, 2020, the EPA and the Corps published the Navigable Waters Protection Rule in the Federal Register. On June 22, 2020, 60 days after publication in the Federal Register, the Navigable Waters Protection Rule became effective across the nation including the state of California.

Remand and Vacatur of the Navigable Waters Protection Rule

- On August 30, 2021, the Navigable Water Protection Rule was remanded and immediately vacated by the United States District Court For The District Of Arizona. In light of this order, the Environmental Protection Agency and the Department of the Army halted implementation of the Navigable Waters Protection Rule nationwide and reinstated the pre-2015 definition of waters of the United States. Under the pre-2015 definition of the waters of the United States, the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency require the case specific application of the significant nexus test, as articulated in the Rapanos decision, to determine waters of the U.S.

Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring Federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California

Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project. Under the Executive Order, Federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

California Desert Conservation Act Plan Amendment for the Coachella Valley

The 2002 California Desert Conservation Act Plan Amendment for the Coachella Valley is an update to the BLM California Desert Conservation Act of 1980. From this point forward in this report, the acronym CDCA will refer to the plan amendment specifically, i.e. the updated version of the 1980 act that applies to the project site. The CDCA was developed in tandem with the CVMSHCP and was subject to high levels of involvement and coordination with local jurisdictions, interest groups, private citizens, researchers, and wildlife agencies.

The entire Coachella Valley planning area is 1,195,057 acres, of which the BLM manages 330,516 acres. Habitat conservation on BLM lands is outlined for each of eight (8) mapped, broadly categorized, vegetation community types that are present. These vegetation community types are consistent with those identified in the CVMSHCP and include the following: Sand Dunes and Sand Fields, Desert Scrub Communities, Chaparral Communities, Desert Alkali Scrub Communities, Marsh Communities, Dry Wash Woodland and Mesquite Communities, Riparian Communities, and Woodland and Forest Communities. Each of these broader communities includes more specific vegetation communities within it and are mapped in the Natural Communities maps of the CVMSHCP. Under the CDCA, proposed activities that cannot meet the habitat conservation objectives for any given vegetation community, either through avoidance measures or mitigation measures, would not be approved on BLM lands. The CDCA also created the Coachella Valley Wildlife Habitat Management Area (WHMA), specifically designed to include BLM-managed lands within CVMSHCP conservation areas that are outside of existing BLM conservation areas; a key conservation target within the WHMA is flat-tailed horned lizard (*Phrynosoma mcallii*). In addition, the CDCA implements recovery goals and objectives that are consistent with the *Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California* (USFWS 2000).

Desert Renewable Energy Conservation Plan Land Use Plan Amendment

The Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan (DRECP LUPA) is the BLM's component of the Interagency DRECP that was developed by the BLM, USFWS, California Energy Commission, and CDFW (BLM 2016). The entire DRECP Plan Area is 22,585,000 acres, approximately 10,818,000 acres of which are managed by the BLM. The purpose of the DRECP LUPA is to help integrate renewable energy and resource conservation with other existing uses on BLM-managed land. Although the project is not within the DRECP Plan Area, certain "LUPA-wide" Conservation and Management Actions (CMAs) apply to activities within the entire LUPA Decision Area. The LUPA Decision Area includes not only the LUPA Plan Area, but also lands outside of the Plan Area

but within the CDCA, including the Coachella Valley where the project is located. Because of this, the project is subject to these LUPA-wide CMAs, which are similar to avoidance and minimization measures.

2.7.2 STATE

California Endangered Species Act

In addition to Federal laws, the State of California has its own California Endangered Species Act (CESA), enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in “take” of individuals (defined in CESA as; “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) are regulated by CDFW. Habitat degradation or modification is not included in the definition of “take” under CESA. Nonetheless, CDFW has interpreted “take” to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern (SSC) list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. As the SSC designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species. Species designated by CDFW as watch list (WL) species are those that are not yet of such immediate threat as to warrant being designated as SSC, but that still may become SSC or higher in the future if a negative trend continues.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an IS; if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a

Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy, while “rare” species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Fish and Game Code

Sections 3503, 3503.5, 3511, and 3513

The CDFW administers the California Fish and Game Code (CFGC). There are particular sections of the CFGC that are applicable to natural resource management. For example, Section 3503 makes it unlawful to destroy any birds’ nest or any birds’ eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey), such as hawks, eagles, and owls, are protected under Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur in the project site. Section 3511 lists fully protected (FP) bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are CDFW FP include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). In addition, Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Sections 1600

Sections 1600 *et seq.* of the CFGC establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely affect fish and wildlife resources, or when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Section 1602 of the CFGC requires any person, State, or local governmental agency or public utility to notify CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;
or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, including the maintenance of existing drain culverts, outfalls, and other structures. To avoid the need for a Lake or Streambed Alteration Agreement from CDFW, all proposed impacts should remain outside of the top of active banks and the canopy/dripline of any associated riparian vegetation, whichever is greater.

California Desert Native Plants Act

Division 23 of the California Food and Agriculture Code consists of the California Desert Native Plants Act (CDNPA). The CDNPA was developed to protect certain species of California desert native plants from unlawful harvesting on both public and privately-owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals. The appropriate permits, tags and seals must be obtained from the sheriff or commissioner of the county where collecting will occur, and the county will charge a fee.

Native Plant Protection Act

Sections 1900–1913 of the CFGC were developed to preserve, protect, and enhance Rare and Endangered plants in the State of California. The act requires all State agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

Porter-Cologne Act

Applicants for a Federal license or permit for activities that may discharge to WoUS must seek a Water Quality Certification from the State or Indian tribe with jurisdiction⁴. In California, there are nine (9) Regional Water Quality Control Boards (Regional Boards) that issue or deny Certification for discharges within their geographical jurisdiction. Such Certification is based on a finding that the discharge will meet water quality standards, which are defined as numeric and narrative objectives in each Regional Board's Basin Plan, and other applicable requirements. The State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board's jurisdiction extends to all WoUS, including wetlands, and to waters of the State (described below).

The Porter-Cologne Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool for the regulatory environment following the SWANCC⁵ and Rapanos⁶ court cases as well as with the implementation of the Federal Navigable Waters Protection Rule, with respect to the state's authority over isolated, ephemeral and otherwise insignificant waters. Generally, in the event that a feature does not meet the definition of a WoUS as defined by the Navigable Waters Protection Rule, any person proposing to discharge waste into waters of the State that could affect its water quality must file a Report

⁴ Title 33, United States Code, Section 1341; Clean Water Act Section.

⁵ *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001).

⁶ *Rapanos v. United States*, 547 U.S. 715 (2006).

of Waste Discharge. Although “waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

On April 2, 2019 the State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures were approved by the Office of Administrative Law on August 28, 2019 and became effective on May 28, 2020.

2.7.3 LOCAL

Coachella Valley Multiple Species Habitat Conservation Plan

The CVMSHCP was developed by the CVAG for the purposes of addressing current and potential future FESA/CESA issues in the Plan Area. The CVMSHCP was developed to comply with the FESA, the CESA, and the Natural Community Conservation Planning Act. The CVMSHCP is intended to allow economic growth goals and needs within the Coachella Valley to progress while also protecting the environment and the unique environmental resources of the Plan Area. In total the Plan Area encompasses approximately 245,000 acres, of which 16% lie within the cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage and the remainder are unincorporated. A total of 27 Covered Species are included in the CVMSHCP, with 27 natural communities identified that provide habitat for the Covered Species and make up the 21 Conservation Areas in the CVMSHCP Reserve System.

Section 3 Results and Discussion

This section describes the results of the 2015 and 2020 habitat assessment surveys, as well as of the focused surveys that were conducted for the proposed project in 2016. Refer to Appendix B for representative photographs taken within the survey area.

3.1 EXISTING CONDITIONS

3.1.1 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). Based on the USDA Web Soil Survey (USDA 2021), the project site is underlain by the following soil units: Carsitas gravelly sand (0 to 9 percent slopes), Carsitas cobbly sand (2 to 9 percent slopes), Carsitas fine sand (0 to 5 percent slopes), Myoma fine sand (0 to 5 percent slopes), Myoma fine sand (5 to 15 percent slopes), and Riverwash (refer to Figure 5, *Soils*, in Appendix A).

3.1.2 SURROUNDING LAND USES

Land uses in the vicinity of the project site include residential development to the south and west as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex sits immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly recovering. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the southwest, south, and southeast. The Morongo Wash passes through the survey area, and the Whitewater River crosses south of the survey area. Land managed by the BLM is present within the survey area both south of I-10 and south of the UPRR tracks.

3.2 VEGETATION COMMUNITIES AND LAND COVER TYPES

The survey area is a combination of different communities and land uses. Outside of the boundaries of the CVMSHCP and BLM lands, on-site vegetation can be characterized as Sonoran creosote bush scrub (refer to Figure 6, *Vegetation*, in Appendix A). However, within the CVMSHCP boundaries and on BLM lands, CVMSHCP community types are required to be mapped. Therefore, on CVMSHCP and BLM lands, three (3) additional vegetation communities were mapped. The vegetation on-site in these areas can be characterized as sand dunes and sand fields within the CVMSHCP Whitewater Floodplain Conservation Area, which makes up the survey area south of I-10, more specifically active sand fields south of the UPRR tracks and stabilized, shielded sand fields north of the tracks and south of I-10; north of I-10 the vegetation within the survey area falls into the CVMSHCP Willow Hole Conservation Area and is characterized as Sonoran mixed woody and succulent scrub. These sand fields are vegetated by species consistent with

Sonoran creosote bush scrub. In addition, the survey area contains two (2) land cover types that are not natural vegetation communities: tamarisk windrow and developed. Refer to Appendix C for a complete list of plant species that were observed within the survey area during all field surveys. Table 1 below provides the acreages of each vegetation community/land cover type within the survey area, followed by each area discussed in more detail.

Table 1: Vegetation Communities and Land Uses within the Survey Area

Vegetation Communities and Land Uses	Acreage*	
	Project Site	Survey Area
Active Sand Fields	17.31	64.39
Stabilized, Shielded Sand Fields	4.80	29.00
Sonoran Mixed Woody and Succulent Scrub	0.00	0.69
Sonoran Creosote Bush Scrub	3.10	87.70
Tamarisk Windrow	1.23	5.63
Developed	0.00	9.13
TOTAL ACREAGE	26.44	196.54

*Due to rounding, actual acreages may be slightly different.

3.2.1 ACTIVE SAND FIELDS

Approximately 64.39 acres of active sand fields are located within the survey area on BLM and CVMSHCP lands. Active sand fields are defined in the CVMSHCP, which the BLM follows via the CDCA, as areas of active sand movement with little or no vegetation. Accumulated sand is generally not of sufficient depth to form classic dune formations, but sand hummocks may form on the leeward side of shrubs or clusters of vegetation. Vegetation itself may range from scarce to dense shrubs or may be composed of smaller vegetation such as wildflowers. Within the survey area, the CVMSHCP has mapped the area south of the UPRR tracks and east of the north-south tamarisk windrow, which includes BLM lands, as active sand fields. Vegetation within the active sand fields in the survey area is dominated by Sonoran creosote bush scrub as described below.

3.2.2 STABILIZED, SHIELDED SAND FIELDS

Approximately 29.00 acres of stabilized, shielded sand fields are located within the survey area on BLM and CVMSHCP lands. These sand fields are defined in the CVMSHCP as areas that are stabilized by evergreen and/or deciduous shrubs, scattered low annuals, and perennial grasses, with interrupted or shielded sand source and sand transport systems. Vegetation is typically characterized by creosote bush scrub or a creosote bush scrub matrix including primarily creosote bush, fourwing saltbush (*Atriplex canescens*), California croton (*Croton californicus*), and indigo bush (*Amorpha fruticosa*). Within the survey area, the CVMSHCP has mapped the area north of the UPRR tracks, which includes BLM lands, as

stabilized, shielded sand fields. Vegetation within the stabilized, shielded sand fields in the survey area is dominated by Sonoran creosote bush scrub as described below.

3.2.3 SONORAN MIXED WOODY AND SUCCULENT SCRUB

Approximately 0.69 acre of Sonoran mixed woody and succulent scrub is located within the survey area on BLM and CVMSHCP lands. This community is defined in the CVMSHCP as having substantial dominance of cacti and other stem succulents, similar to creosote bush scrub but with more variance and usually higher plant density. Vegetation is typically characterized by creosote bush (*Larrea tridentata*) and other associated perennial shrubs, as well as golden cholla (*Opuntia echinocarpa*), buckhorn cholla (*Opuntia acanthocarpa*), pencil cholla (*Opuntia ramosissima*), prickly pear (*Opuntia engelmannii*), and others. This community is mapped north of I-10 at the northern edge of the survey area but is outside of the project site.

3.2.4 SONORAN CREOSOTE BUSH SCRUB

Approximately 87.70 acres of Sonoran creosote bush scrub are located within the survey area on non-BLM and non-CVMSHCP lands. Plant species observed within this community include creosote bush, cheesebush (*Ambrosia salsola*), California croton, indigo bush, and Mediterranean grass (*Schismus* sp.). These are the dominant species observed throughout most of the entire survey area, including in the vegetation communities mapped on CVMSHCP and BLM lands.

3.2.5 TAMARISK WINDROW

Approximately 5.63 of tamarisk windrow is present within the survey area. This land cover type is entirely composed of athel tamarisk (*Tamarix aphylla*) that has been planted as a windrow. It is present running north-south along the eastern edge of the primary project impact area, as well as east-west running parallel both north and south of the UPRR tracks.

3.2.6 DEVELOPED

Approximately 9.13 acres of developed land are within the survey area. This land cover type consists of housing and development associated with the adjacent residential neighborhood. Ornamental vegetation is present as part of the landscaping for the residential houses.

3.3 CRITICAL HABITAT

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result

in take or adverse modification to a species' designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., CWA Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

The project site is not located within any designated Critical Habitat. However, it is located within 100 feet to the west of Coachella Valley milk-vetch Critical Habitat Unit 3 (USFWS 2013) (refer to Figure 7, *Critical Habitat*, in Appendix A). This area is still within the 500-foot survey buffer of the project site but is east of the north-south tamarisk windrow and would not be directly impacted by the proposed project.

3.4 FOCUSED SURVEY RESULTS AND SPECIES OBSERVATIONS

Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a general discussion of special-status plant and wildlife species that were detected during the field surveys or that are expected to occur based on existing site conditions. The discussion is to be used as a general reference and is limited by the season, time of day, and weather conditions in which the field surveys were conducted. Refer to Appendix C for a complete list of wildlife species observed during the 2015, 2016, and 2020 field surveys.

3.4.1 SPECIAL-STATUS PLANTS AND VEGETATION

Michael Baker biologists observed one (1) federally listed special-status plant species, Coachella Valley milk-vetch, on-site during the 2016 focused surveys (refer to Figure 8, *Special-Status Plant Observations*, in Appendix A). Non-listed CNPS-ranked special-status plant species and BLM sensitive plant species were not observed during any of the surveys, including rare plant focused surveys.

Listed Plant Species

Coachella Valley Milk-vetch

Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) is federally listed as endangered and is designated by the CNPS with the California Rare Plant Rank (CRPR) 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is a covered species under the CVMSHCP and is a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is endemic to California and is only known from Riverside County. Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet above mean sea level. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (USFWS

2013). Under the CVMSHCP, nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species.

Coachella Valley milk-vetch was observed during the four focused surveys conducted on April 14, April 19, May 4, and June 15, 2016. In total, 266 individuals were observed throughout the survey area (Michael Baker 2016c).

Non-Listed Special-Status Plant Species and CDNPA Species

Non-listed CNPS-ranked and BLM sensitive plant species known to occur within the general vicinity of the project site were not detected during any project-related surveys, including the 2016 rare plant focused surveys. A single CDNPA species, golden cholla, was found on-site but its location was not mapped.

Sensitive Plant Communities

The CNDDDB lists three (3) sensitive habitats as being identified within the *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* quadrangles: Desert Fan Palm Oasis Woodland, Mesquite Bosque, and Southern Riparian Forest (CDFW 2021a). Neither these nor any other sensitive plant communities are present on-site.

Non-Native Plants

On-site vegetation in the survey area was generally dominated by native desert plants. Michael Baker biologists detected five (5) non-native plant species on-site during all field surveys: Saharan mustard (*Brassica tournefortii*), red-stemmed filaree (*Erodium cicutarium*), barbwire Russian thistle (*Salsola paulsenii*), Arabian schismus (*Schismus arabicus*), and athel tamarisk (*Tamarix aphylla*). One of the ways of determining the threat level of non-native plants on a project site is to refer to the California Invasive Plant Council's (Cal-IPC) Inventory, which rates non-native plants in California by different threat levels. Saharan mustard has a Cal-IPC rating of High, which indicates those species that have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Most species with a High rating are widely distributed ecologically. Saharan mustard is abundant in deserts, desert dunes, and coastal scrub, including the San Joaquin Valley, Sonoran and Mojave Deserts, and a majority of the southwestern region of California. The rest of the non-native species that were detected have a Cal-IPC rating of Limited, which indicates minor state-wide ecological impacts.

3.4.2 SPECIAL-STATUS WILDLIFE

Michael Baker biologists observed one (1) federally listed special-status wildlife species, Coachella Valley fringe-toed lizard (*Uma inornata*), within the survey area during 2016 surveys (refer to Figure 9, *Special-Status Wildlife Observations*, in Appendix A). Additional non-listed special-status wildlife species observed during project surveys included Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), burrowing owl (*Athene cunicularia*), horned lark (*Eremophila alpestris*), and loggerhead shrike (*Lanius ludovicianus*).

Listed Wildlife Species

Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the USFWS as threatened under the FESA and by the CDFW as endangered under the CESA. It is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite (*Prosopis glandulosa*), and four-winged saltbush (*Atriplex canescens*), with four-winged saltbush often associated with high use areas (USFWS 2010a, CVAG 2016). This species is typically active from spring through fall, especially between April and October (CVAG 2016). Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the suitable habitat within the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west of the project site on the Whitewater Floodplain Preserve. Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Focused surveys for Coachella Valley fringe-toed lizard were not conducted for this project. However, one lizard was incidentally observed during the July 7, 2016 burrowing owl focused survey. The lizard was found within the 500-foot survey buffer of the project site, east of the north-south tamarisk windrow along the edge of the abandoned housing pads. Although it wasn't observed anywhere else in the 500-foot survey area of the project during any of the other general or focused biological surveys that have been conducted, because of the availability of suitable habitat throughout and the number of CNDDDB records of this species in the immediate vicinity, this species should be assumed present throughout the survey area.

Non-Listed Special-Status Wildlife Species

Cooper's Hawk

Cooper's hawk is a California WL species that is adapted to urban environments and commonly occurs in the region. This species typically forages along broken woodlands and habitat edges and usually nests in deciduous trees in dense woodland and riparian areas, usually near streams (Rosenfield et al. 2020). The breeding season for Cooper's hawk generally extends from late March through mid- to late July but can vary slightly from year to year based upon seasonal weather conditions. This species typically nests later than other common raptor species such as red-tailed hawk (*Buteo jamaicensis*). This species was observed flying over the survey area during burrowing owl focused surveys in 2016 and should be considered present year-round in the surrounding project vicinity, if not also on-site, particularly due to the immediate adjacency of a residential neighborhood where songbirds (i.e., prey) are likely to congregate in yards.

Sharp-Shinned Hawk

Sharp-shinned hawk is a California WL species. Although this species is a year-round resident of the northern California coast and the Central Valley, it is strictly a winter resident in southern California (Dunn and Alderfer 2011). Sharp-shinned hawks are typically present in southern California from approximately mid-September to mid-April. In its winter range locally, it shares many of the same habitat preferences as the concomitant Cooper's hawk, frequenting a combination of woodland habitats, rural areas, and suburban homes where it can prey on other birds (Bildstein et al. 2020). The chief prey item is other birds, especially sparrows, warblers, and thrushes, but sharp-shinned hawks will also take small mammals (mice, voles, pocket gophers) and insects.

A single sharp-shinned hawk was seen perched in the north-south tamarisk windrow during the October 2020 habitat assessment. The bird was located immediately off of Verona Road, on the edge of the adjacent neighborhood, and it's likely that it is roosting in the trees and then frequenting backyard feeders and/or landscaped areas in the neighborhood for prey. Although observed on-site and therefore considered present, this species is unlikely to occur in multiples on-site and if present in any given winter is most likely to be in this area in close proximity to or inside of the residential neighborhood.

Burrowing Owl

Burrowing owl is currently designated as a BLM sensitive species and a CDFW SSC. It is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of burrowing mammals (e.g., California ground squirrels (*Otospermophilus beecheyi*), coyotes (*Canis latrans*), American badger (*Taxidea taxus*)) whose burrows are used for roosting and nesting. The presence or absence of mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drainpipes, standpipes, and dry culverts. Burrowing owls may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. They also require open vegetation allowing clear line-of-sight of the surrounding habitat to forage as well as watch for predators.

The habitat assessment conducted in August 2015 identified suitable burrowing owl habitat throughout the project site and within a 500-foot buffer. Michael Baker biologists conducted a focused burrow survey in April 2016, doubling as an owl survey, and three (3) additional focused surveys between May and July 2016. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provide a favorable substrate for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or burrowing owl sign (i.e., scat, pellets, feathers, tracks, and prey remains) was observed during the four

focused surveys. However, six (6) burrowing owls were observed outside of the survey area to the east. These burrowing owls occupied three (3) burrows outside the limits of the survey area and were found on the slopes of several remnant building pads. The closest occupied burrow was located approximately 580 feet east of the project site, outside of the 500-foot survey buffer considered for this species by CDFW (CDFW 2012). However, the BLM LUPA Measure LUPA-BIO-IFS-12 requires a 656-foot (200-meter) avoidance buffer and a biological monitor during the nesting season on all activity sites, when practical (BLM 2016).

No burrowing owls were observed during the October 2020 habitat assessment. Because the proposed project will rely on pre-construction surveys rather than additional focused burrowing owl surveys, no effort was made to intentionally conduct a focused burrow search in 2020, although burrows or rock piles that were incidentally observed and that were deemed suitable for this species were recorded with a GPS unit during the October 2020 field survey.

California Horned Lark

California horned lark is a California WL species that typically forages in groups in shortgrass prairies, grasslands, disturbed fields, or similar habitat types (Beason 2020). It typically nests on the open ground, often next to grass clumps or other objects. Areas that are suitable for breeding earlier in the spring may become unsuitable later as vegetation grows higher and obscures the openness of the territory. The breeding season for California horned lark generally extends from mid-March through late August but can vary slightly from year to year based upon seasonal weather conditions. Horned larks were heard flying overhead during the October 2020 habitat assessment and, although not detected during any previous surveys in 2015 and 2016, based on the availability of suitable habitat in and around the project site as well as records shown in the eBird database (eBird 2021), horned larks are probably present in the project site and surrounding area regularly and may nest or forage on-site. However, without more observational data and additional sightings, it is impossible to say from the October 2020 detection which horned lark subspecies was flying over and/or may occur on the project site.

Loggerhead Shrike

The loggerhead shrike is a year-round resident of the Mojave Desert and is designated as a CDFW SSC. This species typically occurs in open and semi-open habitats with scattered shrubs, bare ground, and low or sparse herbaceous cover but may also occur along the edges of denser habitats (Yosef 2020). The loggerhead shrike inhabits a wide variety of habitats including grasslands, agricultural fields, pastures, desert washes, Joshua tree woodland, and creosote bush scrub. These areas provide suitable hunting habitat and often contain an assortment of perches including trees, fences, posts, and utility lines required for spotting prey. Nearby impaling sites for prey manipulation and storage are also required and typically include sharp, thorny, or multi-stemmed plants and/or barbed wire fences (Shuford and Gardali 2008). This species typically breeds from March to May and builds its nest 2.5 to 4 feet above ground in thorny shrubs and trees that provide concealment and protection from predators (Yosef 2020).

Loggerhead shrikes have been observed multiple times within the project’s survey area, including during both the August 2015 and October 2020 habitat assessments. This species is probably a year-round resident on-site. Although nesting has not been documented on-site by Michael Baker staff, based on the repeated presence of the species it likely nests on-site or in the immediate vicinity.

3.5 ADDITIONAL SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR

The following section describes additional special-status species, including those protected by the USFWS, BLM, and/or CDFW, that have potential to occur within the project site or within the 500-foot survey buffer that was used for analysis, but that were not detected during any previous project-related surveys. This section includes those species that are state or federally listed or candidate species that have a low or higher potential to occur, BLM sensitive species that have a low or higher potential to occur, BLM species that are identified as target sensitive species within the Sand Dunes and Sand Fields community type (even if not expected to occur), and other special-status species that have a moderate or high potential to occur. Those species that are not listed, not BLM sensitive or target species, or that otherwise have a low potential to occur or are not expected to occur are not included in this section and are not analyzed in this report. Although they were part of IPaC search results (USFWS 2021a), southwestern willow flycatcher (*Empidonax traillii extimus*; FESA and CESA endangered), peninsular bighorn sheep (*Ovis canadensis nelsoni* pop. 2; FESA endangered, CESA threatened, CDFW FP), and least Bell’s vireo (*Vireo bellii pusillus*; FESA and CESA endangered) are not included in the analysis below because they are not expected to occur on-site due to lack of suitable habitat and they do not meet any other qualifiers as listed above. These species and their specific determinations regarding their potential to occur on-site can be reviewed in Table D-1 in Appendix D.

In general, the potentials for special-status species to occur within the project site were determined based on the reported locations in the CNDDDB (CDFW 2021a), CNPS Online Inventory (CNPS 2021), species records in the Calflora Database (Calflora 2021), eBird (eBird 2021), and the following criteria. The criteria below were generally followed but were occasionally deviated from where known data indicated that there may still be extant records in the project vicinity.

- **Present:** the species was observed or detected within the project site during the field survey.
- **High:** Occurrence records (within 20 years) indicate that the species has been known to occur on or within one mile of the project site and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the project site and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate:** Occurrence records (within 20 years) indicate that the species has been known to occur within one mile of the project site and the site is within the normal expected range of this species. There is suitable habitat within the project site but the site is ecologically isolated from any local known extant populations or sightings.

- **Low:** Occurrence records (within 20 years) indicate that the species has been known to occur within five miles of the project site, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the project site.
- **Not Expected:** There are no occurrence records of the species occurring within five miles of the project site, there is no suitable habitat within the project site, and/or the project site is outside of the normal expected range for the species.

3.5.1 SPECIAL-STATUS PLANTS

Listed Plant Species

Coachella Valley milk-vetch, previously discussed in Section 3.4.1, was the only federally listed and/or candidate species identified with the potential to occur within the project site or within the 500-foot survey buffer. No additional federally listed or candidate species were identified with the potential to occur within the survey area.

Non-Listed Special-Status Plant Species

Borrego Milk-vetch

Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*) is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the CRPR 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in Mojavean and Sonoran desert scrub between 98 and 1,050 feet above mean sea level (CNPS 2021). According to records in Calflora (2021), there are numerous historical occurrences of this species within 5 miles of the project site, all pre-1940s. While many of these are in developed Palm Springs and are likely extirpated, several are close to the project site (within 1.5-2 miles) and are in areas that are still undeveloped. Although this species was not observed during the 2015 or 2020 habitat assessments or the 2016 focused rare plants surveys, Borrego milk-vetch has a moderate potential to occur within the project site.

Little San Bernardino Mountains Linanthus

Little San Bernardino Mountains linanthus (*Linanthus maculatus* ssp. *maculatus*) is an annual herb that blooms between February and May. It is not state or federally listed but is currently designated as a BLM sensitive species. In addition, it is designated by the CNPS with the CRPR 1B.2, indicating that it is rare, threatened and endangered in California and elsewhere, with 20 to 80% of known occurrences threatened. Endemic to California, it is only known to occur in Riverside and San Bernardino Counties where it can be found in sandy soils within Joshua tree woodlands, Mojavean desert scrub, and Sonoran desert scrub at elevations ranging from 640 to 6,808 feet above mean sea level (CNPS 2021). According to records in Calflora (2021), there are two historic (pre-1950s) records within 5 miles of the project site. Based on the

locations of these records, it is likely that both are now extirpated. Although this species was not observed during the 2015 or 2020 habitat assessments or the 2016 focused rare plants surveys, Little San Bernardino Mountains linanthus has a low potential to occur within the project site.

3.5.2 SPECIAL-STATUS WILDLIFE

Listed Wildlife Species

Crotch Bumble Bee

The Crotch bumble bee (*Bombus crotchii*) is designated by as a candidate for listing as endangered under the CESA. However, although Crotch bumble bee is not yet listed, under the CESA candidate species are afforded the same protections as those that are already listed. This species occurs primarily in California, as well as in Mexico and along the Nevada border, although both historically and currently it appears to be rarer in the southeast portion of California along the desert slope (Xerces et al. 2018). This species generally inhabits open grassland and scrub and typically nests underground. It most frequently utilizes plants in the families Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae for foraging. This species is active from late February to late October (queens) and late March through September (worker bees and males). Crotch bumble bee has one record in the CNDDDB within 5 miles of the project site, from 1958 (CDFW 2021a). There is marginal habitat on the project site and it has a low potential to occur.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is designated by as a threatened species under the CESA. It is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert (primarily the Antelope Valley). This species often nests adjacent to riparian habitats and will also use lone trees in agricultural fields or pastures and roadside trees when available and adjacent to suitable foraging habitat. In the Great Basin, this species also occupies juniper/sagebrush communities. Swainson's hawks will typically nest in Joshua trees, in roadside trees, or in windrows adjacent to agricultural fields (California Energy Commission and CDFW 2010). Swainson's hawks forage in adjacent grasslands, suitable grain or alfalfa (i.e., agricultural) fields, livestock pastures, desert scrub, and occasionally in Joshua tree woodlands, where they predominantly hunt small mammals. The project site and this general region are outside of the nesting range of Swainson's hawks, but Borrego Springs to the south is a major overnight stopover location for migrating hawks, and it is possible that some hawks may roost in the tamarisk trees of the project site. There is a low potential for Swainson's hawk to occur on-site, although primarily as a potential overnight roosting bird in the local tamarisk windrows both on- and offsite, not as a nesting bird and likely not as a foraging bird due to the general lack of suitable foraging habitat.

Casey's June Beetle

Casey's June beetle (*Dinacoma caseyi*) is designated as endangered under the FESA. It is also considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is currently

only known to occur in two locations, both in Palm Springs: at the junction of South Palm Canyon Drive and Bogert Trail, and south of Highway 111 and east of Sunrise Road on the Smoke Tree Ranch development (BLM 2002). It is associated with alluvial fans, especially on Carsitas gravelly sand at 0 to 9 percent slopes. Cheesebush (*Hymenoclea salsola*) is thought to be a key larval food plant. This species is not known to occur on BLM land in the Coachella Valley and is not expected to occur.

Desert Tortoise

The desert tortoise is designated as threatened under both the FESA and CESA. The Mojave population of the desert tortoise inhabits areas north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California. Throughout the majority of the Mojave Desert, desert tortoises occur most commonly on gentle sloping soils characterized by an even mix of sand and gravel and sparsely vegetated low-growing vegetation where there is abundant inter-shrub space (USFWS 2008). Typical habitat for the Mojave Desert tortoise has been characterized as creosote bush scrub below 5,500 feet above mean sea level (USFWS 2008, USFWS 2010b). Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by desert tortoise include desert dandelion (*Malacothrix glabrata*), primrose (*Camissonia* spp. and *Oenothera* spp.) desert plantain (*Plantago ovata*), milk-vetches (*Astragalus* spp.), gilia (*Gilia* spp.), desert marigold (*Baileya multiradiata*), Mojave lupine (*Lupinus odoratus*), phacelia (*Phacelia* spp.), desert wishbone-bush (*Mirabilis laevis*), forget-me-nots (*Cryptantha* spp.), goldfields (*Lasthenia californica*), California coreopsis (*Leptosyne californica*), white-margin sandmat (*Euphorbia albomarginata*), and the non-native red-stemmed filaree. The desert tortoise spends 95 percent of its life underground and will opportunistically utilize burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover. Therefore, a moderately friable soil is required to allow for burrow construction and ensure that burrows do not collapse.

While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows and very few burrows at all were observed during the habitat assessment, and the nearest known record of this species (via the CNDDDB (CDFW 2021a)) is located over eight miles to the north of the project site. A single suitable burrow was found on-site during the October 2020 habitat assessment, but no desert tortoise sign was seen in or around it and no sign was observed elsewhere. Desert tortoise has a low potential to occur within the project site.

Non-Listed Special-Status Wildlife Species

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is designated as a BLM sensitive species, a CDFW FP species, and a CDFW WL species. It is a year-round resident of much of southern California, where it typically nests in tall trees or structures (e.g., transmission towers) or particularly on cliffs in high mountains. It shows strong nest fidelity and will reuse the same nest from year to year or rebuild when necessary (Pagel 2010). It is estimated that upwards of 80 percent of the golden eagle's diet is made up of mammals, particularly rabbits

and squirrels, followed by birds (Katzner et al. 2020). Hunting is initiated either from flight or from prominent perching points allowing clear fields of view. The typical nesting season is from late January to the end of August, but courtship and nesting may begin as early as mid-December, and pairs will often maintain territories year-round. Young typically fledge between 45 and 81 days old and will spend months after fledging in their natal territories before dispersing off on their own. Golden eagles generally avoid nesting near urban areas and would not be expected to nest in or anywhere near the project site. It is possible that eagles may forage from overhead, but due to the immediate proximity of urban development to the project site (e.g., residential neighborhood, I-10), it is unlikely that the site would have much value for foraging because of human disturbance. The golden eagle has a low potential to occur on-site.

Prairie Falcon

The prairie falcon (*Falco mexicanus*) is designated as a CDFW WL species. It is a year-round resident of southern California. This species is typically found in shrub-steppe desert, grasslands, mixed shrub and grassland ecotones, agricultural fields, and alpine tundra, but particularly in open, expansive habitats (Steenhof 2020). This species primarily nests on cliffs but will also nest opportunistically if necessary on trees, utility towers, buildings, or even inside caves. The general nesting season extends from the beginning of March through the end of July. Prairie falcon is commonly sighted in the Coachella Valley in the general vicinity of the project (eBird 2021) and has a high potential to occur as a foraging bird but would not be expected to nest on-site.

American Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) is designated as a BLM sensitive species and a CDFW FP species. It was formerly listed under both the FESA and the CESA but has been delisted from both. This subspecies is a year-round resident in southern California, although other subspecies also occur during winter. Peregrine falcons are widespread and use a variety of habitat types, although they prefer cliffs or other tall areas for nesting and open landscapes for foraging (White et al. 2020). Nests are not built but are typically scraped into the surface of the nesting substrate that will be used. Eggs are laid beginning in mid-February, with young typically fledging between 35 and 42 days old and, in non-migratory populations (such as southern California), may remain dependent on parents for an additional nine to ten weeks. There is no nesting habitat within the project site or its vicinity, but there is foraging habitat and this species is known to occur in the general vicinity. The American peregrine falcon has a high potential to occur as a foraging bird but would not be expected to nest on-site.

Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket (*Macrobaenetes valgum*) has no state or federal designation, but is a covered species under the CVMSHCP and it is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio (CVAG 2016). This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with

windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite, Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the suitable habitat within the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.

Pocketed Free-Tailed Bat

The pocketed free-tailed bat (*Nyctinomops femorosaccus*) is designated as a CDFW SSC. It is found in Riverside, San Diego, and Imperial Counties, where it occurs in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis habitats (CDFW 2000). This species roosts and establishes colonies in rock crevices, caverns, and buildings. Pups are born in June and July, with lactation of maternal bats to their young continuing into August. Pocketed free-tailed bat has a moderate potential to forage within the project site but is not expected to roost on-site. Because this species is completely insectivorous (CDFW 2000), it will not be directly dependent on any on-site flora for foraging.

Lucy's Warbler

The Lucy's warbler (*Oreothlypis luciae*) is designated as a BLM sensitive species and a CDFW SSC. In North America it is typically found in the Desert Southwest, particularly the area from the Colorado River to southwest New Mexico. West of the Colorado River, and particularly west of the Salton Sea, this species is considered a rare but regular vagrant (eBird 2021). During migration and on wintering grounds, this species may use a variety of arboreal habitats including riparian, tamarisk, and ornamental trees (Johnson et al. 2020). The project site and surrounding survey area has an abundance of tamarisks planted as windrows, but because this species is rare in California except for the far southeastern edge, Lucy's warbler is considered to have a low potential to occur in the project site.

Palm Springs Pocket Mouse

The Palm Springs pocket mouse is designated as a BLM sensitive species and a CDFW SSC. It is also a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Geronio Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands with loose and/or sandy soils and sparse to moderate vegetative cover, particularly in areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*) (CVAG 2016). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the Whitewater Floodplain Conservation Area has been designated by the CVMSHCP as a core habitat

area and previous trapping in 2000 found the species east of Gene Autry Trail between the UPRR tracks and I-10, although it is unknown exactly where the occurrences were in relation to the survey area (CVAG 2016). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

Flat-Tailed Horned Lizard

The flat-tailed horned lizard is designated as a BLM sensitive species and a CDFW SSC. It was previously designated as a candidate for endangered status under the CESA in 2015 but was rejected for full CESA listing in 2016. It is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area (CVAG 2016). Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. There are numerous CNDDDB records of this species occurring within five (5) miles of the project site prior to the year 2000, but as of 2016 the last confirmed record of this species in the Whitewater Floodplain Conservation Area was in 1994 (CVAG 2016). Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Coachella Valley Grasshopper

The Coachella Valley grasshopper (*Spaniacris deserticola*) has no state or federal designation, but is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is strongly associated with Palmer's crinklemat (*Tiquilia palmeri*) and is most often found along the lower fringes of rocky bajadas where the soil is a combination of rock, sand, and clay; along low sandy ridges; and along sandy alluvial fans, as long as the host plant is present (BLM 2002). Other than Palmer's crinklemat, this species may on occasion also use fanleaf crinklemat (*Tiquilia plicata*), which was documented on-site during project surveys. Adults are active from late June through August and can tolerate soil temperatures of at least 140 degrees Fahrenheit, while nymphs are active in the spring. This species is known to occur in the Thousand Palms Preserve, at the east end of the Indio Hills, and in the Willow Hole Conservation Area of the CVMSHCP (BLM 2002). Because its primary host species is not present on-site and this species is not known to occur in the area around the project site, Coachella Valley grasshopper is not expected to occur.

Coachella Valley Jerusalem Cricket

The Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*) has no state or federal designation, but is a covered species under the CVMSHCP and is considered a target sensitive species within the Sand Dunes and Sand Fields community type. This species is most often found in the western Coachella Valley where temperature and moisture gradients are within its tolerance levels (CVAG 2016). It occurs in sandy to somewhat gravelly sandy soils and is typically found in loose windblown drift sands and especially in dunes. It appears to favor areas dominated by members of the sunflower family, particularly *Ambrosia* spp. and *Encelia* spp. According to the CVMSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found (CVAG 2016). Coachella Valley Jerusalem cricket is not expected to occur within the project site.

Le Conte's Thrasher

The Le Conte's thrasher is designated as a CDFW SSC, is a covered species under the CVMSHCP, and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.) but may still utilize areas without these plants (Sheppard 2020). Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the Whitewater Floodplain Conservation Area has been modeled as conserved habitat for this species. However, local records from the CNDDDB (CDFW 2021a) and eBird (eBird 2021) suggest that this species is rare in this area, with few recent records. Le Conte's thrasher has a low potential to occur within the project site.

Coachella Valley Round-Tailed Ground Squirrel

The Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*, also known as Palm Springs round-tailed ground squirrel) is designated as a BLM sensitive species and a CDFW SSC. It is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains (CVAG 2016). Ideal habitat seems to be areas where hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the CVMSHCP, this species seems to particularly favor hummocks that form around mesquite. The breeding period is generally from early spring through June, and it is inactive in its burrows from August until January. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the CVMSHCP as core habitat. Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Section 4 Conclusion and Recommendations

Michael Baker biologists conducted a series of habitat assessments and focused surveys within the project site and its 500-foot buffer, or survey area, between August 2015 and October 2020. These field surveys helped Michael Baker to identify the current or possible future presence of presence of several special-status biological resources that are of interest to the BLM and its compliance with the CDCA (BLM 2002), DRECP LUPA (BLM 2016), CVMSHCP (CVAG 2016), and various State and federal regulations. The survey area was found to contain four (4) natural vegetation communities including Sonoran creosote bush scrub on lands not managed by the BLM or included within the CVMSHCP, and active sand fields; stabilized, shielded sand fields; and Sonoran mixed woody and succulent scrub within BLM/CVMSHCP lands. In addition, the survey area contains two (2) land cover types classified as tamarisk windrow and developed.

Michael Baker biologists observed one (1) federally listed special-status plant species, Coachella Valley milk-vetch (federally listed as endangered, CRPR 1B.2, BLM target sensitive species within sand dunes and sand fields, and a covered species the CVMSHCP), on-site during the 2016 focused surveys. No other special-status plant species were observed during any of the surveys between 2015 and 2020. Based on the results of comprehensive records searches and literature reviews repeated over the course of the site investigations (between 2015 and 2020), a review of existing site conditions during previous field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status plant species, Michael Baker determined that the overall survey area has a moderate potential to support Borrego milk-vetch (CRPR 4.3) and a low potential to support Little San Bernardino Mountains linanthus (CRPR 1B.2 and BLM sensitive species). All remaining special-status plant species identified by the records searches and literature reviews are not expected to occur within the survey area.

Michael Baker biologists observed one (1) federally-listed special-status wildlife species, Coachella Valley fringe-toed lizard (federally listed as threatened, State listed as endangered, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP), on-site during 2016 burrowing owl focused surveys. Other special-status wildlife species that were observed within the survey area between 2015 and 2020 included Cooper's hawk (CDFW WL), sharp-shinned hawk (CDFW WL), burrowing owl (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), horned lark (CDFW WL if the *actia* subspecies), and loggerhead shrike (CDFW SSC). Based on the specific results of the records searches and literature reviews, a review of existing site conditions during the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status wildlife species, Michael Baker determined that the overall project site has a high potential to support prairie falcon (CDFW WL), American peregrine falcon (BLM sensitive species and CDFW FP), Coachella giant sand treader cricket (BLM target sensitive species within sand dunes and sand fields and a covered species under the CVMSHCP), and Palm Springs pocket mouse (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and a moderate

potential to support pocketed free-tailed bat (CDFW SSC), flat-tailed horned lizard (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and Coachella Valley round-tailed ground squirrel (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). In addition, the project site has a low potential to support Crotch bumble bee (CDFW candidate for State listing as endangered), Swainson’s hawk (State listed as threatened), desert tortoise (State and federally listed as threatened and a covered species under the CVMSHCP), golden eagle (BLM sensitive species, CDFW FP, CDFW WL), Lucy’s warbler (BLM sensitive and CDFW SSC), and Le Conte’s thrasher (BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). All remaining special-status wildlife species identified by the records searches and literature reviews are not expected to occur within the survey area.

A variety of avoidance and minimization measures and conservation measures will apply to the project to ensure compliance with the CDCA (BLM 2002), DRECP LUPA (BLM 2016), CVMSHCP (CVAG 2016), and various State and federal regulations. Those that are applicable to this project are listed below.

Applicable LUPA Conservation and Management Actions

LUPA-wide Measures

LUPA-BIO-1 Conduct a habitat assessment of Focus and BLM Special Status Species’ suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Focus and BLM Special Status Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat. No Route disturbance is already existing disturbance.

BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season.

Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.

LUPA-BIO-2 Designated biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during preconstruction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

LUPA-BIO-3 Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

- The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).
- The edge of the vegetation extent for specified Focus and BLM sensitive plant species.
- The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.

LUPA-BIO-4 For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities. No species-specific seasonal restriction dates are described in the applicable CMAs.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.

LUPA-BIO-5 All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program

will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

LUPA-BIO-6 Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:

- Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.
- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
- Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native

habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.

All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

- In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.

LUPA-BIO-9 Implement the following general LUPA CMA for water and wetland dependent resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
 - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
 - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
 - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific

stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:

- Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
- Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
- Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.

LUPA-BIO-10 Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.
- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.

LUPA-BIO-11 Implement the following CMAs for controlling nuisance animals and invasive species:

- No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.
- Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100- year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.
- Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.

- Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.
- When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

LUPA-BIO-12 For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise:

- To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.
- Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.
- Use noise controls on standard construction equipment including mufflers to reduce noise.

LUPA-BIO-13 Implement the following CMA for project siting and design:

- To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species.
- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.
- To the maximum extent practicable, restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.
- To the maximum extent practicable, confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.

- To the maximum extent practicable, any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.
- Use nontoxic road sealants and soil stabilizing agents.

LUPA-BIO-14 Implement the following general standard practices to protect Focus and BLM Special Status Species:

- Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.
- Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.
- Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.
- All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.
- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.
- Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

LUPA-BIO-15 Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

Plant Species

LUPA-BIO-PLANT-1 Conduct properly timed protocol surveys in accordance with the BLM’s most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.

General Vegetation Management

LUPA-BIO-VEG-1 Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.

LUPA-BIO-VEG-2 Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

LUPA-BIO-VEG-3 Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

LUPA-BIO-VEG-5 All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.

Burrowing Owl

LUPA-BIO-IFS-12 If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

LUPA-BIO-IFS-13 If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

LUPA-BIO-IFS-14 Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

Applicable Conservation Measures for Sensitive Species in the Sand Dunes and Sand Fields Community

The following measures are taken from the Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement (BLM 2002) and apply specifically to species occurring in the Sand Dunes and Sand Fields Community type.

- Dune 2** Avoid stabilization of sand dunes due to adjacent development and spread of invasive species.
- Dune 3** Maintain, and enhance where feasible, aeolian and fluvial sand transport systems.
- Dune 4** Minimize sand compaction to protect Jerusalem cricket and giant sand treader cricket habitat and to minimize crushing of Coachella Valley fringe-toed lizards.
- Dune 5** Minimize roads within flat-tailed horned lizard habitat which are prone to crushing by vehicles.
- Dune 6** Avoid crushing of burrows, especially for burrowing owl, giant sand treader cricket, Jerusalem cricket, and round-tailed ground squirrel.
- Dune 7** Avoid disturbance and compaction of sandy habitats associated with Coachella Valley milk-vetch and avoid crushing Coachella Valley milk-vetch plants.
- Dunes 10** Minimize loss of native vegetation, minimize habitat fragmentation and maintain habitat patch connectivity.

Project Avoidance and Minimization Measures

The following measures are proposed by CVWD and are intended as avoidance, minimization, or mitigation to offset or reduce the potential impacts to the Coachella Valley milk-vetch, burrowing owl, and other special status species with potential to occur in the vicinity. The CVWD Project Engineer, Contractor, CVWD Environmental Specialist and/or Biological Monitor, and CVWD Inspector shall ensure implementation of all biological mitigation measures.

- BIO-1** Habitat Preservation. Following project completion, CVWD shall inspect the site for invasive weed species within the project site to help prevent habitat degradation and spread of invasive plants.
- BIO-2** Conservation Easement. CVWD shall place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing Whitewater Floodplain Conservation Area (WFCA) of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and adjacent to the project site. Twenty-three of the 42 acres shall be used to offset the 23 acres of impacts to land

within City of Cathedral City’s portion of the WFCA from implementation of the project, resulting in a net increase of 19 acres of land being added to the conservation area.

BIO-3 Nesting Birds. Pursuant to the MBTA and California Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat shall be conducted outside the avian nesting season. The nesting season generally extends from January 15 through August 31 but can vary slightly from year to year based on seasonal weather conditions. A pre-construction clearance survey for nesting birds shall be conducted within three days of the start of any ground-disturbing activities to ensure no nesting birds will be disturbed during construction. The biologist conducting the clearance survey shall document a negative survey with a brief letter report indicating no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. The Biological Monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

BIO-4 Burrowing Owl Survey. A pre-construction clearance survey for burrowing owl(s) shall be conducted within 30 days of the start of any ground-disturbing activities to ensure burrowing owls remain absent from the survey area. Should burrowing owl(s) be found within the project footprint during the pre-construction clearance survey, CDFW shall be contacted for consultation prior to clearing and grubbing.

If burrowing owl(s) are found to occupy the project site at the time of the pre-construction clearance survey, a relocation plan shall be written, consistent with LUPA-BIO-IFS-12, -13, and -14, approved by BLM and CDFW, and implemented prior to site development. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with BLM and CDFW. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with BLM/CDFW.

Additional Avoidance and Minimization Measures

The following avoidance and minimization measures were provided by the BLM as part of the FESA Section 7 informal consultation process and are required to be implemented on BLM administered lands

within the project area. These apply specifically to Coachella Valley fringe-toed lizard and Coachella Valley milk-vetch.

Coachella Valley Fringe-toed Lizard

- CVFTL-1** Prior to the initiation of ground-disturbing activities, the Applicant will designate an Authorized Biologist who will be responsible for overseeing compliance with the conservation measures outlined in this biological opinion. The authorized biologist will retain a copy of all conservation measures readily available while conducting work on site and oversee coordination between workers. The authorized biologist will be on site for all work-related activities and would have the authority to halt work activities that are not in compliance with the conservation measures.
- CVFTL-2** Prior to the start of construction, exclusion fencing will be installed along the perimeter of the work area and access route and maintained to keep fringe-toed lizards from entering work areas. Exclusion fencing will consist of a material suitable to withstand high winds, sun, and heat. The fence will be buried 12 inches below the sand surface and extend above ground a minimum of 24 inches. Fencing will be installed per manufacturer specifications. If the authorized biologist observes a Coachella Valley fringe-toed lizard within the Project area during fence installation, the lizard will be allowed to voluntarily exit the Project area. If a lizard is found within the fenced Project area during construction, the authorized biologist will ensure that construction equipment and personnel avoid the lizard. All workers will strictly limit activities and vehicles to the designated work areas within the project footprint. Once project activities have concluded, the fencing will be removed.
- CVFTL-3** If any fringe-toed lizards are captured within the Project footprint, they will be released immediately outside the Project footprint. Lizards will be released in the shade of a shrub. No lizards will be held in captivity or in transport for longer than 10 minutes after their initial capture within an enclosed construction area. If necessary, lizards will be transported in clean, white, plastic 5-gallon buckets.
- CVFTL-4** All work area boundaries associated with temporary and permanent disturbances will be conspicuously staked, flagged, or marked to minimize surface disturbance activities. All workers shall strictly limit activities and vehicles to the designated work areas.
- CVFTL-5** Should any fringe-toed lizards be injured or killed, all activities in the immediate area would be halted, and the authorized biologist would be contacted immediately to investigate the incident. The authorized biologist would be responsible for reporting the incident (via fax or email) to the Service and California Department of Fish and Wildlife within 24 hours of the incident.

- CVFTL-6** During project activities, motor vehicles would be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint.
- CVFTL-7** Perennial vegetation such as creosote bush will be avoided to the extent feasible.
- CVFTL-8** Staging areas will be located outside of fringe-toed lizard habitat (modeled, critical, or occupied habitat).
- CVFTL-9** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to fringe-toed lizards would be securely fenced or covered when unattended to prevent accidental death or injury. At the start and end of each workday, and just before backfilling, all excavations would be inspected for trapped animals. If found, trapped animals would be removed by the authorized biologist and relocated to outside the Project footprint, as appropriate.
- CVFTL-10** Anti-perching devices will be placed on the new poles. Substitute measures of equal or greater ecological value to likely affected listed species, pursuant to review and approval of the BLM and Service, can be implemented in lieu of installing/maintaining pole anti-perching devices.

Coachella Valley Milk-vetch

- CVMV-1** A Qualified Biologist would conduct pre-construction focused surveys for Coachella Valley milk-vetch within the Project footprint during the blooming season (generally February through May) prior to initiation of ground-disturbing activities. Areas where the plant is found will be marked for avoidance as Environmentally Sensitive Areas and Qualified Biologists would be present throughout construction and decommission activities. The name and qualifications of the Qualified Biologist(s) would be submitted to the BLM and Service for approval at least 30 days prior to Project activities in Coachella Valley milk-vetch designated critical habitat.
- CVMV-2** Coachella Valley milk-vetch locations identified during the pre-construction surveys would be delineated on the ground and on aerial photographs, incorporated into the construction management plans, and avoided to the maximum extent possible. Where avoidance is not possible, the Applicant would follow methods described in the Plant Salvage and Restoration Plan to ensure seeds are salvaged appropriately and re-distributed within the action area.
- CVMV-3** A Plant Salvage and Restoration Plan (Restoration Plan) will be submitted to the BLM and Service for approval in the areas of Coachella Valley milk-vetch critical habitat and Coachella Valley milk-vetch modeled habitat within the action area. The Restoration Plan will describe topsoil salvage, recontouring and topsoil placement, and

weeding maintenance for 5 years, or another period of time approved by the BLM and Service to ensure approximately 60 percent replacement of the affected Coachella Valley milk-vetch critical habitat and Coachella Valley milk-vetch modeled habitat. The Restoration Plan will include seed collection and storage at an appropriate facility (e.g., Rancho Santa Ana Botanic Garden), reseeding in appropriate existing or restored habitat, stockpile and reapplication of topsoil, or other similar activities. The Restoration Plan will be submitted to the BLM and Service for approval 30 days prior.

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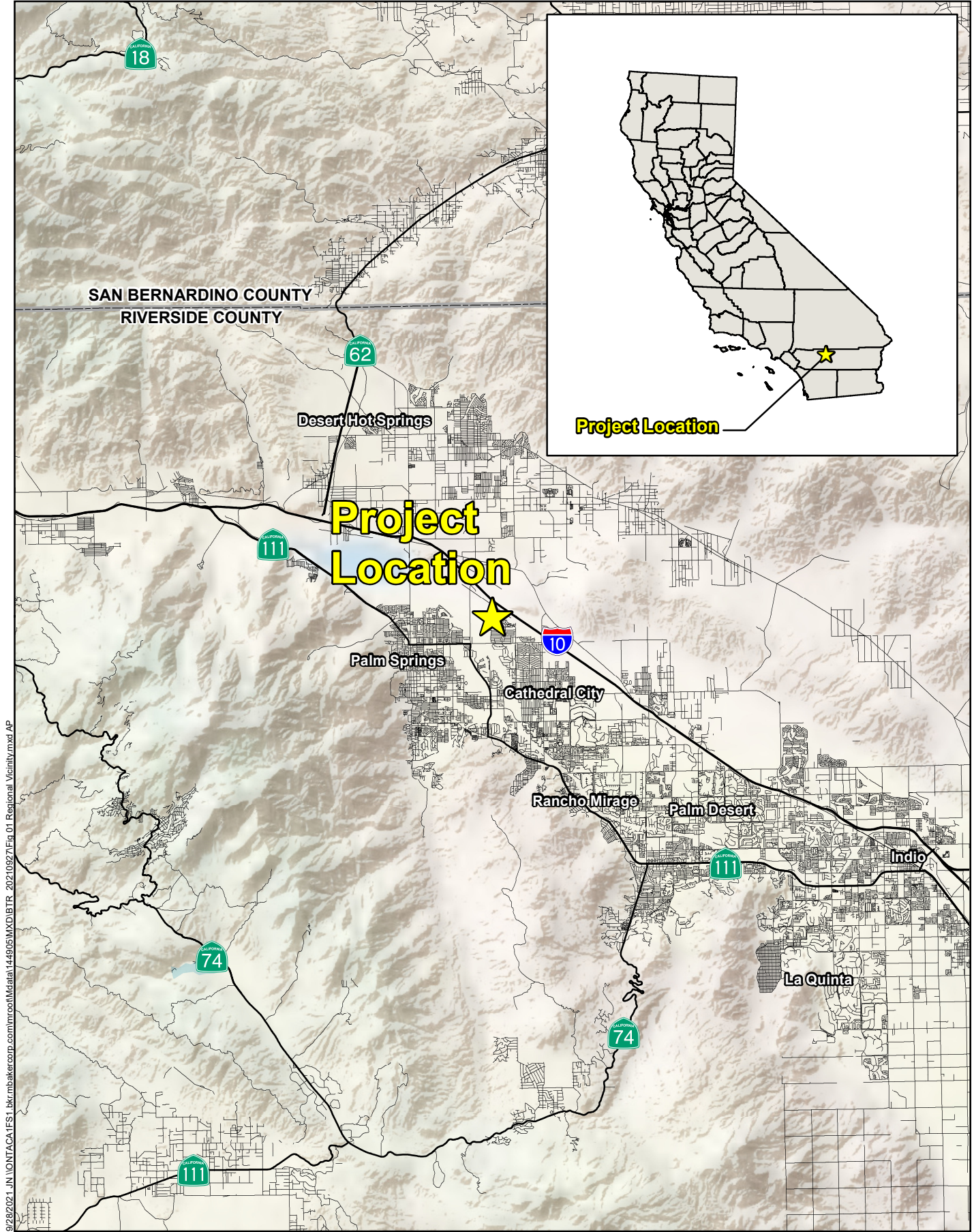
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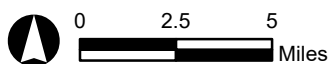
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Appendix A Figures



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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BIOLOGICAL RESOURCES TECHNICAL REPORT

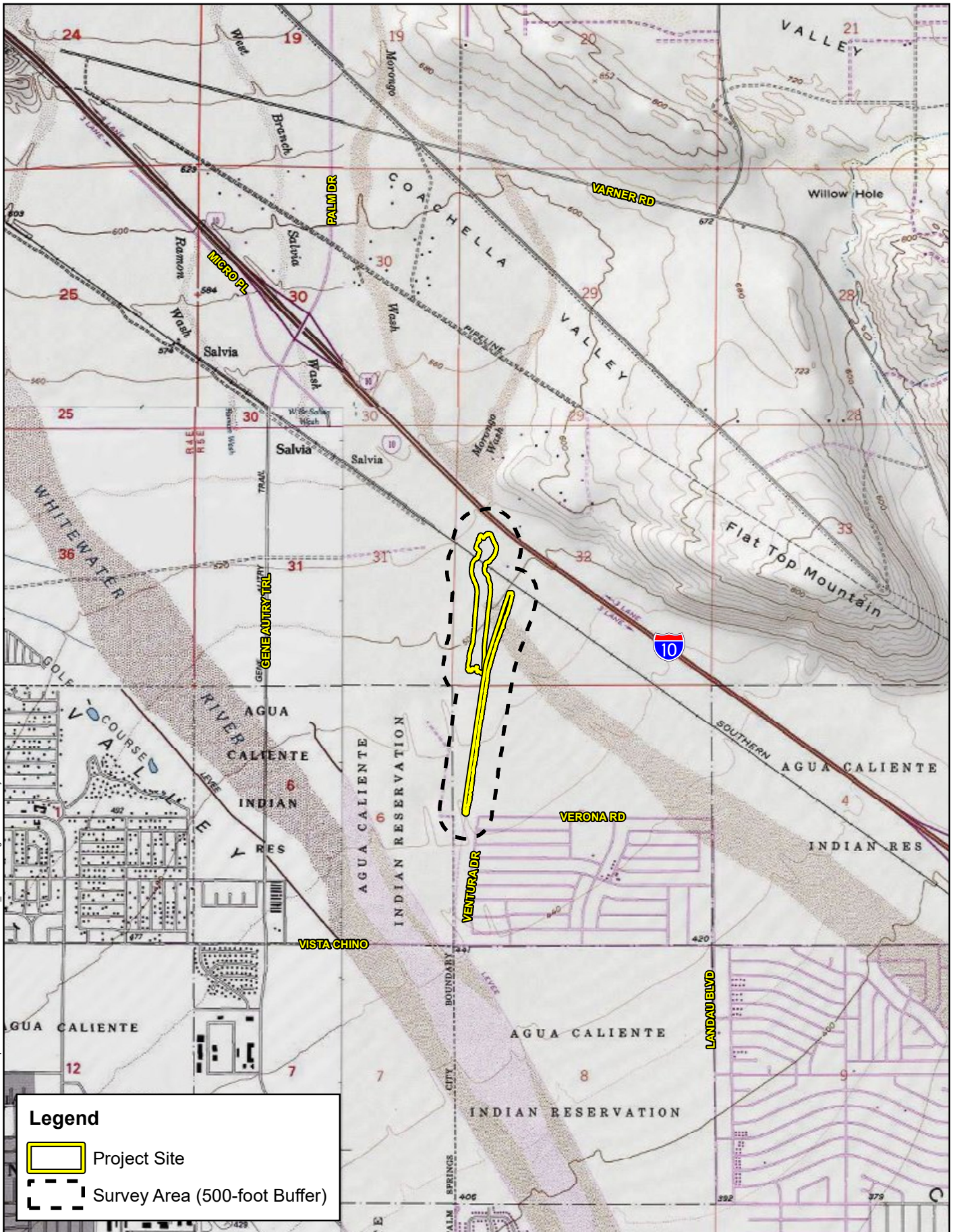


Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Figure 1

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 BIOLOGICAL RESOURCES TECHNICAL REPORT
Site Vicinity





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Union Pacific Railroad

Verona Rd

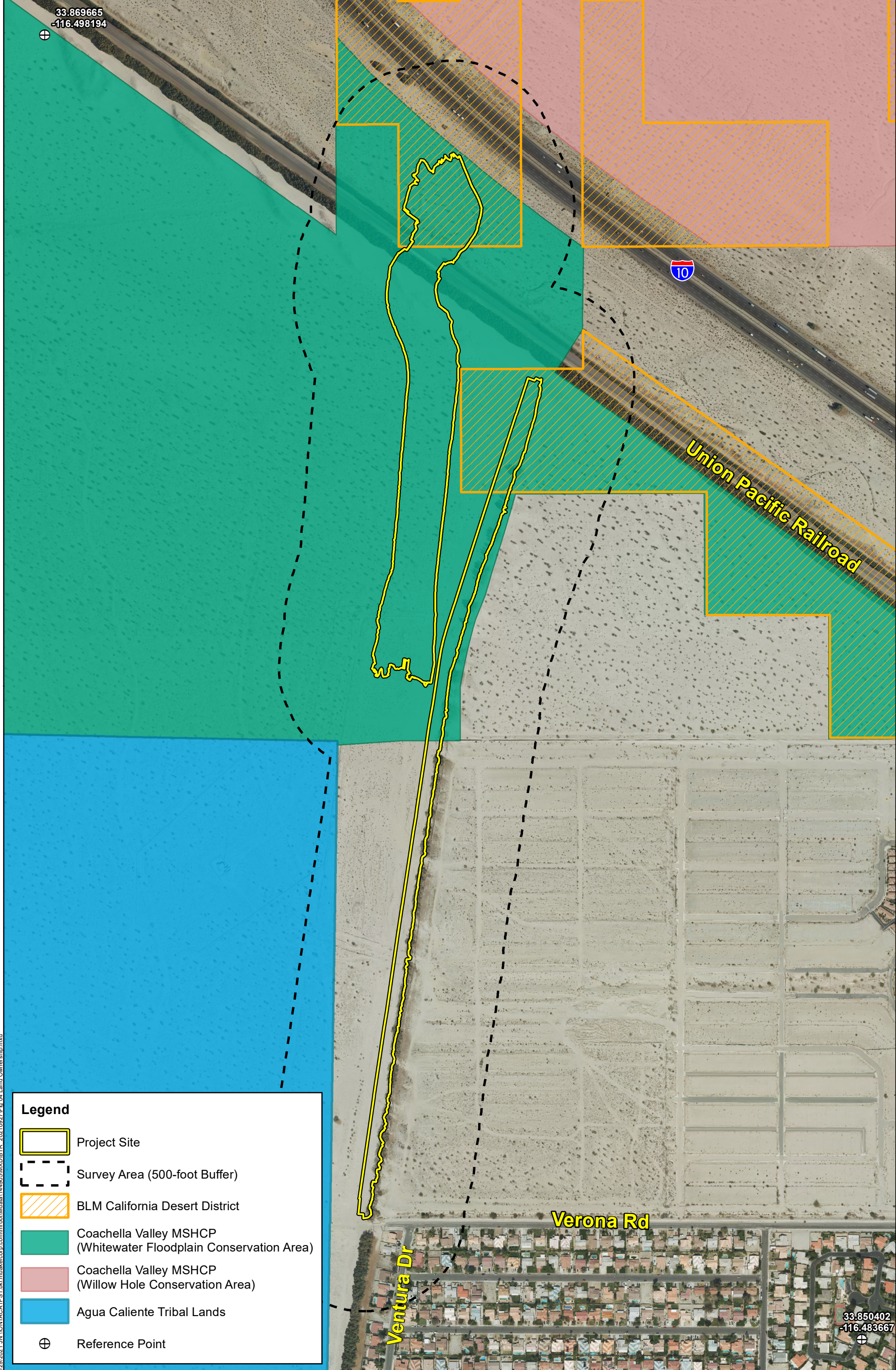
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Legend

-  Project Site
-  Survey Area (500-foot Buffer)
-  Reference Point

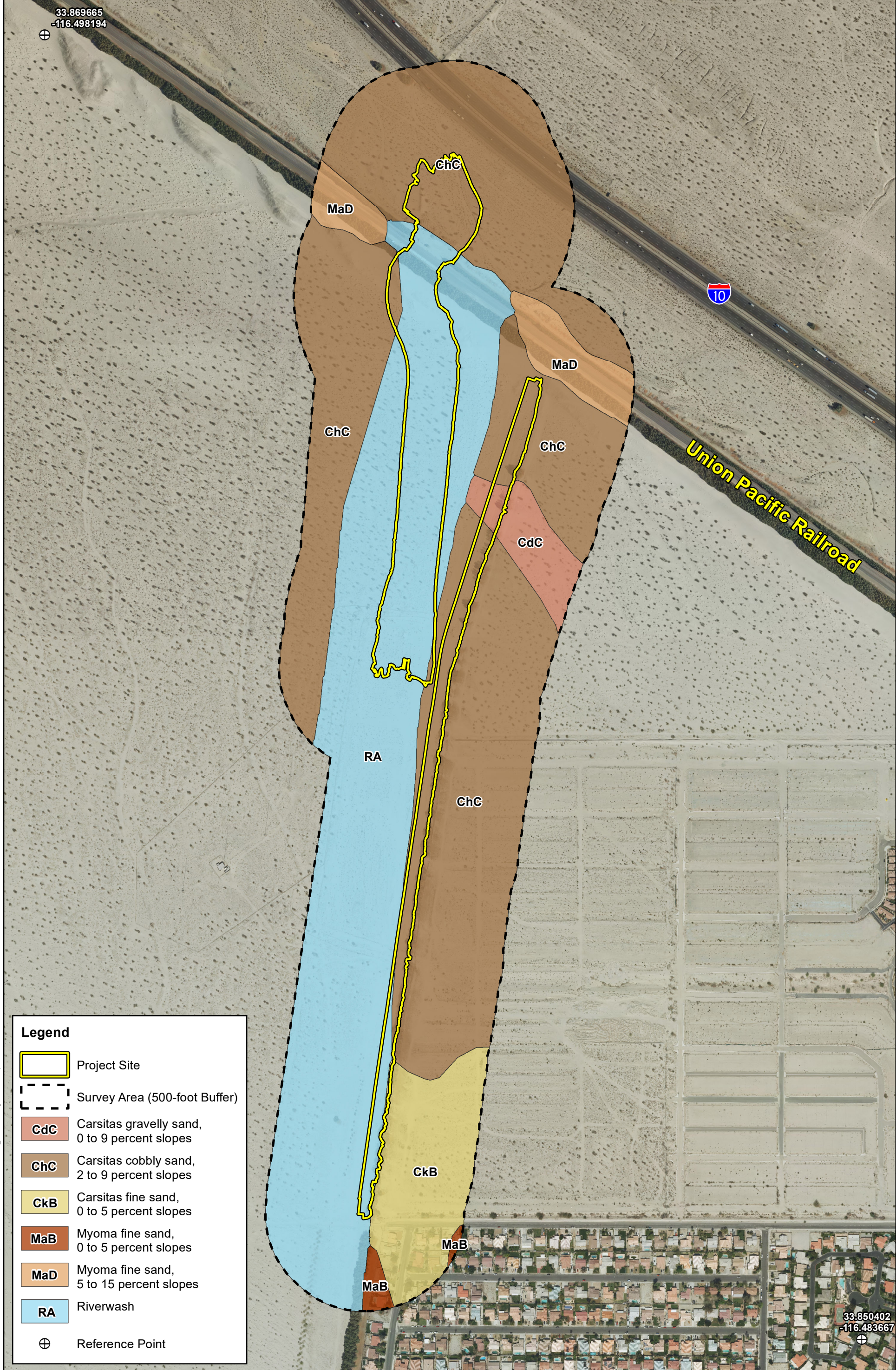
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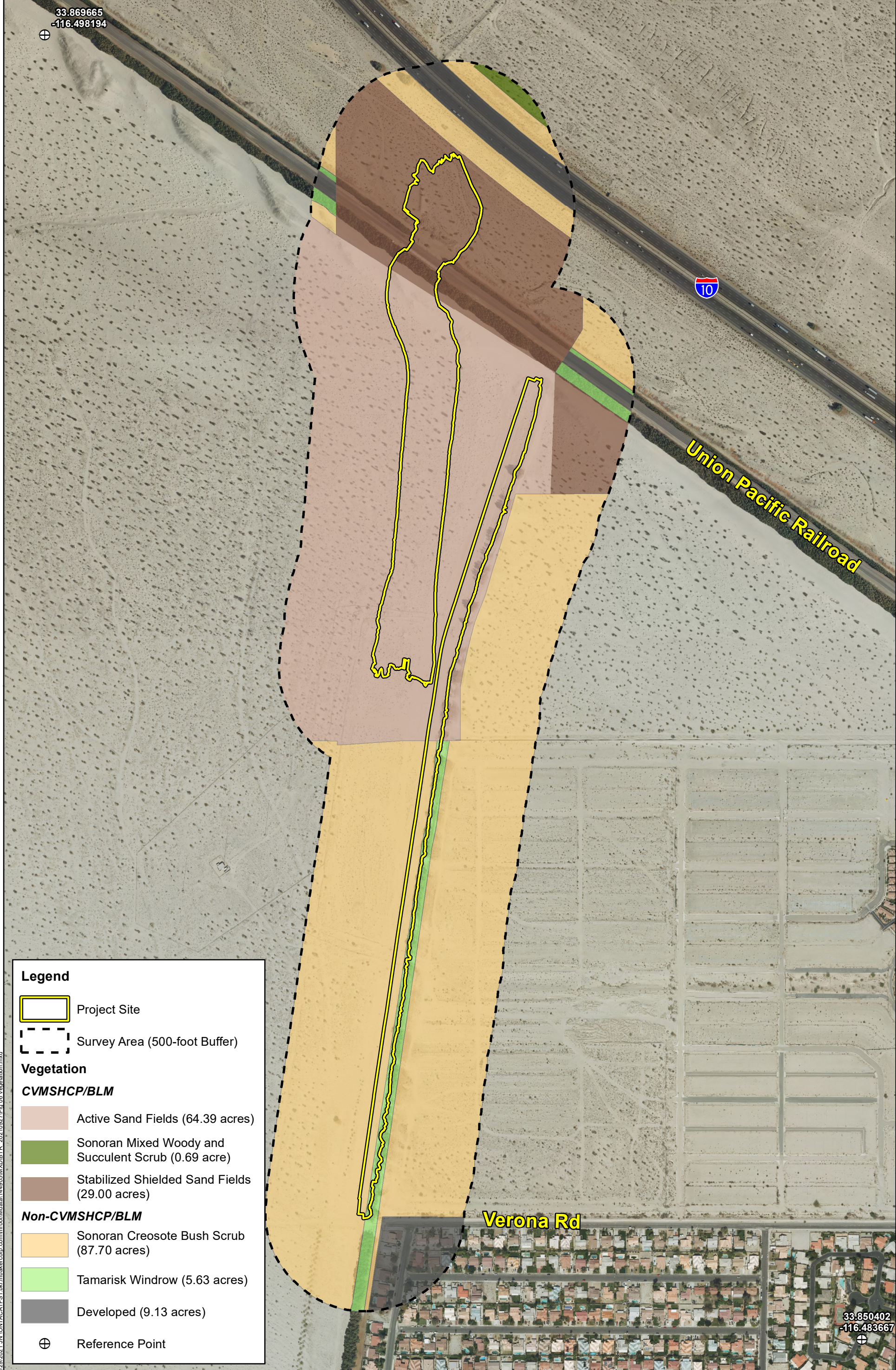
Legend

-  Project Site
-  Survey Area (500-foot Buffer)
-  BLM California Desert District
-  Coachella Valley MSHCP (Whitewater Floodplain Conservation Area)
-  Coachella Valley MSHCP (Willow Hole Conservation Area)
-  Agua Caliente Tribal Lands
-  Reference Point

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Legend

- Project Site
- Survey Area (500-foot Buffer)

Vegetation

CVMSHCP/BLM

- Active Sand Fields (64.39 acres)
- Sonoran Mixed Woody and Succulent Scrub (0.69 acre)
- Stabilized Shielded Sand Fields (29.00 acres)

Non-CVMSHCP/BLM





- Sonoran Creosote Bush Scrub (87.70 acres)
- Tamarisk Windrow (5.63 acres)
- Developed (9.13 acres)

Reference Point

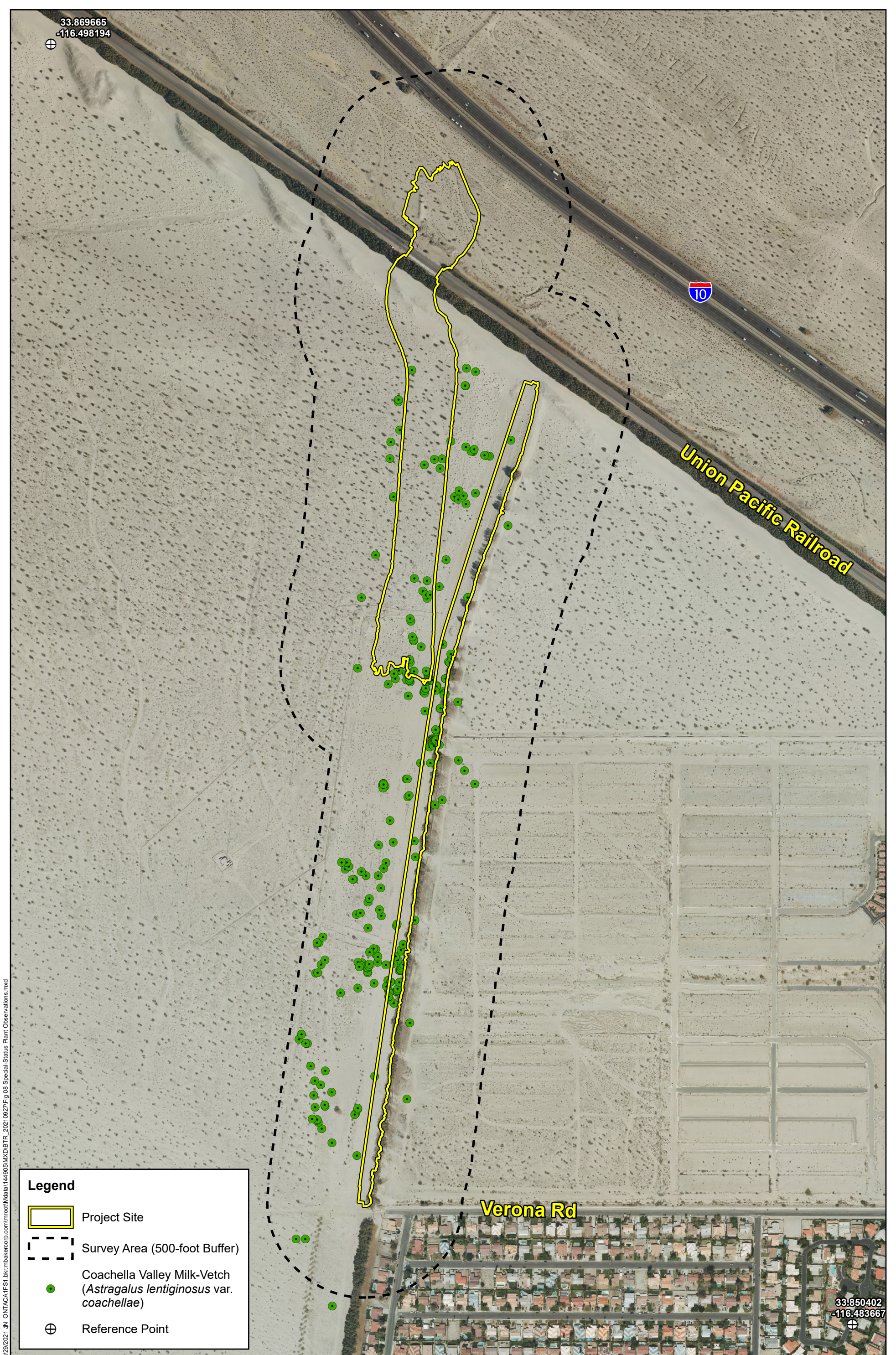
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Legend

-  Project Site
-  Survey Area (500-foot Buffer)
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus* var. *coachellae*)
-  Reference Point

9/29/2021 10:07:11 AM ONTACA\F51\brm\michael\144905\MXD\BTR_20210927\Fig 07 Critical Habitat.mxd



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Union Pacific Railroad

Verona Rd

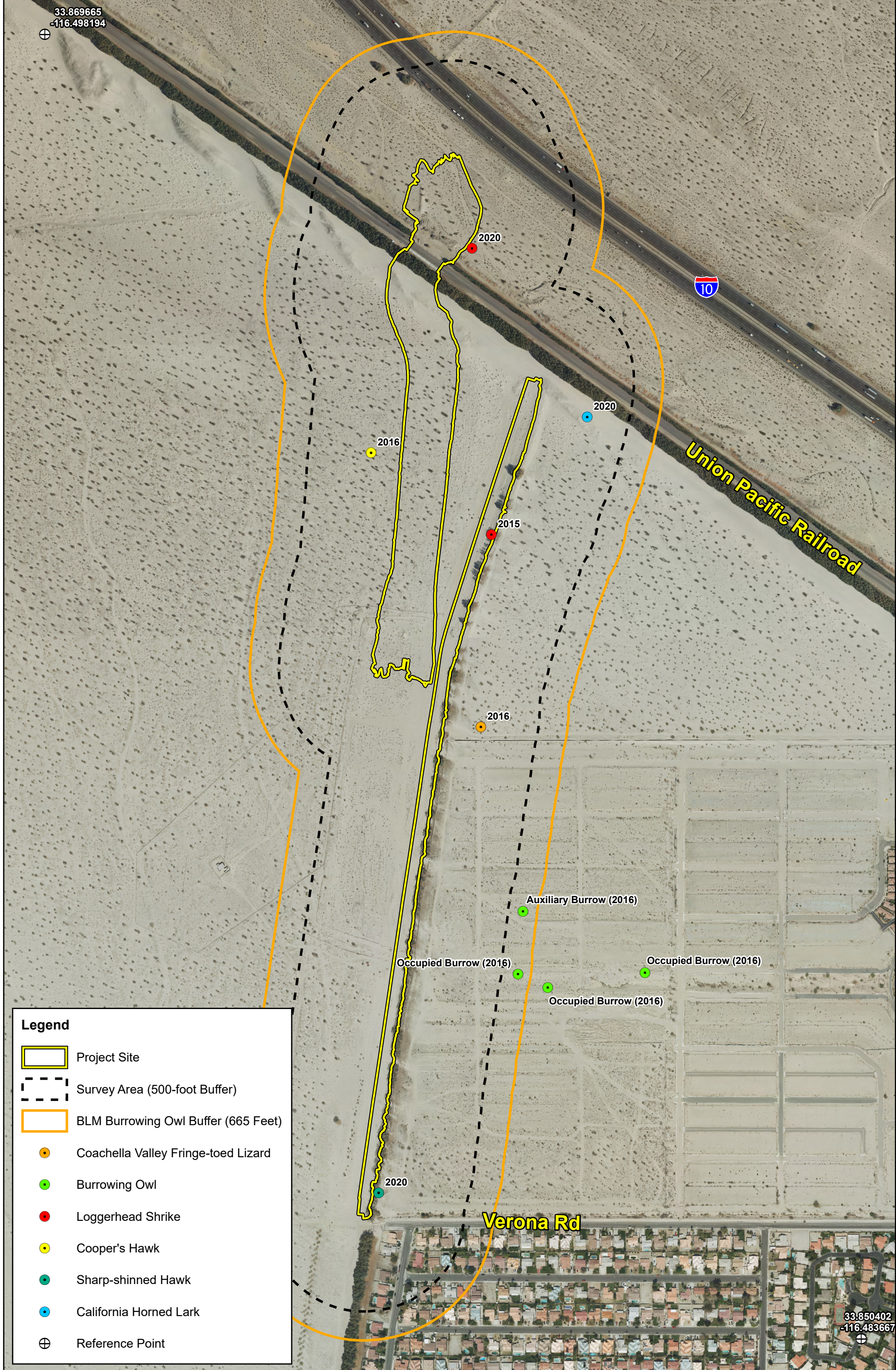
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Legend

-  Project Site
-  Survey Area (500-foot Buffer)
-  Coachella Valley Milk-Vetch (*Astragalus lentiginosus* var. *coachellae*)
-  Reference Point



9/29/2021 10:08:51 AM ONTACA\F51_bkr\michaelbakercorp.com\michaelbakercorp.com\144905\MXD\DET_20210927\Fig_08_Special-Status Plant Observations.mxd



Legend

- Project Site
- Survey Area (500-foot Buffer)
- BLM Burrowing Owl Buffer (665 Feet)
- Coachella Valley Fringe-toed Lizard
- Burrowing Owl
- Loggerhead Shrike
- Cooper's Hawk
- Sharp-shinned Hawk
- California Horned Lark
- ⊕ Reference Point

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Appendix B Site Photographs



Photograph 1: Standing in the southwestern portion of the survey area, facing north. The north-south tamarisk windrow is visible on the right side of the photograph.



Photograph 2: Standing in the western-central portion of the survey area, facing north.



Photograph 3: Standing in the southwestern portion of the survey area, facing north.



Photograph 4: Standing in the northwestern portion of the survey area within BLM lands, facing west. The east-west tamarisk windrow is visible to the north.



Photograph 5: Standing in the northern-central portion of the survey area, facing south.



Photograph 6: A photograph of the east-west tamarisk windrow and railroad tracks located on the northern portion of the survey area, facing west.



Photograph 7: A photograph of the railroad bridge located within the northern portion of the survey area, facing southwest.



Photograph 8: A photograph of the spoils pile located within BLM lands to the north of the railroad bridge, facing north.



Photograph 9: Standing in the northern portion of the survey area within BLM lands to the south of Interstate-10, facing east.



Photograph 10: Standing in the eastern portion of the survey area, facing east.



Photograph 11: A large burrow located within the central portion of the site, facing north. No burrowing owl or desert tortoise sign was identified at this burrow or anywhere else in the survey area.

Appendix C Plant and Wildlife Species Observed List

Table C-1: Plant Species Observed List

Scientific Name	Common Name	Cal-IPC Rating**	Special-Status Rank***
<i>Abronia villosa</i>	desert sand verbena		
<i>Ambrosia acanthicarpa</i>	annual bursage		
<i>Ambrosia dumosa</i>	burrowweed / white bursage		
<i>Ambrosia salsola</i>	burrowbrush		
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella valley milk vetch		FE, 1B.2
<i>Atriplex lentiformis</i>	big saltbush		
<i>Brassica tournefortii</i> *	Saharan mustard	High	
<i>Camissonia californica</i>	California primrose		
<i>Camissoniopsis pallida</i>	pale yellow sun cup		
<i>Chorizanthe brevicornu</i>	brittle spine flower		
<i>Chorizanthe rigida</i>	devil's spineflower		
<i>Chylismia claviformis</i>	clavate fruited primrose		
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple clarkia		
<i>Cryptantha circumscissa</i>	cushion cryptantha		
<i>Cylindropuntia echinocarpa</i>	silver cholla		
<i>Dicoria canescens</i>	desert dicoria		
<i>Dithyrea californica</i>	California shieldpod		
<i>Encelia farinosa</i>	brittlebush		
<i>Encelia frutescens</i>	rayless encelia		
<i>Eriastrum eremicum</i>	desert woollystar		
<i>Ericameria nauseosa</i>	rubber rabbitbrush		
<i>Eriogonum thomasi</i>	Thomas eriogonum		
<i>Erodium cicutarium</i> *	red-stemmed filaree	Limited	
<i>Euphorbia micromera</i>	Sonoran sandmat		
<i>Larrea tridentata</i>	creosote bush		
<i>Lupinus shockleyi</i>	purple desert lupine		
<i>Oenothera californica</i>	California evening primrose		
<i>Palafoxia arida</i>	Spanish needle		
<i>Paritoma arborea</i>	bladderpod		
<i>Pectocarya recurvata</i>	arch nuted comb bur		
<i>Petalonyx thurberi</i>	sandpaper plant		
<i>Plantago ovata</i>	desert plantain		
<i>Prosopis glandulosa</i>	honey mesquite		
<i>Psathyrotes ramosissima</i>	velvet turtleback		
<i>Psorothamnus emoryi</i>	dyebush		
<i>Psorothamnus schottii</i>	indigo bush		
<i>Psorothamnus spinosus</i>	smoketree		
<i>Salsola paulsenii</i> *	barbwire Russian thistle	Limited	
<i>Salvia columbariae</i>	chia		
<i>Schismus arabicus</i> *	Arabian schismus	Limited	
<i>Stephanomeria pauciflora</i>	wire lettuce		
<i>Stillingia spinulosa</i>	annual stillingia		
<i>Tamarix aphylla</i> *	athel tamarisk	Limited	
<i>Tiquilia plicata</i>	fanleaf crinklemat		

* **Non-native species**

** **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Limited These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent

*** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

1B Plants rare, threatened, or endangered in California and elsewhere.

Threat Ranks

.2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).

Table C-2: Wildlife Species Observed List

Scientific Name*	Common Name	Special-Status Rank**
Birds		
<i>Accipiter cooperii</i>	Cooper's hawk	WL
<i>Accipiter striatus</i>	sharp-shinned hawk	WL
<i>Anthus rubescens</i>	American pipit	
<i>Ardea alba</i>	great egret	
<i>Athene cunicularia</i>	burrowing owl	BLMS, SSC
<i>Auriparus flaviceps</i>	verdin	
<i>Buteo jamaicensis</i>	red-tailed hawk	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Calypte costae</i>	Costa's hummingbird	
<i>Columba livia</i> *	rock pigeon	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Corvus corax</i>	common raven	
<i>Eremophila alpestris actia</i>	California horned lark	WL
<i>Geococcyx californianus</i>	greater roadrunner	
<i>Haemorhous mexicanus</i>	house finch	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Passer domesticus</i> *	house sparrow	
<i>Quiscalus mexicanus</i>	great-tailed grackle	
<i>Sayornis saya</i>	Say's phoebe	
<i>Setophaga coronata auduboni</i>	Audubon's yellow-rumped warbler	
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Streptopelia decaocto</i> *	Eurasian collared-dove	
<i>Sturnus vulgaris</i> *	European starling	
<i>Tachycineta bicolor</i>	tree swallow	
<i>Zenaida asiatica</i>	white-winged dove	
<i>Zenaida macroura</i>	mourning dove	
<i>Zonotrichia leucophrys gambelii</i>	white-crowned sparrow (Gambel's)	
Reptiles		
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard	
<i>Coluber fragellum piceus</i>	red racer	
<i>Crotalus cerastes laterorepens</i>	Colorado desert sidewinder	
<i>Dipsosaurus dorsalis</i>	desert iguana	
<i>Uma inornata</i>	Coachella valley fringe-toed lizard	FT, SE
Mammals		
<i>Canis latrans</i>	coyote (scat and tracks)	
<i>Lepus californicus</i>	black-tailed jackrabbit	
<i>Sylvilagus audubonii</i>	desert cottontail	

* **Non-native wildlife species**

** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FT Federally Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Bureau of Land Management (BLM)

BLMS BLM Sensitive – BLM Manual §6840 states that “BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species.”

California Department of Fish and Wildlife (CDFW)

SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List – taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not meet SSC criteria, but for which there is a concern and a need for additional information to clarify status.

Appendix D Potentially Occurring Special-Status Biological Resources

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
WILDLIFE SPECIES				
<i>Accipiter cooperii</i> Cooper's hawk	WL G5 S4	Yearlong resident of California. Generally, found in forested areas up to 3,000 feet above mean sea level (amsl) in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	Yes	Present. This species was observed during burrowing owl focused surveys in 2016.
<i>Accipiter striatus</i> sharp-shinned hawk	WL G5 S4	Found in pine, fir and aspen forests. They can be found hunting in forest interior and edges from sea level to near alpine areas. Can also be found in rural, suburban and agricultural areas, where they often hunt at bird feeders. Typically found in southern California in the winter months.	Yes	Present. This species was observed on-site during the October 2020 habitat assessment and can be expected to winter in the area.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	WL G5T3 S3	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (<i>Artemisia californica</i>) but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	Not expected. No suitable habitat is present on-site. This species is confined to coastal sage scrub habitat and would not be expected away from the foothills.
<i>Antrozous pallidus</i> pallid bat	BLMS SSC G5 S3	Locally common species locally common in the Great Basin, Mojave, and Sonoran deserts (specifically Sonoran life zone) and grasslands throughout the western U.S. Also occurs in shrublands, woodlands, and forests from sea level to 8,000 feet above mean sea level (amsl). Prefers rocky outcrops, cliffs, and crevices for roosting with access to open habitats for foraging. May also roost in caves, mines, bridges, barns, porches, and bat boxes, and even on the ground under burlap sacks, stone piles, rags, baseboards, and rocks.	No	Not expected. Although suitable foraging habitat is present on-site, there is no suitable roosting habitat and the closest CNDDDB records are all well over 10 miles away.
<i>Aquila chrysaetos</i> golden eagle	BLMS FP WL G5 S3	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	Low (foraging). There is marginal foraging habitat for this species on-site but no suitable nesting habitat. Development in the immediate vicinity reduces the value of the site for this large raptor.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Asio otus</i> long-eared owl	SSC G5 S3?	Uncommon yearlong resident throughout the state except the Central Valley and Southern California deserts where it is an uncommon winter visitor. Requires riparian habitat and uses live oak thickets and other dense stands of trees.	No	Low (nesting and foraging). The row of salt cedar provides marginal habitat for this species on-site.
<i>Athene cunicularia</i> burrowing owl	BLMS SSC CVMSHCP G4 S3	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	Yes	Moderate (nesting and foraging). This species was found approximately 580 feet from the project boundary during focused surveys in 2016, outside of the 500-foot buffer that was used for surveys. It may occur on-site or in the general vicinity.
<i>Aythya americana</i> redhead	SSC G5 S3S4	Occurs year round in California, though status varies regionally. Nest in freshwater emergent wetlands where dense stands of cattails and tules are interspersed with areas of deep, open water.	No	Not expected. No suitable habitat is present on-site, where nesting and wintering habitat are not present.
<i>Bombus crotchii</i> Crotch bumble bee	SCE G3G4 S1S2	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Primarily occurs in California, including the Mediterranean region, Pacific coast, western desert, great valley, and adjacent foothills through most of southwestern California. Has also been recorded in Baja California, Baja California Sur, and in southwest Nevada. Inhabits open grassland and scrub habitats. Primarily nests underground. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	No	Low. There are some plants within the survey area that fall within the target genera that this species prefers for food. However, there is only one CNDDDB record within 5 miles of the site, from 1958.
<i>Buteo swainsoni</i> Swainson's hawk	BLMS ST G5 S3	Spring and late summer migrant throughout most of southern California outside of a very restricted breeding range (primarily the Antelope Valley in Los Angeles County). Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	Low. No suitable breeding or foraging habitat is present on-site, but this species is very likely to migrate overhead, with a low potential to actually land on-site and roost overnight in the tamarisk windrows that are present. There are many eBird records of this species in this area, and Borrego Springs to the south (opposite the San Jacinto Mountains) is a major stopover spot for migrant hawks.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	SSC G5T34 S3S4	Common resident of sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California. Occurs mainly in arid coastal and desert border areas. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	Low. There is marginal habitat for this species on-site. The only CNDDDB record within 5 miles is from 1941. All other CNDDDB records in the area are farther than 5 miles away.
<i>Chaetura vauxi</i> Vaux's swift	SSC G5 S2S3	Prefers redwood and Douglas-fir habitats with nest-sites in large hollow trees and snags, especially tall, burned-out stubs.	No	Not expected. This species may occur as a flyover migrant but is otherwise not expected to utilize the site at all.
<i>Circus hudsonius</i> northern harrier	SSC G5 S3	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Mostly found in flat, or hummocky, open areas of tall, dense grasses moist or dry shrubs, and edges for nesting, cover, and feeding.	No	Low (foraging). There is marginal foraging habitat for this species on-site, but no nesting habitat.
<i>Contopus cooperi</i> olive-sided flycatcher	SSC G4 S4	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 ft throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine.	No	Not expected. No suitable habitat is present on-site. This species nests in high-elevation mountains.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	BLMS SSC G3G4 S2	Now considered uncommon in California. Details of its distribution are not well known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats. Roosts from walls and ceilings in the open.	No	Not expected. No suitable habitat is present. There is no roosting habitat present within the site, nor is there adequate foraging habitat.
<i>Crotalus ruber</i> red-diamond rattlesnake	SSC G4 S3	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	Not expected. No suitable habitat is present on-site and there are no CNDDDB records within 5 miles of the site.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Cypseloides niger</i> black swift	SSC G4 S2	Occurs in California as a summer resident and migrant from mid-April to mid-October. Restricted to a very limited supply of potential nesting locations which include, behind or beside permanent or semi-permanent waterfalls, on perpendicular cliffs near water and sea caves.	No	Not expected. No suitable habitat is present on-site.
<i>Dinacoma caseyi</i> Casey's June beetle	FE G1 S1	All <i>Dinacoma</i> populations are associated with alluvial sediments occurring in or contiguous with bases of desert alluvial fans, and the broad, gently sloping, depositional surfaces at the base of the Santa Rosa mountain ranges in the dry Coachella valley region. Most commonly associated with the Carsitas series soil.	No	Not expected. Known records of this species are concentrated in Palm Canyon Creek to the south of the project site.
<i>Dipodomys merriami collinus</i> Earthquake Merriam's kangaroo rat	SSC G5T2? S1S2	Typically found in Riversidean alluvial fan sage scrub habitat, but may also be found in Riversidean sage scrub, chaparral and grassland vegetation in adjacent to upland areas. Often associated with sandy-loam soils that are common throughout the designated core drainages.	No	Not expected. No suitable habitat is present on-site. Alluvial fan sage scrub, chaparral, and grassland habitats are absent.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	FE CSC	Primarily found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidean alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	Not expected. No suitable habitat is present on-site. Alluvial fan sage scrub is absent.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE SE MSHCP G5T2 S1	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	Not expected. No suitable habitat is present on-site, with no riparian habitat and the only arboreal habitat limited to tamarisk windrows.
<i>Eremophila alpestris actia</i> California horned lark	WL G5T4Q S4	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	Yes	Present. This species was found on-site during the October 2020 habitat assessment. Nesting and foraging habitat is present.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Falco mexicanus</i> prairie falcon	WL G5 S4	Commonly occur in arid and semiarid shrubland and grassland community types. Also occasionally found in open parklands within coniferous forests. During the breeding season, they are found commonly in foothills and mountains which provide cliffs and escarpments suitable for nest sites.	No	High (foraging). There is suitable foraging habitat throughout the site and this species is frequently sighted in the area. There is no nesting habitat.
<i>Falco peregrinus anatum</i> American peregrine falcon	BLMS FP G4T4 S3S4	This species breeds and winters throughout California, with the exception of desert areas. Use a large variety of open parklands for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes. Riparian areas, as well as coastal and inland wetlands, are also important habitats year-round for this species. The species breeds mostly in woodland, forest, and coastal habitats. The nest is typically a scrape or depression dug in gravel on a cliff ledge or on manmade structures, including skyscraper ledges, tall towers, and bridges. Within southern California, peregrine falcons are primarily found at coastal estuaries and inland oases where ever a food source is located.	No	High (foraging). There is suitable foraging habitat throughout the site and this species is frequently sighted in the area. There is no nesting habitat.
<i>Gavia immer</i> common loon	SSC G5 S1	Lakes with coves and islands are preferred habitat as they provide cover from predators. In their winter range along the coasts, they occur fairly close to the shore and in bays and estuaries.	No	Not expected. No suitable habitat is present on-site and this species is not expected in the open desert.
<i>Gopherus agassizii</i> desert tortoise	FT ST MSHCP G3 S2S3	Widely distributed in the Mojave, Sonoran, and Colorado deserts from below sea level to 7,220 feet. Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	No	Low. While suitable habitat is present throughout the site, only one suitable desert tortoise burrow was found (during the October 2020 habitat assessment). The closest record of this species in the CNDDDB is approximately 8 miles to the north.
<i>Icteria virens</i> yellow-breasted chat	SSC MSHCP G5 S3	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America.	No	Not expected. No suitable habitat is present on-site. There is no riparian scrub or woodland present.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC G4 S4	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Yes	Present. Multiple individuals were on-site during the project surveys between 2015 and 2020.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Larus californicus</i> California gull	WL G5 S4	Require isolated islands in rivers, reservoirs and natural lakes for nesting, where predations pressures from terrestrial mammals are diminished. Uses both fresh and saline aquatic habitats at variable elevations and degrees of aridity for nesting and for opportunistic foraging.	No	Not expected. No suitable habitat is present on-site. Well known to occur on lakes at nearby golf courses.
<i>Lasiurus xanthinus</i> western yellow bat	SSC MSHCP G5 S3	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	Not expected. No suitable habitat is present on-site. There is no roosting habitat present.
<i>Macrobaenetes valgum</i> Coachella giant sand treader cricket	MSHCP G1G2 S1S2	Nocturnal and moisture sensitive insects. Emergence occurs with winter rains and appear at maximum densities in January-February. Can be detected via their characteristic delta-shaped burrow excavations.	No	Moderate/High. There is suitable habitat throughout the project site, but trapping data is lacking east of Gene Autry Trail. The Whitewater Floodplain Conservation Area has been designated as a core habitat area for this species. There is one historic (1960) record in the CNDDDB within 5 miles.
<i>Macrotus californicus</i> California leaf-nosed bat	BLMS SSC G4 S3	Found in a variety of desert habitats including desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub, and palm oasis habitats. Requires rocky terrain with either mines or caves for roosting.	No	Not expected. There is suitable foraging habitat throughout the project site. However, there is no roosting habitat on-site and the nearest CNDDDB record is over 40 miles away.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	SSC G5T3T4 S3S4	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	Not expected. No suitable habitat is present on-site. Woodrat sign (middens, scat) was not observed during the survey.
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	SSC G4 S3	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosts in rocky areas with high cliffs.	No	Low. There is suitable foraging habitat throughout the project site and one CNDDDB record from 1987 within 5 miles. However, there is no roosting habitat.
<i>Nyctinomops macrotis</i> big free-tailed bat	SSC G5 S3	Maternity roosts have been documented in rock crevices, with evidence of long term use. Mainly roost in crevices and rocks in cliff situations. Some have been documented roosting in buildings, caves, and tree cavities.	No	Not expected. No suitable roosting habitat is present on-site.
<i>Oreothlypis luciae</i> Lucy's warbler	BLMS SSC G5 S2S3	Found in desert and riparian areas of the southwestern US and northwestern Mexico. Often found in mesquite woodlands. Also breed in cottonwood-willow riparian woodlands, sycamore-oak woods, and salt cedar stands.	No	Low. While suitable habitat is present on-site, this species is a rare vagrant to the Coachella Valley, and anywhere in southern California.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	BLMS FP G4T4 S3	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health.	No	Not expected. No suitable habitat is present on-site.
<i>Ovis canadensis nelsoni</i> pop. 2 Peninsular bighorn sheep DPS	FE ST FP MSHCP G4T3Q S1	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health. Found mainly in the Peninsular Ranges.	No	Not expected. No suitable habitat is present on-site.
<i>Pandion haliaetus</i> osprey	WL G5 S4	Remain close to still or slow-moving bodies of water including oceans, rivers, lakes, mangroves, coastal wetlands, lagoons, reefs, estuaries and marshes. Generally nest in high places, such as trees, power poles, or cliffs.	No	Not expected. No suitable habitat is present on-site, where there is no suitable nesting or foraging habitat.
<i>Passerculus sandwichensis rostratus</i> large-billed savannah sparrow	SSC G5T2T3Q S2	Non-breeding visitor occurring primarily from late August to early March along the southern coast and from late July to mid-February at the Salton Sea. Breeding habitat is limited to open, low salt marsh vegetation, including grasses, pickleweed, and iodine bush.	No	Not expected. No suitable habitat is present on-site and this is outside of the typical range of this subspecies.
<i>Perognathus longimembris bangsi</i> Palm Springs pocket mouse	BLMS SSC MSHCP G5T2 S2	Inhabits areas having flat to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils on slopes ranging from 0% to approximately 15%. Remaining habitat in the Coachella Valley and environs is about 142,000 acres.	No	Moderate/High. There is suitable habitat throughout the project site. The Whitewater Floodplain Conservation Area has been designated as a core habitat area for this species. This species has been trapped between the railroad tracks and Interstate 10, east of Gene Autry Trail, and may occur in the northern portion of the project site.
<i>Phalacrocorax auritus</i> double-crested cormorant	WL G5 S4	Yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. August to May, fairly common to locally very common along the coast and in estuaries and salt ponds. Uncommon in marine subtidal habitats from San Luis Obispo Co. south, and very rare to the north.	No	Not expected. No suitable habitat is present on-site.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Phrynosoma blainvillii</i> coast horned lizard	BLMS SSC G3G4 S3S4	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	Not expected. The project site is outside of the typical range for this species.
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	BLMS SSC CVMSHCP G3 S2	Typical habitat is sandy desert hardpan or gravel flats with scattered sparse vegetation of low species diversity. Most common in areas with high density of harvester ants and fine windblown sand, but rarely occurs on dunes.	No	Moderate. There is suitable habitat throughout the site. The site is at the northern end of this species' range. There are numerous pre-2000 records in the CNDDDB within 5 miles of the project site. Unidentified horned lizard scat was identified on-site during the August 2015 habitat assessment but no horned lizards have been observed during any surveys of the site.
<i>Piranga rubra</i> summer tanager	SSC MSHCP G5 S1	Breed in gaps and edges of open deciduous or pine-oak forests across the southern and mid-Atlantic U.S. Uncommon (formerly common) summer resident and breeder in desert riparian habitat along lower Colorado River. Breeds in mature, desert riparian habitat dominated by cottonwoods and willows.	No	Not expected. No suitable habitat is present on-site, where no riparian habitat or arboreal habitat is present except the tamarisk windrows.
<i>Polioptila californica californica</i> coastal California gnatcatcher	FT SSC G4G5T2Q S2	Yearlong resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet amsl in coastal regions and below 1,500 feet amsl inland. Ranges from the Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	Not expected. No suitable habitat is present on-site. This is outside of this species' range. The one CNDDDB record in the project vicinity likely pertains to black-tailed gnatcatcher, which used to be considered the same species.
<i>Polioptila melanura</i> black-tailed gnatcatcher	WL G5 S3S4	In Mojave, Great Basin, Colorado and Sonoran desert communities, prefers nesting and foraging in densely lined arroyos and washes dominated by creosote bush and salt bush with scattered bursage, burrowed, ocotillo, saguaro, barrel cactus, nipple cactus, and prickly pear and cholla.	No	Low. There is marginal habitat for this species on-site. This species is very common in the surrounding area as shown in eBird, but on-site habitat is restricted.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Rana draytonii</i> California red-legged frog	FT SSC G2G3 S2S3	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streambanks with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	Not expected. No suitable habitat is present on-site.
<i>Rana muscosa</i> southern mountain yellow-legged frog	FE SE G1 S1	Inhabits lakes, ponds, meadow streams, isolated pools, sunny riverbanks in the southern Sierra Nevada Mountains. In the mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt.	No	Not expected. No suitable habitat is present on-site.
<i>Setophaga petechia</i> yellow warbler	SSC MSHCP G5 S3S4	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	Not expected. No suitable habitat is present on-site.
<i>Stenopelmatus cahuillaensis</i> Coachella Valley Jerusalem cricket	MSHCP G1G2 S1S2	Restricted to desert dunes.	No	Low. Although desert dune habitat is present within the project site and the Whitewater Floodplain Conservation Area has approximately 5,646 acres of modeled habitat, the extent to which suitable habitat actually occurs in this conservation area is an open question. This species has not been recorded at all in this entire conservation area.
<i>Thamnophis hammondi</i> two-striped gartersnake	BLMS SSC G4 S3S4	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	No	Not expected. No suitable habitat is present on-site.
<i>Toxostoma crissale</i> Crissal thrasher	SSC MSHCP G5 S3	Year round resident in California. Occupies a relatively large variety of desert riparian and scrub habitats from below sea level to over 6,000 feet. The common factor, regardless of habitat type and species of shrub, is dense, low scrubby vegetation. Primarily occupies riparian scrub or woodland at lower elevations.	No	Not expected. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Toxostoma lecontei</i> Le Conte's thrasher	SSC MSHCP G4 S3	An uncommon to rare, local resident in southern California deserts from southern Mono Co. south to the Mexican border, and in western and southern San Joaquin Valley. Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	No	Low. There is suitable habitat throughout the site. However, CNDDDB and eBird records suggest that this species is rare in the area, with few records and fewer still after the year 2000.
<i>Uma inornata</i> Coachella Valley fringe-toed lizard	FT SE MSHCP G1Q S1	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, washes, and flats with sandy hummocks formed around the bases of vegetation. Needs fine, loose sand for burrowing.	Yes	Present. This species was found on-site during burrowing owl focused surveys conducted in 2016 but was not seen during any other surveys. There are many CNDDDB records within the immediate project vicinity.
<i>Vireo bellii pusillus</i> least Bell's vireo	FE SE MSHCP G5T2 S2	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 - 2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	Not expected. No suitable habitat is present.
<i>Xerospermophilus tereticaudus chlorus</i> Coachella Valley (= Palm Springs) round-tailed ground squirrel	BLMS SSC MSHCP G5T2Q S2	Inhabits sandy arid regions of Lower Sonoran Life Zone. Its scrub and wash habitats include mesquite and creosote dominated sand dunes, creosote bush scrub, creosote palo verde and saltbush/alkali scrub.	No	Moderate. There is suitable habitat throughout the site. Although this species is known to occur to the west in the Fringe-toed Lizard Preserve in the Whitewater Floodplain Conservation Area, due to the distance and age of the data, it is unknown if this species may occur in the project site.
PLANT SPECIES				
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	BLMS 1B.1 G5T2? S2	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet. Blooming period is from January to September.	No	Not expected. No suitable habitat is present. Not observed during the 2016 sensitive plant focused survey.
<i>Acmispon haydonii</i> pygmy lotus	1B.3 G3 S3	Grows in rocky soil within Sonoran desert scrub, pinyon and juniper woodland. Found at elevations ranging from 1,706 to 3,937 feet. Blooming period is from January to June.	No	Not expected. The project site is outside of the typical known elevation for this species.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Almutaster pauciflorus</i> alkali marsh aster	2B.2 G4 S1S2	Perennial herb. Grows in alkaline soils in meadows and seeps. Found at elevations ranging from 785 to 2,625 feet amsl. Blooms June through October.	No	Not expected. No suitable habitat is present.
<i>Aloysia wrightii</i> Wright's beebrush	4.3 G5 S4	Prefers rocky and carbonate soils within Joshua tree woodland, pinyon and juniper woodland. Found at elevations ranging from 2,953 to 5,249 feet. Blooming period is from April to October.	No	Not expected. The project site is well outside of the typical known elevation for this species.
<i>Ambrosia monogyra</i> singlewhorl burrobrush	2B.2 G5 S2	Found in chaparral and Sonoran desert scrub habitat within sandy soil. Found at elevations ranging from 33 to 1,640 feet in elevation. Blooming period is from August to November.	No	Not expected. This species was not observed during the habitat assessment. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Astragalus hornii</i> var. <i>hornii</i> Hom's milk vetch	1B.1 GUT1 S1	Annual herb. Grows in alkaline soils within meadows, seeps, and playas. Found at elevations ranging from 195 to 2,790 feet amsl. Blooms May through October.	No	Not expected. No suitable habitat is present.
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	4.3 G5T5? S4	Grows in sandy soils within Mojavean desert scrub and Sonoran desert scrub. Found at elevations ranging from 98 to 1,050 feet in elevation. Blooming period is from February to May.	No	Moderate. There is suitable habitat throughout the site. In addition, there are a variety of historic records (pre-1940s) in Calflora (2020) within 5 miles of the project site. Although many of these are within areas that are now developed, several of the closest ones are in undeveloped areas and may be extant. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	FE MSHCP 1B.2 G5T1 S1	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation. Blooming period is from February to May.	Yes	Present. Species was documented on-site during the 2016 sensitive plant focused survey. This species and its critical habitat are abundantly documented in the project vicinity.
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	FE MSHCP 1B.2 G2 S2	Found in sandy or gravelly soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 1,476 to 3,904 feet. Blooming period is from February to May.	No	Not expected. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Atriplex parishii</i> Parish's brittle scale	BLMS 1B.1 G1G2 S1	Habitat types include chenopod scrub, playas, and vernal pools. Found at elevations ranging from 82 to 6,234 feet. Blooming period is from June to October.	No	Not expected. No suitable habitat is present.
<i>Ayenia compacta</i> California ayenia	2B.3 G4 S3	Grows in rocky soils within Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 492 to 3,593 feet. Blooming period is from March to April.	No	Not expected. No suitable habitat is present.
<i>Caulanthus simulans</i> Payson's jewelflower	4.2 G4 S4	Preferred habitats include chaparral and coastal scrub with sandy and granitic soils. Found at elevations ranging from 295 to 7,218 feet. Blooming period is from February to June.	No	Not expected. No suitable habitat is present.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	BLMS 1B.1 G3T2 S2	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	Not expected. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	BLMS 1B.2 G4T3 S3	Grows on sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	Not expected. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Cryptantha costata</i> ribbed cryptantha	4.3 G4G5 S4	Preferred habitat includes desert dunes, Mojavean desert scrub, and Sonoran desert scrub habitats on sandy soil. Found at elevations ranging from 197 to 1,640 feet. Blooming period is from February to May.	No	Low. There is suitable habitat on-site, but there is only one record in Calflora (2020) within 5 miles, and it is from 1980. From the location, at the edge of a community (Escena Palm Springs), it may be extirpated. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Cryptantha holoptera</i> winged cryptantha	4.3 G4G5 S4	Found in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 328 to 5,545 feet. Blooming period is from March to April.	No	Low. There is suitable habitat on-site, but there is only one record in Calflora (2020) within 5 miles, and it is from 1922. Based on the location of this record, in a residential neighborhood, it is likely extirpated. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Cuscuta californica</i> <i>var. apiculata</i> pointed dodder	3 G5T3 S3?	Occurs in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 0 to 1640 feet. Blooming period is from February to August.	No	Low. There is suitable habitat on-site. However, there are no distinct records available in Calflora (2020), just a note that this species has been observed in the <i>Cathedral City</i> quadrangle. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Dodecahema leptoceras</i> Slender-horned spineflower	FE SE 1B.1 G1 S1	Annual herb. Grows in sandy soils within chaparral, cismontane woodland, and coastal scrub (alluvial fan) habitats. Found at elevations ranging from 655 to 2,490 feet amsl. Blooms April through June	No	Not expected. No suitable habitat is present.
<i>Eriastrum harwoodii</i> Harwood's eriastrum	BLMS 1B.2 G2 S2	Grows on desert dunes. Found at elevations ranging from 410 to 3,002 feet. Blooming period is from March to June.	No	Not expected. No suitable habitat is present.
<i>Eschscholzia androuxii</i> Joshua Tree poppy	4.3 G3 S3	Grows in desert washes, flats, and slopes; sandy, gravelly and/or rocky within Joshua tree woodland and Mojavean desert scrub habitats. Found at elevations ranging from 1,919 to 5,528 feet. Blooming period is from February to June.	No	Not expected. The project site is well outside of the typical known elevation for this species.
<i>Euphorbia arizonica</i> Arizona spurge	2B.3 G5 S3	Preferred habitat includes sandy, Sonoran desert scrub habitat. Found at elevations ranging from 164 to 984 feet. Blooming period is from March to April.	No	Low. There is suitable habitat on-site. However, there are no distinct records available in Calflora (2020), just a note that this species has been observed in the <i>Cathedral City</i> and <i>Palm Springs</i> quadrangles. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Euphorbia misera</i> cliff spurge	2B.2 G5 S2	Found on rocky soils within coastal bluff scrub, coastal scrub, and Mojavean desert scrub habitat. Found at elevations ranging from 33 to 1,640 feet. Blooming period is from December to October.	No	Not expected. No suitable habitat is present.
<i>Euphorbia platysperma</i> flat-seeded spurge	1B.2 G3 S1	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet. Blooming period is from February to September.	No	Low. There is suitable habitat, but the project site is outside of the known elevation range for this species. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.
<i>Heuchera hirsutissima</i> shaggy-haired alumroot	1B.3 G3 S3	Occurs on rocky, granitic soils in subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 4,987 to 11,483 feet. Blooming period is from May to July.	No	Not expected. The project site is well outside of the typical known elevation for this species.

Table D-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Imperata brevifolia</i> California satintail	2B.1 G4 S3	Found in chaparral, coastal scrub, Mojavean desert scrub, riparian scrub, meadows and seeps habitats. Found at elevations ranging from 0 to 3,986 feet. Blooming period is from September to May.	No	Not expected. No suitable habitat is present.
<i>Lilium parryi</i> lemon lily	1B.2 G3 S3	Habitats include lower montane coniferous forest, riparian forest, upper montane coniferous forest, meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	Not expected. The project site is well outside of the typical known elevation for this species.
<i>Linanthus jaegeri</i> San Jacinto linanthus	1B.2 G2 S2	Grows on granitic, rocky soils within subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 7,201 to 10,007 feet. Blooming period is from July to September.	No	Not expected. The project site is well outside of the typical known elevation for this species.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i> Little San Bernardino Mountains linanthus	BLMS MSHCP 1B.2 G2T2 S2	Preferred habitats include desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub in sandy soils. Found at elevations ranging from 640 to 6,808 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site. There are two historic records in Calflora (2020) within 5 miles, but both are pre-1950s and based on the locations are probably extirpated.
<i>Mentzelia tricuspis</i> spiny-hair blazing star	2B.1 G4 S2	Habitats include Mojavean desert scrub. Prefers sandy, gravelly, slopes and washes. Found at elevations ranging from 492 to 4,199 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Nemacaulis denudata</i> var. <i>gracilis</i> slender cottonheads	2B.2 G3G4T3? S2	Occurs in coastal dunes, desert dunes, and Sonoran desert scrub habitats. Found at elevations ranging from 164 to 1,312 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Penstemon clevelandii</i> var. <i>connatus</i> San Jacinto beardtongue	4.3 G5T4 S3	Grows on rocky soils within chaparral, Sonoran desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 1,312 to 4,921 feet. Blooming period is from March to May.	No	Not expected. The project site is outside of the typical known elevation for this species.
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	BLMS 1B.2 G3 S3	Habitats include chaparral, Mojavean desert scrub, pinyon and juniper woodland. Prefers rocky or sandy, often granitic, soils. Found at elevations ranging from 1,312 to 6,234 feet. Blooming period is from March to June.	No	Not expected. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey or during the 2020 Habitat Assessment.

Table D-1: Potentially Occurring Sensitive Biological Resources

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat	Observed On-site	Potential to Occur
<i>Selaginella eremophila</i> desert spike-moss	2B.2 G4 S2S3	Found in chaparral and Sonoran desert scrub habitats within gravelly or rocky soil. Found at elevations ranging from 656 to 2,953 feet. Blooming period is from May to July.	No	Not expected. No suitable habitat is present.
<i>Stemodia durantifolia</i> purple stemodia	2B.1 G5 S2	Occurs in Sonoran desert scrub habitats. Found at elevations ranging from 591 to 984 feet. Blooming period is from January to December.	No	Not expected. This species is presumed extirpated in Riverside County.
<i>Streptanthus campestris</i> southern jewelflower	BLMS 1B.3 G3 S3	Prefers chaparral, lower montane coniferous forest, pinyon and juniper woodland habitats. Found at elevations ranging from 2,953 to 7,546 feet. Blooming period is from April to July.	No	Not expected. The project site is outside of the typical known elevation for this species.
<i>Thelypteris puberula var. sonorensis</i> Sonoran maiden fern	2B.2 G5T3 S2	Grows within meadows and seeps. Found at elevations ranging from 164 to 2,001 feet. Blooming period is from January to September.	No	Not expected. No suitable habitat is present.
<i>Xylorhiza cognata</i> Mecca-aster	BLMS MSHCP 1B.2 G2 S2	Occurs in Sonoran desert scrub habitat. Found at elevations ranging from 66 to 1,312 feet. Blooming period is from January to June.	No	Not expected. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area. Not observed during the 2016 sensitive plant focused survey.

* **U.S. Fish and Wildlife Service (USFWS)**

- FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range.
- FT Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Bureau of Land Management (BLM)

- BLMS BLM Sensitive – BLM Manual §6840 states that “BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species.”

California Department of Fish and Wildlife (CDFW)

- SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- ST Threatened – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required under the California Endangered Species Act (CESA).
- SCE Candidate Endangered - any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that the California Fish and Game Commission has formally noticed as being under review by the CDFW for listing as endangered under the CESA. Candidates are given full CESA protection.

- FP Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.
- SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:
- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
 - is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
 - is experiencing, or formerly experienced, serious (nonyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
 - has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Coachella Valley Multiple Species Habitat Conservation Plan

MSHCP Covered species under the CVMSHCP.

California Native Plant Society (CNPS) California Rare Plant Rank

- 1B Plants rare, threatened, or endangered in California and elsewhere.
- 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- 4 Plants of limited distribution – Watch List.

Threat Ranks

- .1 Seriously threatened in California (over 80% of occurrences threatened/high degree any immediacy of threat).
- .2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).
- .3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

NatureServe Conservation Status Rank

The Global Rank (G#) reflects the overall condition and imperilment of a species throughout its global range. The Intraspecific Taxon Rank (T#) reflects the global situation of just the subspecies or variety. The State Rank (S#) reflects the condition and imperilment of an element throughout its range within California. (G#Q) reflects that the element is very rare but there are taxonomic questions associated with it; the calculated G rank is qualified by adding a Q after the G#. Adding a ? to a rank expresses uncertainty about the rank.

- G1/T1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2/T2 Imperiled— At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3/T3 Vulnerable— At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4/T4 Apparently Secure— Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5 Secure – Common; widespread and abundant.
- U Unknown status.
- S1 Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
- S2 Imperiled – 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.
- S3 Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

August 30, 2022

179420

Coachella Valley Conservation Commission

Contact: Peter Satin

73-710 Fred Waring Drive, Suite 200

Palm Desert, California 92260

SUBJECT: Proposed Changes to Grading Limits for the North Cathedral City Improvements Project, Phase 1 – City of Cathedral City, Riverside County, California

Dear Mr. Satin:

Michael Baker International (Michael Baker) is submitting this memorandum to the Coachella Valley Conservation Commission (CVCC) to document and describe minor refinements to the previously approved North Cathedral City Improvements Project, Phase 1 (project) located in the City of Cathedral City, Riverside County, California. This project was previously approved through the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Joint Project Review (JPR) process in 2017. On June 16, 2016 CVWD submitted a JPR application to the CVCC, followed by submittal of an equivalency analysis to the CVCC for the project from Michael Baker on behalf of the Coachella Valley Water District (CVWD) on January 26, 2017. The CVCC provided a concurrence letter on May 11, 2017. This memorandum is intended as an administrative update to the approved Like Exchange/JPR to address the minor grading change from 23 acres to 21.98 acres. The project's proponent, the CVWD, will record a conservation easement which will increase the net acreage to the Whitewater Floodplain Conservation Area (WFCA), reestablish connectivity of the wildlife corridor in the area, and which is consistent with the Like Exchange criteria in the CVMSHCP.

Project Location

The project is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California. The project is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east. Specifically, the project is located north of Ontina Road, west and south of I-10, and east of Gene Autry Trail.

JPR History

The project previously entered into a JPR with the CVCC with the submittal of the JPR application package on June 16, 2016, followed by an in-person presentation to the CVCC at the Coachella Valley Association

of Governments (CVAG) on June 22, 2016. The project was proposed to result in 23 acres of impacts (5.7 acres permanent and 17.3 acres temporary) to habitat within the CVMSHCP WFCAs. As a result, the CVWD agreed to place a conservation easement on 42 acres of land adjacent to the project and within the WFCAs; of these 42 acres, 23 acres would be used to offset the project impacts, with the remaining 19 acres resulting in a net increase of conservation lands to the WFCAs. The conserved lands would be proposed in a Like Exchange at a standard of biologically equivalent or superior conservation value to the lands that would be lost. An equivalency analysis analyzing the comparison of the lands was drafted in September 2016 and presented to the CVCC in another meeting on January 26, 2017. Following their review of the equivalency analysis and proposed Like Exchange, the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) approved the Like Exchange on March 15, 2017 via an email to the CVCC, which subsequently provided final approval of the Like Exchange and signified the completion of the JPR process on May 11, 2017 (see Attachment A, *Concurrence Letter*).

Updated Grading Limits

In September 2021 the project underwent minor changes to the grading boundaries. These changes were needed in order to integrate site grading to the current surface contours of the surrounding area; implement minor adjustments to the scour depth (due to updated hydraulic calculations); as well as add an access road, maintenance ramp to the channel invert, and turnaround area to the project. The changes were made based on comments from CVWD Engineering and Operations staff during the design review process. These project revisions have resulted changes to both the temporary and permanent grading limits, with a decrease in temporary grading limits from 17.3 acres to 13.42 acres and an increase in permanent grading limits from 5.7 acres to 8.56 acres. A visual comparison of the previous limits and the new limits is provided in Figure 1, *Updated Grading Limits*, in Attachment B.

Conclusion

As presented in Figure 1 in Attachment B, the minor grading refinements for the project would result in a net loss of 1.02 acres of impacts within the existing WFCAs, with a decrease of 3.88 acres of temporary impacts and an increase of 2.86 acres of permanent impacts. With the decrease in net project impacts, the increase in net conservation lands for the WFCAs would go from 19 acres to 20.02 acres. Because this project has already completed the JPR process, CVWD and Michael Baker request that this memorandum serve as a minor, administrative update to the existing JPR with concurrence from the CVCC.

Please do not hesitate to contact me at (949) 330-4115 or Ryan.Winkleman@mbakerintl.com should you have any questions or require further information.

Sincerely,



Ryan Winkleman
Senior Biologist
Natural Resources and Regulatory Permitting

Attachments:

- A. *Concurrence Letter*
- B. *Figure 1*

CC:

CVWD

Steve Bigley
William Patterson
Solan Watts
Carlos Huerta
Scott Strosnider

Michael Baker International

Mujahid Chandoo
Alan Ashimine

Attachment A

Concurrence Letter



COACHELLA VALLEY CONSERVATION COMMISSION

Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert Palm Springs • Rancho Mirage • County of Riverside • Coachella Valley Water District • Imperial Irrigation District

May 11, 2017

Luke Stowe
Environmental Specialist
Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

RE: North Cathedral City Improvement

Dear Mr. Stowe:

This project was determined to require a change of the Conservation Area boundary and was processed as a Like Exchange. This Like Exchange has received concurrence from United States Fish and Wildlife Service and California Department of Fish and Wildlife with the requirement that the addition parcels (660-320-002, 660-350-002, 660-350-009,010,015 and 677-050-001) be acquired and either be deeded to Coachella Valley Conservation Commission (CVCC) or have a conservation easement in favor of CVCC placed on the parcels for this Like Exchange to be effective.

A copy of the Concurrence Letter is enclosed. If you have questions on this JPR, please do not hesitate to contact me or Jim Sullivan at jsullivan@cvag.org or 760-346-1127.

Sincerely,

Katie Barrows
Director of Environmental Resources

Cc: Heather Pert, CDFW
Ken Corey, USFWS

Enclosure



U.S. Fish and Wildlife Service
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262
760-322-2070
FAX 760-322-4648



California Department of Fish and Wildlife
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, California 91764
909-484-0167
FAX 909-481-2945

In Reply Refer To:
FWS/CDFW-ERIV-09B0023-17TA0477

March 15, 2017
Sent by Email

Mr. Jim Sullivan
Coachella Valley Conservation Commission
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92260

Subject: North Cathedral City Improvements Project, Phase I, City of Cathedral City,
Riverside County, California

Dear Mr. Sullivan:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department) have reviewed the Like Exchange Equivalency Analysis for Phase I of the North Cathedral City Improvements Project (Project), prepared by Michael Baker International on behalf of the Coachella Valley Water District (CVWD) for submission to the Coachella Valley Conservation Commission (CVCC). The CVWD proposes to re-establish a stormwater drain to convey flows from Morongo Wash under the Union Pacific Railroad Bridge, southward to the Whitewater River Stormwater Channel, as part of the North Cathedral City Stormwater Master Plan. The project is located in the Whitewater Floodplain Conservation Area (WFCA) within the jurisdiction of the City of Cathedral City.

The Project includes a total of 23 acres of impacts from 5.7 acres of hardscape permanent impacts and 17.3 acres of temporary impacts (16.9 acres of earthen improvements and 0.4 acres from a temporary earthen construction access road). The project impacts exceed the 7 acres of authorized disturbance for the WFCA in the City of Cathedral City Area. To offset the 23 acres of impacts to biological resources, CVWD will acquire 42 acres within and immediately adjacent to the WFCA and record a conservation easement in favor of CVCC on the acquired properties; resulting in a net increase of 19 acres added to the Conservation Area. The re-establishment of connectivity between the WFCA and the Willow Hole Conservation Area will help restore an important corridor for wildlife movement and sand transport. This proposed modification to the Conservation Area will result in biologically equivalent or superior conservation value and is consistent with the Like Exchange criteria in Section 6.12.2 of the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan.

We concur that the following Conservation Area boundary adjustment is allowable through this Like Exchange and will be effective either (1) upon the transfer of property titles to CVCC or (2) the recording of conservation easements on the properties in favor of CVCC.

Mr. Jim Sullivan (FWS/CDFW-ERIV-09B0023-17TA0477)


2

If you have any questions regarding this letter, please contact Jenness McBride of the Service at 760-322-2070, extension 403, or Heather A. Pert of the Department at 858-395-9692.

Sincerely,

JENNESS
MCBRIDE

Digitally signed by
JENNESS MCBRIDE
Date: 2017.03.15
14:46:51 -07'00'

A handwritten signature in black ink that reads "Heather A. Pert" with a small flourish below it.

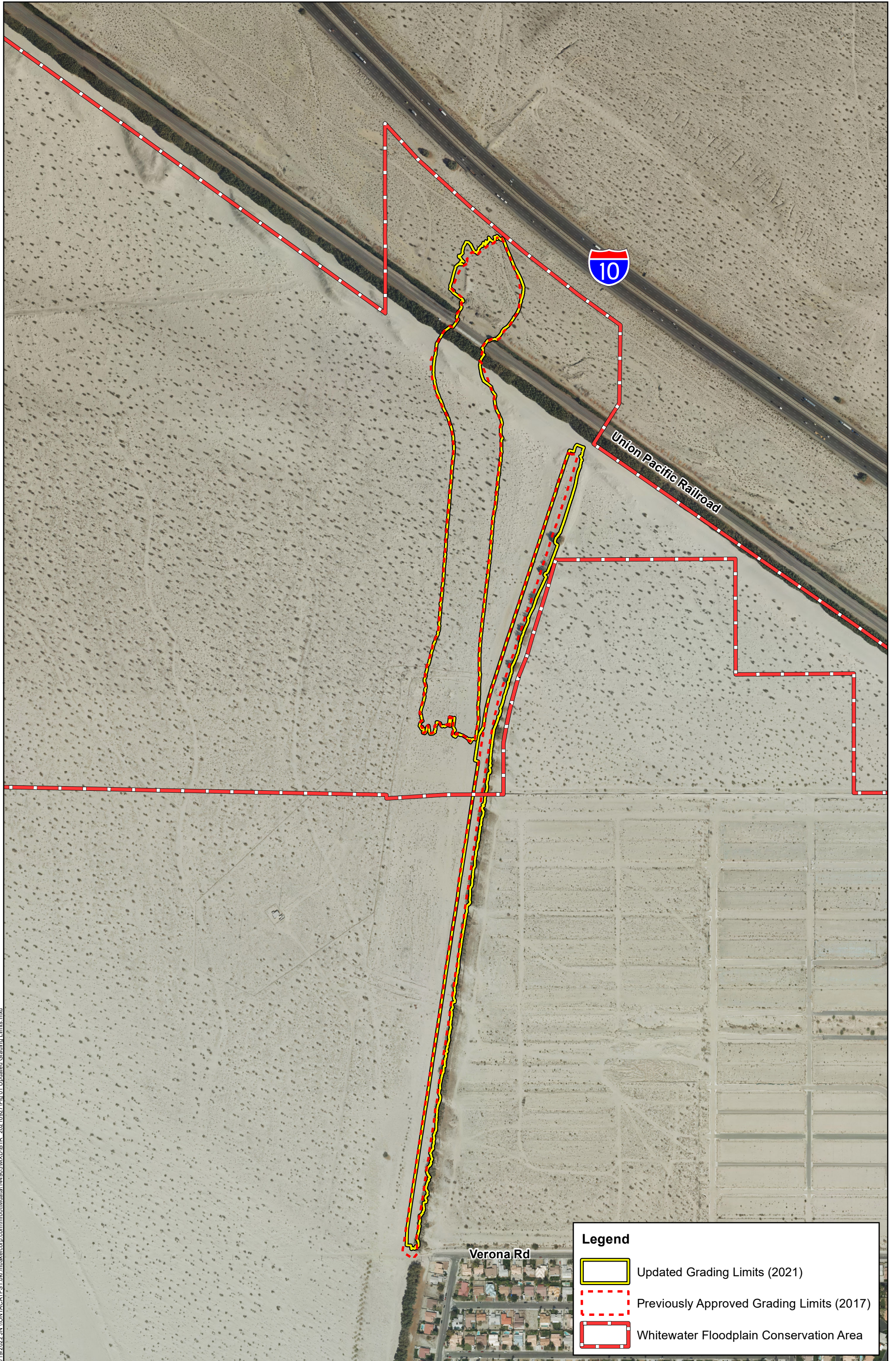
Kennon A. Corey
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Leslie MacNair
Inland Deserts Region
Regional Manager
California Department of Fish and Wildlife




cc:
Luke Stowe, CVWD

Attachment B

Figure 1



8/19/2022 J:\MONTACA\FS1\br\mbacker\corp.com\mrcat\mdata\144905\WMD\BTR_20210927\Fig 01_Updated Grading Limits.mxd

Legend	
	Updated Grading Limits (2021)
	Previously Approved Grading Limits (2017)
	Whitewater Floodplain Conservation Area



COACHELLA VALLEY CONSERVATION COMMISSION

Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert Palm Springs • Rancho Mirage • County of Riverside • Coachella Valley Water District • Imperial Irrigation District

May 11, 2017

Luke Stowe
Environmental Specialist
Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

RE: North Cathedral City Improvement

Dear Mr. Stowe:

This project was determined to require a change of the Conservation Area boundary and was processed as a Like Exchange. This Like Exchange has received concurrence from United States Fish and Wildlife Service and California Department of Fish and Wildlife with the requirement that the addition parcels (660-320-002, 660-350-002, 660-350-009,010,015 and 677-050-001) be acquired and either be deeded to Coachella Valley Conservation Commission (CVCC) or have a conservation easement in favor of CVCC placed on the parcels for this Like Exchange to be effective.

A copy of the Concurrence Letter is enclosed. If you have questions on this JPR, please do not hesitate to contact me or Jim Sullivan at jsullivan@cvag.org or 760-346-1127.

Sincerely,

Katie Barrows
Director of Environmental Resources

Cc: Heather Pert, CDFW
Ken Corey, USFWS

Enclosure



U.S. Fish and Wildlife Service
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262
760-322-2070
FAX 760-322-4648



California Department of Fish and Wildlife
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, California 91764
909-484-0167
FAX 909-481-2945

In Reply Refer To:
FWS/CDFW-ERIV-09B0023-17TA0477

March 15, 2017
Sent by Email

Mr. Jim Sullivan
Coachella Valley Conservation Commission
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92260

Subject: North Cathedral City Improvements Project, Phase I, City of Cathedral City,
Riverside County, California

Dear Mr. Sullivan:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department) have reviewed the Like Exchange Equivalency Analysis for Phase I of the North Cathedral City Improvements Project (Project), prepared by Michael Baker International on behalf of the Coachella Valley Water District (CVWD) for submission to the Coachella Valley Conservation Commission (CVCC). The CVWD proposes to re-establish a stormwater drain to convey flows from Morongo Wash under the Union Pacific Railroad Bridge, southward to the Whitewater River Stormwater Channel, as part of the North Cathedral City Stormwater Master Plan. The project is located in the Whitewater Floodplain Conservation Area (WFCA) within the jurisdiction of the City of Cathedral City.

The Project includes a total of 23 acres of impacts from 5.7 acres of hardscape permanent impacts and 17.3 acres of temporary impacts (16.9 acres of earthen improvements and 0.4 acres from a temporary earthen construction access road). The project impacts exceed the 7 acres of authorized disturbance for the WFCA in the City of Cathedral City Area. To offset the 23 acres of impacts to biological resources, CVWD will acquire 42 acres within and immediately adjacent to the WFCA and record a conservation easement in favor of CVCC on the acquired properties; resulting in a net increase of 19 acres added to the Conservation Area. The re-establishment of connectivity between the WFCA and the Willow Hole Conservation Area will help restore an important corridor for wildlife movement and sand transport. This proposed modification to the Conservation Area will result in biologically equivalent or superior conservation value and is consistent with the Like Exchange criteria in Section 6.12.2 of the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan.

We concur that the following Conservation Area boundary adjustment is allowable through this Like Exchange and will be effective either (1) upon the transfer of property titles to CVCC or (2) the recording of conservation easements on the properties in favor of CVCC.

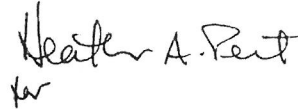
Mr. Jim Sullivan (FWS/CDFW-ERIV-09B0023-17TA0477)

2

If you have any questions regarding this letter, please contact Jenness McBride of the Service at 760-322-2070, extension 403, or Heather A. Pert of the Department at 858-395-9692.

Sincerely,

JENNESS Digitally signed by
MCBRIDE JENNESS MCBRIDE
Date: 2017.03.15
14:46:51 -07'00'

Handwritten signature of Heather A. Pert in black ink, with a small 'hr' mark below the signature.

Kennon A. Corey
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Leslie MacNair
Inland Deserts Region
Regional Manager
California Department of Fish and Wildlife

cc:
Luke Stowe, CVWD

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Equivalency Analysis

Prepared For:

Coachella Valley Water District

75515 Hovely Lane East
Palm Desert, California 92211
Contact: *Mr. Luke Stowe*
760.398.2651

Prepared By:

Michael Baker International

14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

September 2016

Updated November 2016

JN: 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Equivalency Analysis

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

September 2016
Updated November 2016

Executive Summary

The Coachella Valley Water District (CVWD) proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) Bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR Bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of the North Cathedral City Stormwater Master Plan. This project provides a reliable and engineered channel under the bridge that will provide a long term solution for conveying flows downstream to the WWRSC. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the North City Extended Specific Plan.

The project site is located within the Plan Area for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP or Plan). Specifically, the project sited is located along the eastern portion of the Whitewater Floodplain Conservation Area (WFCA) of the MSHCP, directly south of the Willow Hole Conservation Area and is, therefore, subject to the Coachella Valley Conservation Commission's (CVCC) Joint Project Review (JPR) Process. Development of the project would result in both positive and negative impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport).

The proposed project would result in a total of approximately 23 acres of impact to the WFCA. This would include 5.7 acres of hardscape (concrete) improvements, 16.9 acres of earthen improvements, and 0.4 acres associated with the temporary earthen construction access road. The area of impact within the WFCA has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The use of concrete-lined facilities has been limited to areas subject to high levels of erosion and scour during storm events. It should be noted that the bottom of these concrete lined facilities will naturally fill with sand over time as sand transport occurs during storm events, increasing the available habitat for the sand dune species. All areas affected by project construction activities would be regraded to match existing conditions as closely as possible.

The MSHCP allows for a maximum of 7 acres of permanent impacts for development within the City of Cathedral City's portion of the WFCA, and any proposed development should be consistent with this requirement. As noted above, the project would impact a total of 23 acres of land within the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact).

To offset impacts related to biological resources (23 acres), CVWD proposes to place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA and adjacent to the project site. Twenty-three of the 42 acres will be used to offset the 23 acres of impacts to land within City of Cathedral City's portion of the WFCA from implementation of the proposed project, resulting in a net increase of 19 acres of land being added to the conservation area.

This proposed modification to conservation within the WFCA will result in biologically superior (equivalent) conservation acreage and value using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12.2, summarized as follows:

- The conservation of suitable habitat and level of take of MSHCP covered species with the proposed modification to the WFCA would be biologically equivalent or superior to what would otherwise occur;
- The proposed conservation would result in equal or greater benefits to natural communities as compared to those benefits analyzed under the MSHCP;
- The function and value of sand transport corridor between the Willow Hole Conservation Area and the Whitewater River Conservation Area would be restored and enhanced by the conveyance of stormwater between the two Conservation areas;
- The proposed conservation would result in biologically equivalent conservation configuration and management requirements compared to what could have occurred under the MSHCP;
- Ecotones and overall species diversity are not expected to be reduced by the proposed conservation;
- The 42 acres of proposed additional conservation land exceeds the 23 acres of impact (5.7 acres of permanent impacts and 17.3 acres of temporary loss), resulting in a net increase of conservation area within the City of Cathedral City's portion of the WFCA; and
- All contributed parcels are under the ownership of the applicant.

Based on this analysis, the proposed modification of conservation within the WFCA will result in biologically equivalent or superior conservation value compared with implementation of the MSHCP without the proposed project and additional conservation that will be added as a result of the project.

The CVWD has met with the CVCC during the JPR process to discuss this project, its benefit to the overall structure of conservation in the Plan area and the benefits of restoring the wildlife corridor under the UPRR Bridge and restoring fluvial transport of sand into the southeast portion of the WFCA. The CVCC is in concurrence both over the need for and benefit from the North Cathedral City Improvements Project, as well as the recommended additional

conservation lands that will be added to the WFCRA, through the acquisition of privately owned, undeveloped parcels, implementation of several avoidance and minimization measures during construction of the improvements, and the restoration of all areas of temporary impacts.

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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVWD	Coachella Valley Water District
ESA	Endangered Species Act (federal)
HMMP	Habitat Mitigation and Monitoring Plan
I	Interstate
JPR	Joint Project Review
Michael Baker	Michael Baker International
MSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
SAA	Streambed Alteration Agreement
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WFCA	Whitewater Floodplain Conservation Area
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

The Coachella Valley Water District (CVWD) proposes to develop regional stormwater improvements in northern Cathedral City, County of Riverside that would convey stormwater flows from the vicinity of the I-10 Freeway and the Union Pacific Railroad (UPRR) Bridge in a southerly direction to the Whitewater River Stormwater Channel. This report presents an equivalency analysis of the proposed project and the accompanying conservation measures and demonstrates how the approved biological goals and objectives for the Whitewater Floodplain Conservation Area (WFCA) will be accomplished.

As required by the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP or Plan), the equivalency analysis for the requested modification contains the following information:

1. Clear delineation of the proposed boundary adjustment;
2. Description of the proposed project;
3. Description of biological information available, including vegetation mapping, modeled habitat and appropriate species surveys, land identified as part of a biological corridor or linkage, and land identified as part of an essential ecological process area;
4. Description of the project's efforts to be consistent with the MSHCP Conservation Area Conservation Objectives and rationale of why consistency has been determined to be infeasible; and
5. Description of the effects/benefits of the proposed action on habitats for covered species, natural communities, biological corridors and linkages, essential ecological processes, and MSHCP Conservation Area design and function.

The majority of the 23-acre project site is undeveloped and is located within the boundaries of the MSHCP (Coachella Valley Association of Governments [CVAG] 2007a), which requires that the proposed project be consistent with the Plan. The MSHCP was approved in 2008 to conserve 240,000 acres of open space and to protect 27 plant and wildlife species. Through its implementation, the Plan provides Coachella Valley with a regional vision for balanced growth while meeting the requirements of the federal and state endangered species acts. As part of its conservation obligations under the MSHCP, the Coachella Valley Association of Governments (CVAG) has designated 21 Conservation Areas.

The MSHCP is a comprehensive, multi-jurisdictional effort that focuses on the conservation of 27 species of plants and animals within 21 identified Conservation Areas (refer to Exhibit 1, *MSHCP Conservation Areas*). For each Conservation Area, conservation objectives are articulated for conserving covered species; essential ecological processes necessary to maintain habitat viability; biological corridors and linkages, as needed; and authorized acreage

of land within a conservation area that may be impacted by site development. The MSHCP includes certain requirements for proposed projects within the Conservation Areas to avoid, minimize, and mitigate impacts to covered plant and animal species.

The primary conservation goals for the WFCA include (1) maintaining “Core Habitat” within the WFCA; (2) conserving modeled habitat for Covered Species and conserving Covered Species where they occur; and (3) maintaining key ecological processes (fluvial sand transport). Specifically, the project site contains MSHCP modeled habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley fringe-toed lizard (*Uma inornata*), Palm Springs pocket mouse (*Pereognathus longimembris bangsi*), and Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*). Other species having conserved habitat within the project site or known to occur in the general vicinity are *Le Conte’s thrasher* (*Toxostoma lecontei*), burrowing owl (*Athene cunicularia*), and *flat-tailed horned lizard* (*Phrynosoma mcallii*).

Section 6.12, *Modifications, Like Exchanges to Conservation Areas, and Amendments to the MSHCP*, in the MSHCP acknowledges that in some instances it may be possible to achieve the Plan’s conservation goals through modification or a different configuration of one or more conservation areas if it can be demonstrated that the proposed modification to a conservation area will provide biological equivalent preservation. Through this process, impacts allowed within a conservation area may be modified in exchange for increasing the available conservation opportunities elsewhere in the conservation area. Two key conditions for determining whether the equivalency requirements are met is by demonstrating that the project will (1) result in equal or greater benefits to MSHCP covered species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing conservation area), and (2) the level of take of (impact to) MSHCP covered species must be no greater than that analyzed in the Plan.

The opportunity for proposed modifications to the existing WFCA is provided in the Plan which acknowledges that in some instances it may be possible to achieve the Plan’s conservation goals through a different configuration of one or more Conservation Areas. Through this process, the boundary of a conservation area may be modified if the resulting conservation is biological equivalent to that approved under the Plan.

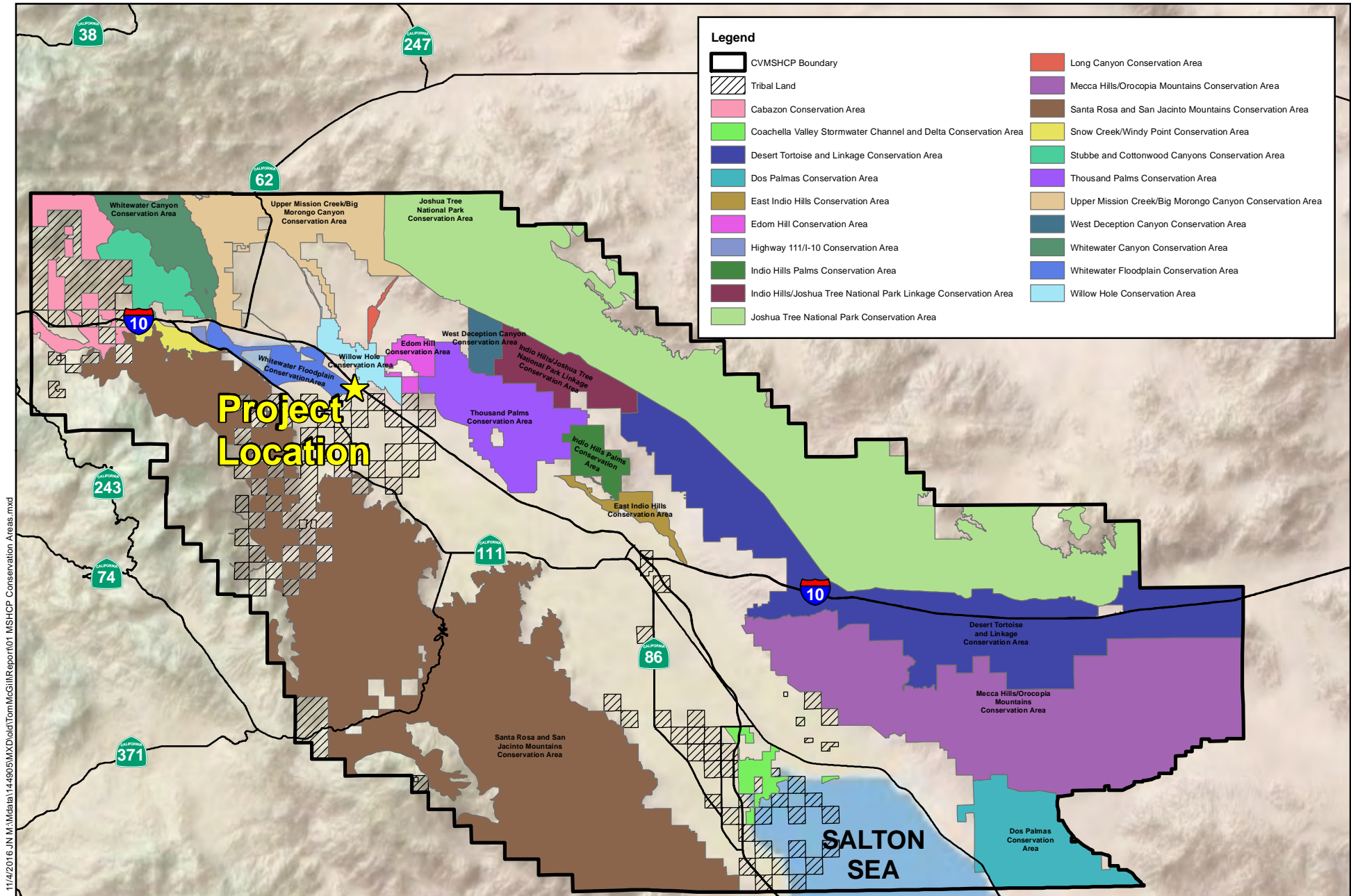
The proposed stormwater improvements project site is located in the southeast corner of the 7,400-acre WFCA (refer to Exhibit 2, *Whitewater Floodplain Conservation Area*). The WFCA encompasses the former Whitewater River floodplain habitat south of Interstate 10 (I-10). Currently, there is an existing UPRR Bridge at the north end of the project site that was constructed but backfilled until the design of the North Cathedral City Stormwater Master Plan

was finished and the future stormwater channel could be constructed and incorporated into the existing bridge. Completion of the stormwater channel in association with the existing bridge will allow natural flows to be re-established under the railroad track and restore the fluvial transport of sand that is integral to the active sand field habitats in the northern portion of Cathedral City. The channel will also re-establish a movement corridor for wildlife under the UPRR tracks, connecting wildlife habitats above and below the UPRR Bridge and the I-10 Freeway. Although the stormwater improvements will result in temporary impacts during construction and minor losses of the natural plants communities in the area, the overall benefits of restoring flows and the fluvial transport of sand in the area will have superior positive impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport). Since this project is located within the WFCA and will have impacts, positive and negative, on the natural communities, biological movement corridors and essential ecological processes, the project is subject to the Joint Project Review (JPR) process.

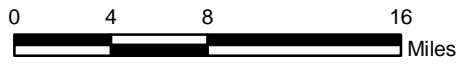
Constructing the improvements needed for establishing the stormwater channel would result in a total of 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impacts) to land within the City of Cathedral City's portion of the WFCA. The area of impact has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The use of concrete-lined facilities has been limited to areas subject to high levels of erosion and scour during storm events.

The MSHCP allows for a maximum of 7 acres of development impacts on private lands within the City of Cathedral City's portion of the WFCA. CVWD land is considered privately-owned under the MSHCP and the proposed development should be consistent with this requirement. As noted above, the project would impact a total of 23 acres of land within the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact).

To offset impacts related to biological resources (23 acres), CVWD proposes to place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA and adjacent to the project site. This action would result in a net increase of 19 acres to the conservation area since 23 of the 42 acres will be used to offset the 23 acres of impacts to land within the City of Cathedral City's portion of the WFCA from implementation of the proposed project.



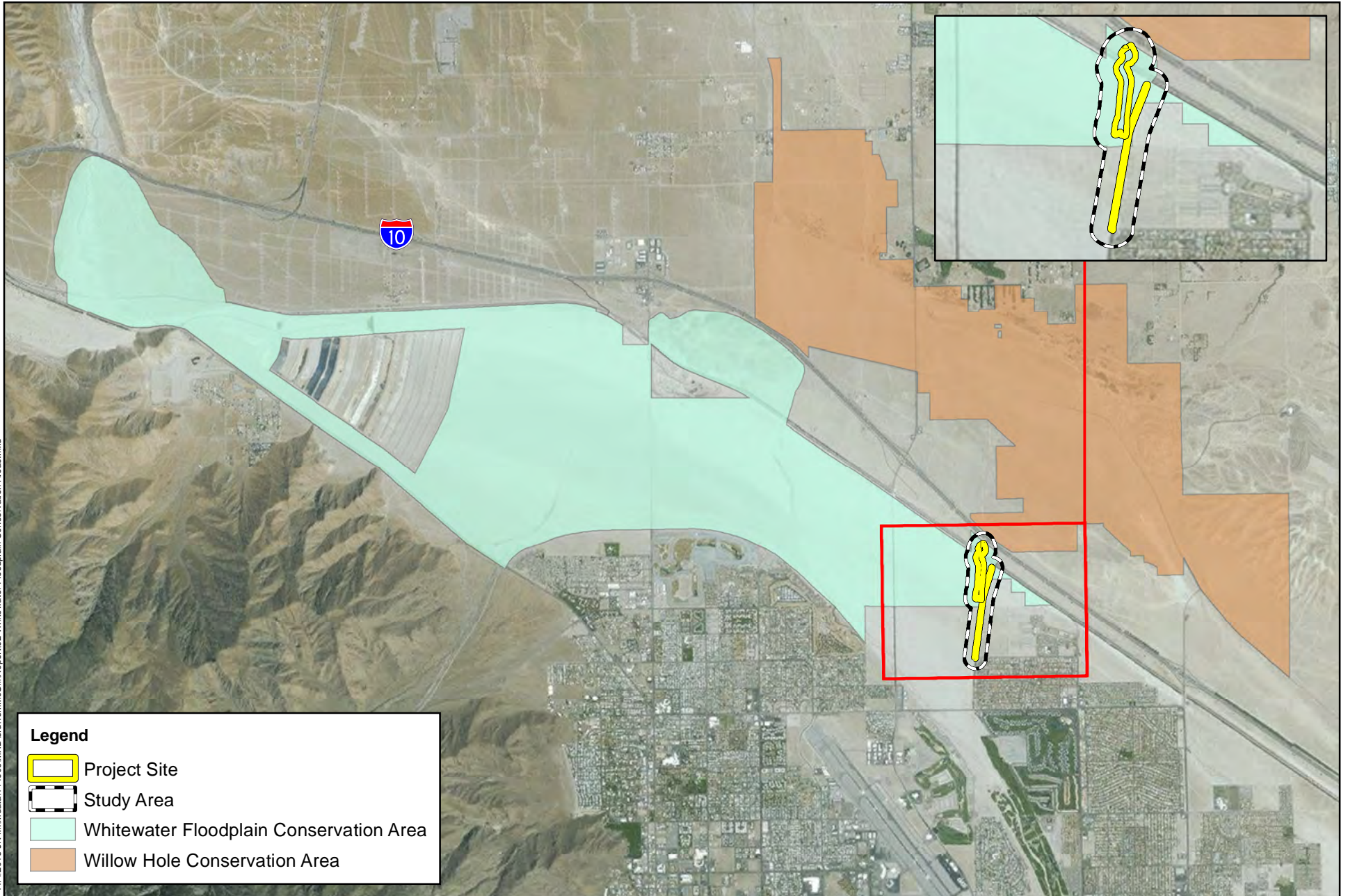
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

Source: CVMSHCP, ESRI Imagery

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS
MSHCP Conservation Areas

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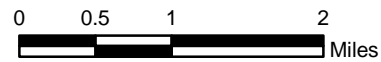


Legend

-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Whitewater Floodplain Conservation Area



Source: Riverside County, ESRI World Imagery

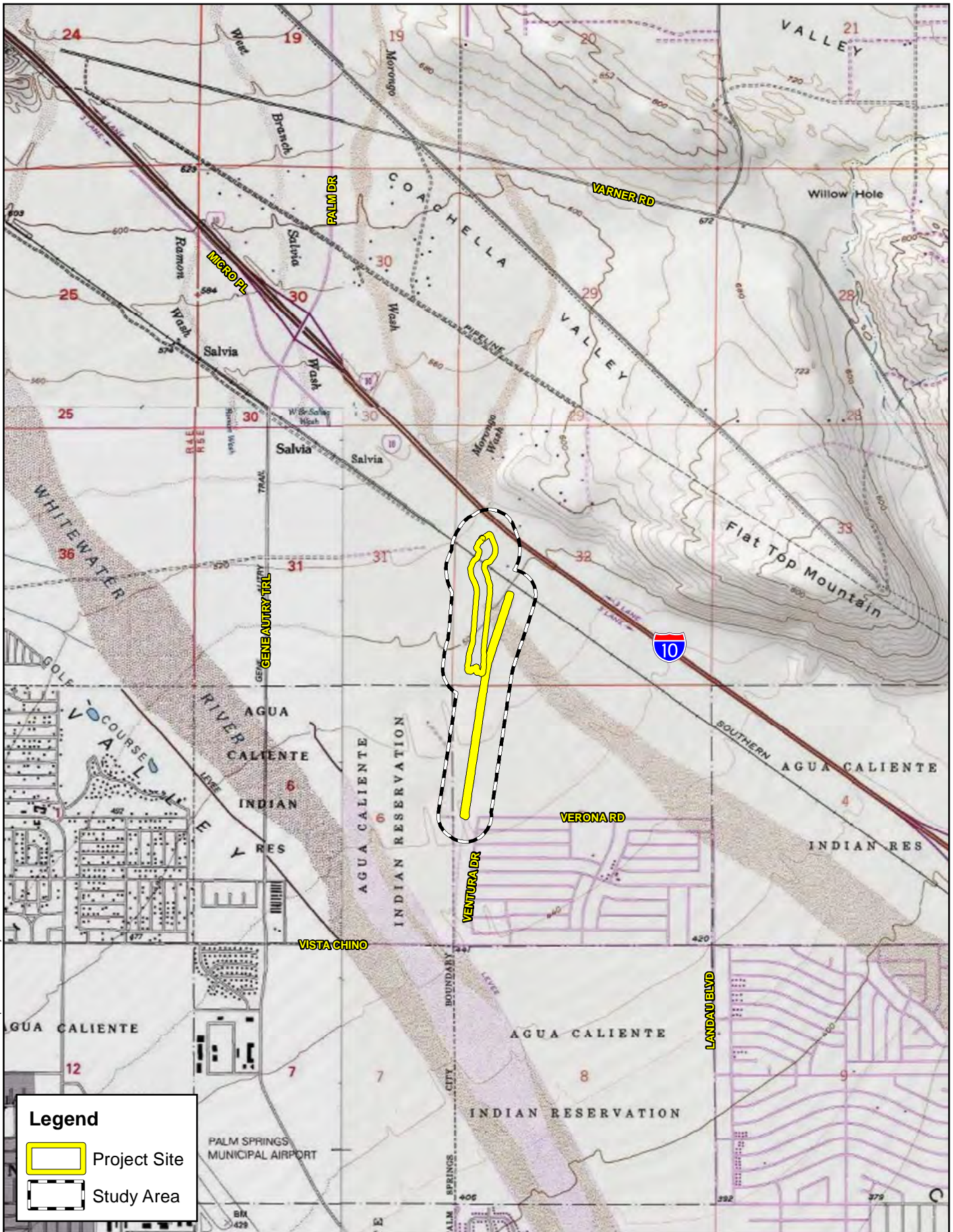
Section 2 Definition of Planning Area

The project site is located south of Interstate 10 (I-10) and the UPRR tracks in the northwest corner of the City of Cathedral City, Riverside County, California. The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 3, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of I-10, and east of Gene Autry Trail (Exhibit 4, *Depiction of Proposed Project*).

The CVWD proposes regional stormwater improvements that would convey stormwater flows from north of the UPRR tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR Bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

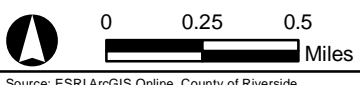
Specifically, the proposed storm drain channel will begin just north of the UPRR tracks and will receive stormwater from Morongo Wash flowing south and will convey the 11,500 cfs flows across the I-10 Freeway and under an existing UPRR Bridge composed of three (3) box culverts that was constructed over the natural drainage crossing under the tracks but backfilled with sand until an appropriated storm drain channel could be designed as part of the North Cathedral City's stormwater master plan for this area. The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes and would convey stormwater flows in a southerly direction to the WWRSC.

11/4/2016 10:31:14 AM J:\M\Mapa\144905\MXD\OldTomMcGill\Report\03 Site Vicinity.mxd



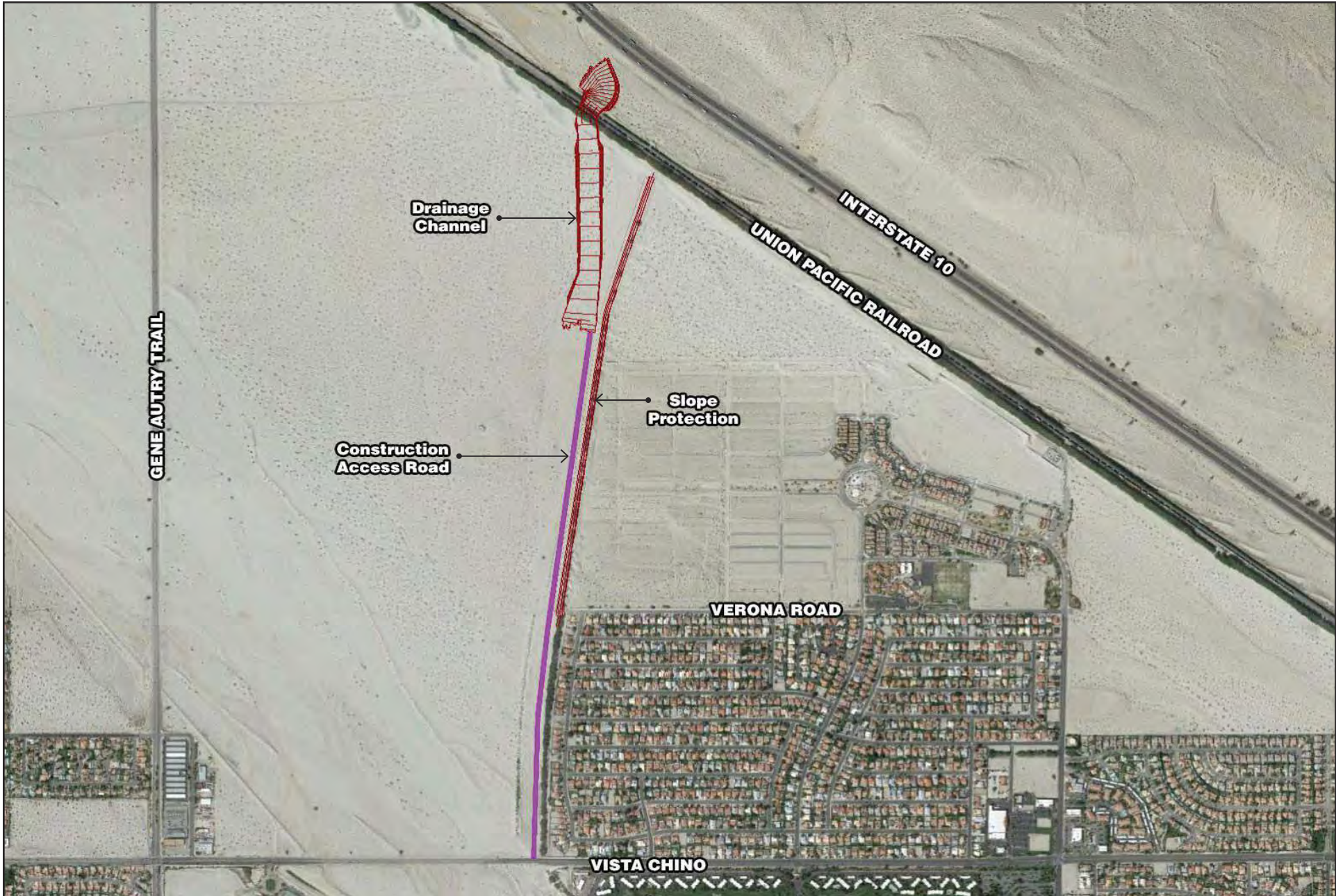
Legend

- Project Site
- Study Area



Source: ESRI ArcGIS Online, County of Riverside

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS
Site Vicinity



NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Depiction of Proposed Project

Section 3 Project Description

The proposed project consists of 2 distinct elements: (1) the proposed development of flood control activities, and (2) the proposed conservation measures that are an integral part of the proposed project and will contribute to conservation within the WFCAs. Both of these elements are important factors in determining whether the proposed modification to the conservation area would result in equal or greater biological values, compared to implementation of the MSHCP without the proposed project.

3.1 FLOOD CONTROL ACTIVITIES

The primary components of the proposed storm water improvements project include the placement of concrete channel protection on both sides of the UPRR Bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR Bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

3.2 OPERATIONS AND MAINTENANCE

The proposed project would be regularly maintained throughout the life of the project to ensure safe operation of the drainage facility but will be conducted seasonally to avoid impacts to sensitive plant and wildlife species and to promote wildlife movement. Maintenance activities would focus primarily on the concrete-lined areas beneath and adjacent to the UPRR Bridge to ensure that the culvert can adequately convey stormwater flows. The drainage crossing beneath the UPRR bridge would be kept clear of substantial debris, sediment, and other impediments to allow for both drainage and wildlife connectivity. Sediment would be cleared (via dozer or similar equipment) on a regular basis to maintain the operational characteristics of the UPRR Bridge.

Maintenance activities would also include invasive species control measures to protect native habitat within the project area. It is anticipated that an invasive species control program would be implemented as part of the Habitat Mitigation and Monitoring Plan (HMMP) required under the Section 1600 Streambed Alteration Agreement (SAA) anticipated for the project. The program would include measures such as a five-year period where non-native species are controlled/removed, photo documentation, a project completion report, and annual reporting to ensure compliance with the plan.

3.3 CONSERVATION MEASURES

In addition to improved conditions related to regional stormwater flows and flood protection, the project would also provide biological benefits to natural habitats, covered species and ecological processes in the Coachella Valley. The creation of a permanent, unimpeded channel crossing beneath the UPRR Bridge would facilitate wildlife movement between the northern and southern sides of the UPRR tracks. The project would not include any fencing, structures, or other facilities that would impede wildlife movement under the UPRR Bridge. The proposed

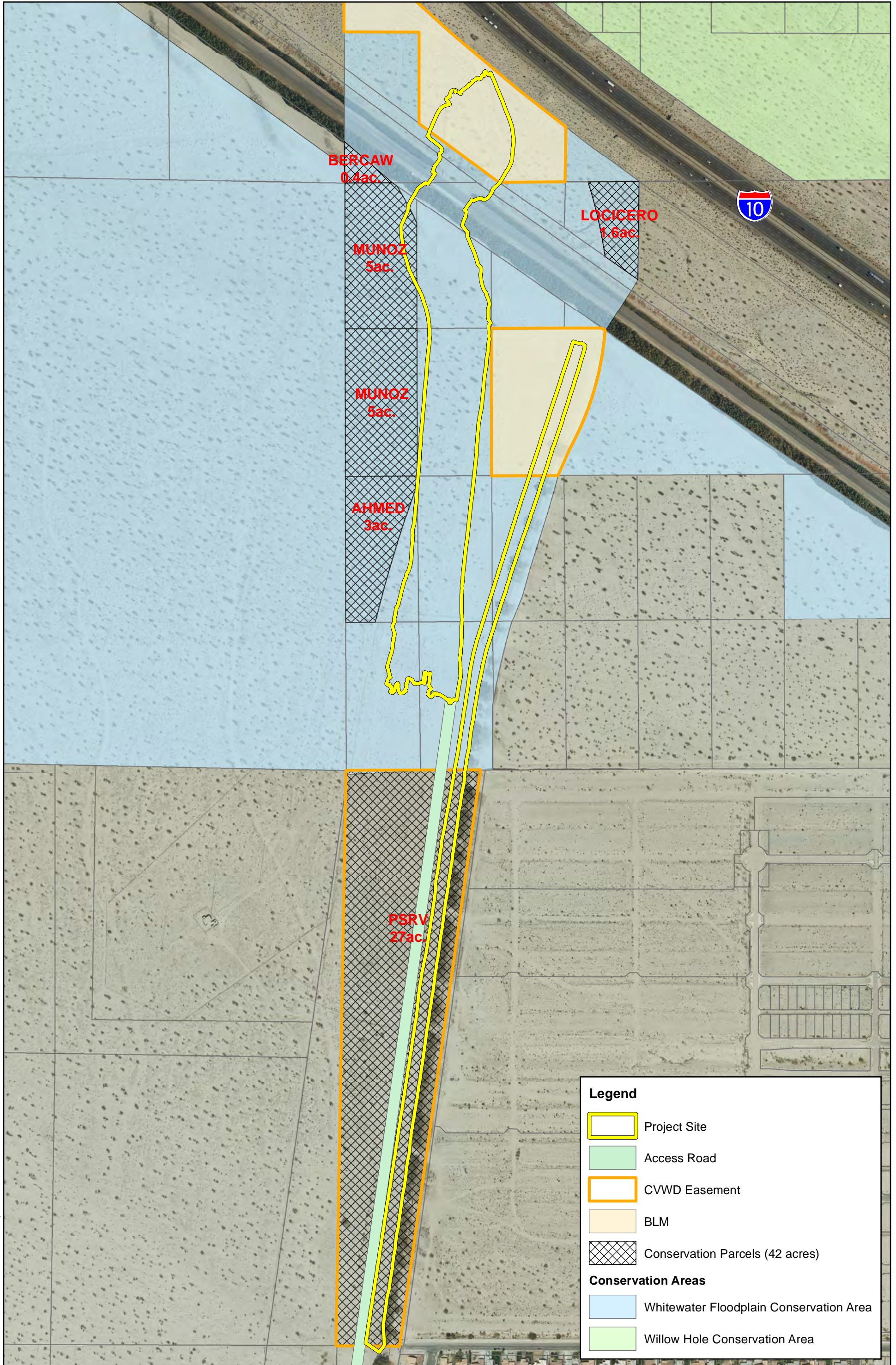
project, when combined with future planned Phase 2 of the North Cathedral City Stormwater Master Plan that would improve regional stormwater flows and wildlife connectivity beneath I-10 and the UPRR Bridge, would serve as an important wildlife corridor/linkage between the Willow Hole Conservation Area (northeast of the project site) and the WFCA (encompassing a portion of the site and extending west of the project site) under the MSHCP. By providing a connection to the WWRSC, the project would allow for stormwater flows and associated sand transport, resulting in an increase in sand habitat within the project area. The proposed project was recognized in the MSHCP as a means to “enhance sand transport and wildlife movement between the Willow Hole Conservation Area and the WFCA,” since this area is designated a Biological Corridor/Linkage between the Whitewater Floodplain and Willow Hole Conservation Areas.

The proposed project would result in a total of 23 acres of impact to habitats in the WFCA. This would include 5.7 acres of hardscape (concrete) improvements, 16.9 acres of earthen improvements, and 0.4 acres associated with the temporary earthen construction access road. The area of impact within the WFCA has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The minimum amount of concrete-lined facilities has been incorporated, limited only to areas subject to high levels of erosion and scour during storm events. In addition, concrete-bottom facilities will naturally fill with sand over time as sand transport occurs during storm events. All areas affected by project construction activities would be regraded to match existing conditions as closely as possible.

As noted above, the project site is located within the WFCA of the MSHCP. Based on the MSHCP, the entire project site is within the modeled habitat for the Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, Le Conte’s thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. A single natural community occurs with the project site, a Sonoran creosote bush scrub plant community and the underlying soils are part of an active desert sand field, an essential component to maintaining ecological processes needed to support the sand dune plant communities found within the WFCA.

To offset impacts to 23 acres (5.7 acres of permanent impact, and 17.3 acres of temporary impact), CVWD proposes to place a conservation easement upon the 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA, west of the project site. Exhibit 5, *Conservation Parcels*, shows the locations of the six conservation parcels either owned or available for acquisition by CVWD that total 42 acres of committed conservation that are either within the boundaries of the WFCA or immediately adjacent to the Conservation Area and that will be added to the acreage of the existing WFCA. Twenty-three

of the 42 acres will be used to offset the 23 acres of land that will be impacted within the City of Cathedral City's portion of the WFCA from implementation of the proposed project, resulting in a net increase of 19 acres of land being added to the conservation area.



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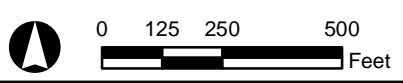
- Project Site
- Access Road
- CVWD Easement
- BLM
- Conservation Parcels (42 acres)

Conservation Areas

- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Conservation Parcels



Source: County of Riverside, Eagle Imagery

Section 4 Biological Information

4.1 VEGETATION MAPPING

One (1) natural plant community was documented within the project site: Sonoran creosote bush scrub (refer to Exhibit 6, *Vegetation Map*). Plant species observed within the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows.

4.2 COVERED SPECIES



The WFCAs provide core habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley fringe-toed lizard (*Uma inornata*), Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*), and Palm Springs pocket mouse (*Pereognathus longimembris bangsi*). Other species for which habitat occurs include Le Conte’s thrasher (*Toxostoma lecontei*). Descriptions of covered species with modeled habitat within the project site, as well as of those covered species that are known to occur within the WFCAs, are provided below. Table 1 lists the amount of modeled habitat for each of these species within the proposed project site and additional conservation areas.

Table 1: Modeled Habitat for Covered Species (acres)


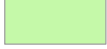

Species	Project Parcels	Conservation Parcels
Coachella Valley milk-vetch	23.0	42.0
Coachella Valley Fringe-toed Lizard	23.0	42.0
Le Conte’s thrasher	23.0	42.0
Palm Springs pocket mouse	23.0	42.0
Coachella Valley round-tailed ground squirrel	23.0	42.0
Coachella Valley Giant Sand-treader Cricket	23.0	42.0
Flat-tailed Horned Lizard	23.0	42.0



Legend

-  Project Site
-  Study Area

Vegetation

-  Sonoran Creosote Bush Scrub (170.55 acres)
-  Tamarisk Windrow (11.59 acres)
-  Developed (11.73 acres)

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4.2.1 Coachella Valley Milk-vetch

Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside County. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Within the sand dunes and sand fields, this milk-vetch tends to occur in the coarser sands at the margins of dunes, not in the most active blow sand areas. It may also occur in sandy substrates in creosote bush scrub, not directly associated with sand dune habitats (CVAG 2007a). Nearly all of the WFCAs has been designated as core habitat, including the entirety of the proposed project site, for this species (refer to Exhibit 7, *Core Habitat*). Focused surveys for Coachella Valley milk-vetch in Spring 2016 found this species throughout the project site (refer to Exhibit 8, *Sensitive Plant Survey Results*).

4.2.2 Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket has no state or federal designation, but is covered under the MSHCP. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio. This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite (*Prosopis glandulosa*), Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the WFCAs has been designated as core habitat, including the entirety of the proposed project site, for this species (Exhibit 7), which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.

4.2.3 Palm Springs Pocket Mouse

The Palm Springs pocket mouse is designated by the California Department of Fish and Wildlife (CDFW) as a species of special concern and is also covered under the MSHCP. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Geronimo Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands

with loose and/or sandy soils and sparse to moderate vegetative cover. Areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the WFCA has been designated by the MSHCP as core habitat, including the entirety of the proposed project site, for this species (Exhibit 7). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

4.2.4 Le Conte's Thrasher

Le Conte's thrasher is designated by the CDFW as a species of special concern. It is covered under the MSHCP. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.), but may still utilize areas without these plants. Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the WFCA has been modeled as conserved habitat, including the entirety of the proposed project site, for this species (Exhibit 9, *Core/Otherwise Conserved Habitat*). Le Conte's thrasher has a moderate potential to occur within the project site.

4.2.5 Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the United States Fish and Wildlife Service (USFWS) as threatened under the federal Endangered Species Act (ESA) and by the CDFW as endangered under the California Endangered Species Act (CESA). It is covered under the MSHCP. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite, and four-winged saltbush (*Atriplex canescens*). This species is typically active from spring through fall, especially between April and October. Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the WFCA has been designated as core habitat, including the entirety of the proposed project site, for this species (Exhibit 9). Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site.

4.2.6 Coachella Valley Round-tailed Ground Squirrel

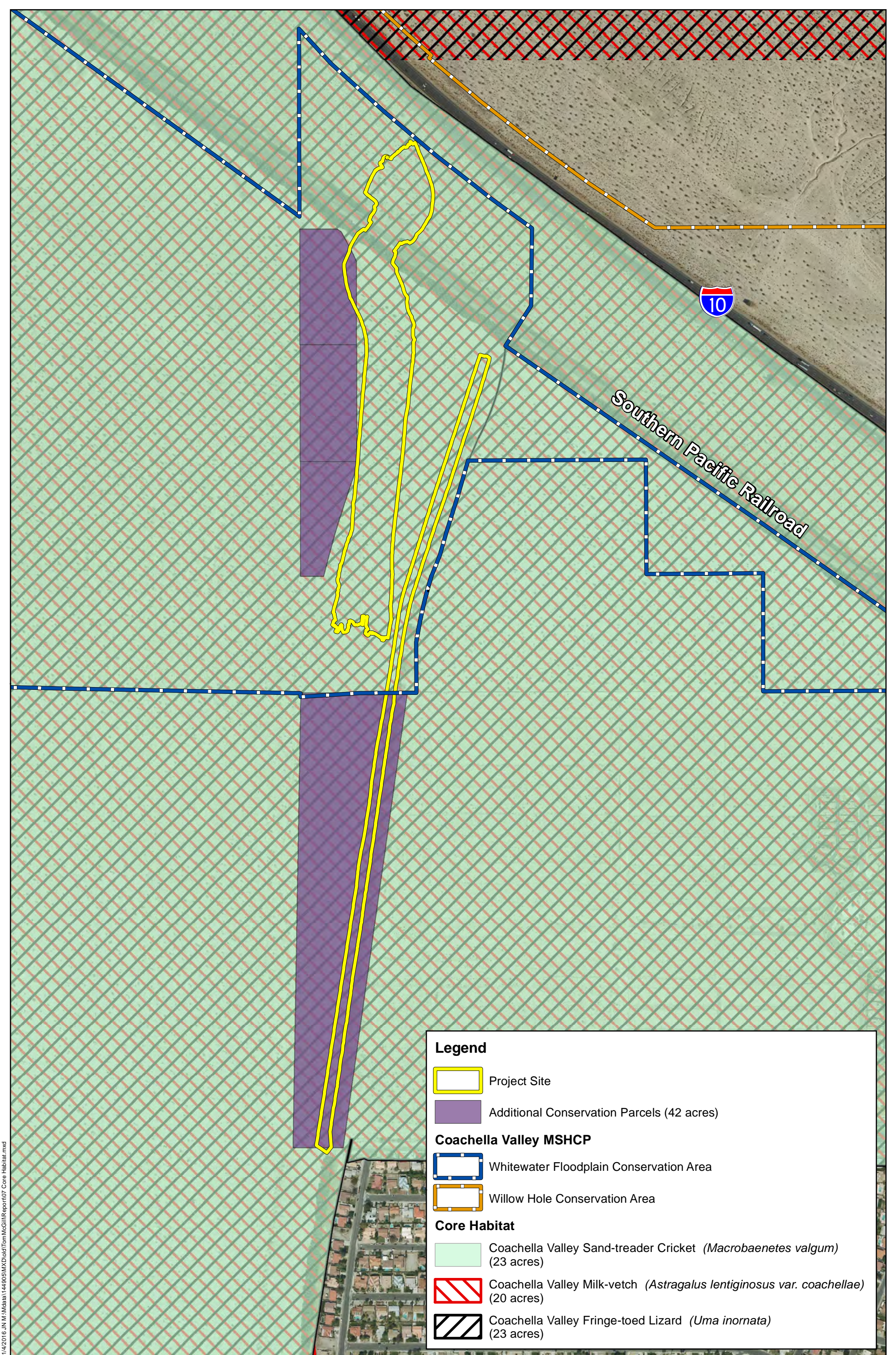
Coachella Valley round-tailed ground squirrel is designated by the CDFW as a species of special concern. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains. Ideal habitat seems to be areas were

hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the MSHCP, this species seems to particularly favor hummocks that form around mesquite. It is inactive and in its burrows from August until January. The breeding period is generally from early spring through June. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire WFCAs, including the entirety of the proposed project site, has been designated by the MSHCP as core habitat (refer to Exhibit 9, *Core/Otherwise Conserved Habitat*). Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a low to moderate potential to occur within the project site.

4.2.7 Flat-tailed Horned Lizard

Flat-tailed horned lizard is designated by the CDFW as a candidate for endangered status under the CESA, and also as a species of special concern. It is covered under the MSHCP. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area. Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the WFCAs has been designated as predicted and potential conserved habitat, including the entirety of the proposed project site, for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site. For the purposes of the equivalency analysis, it is assumed that the observed lizard was a flat-tailed horned lizard.



Legend

-  Project Site
-  Additional Conservation Parcels (42 acres)

Coachella Valley MSHCP

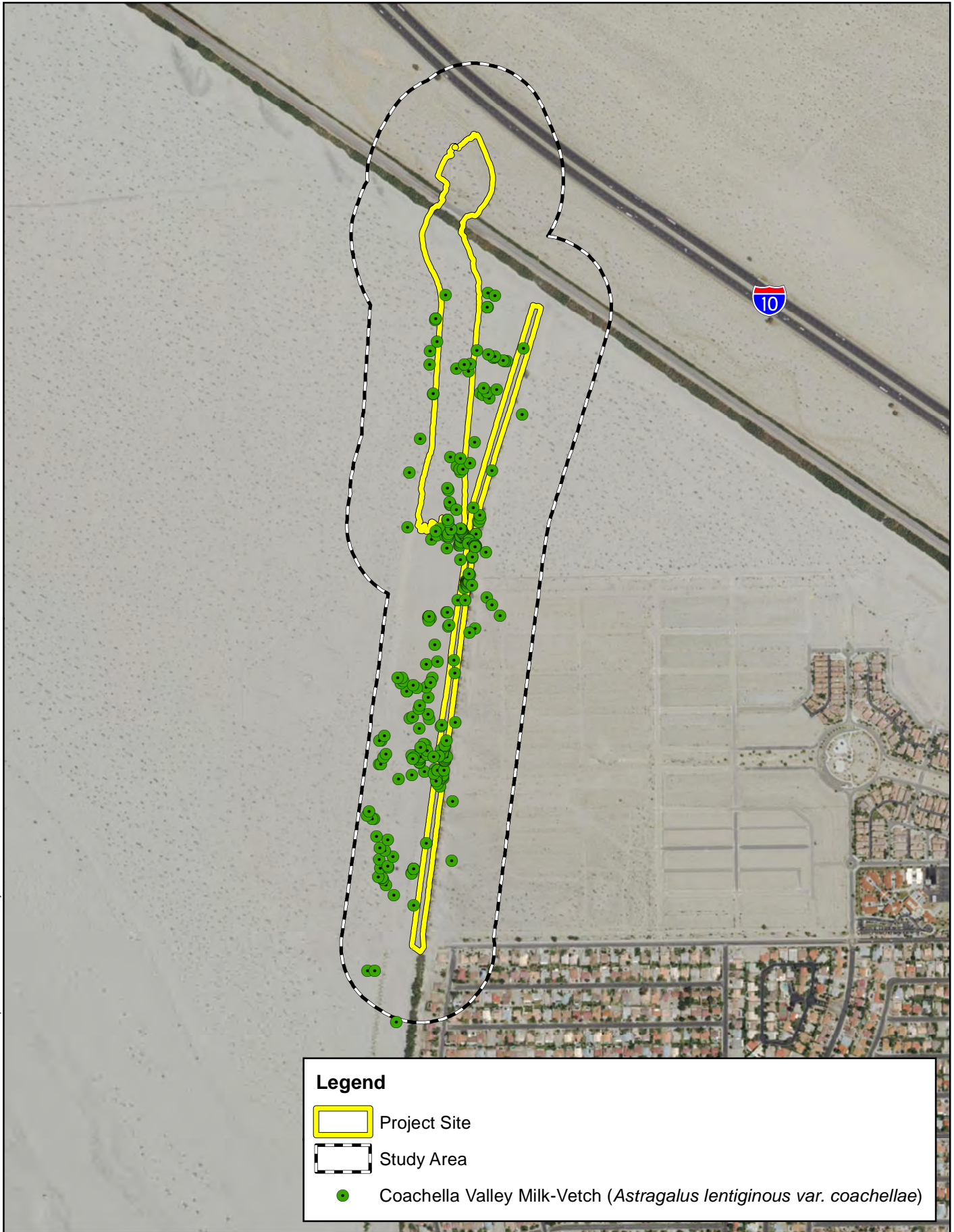
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core Habitat

-  Coachella Valley Sand-treader Cricket (*Macrobaenetes valgum*) (23 acres)
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus var. coachellae*) (20 acres)
-  Coachella Valley Fringe-toed Lizard (*Uma inornata*) (23 acres)

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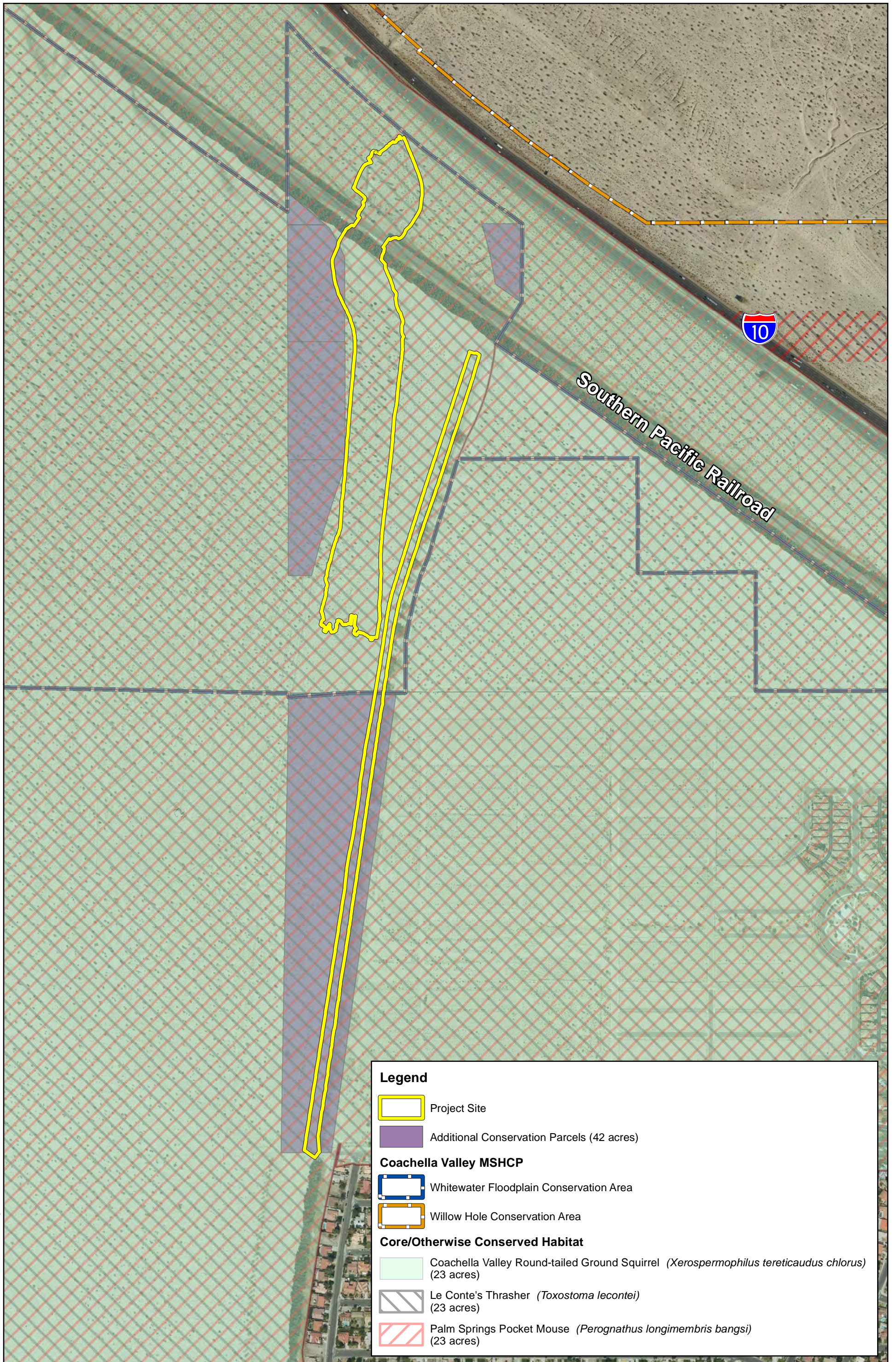
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-  Project Site
-  Study Area
-  Coachella Valley Milk-Vetch (*Astragalus lentiginous var. coachellae*)



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


Legend

-  Project Site
-  Additional Conservation Parcels (42 acres)

Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core/Otherwise Conserved Habitat

-  Coachella Valley Round-tailed Ground Squirrel (*Xerospermophilus tereticaudus chlorus*) (23 acres)
-  Le Conte's Thrasher (*Toxostoma lecontei*) (23 acres)
-  Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*) (23 acres)

4.3 BIOLOGICAL CORRIDOR OR LINKAGE

The project site is partially located within a designated corridor related to the Whitewater River/Fluvial Sand Transport Biological Corridor (refer to Exhibit 10, *Biological Corridor and Ecological Processes*). This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the WFCAs. The corridor is intended to provide habitat connectivity for Coachella Valley giant-sand-treader cricket, Coachella Valley fringe-toed lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse, as well as to maintain ecosystem function for covered species (CVAG 2007a). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the project site.

4.4 ESSENTIAL ECOLOGICAL PROCESS AREA

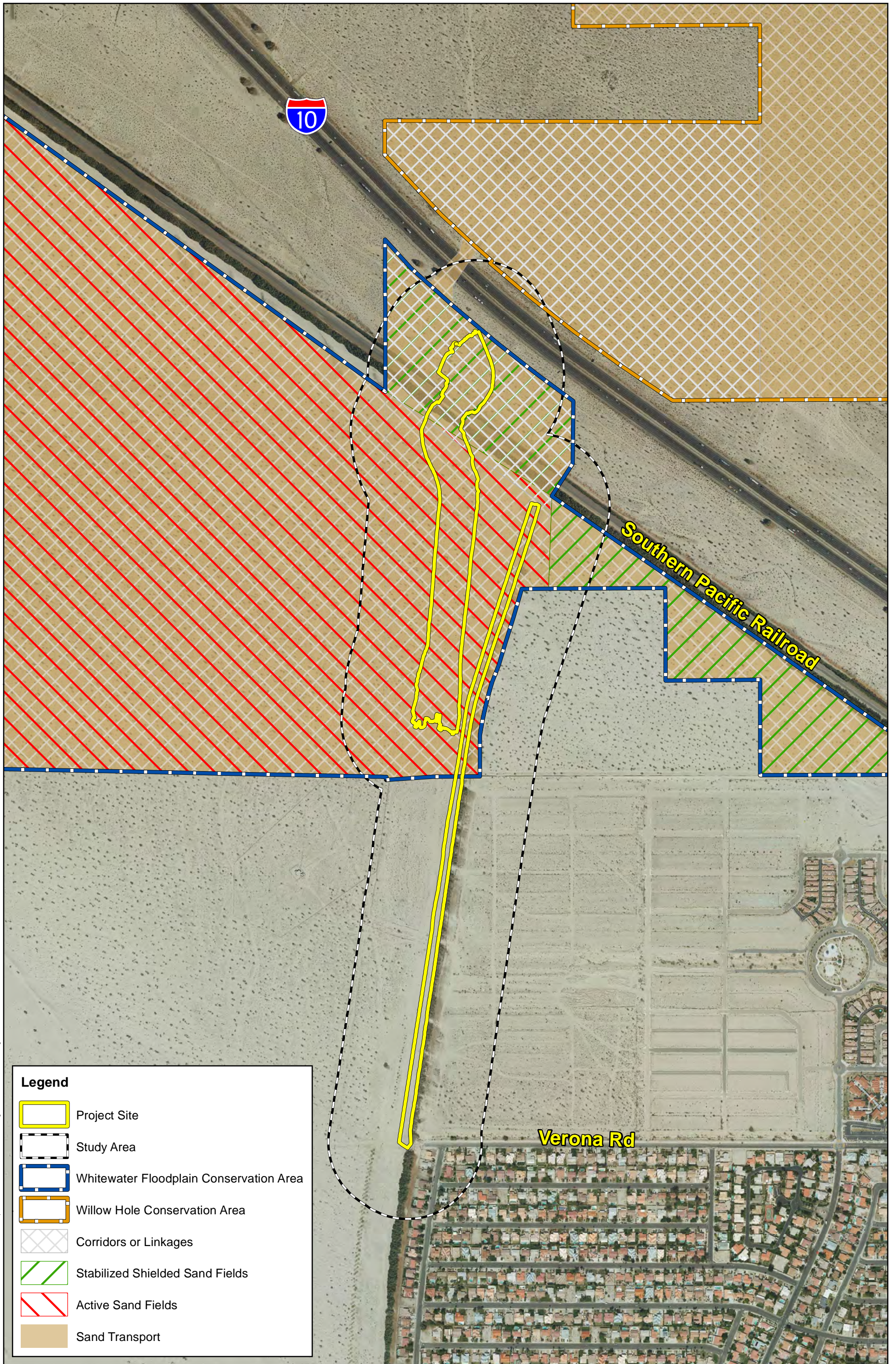
"Fluvial sand transport" refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley (Exhibit 10). On the valley floor, continued occasional water flow associated with storm events will maintain fluvial transport, but high winds will also pick up sediment and carry it (aeolian transport). In accordance with Section 4.4 of the MSHCP, the following additional measure would be required for the proposed project to remain in compliance with the MSHCP.

The following text is taken directly from Section 4.4 of the MSHCP:









Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongo Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.

The proposed project would create an opening in the tamarisk windrows that run east-west along the railroad tracks and reroute the water from the washes north of I-10 through the opening in the tamarisk windrows to areas south of the railroad tracks. This would improve fluvial sand transport and will likely result in minor improvements to aeolian sand transport.

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-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area
-  Corridors or Linkages
-  Stabilized Shielded Sand Fields
-  Active Sand Fields
-  Sand Transport

Section 5 Rationale in Equivalency Analysis

The rationale for the equivalency analysis is based on:

- The MSHCP’s acknowledgement that it may be possible to achieve the Plan’s conservation goals through a different configuration or modification of the WFCAs;
- The proposed modification or Like Exchange will result in equal or greater benefits to Covered Species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing Conservation Area boundaries);
- The level of take of (impact to) Covered Species is no greater than that analyzed in the Plan; and
- The ecological processes associated with the project will improve the ecological processes associated with the WFCAs from what was assumed when the MSHCP was adopted.

This section presents the above rationale, identifies the proposed modification or Like Exchange acreage requirements, describes the baseline against which the modification or Like Exchange is compared, and summarizes the required equivalency findings.

5.1 ABILITY TO ACHIEVE CONSERVATION GOALS

The primary conservation goals for Cathedral City’s portion of the WFCAs include (1) conserving up to 61 acres of “Core Habitat” for the seven Covered Sand Species discussed above, as well as conserving Covered Species where they occur; (2) maintaining key ecological processes (active sand fields and fluvial sand transport), and (3) maintaining the functionality of the biological corridor or linkage between the Willow Hole Conservation Area and the WFCAs. The proposed modification will support these objectives by (1) conserving 42 acres of modeled core habitat for the above listed Covered Sand Species which increases the acreage of conserved habitat than would occur without the Like Exchange; (2) conserving 42 acres of active sand fields; (3) enhancing fluvial sand transport within the WFCAs with the construction of the storm drain; and (4) enhancing the functionality of the biological corridor or linkage between the Willow Hole Conservation Area and the WFCAs through project implementation.

5.2 PROVIDE EQUAL OR GREATER BENEFITS TO COVERED SPECIES AND NATURAL COMMUNITIES

Modeled habitat for each of the Covered Species addressed in the WFCAs will be conserved at a higher acreage total as a result of the proposed modification. Further, with the proposed project, fluvial sand transport will be enhanced, improving habitat values for the natural communities and covered species associated with the active sand fields that found in the

eastern portion of the WFCAs. The proposed project will unblock the passages under the UPRR Bridge, enhancing wildlife movement opportunities for Covered Species from the Willow Hole Conservation Area to the WFCAs.

5.3 THE LEVEL OF TAKE IS NO GREATER THAN THAT ANALYZED IN THE PLAN

Focused surveys for Coachella Valley milk-vetch found the species throughout the proposed project area, as well as areas proposed for additional conservation. Under the Plan, only 7 acres of disturbance to Coachella Valley milk-vetch habitat is allowed within the City of Cathedral City's portion of the WFCAs. The project, as proposed, will result in 5.7 acres of permanent impact and 17.3 acres of temporary impact. However, the proposed project also includes the acquisition of 42 acres of private lands that will be permanently conserved, adding to the acreage of conserved habitat for Coachella Valley milk-vetch with the WFCAs. Although, focused surveys were not conducted for several sand dune species, including Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, Palm Springs Pocket Mouse, Le Conte's Thrasher, and Flat-tailed Horned Lizard, CVAG habitat modeling identifies Core habitat for each of these species within the project site. The proposed project would increase the acreage of core habitat being conserved for all of these species.

5.3.1 Ecological Processes

The restoration or enhance of fluvial ecological processes within those portions of the 100-year floodplain associated with the proposed project would provide for the fluvial transport of sand that is critical to conservation of a number of species endemic to the sand fields in the Coachella Valley. The scouring of this area that would result from this project would also be expected to enhance habitat types/values in the project site and surrounding active sand field.

5.3.2 Equivalency Analysis for the Proposed Modification

As shown in Table 4-37b of the MSHCP, disturbance or habitat loss is limited to 7 acres within the City of Cathedral City's portion of the WFCAs. In order to authorize the proposed 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impact) in the existing WFCAs, a modification supported by an equivalency analysis is proposed. The equivalency analysis for the proposed modification will ensure consistency with the MSHCP and will result in a net increase of 19 acres of conserved core habitat. Refer to Table 2, *Disturbances within the WFCAs* below:

Table 2: Disturbances within the WFCFA

Description	Acres
Disturbance authorized within the City of Cathedral City's portion of the WFCFA (gross)	7.0
Project Impacts (gross) <ul style="list-style-type: none"> • Direct Impact 5.7 • Temporary Impact 17.3 	23.0
Proposed Additional Conservation Land (gross)	42.0
Net Increase in Conservation Area <ul style="list-style-type: none"> • The difference between the proposed additional conservation land and the anticipated project impacts 	19.0

Section 6 Equivalency Analysis for the Proposed Modification to the Whitewater Floodplain Conservation Area

In accordance with the requirements of the MSHCP, this section compares the effects/benefits of the proposed project with the proposed modification, and a project on the same site not deviating from the Conservation Area Conservation Objectives.

6.1 COVERED SPECIES HABITAT AND LEVEL OF TAKE

As explained in detail below, the conservation of suitable habitat and level of take of Covered Species with the proposed modification will be biologically equivalent or superior to what would otherwise occur. This section addresses the specific habitat requirements of the species of concern on the site.

6.1.1 Coachella Valley Milk-vetch

This species was found during a sensitive plant survey in 2016 to occur throughout the 20 acres of proposed impacts, all of which are modeled as Core Habitat for the species (Exhibit 8). The Plan allows for up to 7.0 acres of permanent impacts with the City of Cathedral City's portion of the WFCA. The project will result in a total of approximately 23 acres of impact to the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact). CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCA and 27 acres immediately adjacent to the southeast corner of the WFCA (Exhibit 5) which will be added to the Conservation Area. This action would result in a net increase of 19 acres to the conservation area since 23 of the 42 acres will be used to offset the 23 acres of impacts to land within the City of Cathedral City's portion of the WFCA from implementation of the proposed project. This will result in a net increase of 19 acres of conservation of core habitat for Coachella Valley milk-vetch to compensate for the 23 acres of impacts to Coachella Valley milk-vetch habitat. Based on this information, the level of take of this species will be biologically equivalent or superior to what would otherwise occur.

6.1.2 Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, Palm Springs Pocket Mouse, and Le Conte's Thrasher

As the project site is modeled as core habitat for Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, and Palm Spring Pocket Mouse. It is also considered conserved habitat for Le Conte's Thrasher. Development of the project site, will result in a total of 23 acres of impacts to the WFCA (5.7

acres of permanent impact and 17.3 acres of temporary impact). The Plan allows for up to 7.0 acres of impacts within the City of Cathedral City's portion of the WFCAs. CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCAs and 27 acres immediately adjacent to the southeast corner of the WFCAs (Exhibit 5) which will be added to the Conservation Area. All 42 acres are considered core or otherwise conserved habitat for each of these species. This will result in a net increase of 19 acres of conservation of modeled core or otherwise conserved habitat to compensate for the 23 acres of impacts to habitat for these species. Based on this information, the level of take of all of these species will be biologically equivalent or superior to what would otherwise occur.

6.1.3 Flat-tailed Horned Lizard

Development of the project site, will result in a total of 23 acres of impacts to the WFCAs (5.7 acres of permanent impact and 17.3 acres of temporary impact). The Plan allows for up to 7.0 acres of impacts within the City of Cathedral City's portion of the WFCAs. CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCAs and 27 acres immediately adjacent to the southeast corner of the WFCAs (Exhibit 5) which will be added to the Conservation Area. The added conservation lands are a continuum of the active sand field habitat that supports MSHCP Covered Sand Species. All 42 acres are considered, predicted and potential habitat for flat-tailed horned lizard. This will result in a net increase of 19 acres of conservation of predicted and potential flat-tailed horned lizard habitat to compensate for the 23 acres of impacts to potential flat-tailed horned lizard habitat associated with this project. Based on this information, the level of take of flat-tailed horned lizard habitat will be biologically equivalent or superior to what would otherwise occur.

6.2 NATURAL COMMUNITIES

The entire project site, as well as the additional conservation areas, supports Sonoran creosote bush scrub. The proposed modification will result in an increase in acreage of conserved Sonoran creosote bush with the same overall habitat function and values.

6.3 BIOLOGICAL CORRIDORES AND LINKAGES

The Whitewater River Fluvial Sand Transport Biological Corridor in the vicinity of the project site is intended to provide a linkage or biological corridor between the Willow Hole Conservation Area and the WFCAs. It is also intended to provide habitat connectivity for several covered species, as well as to maintain ecosystem functions for these species. The configuration of the proposed project, including the additional conserved lands, would continue to meet these biological objectives.

The proposed modification will not only maintain the corridor but would increase its function and values by opening the clearing under the UPRR Bridge that had previously been backfilled.

The newly available movement corridor under the bridge would allow wildlife to more freely move between the Willow Hole Conservation Area and the WFC. The proposed project would, therefore, provide a biologically equivalent or superior corridor to that analyzed in the MSHCP.

6.4 ESSENTIAL ECOLOGICAL PROCESSES

The key ecological process that the MSHCP is intended to maintain in this portion of the WFC is fluvial sand transport. This ecological objective appears to have been constrained by the backfill of the openings under the UPRR Bridge. With the proposed project the openings under the bridge would be restored. Further, the proposed project would further enhance the flow of storm waters from the north to the south and into the floodplain habitats south of the railroad tracks. The proposed project would result in the provision of essential ecological processes that are biologically equivalent or superior to what would occur without the proposed modification.

6.5 CONSERVATION AREA CONFIGURATION AND MANAGEMENT

Five of the six addition conservation lands that would be added to the WFC are within the existing boundaries of the conservation area but exist as unmanaged private lands that are not part of the WFC. Their acquisition would improve that overall configuration and management of the WFC. The sixth and largest parcel is a 27 acres parcel, immediately outside of the existing conservation area, at its southeast corner and adjacent to Tribal land. The acquisition of this sixth parcel is not expected to create any new or additional concerns regarding the configuration and/or management of existing WFC Conservation Area.

Overall, considering the configuration of the additional conservation area and the lack of changes in otherwise allowable uses in the WFC, the proposed modification would result in biologically equivalent or superior conservation configuration and management requirements as compared to what was analyzed under the MSHCP.

6.6 ECOTONES AND OTHER CONDITIONS AFFECTING SPECIES DIVERSITY

The entire project site is mapped as Sonoran creosote bush scrub and occurs in a larger area of active desert sand fields with little or no topographic relief, thereby limiting the presence of ecotones within or adjacent to the project site. The proposed modification would result in overall equivalent conditions affecting species diversity as that analyzed under the MSHCP.

6.7 ACREAGE CONTRIBUTED TO THE CONSERVATION AREAS

Development of the project site, will result in a total of 23 acres of impacts to the WFC (5.7 acres of permanent impact and 17.3 acres of temporary impact). CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFC and 27 acres immediately adjacent to the southeast corner of the WFC (Exhibit 5) which will be added to the Conservation Area. The proposed additional conservation land, totaling 42 acres, results in a net contribution of 19 acres of conserved habitat.

6.8 CONTROL OVER MITIGATION PROPERTY

The mitigation properties are presently privately owned parcels but will be acquired by CVWD and a conservation easement will be recorded in favor of the CVAG. This will allow these properties to be managed as part of the existing WFC. CVWD has control over all mitigation property for the proposed project and will contribute properties to the conservation areas.

Section 7 Equivalency Findings

The proposed modification would result in biologically equivalent or superior conservation acreage and value, as summarized here using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12. A more complete analysis is provided in above Section 6 of this report:

- **Level of Habitat Conservation and Take of Covered Species.** The conservation of suitable habitat and level of take of covered species with the proposed modification would be biologically equivalent or superior to what would otherwise occur for all potentially occurring species. Surveys have been conducted for Coachella Valley milk-vetch and this species is known to occur on the property. In addition, the project area, including areas of permanent and temporary impacts, as well as the all six parcels proposed as additional conservation lands are within core habitat for Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. Other species for which habitat occurs within the project site and the additional conservation properties, include *Le Conte's* thrasher and flat-tailed horned lizard. While impacts will be limited to 5.7 acres, of permanent impacts (7 acres are authorized, within the City of Cathedral City's portion of the WFCA), CVWD will acquire 42 acres of habitat that is also recognized as core habitat or otherwise conserved habitat for these various Covered Sand Species. This will result in the net increase of 19 acres to active desert sand fields modeled to provide core habitats or otherwise conserved habitats for these Covered Sand Species. The level of habitat conservation and take of covered species will be biologically equivalent or superior to what would otherwise occur without the proposed modification.
- **Effects on Natural Communities.** Both the impact area and the addition of conservation properties are part of the same Sonoran creosote bush scrub natural community, and therefore provide similar overall functions and values.
- **Effects on Biological Corridors and Linkages.** The 23 acres of impacts occur at the eastern edge of the Whitewater River Fluvial Sand Transport Biological Corridor that connects the Willow Hole Conservation Area and the WFCA. The UPRR Bridge was constructed to provide a passageway for wildlife under the railroad track, however, the openings under the bridge were backfilled pending approval of a flood control structure that would provide adequate movement opportunities for wildlife while meeting County Standards as a regional flood control facility. The proposed project represents the final design for the regional flood control facility under the UPRR Bridge. Its development will facilitate wildlife movement through the corridor will meeting the requirements for regional flood control.

- **Effects on Essential Ecological Processes.** With the opening of the passageway under the UPRR Bridge and development of the regional flood control facility at this location, the project will enhance the essential ecological processes, primarily fluvial sand transport, for this location in the WFCA. The proposed project would result in the provision of essential ecological processes that are biological equivalent or superior to what would occur without the proposed modification.
- **Effects on Conservation Area Configuration and Management.** The maintenance of the proposed project site, following construction of the flood control facility, and the acquisition of conservation lands that would be added to the WFCA will improve the overall configuration and management of the WFCA.
- **Effects on Ecotones and Other Conditions Affecting Species Diversity.** The project area and proposed additional conservation lands are part of a larger mapped area of Sonoran creosote bush scrub, thereby limiting the presence of ecotones associated with the project site and/or additional conservation areas. Overall species diversity is not expected to be reduced by the proposed modification.
- **Equivalent or Greater Acreage.** The proposed project, with the contribution of 6 parcels of additional conservation totaling 42 acres of Core Habitat, will result in greater conservation acreage (19 additional acres like habitat) than would otherwise occur without the proposed modification.
- **Control Over Mitigation Property.** The applicant has control over all mitigation property for the proposed project and will deed all properties to CVAG. The six parcels of mitigation property are presently privately owned parcels but will be acquired by CVWD and deeded to the CVAG as conservation properties to be managed as part of the existing WFCA.

Section 8 Conclusion

The proposed modification is proposed in order to allow the construction of a planned storm drain channel at the UPRR Bridge. Besides providing needed flood protection measures, this project will enhance the biological corridor and restore the ecological process of fluvial sand transport south of the I-10 Freeway and the Union Pacific Rail Road tracks. The project will result in 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impacts). The Plan authorizes up to 7 acres of habitat loss in the City of Cathedral City's portion of the WFCA. The proposed modification or Like Exchange consists of two conservation measures that will be implemented by CVWD:

- Enhancement of Wildlife Movement and Essential Ecological Processes
- Additional Habitat Conservation

The rationale for this equivalency analysis in support of the proposed modification is based on:

- The MSHCP's acknowledgement that it may be possible to achieve the Plan's conservation goals through a modification or different configuration of 1 or more conservation areas;
- The proposed modification will result in equal or greater benefits to Covered Species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing Conservation Area boundaries);
- The level of take of (impact to) Covered Species is no greater than that analyzed in the Plan;
- The restoration and enhancement of the biological corridor between the Willow Hole Conservation Area and the WFCA; and
- The restoration of essential ecological processes of fluvial sand transport south of the I-10 Freeway at the eastern edge of the WFCA with project implementation.

The proposed modification would result in biologically equivalent or superior conservation acreage and value using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12, summarized as follows:

- The conservation of core habitat in exchange for authorized take of Covered Species with the proposed modification would be biologically equivalent to what would otherwise occur;
- The proposed modification would result in equal or greater benefits to natural communities as compared to those benefits analyzed under the MSHCP;

- The proposed project will restore and enhance the function and values of the existing biological corridor between the Willow Hole Conservation Area and the WFCA, resulting in a Biological Corridor and essential ecological processes (i.e., fluvial sand transport) that are biological equivalent or superior to what would otherwise occur without the proposed modification;
- The proposed modification would result in biologically equivalent conservation configuration and management requirements as what could have occurred under the MSHCP;
- Ecotones and overall species diversity are not expected to be reduced by the proposed modification;
- The additional conservation parcels are the greater in size, resulting in an greater acreage in the WFCA ; and
- The six parcels that constitutes the additional conservation will be acquired by CVWD and, therefore, will be under the direct ownership of the applicant before being deeded to CVAG.

Based on this analysis, the proposed modification would result in biologically equivalent or superior conservation value compared with implementation of the MSHCP without the proposed modification for this project.

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**Appendix A Habitat Assessment and MSHCP
Consistency Analysis (2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Habitat Assessment and MSHCP Consistency Analysis

Prepared By:

Michael Baker International
14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

March 2016
Updated November 2016
JN: 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Habitat Assessment and MSHCP Consistency Analysis

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Travis J. McGill
Biologist
Natural Resources



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

March 2016
Updated November 2016

Executive Summary

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the North Cathedral City Improvements Project, Phase 1 (project site or site) located in the City of Cathedral City, Riverside County, California. The project site is located within the Morongo Wash on the western edge of Cathedral City. Most of the project is located within an open area, but approximately the northernmost 20% of the project is located within a constrained corridor located between Interstate 10 (I-10) to the north and railroad tracks to the south. The project would create a transport system underneath the railroad tracks to allow water from the Morongo Wash to cross underneath the tracks. Ultimately this would allow water from north of I-10 to connect with water south of I-10 (i.e. the Whitewater River). The vegetation on-site can be characterized as Sonoran creosote bush scrub, as well as two tamarisk windrows associated with the railroad tracks. The project site is underlain by active sand fields south of the railroads and stabilized shielded sand fields north of the tracks.

Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that the project site has a moderate or higher potential to support one (1) MSHCP-covered plant species, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), which was observed during the 2016 sensitive plant surveys. In addition, the site has a moderate or higher potential to support five (5) sensitive plant species that are not covered under the MSHCP, including Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*), ribbed cryptantha (*Cryptantha costata*), winged cryptantha (*Cryptantha holoptera*), pointed dodder (*Cuscuta californica* var. *apiculata*), and Arizona spurge (*Euphorbia arizonica*). All other sensitive plant species, covered and non-covered, have a low potential to occur or are presumed absent.

Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a moderate or higher potential to support six (6) MSHCP-covered wildlife species, including Coachella Valley giant sand treater cricket (*Macrobaenetes valgum*), Palm Springs pocket mouse (*Perognathus longimembris bangsi*), flat-tailed horned lizard (*Phrynosoma mcallii*), Le Conte's thrasher (*Toxostoma lecontei*), Coachella Valley fringe-toed lizard (*Uma inornata*), and Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*). In addition, the project site has a moderate or higher potential to support three (3) sensitive wildlife species that are not covered under the MSHCP, including prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). Loggerhead shrikes was observed on-site during Michael Baker's August 2015 survey. All other sensitive wildlife species, covered and non-covered, have a low potential to occur or are presumed absent.

The project site is located within the Whitewater Floodplain Conservation Area of the MSHCP. Because the site is located within a conservation area and will have impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e. sand transport), the project will be required to undergo the Joint Project Review Process, which allows the Coachella Valley Conservation Commission to monitor MSHCP progress and implementation. To remain in compliance with the MSHCP, focused surveys may be required under MSHCP Section 4.4 for burrowing owl (*Athene cunicularia*) and Le Conte's thrasher. However, sands in the area are very soft and no suitable burrowing owl burrows were found anywhere within the survey area during Michael Baker's field survey. To reduce the potential for degradation of the Sonoran creosote bush scrub, active sand fields, or stabilized shielded sand fields, activities that may result in sand stabilization or compaction within the project site should be limited, and all vehicles and equipment should be washed prior to entering the site to reduce the potential for transmission of invasive weed seeds.

Burrowing owl focused surveys were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, a focused burrow survey was conducted on April 19, 2016. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent from the project site. However, six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east of the project site. Prior to construction, a pre-construction burrowing owl and nesting bird clearance survey shall be conducted to ensure burrowing owl remain absent from the project site.

Sensitive plant survey was conducted on April 14, April 19, May 4, and June 15, 2016 survey to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). Coachella Valley milk-vetch was the only sensitive plant observed during the focused surveys. Approximately 266 individuals were observed throughout the survey area. No other sensitive plant species were observed on-site during the sensitive plant surveys

Based on the results of the Delineation of State and Federal Jurisdictional Waters Report, prepared under separate cover (Michael Baker, 2016), State jurisdictional areas (Morongo Wash) were identified within the project site that are subject to the Regional Water Quality Control Board (Regional Board) and California Department of Fish and Wildlife (CDFW) and approval. The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement¹.

Pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from February 1 through August 31, but can vary slightly from year to year based upon seasonal weather conditions. However, out of an abundance of caution, a pre-construction nesting bird clearance survey will be conducted prior to any construction or vegetation clearing activities. No burrowing owls were observed on the project site during the 2016 focused surveys; however, burrowing owl have the potential to occur within the project footprint and the pre-construction nesting bird clearance survey should focus on the continued absence of burrowing owl to ensure burrowing owl remain absent from the project site.

¹ The CDFW can issue other approvals in-lieu of a formal Agreement such as an Operation-by-Law letter or Letter of Non-Substantial Impact. A formal notification must first be submitted to the CDFW prior to approval.

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APPENDIX

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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corp of Engineers
CVCC	Coachella Valley Conservation Commission
CVWD	Coachella Valley Water District
CWA	Clean Water Act
F	Fahrenheit
FR	Federal Register
GIS	Geographic Information System
I	Interstate
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
MSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
NRCS	Natural Resources Conservation Service
Regional Board	Regional Water Quality Control Board
Section 6	Section 6 Target Acquisition Area
Specific Plan	North City Extended Specific Plan
THCP	Tribal Habitat Conservation Plan
UPRR	Union Pacific Railroad
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California. A habitat assessment/field investigation was conducted by Michael Baker biologists Travis J. McGill, Ryan S. Winkleman, Thomas C. Millington, and Ashley M. Barton on August 5, 2015 to verify existing site conditions and assess the probability of occurrence for sensitive plant and wildlife species that could pose a constraint to development of the proposed project site. A formal delineation of state and federal jurisdictional waters was prepared under separate cover.

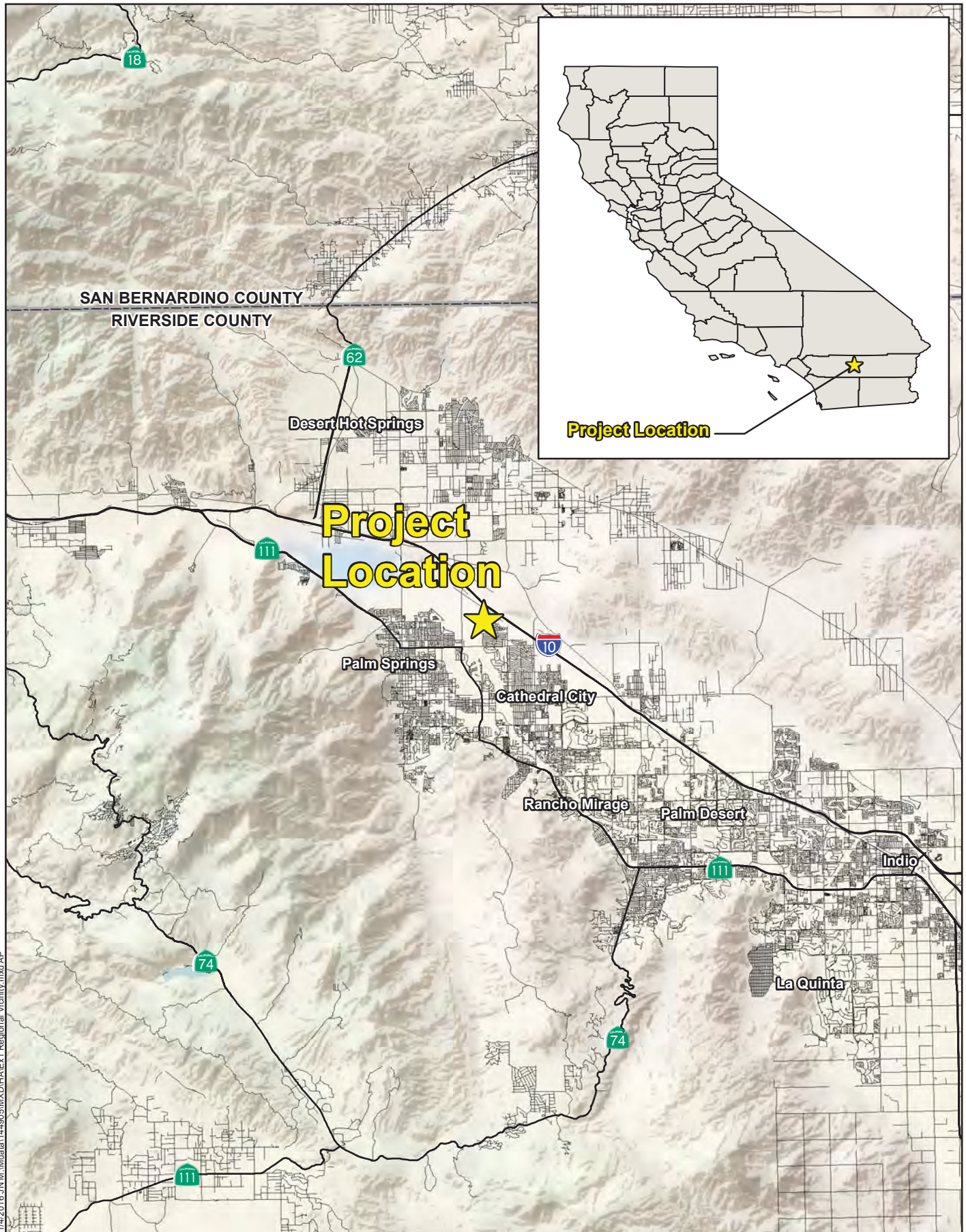
Special attention was given to the suitability of the on-site habitat to support species whose habitat has been conserved within the Whitewater Floodplain Conservation Area by the MSHCP, including Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), triple-ribbed milk-vetch (*Astragalus tricarinatus*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*), Coachella Valley fringe-toed lizard (*Uma inornata*), desert tortoise (*Gopherus agassizii*), flat-tailed horned lizard (*Phrynosoma mcallii*), burrowing owl (*Athene cunicularia*), Le Conte's thrasher (*Toxostoma lecontei*), Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*), as well as other sensitive species identified by the California Natural Diversity Database (CNDDDB) and other electronic databases as potentially occurring on or within the general vicinity of the project site.

1.1 PROJECT LOCATION

The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of I-10, and east of Gene Autry Trail (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

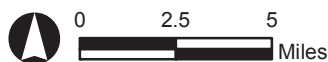
The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently,



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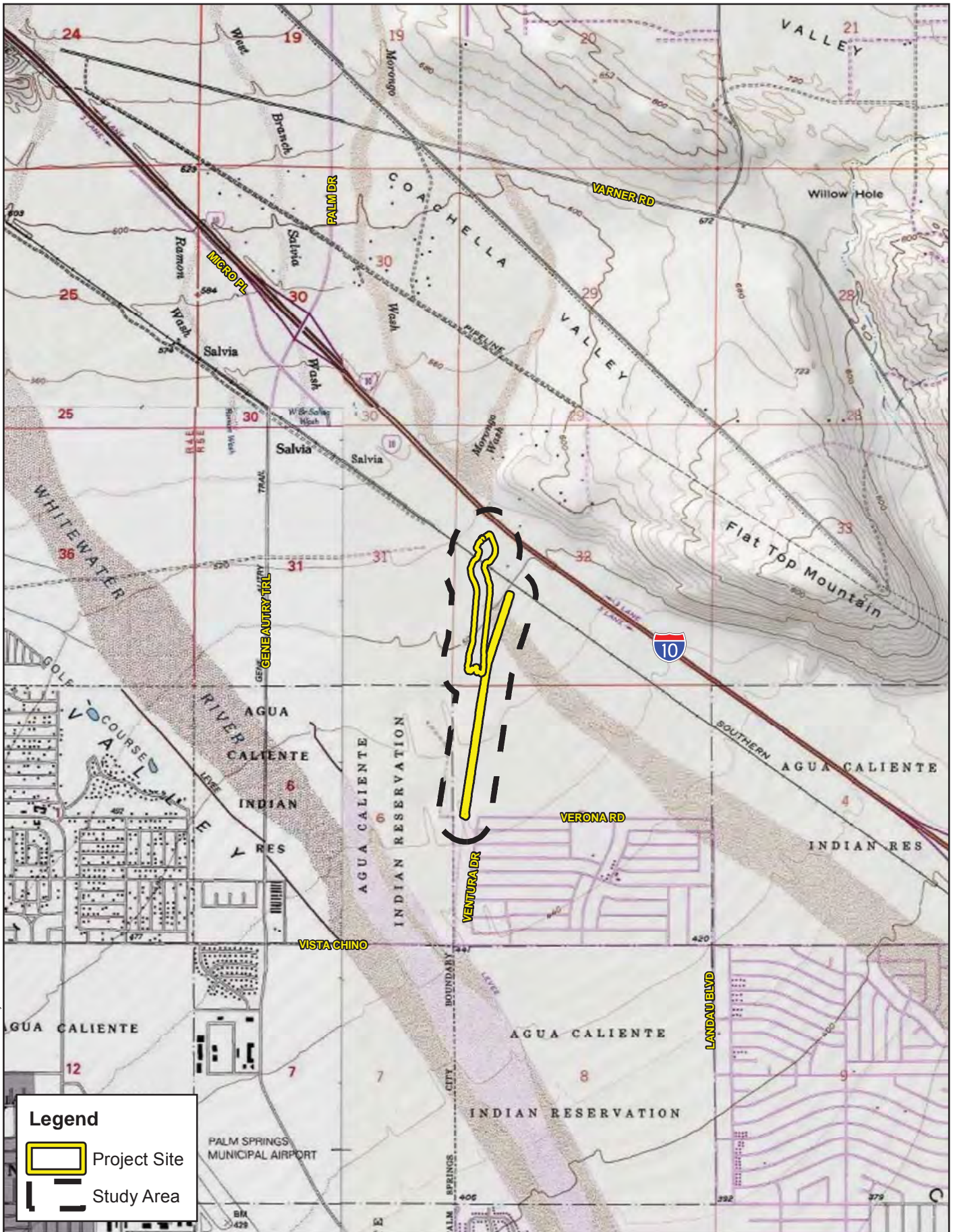
NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

Regional Vicinity



Source: ESRI Relief Map, National Highway Planning Network

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

Site Vicinity





Source: ArcGIS Online, County of Riverside, County of San Bernardino



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Legend

-  Project Site
-  Study Area

Verona Rd

Southern Pacific Railroad



there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet (Exhibit 4, *Depiction of Proposed Project*). Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.



NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS
Depiction of Proposed Project

Section 2 Methodology

2.1 COACHELLA VALLEY MSHCP CONSISTENCY ANALYSIS

CVWD is a permittee under the Coachella Valley MSHCP, and although the proposed project was in the planning process during the construction of the MSHCP and is directly referenced in Section 4.3 under the Whitewater Floodplain Conservation Area, the proposed project is not a covered activity.

The project site was reviewed to determine consistency with the MSHCP. Geographic Information System (GIS) software was utilized to map the project site in relation to MSHCP areas including conservation areas, corridors and linkages, and sand transport areas. The MSHCP requires that local permittees, such as CVWD, comply with a number of protection measures for species, communities, essential ecological processes, and biological corridors. In addition, certain projects may be subject to local development mitigation fees, a Joint Project Review Process, or other conservation or implementation measures. These are discussed in greater detail in regards to the proposed project in Section 5.0.

2.2 HABITAT ASSESSMENT

The first step in determining consistency against the above listed sections of the MSHCP is to conduct a habitat assessment of the project site. Prior to conducting this assessment, Michael Baker biologists conducted a literature review and records search for sensitive biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of sensitive² plant and wildlife species and their proximity to the project site were determined through a query of the CDFW's CNDDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of sensitive species published by CDFW, the United States Fish and Wildlife Service (USFWS) species listings, and the Coachella Valley MSHCP and associated technical documents. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey;

² As used in this report, "sensitive" refers to plant and animal species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society Rare Plant Rank; and animal species that are designated by the CDFW as fully protected, species of special concern, or watch list species.

- USFWS Critical Habitat designations for Threatened and Endangered Species;
- Habitat requirements for Coachella Valley milk-vetch, triple-ribbed milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, burrowing owl, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse; and
- Primary Constituent Elements for Coachella Valley milk-vetch, Coachella Valley fringe-toed lizard, and desert tortoise.

Following the literature review, Michael Baker biologists Travis J. McGill, Ryan S. Winkleman, Thomas C. Millington, and Ashley M. Barton inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the project site on August 5, 2015. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. In addition, field staff identified any jurisdictional features, riparian/riverine habitat, and natural corridors and linkages that may support the movement of wildlife through the area.

Special attention was given to any sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species. Areas providing suitable habitat for desert tortoise, flat-tailed horned lizard, and Coachella Valley fringe-toed lizard were closely surveyed for signs of presence during the habitat assessment. Methods to detect the presence of DT included direct observation and signs of presence including burrows, scat, scutes, and carapaces. Methods to detect the presence of flat-tailed horned lizard and Coachella Valley fringe-toed lizard included availability of suitable blowsand habitat and direct observation of sign (lizard scat and tracks).

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features as well as riparian/riverine areas were noted.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

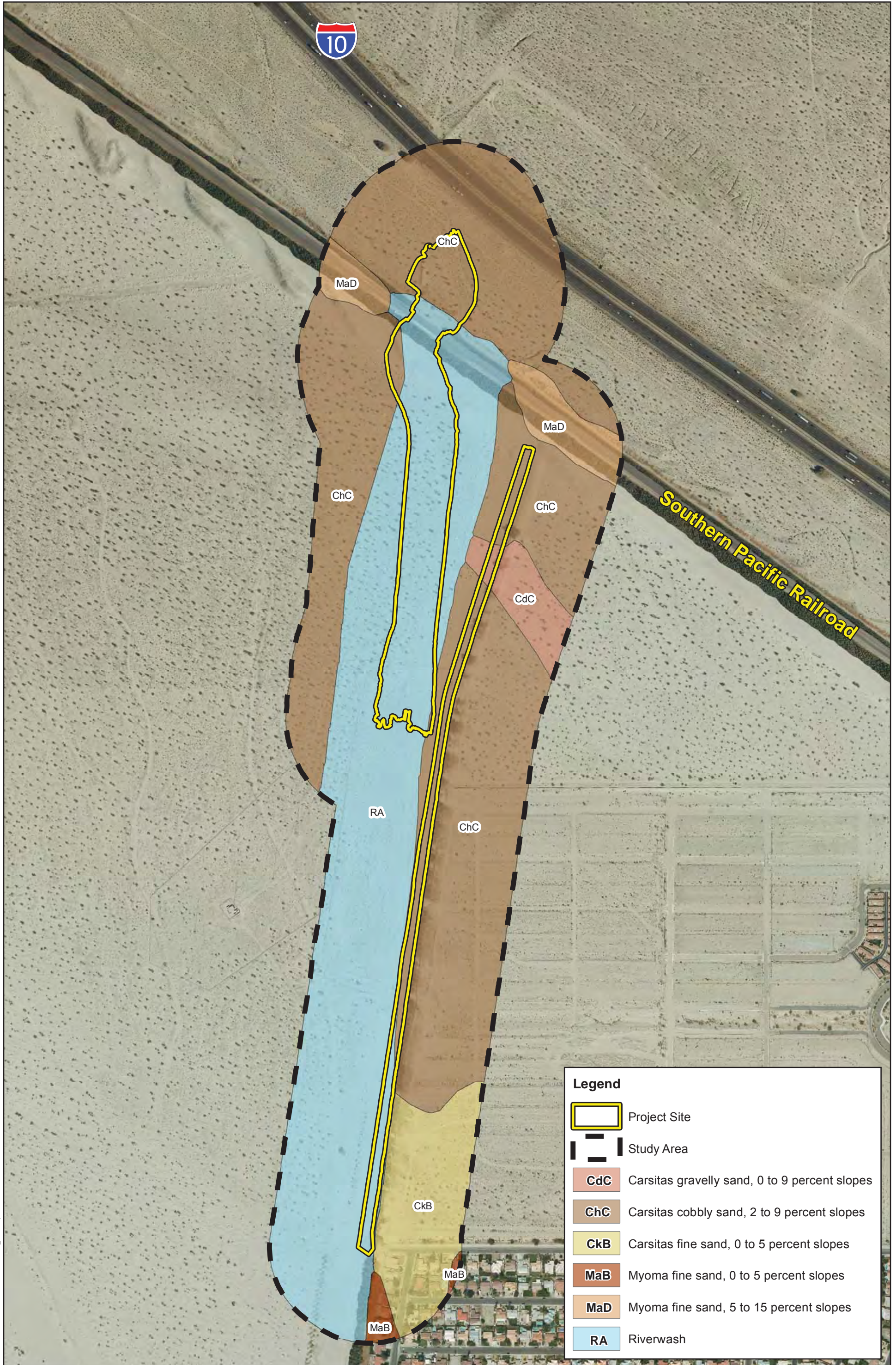
Riverside County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures common. Climatological data obtained for the City of Cathedral City indicates the annual precipitation averages 5.23 inches per year. Almost all of the precipitation occurs in the months between December and March, with hardly any occurring between the months of April and November. The wettest month is January, with a monthly average total precipitation of 1.27 inches. The average maximum and minimum temperatures for the City of Cathedral City are 88.9 and 59.0 degrees Fahrenheit (F) respectively with July being the hottest month (monthly average 108.0° F) and December being the coldest (monthly average 43.0° F). Temperatures during the site visits were in the mid- to high 90s (degrees Fahrenheit) with infrequent, light winds and little to no cloud cover.

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). Based on the NRCS USDA Web Soil Survey, the project site is underlain by the following soil units: Carsitas cobbly sand (2 to 9 percent) and Riverwash (Exhibit 5, *Soils*).

3.3 SURROUNDING LAND USES

Land uses in the vicinity of the project site include residential development to the south and west as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex sits immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly recovering. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the southwest, south, and southeast. The Morongo Wash passes through the project site, and the Whitewater River crosses south of the project site.



Legend	
	Project Site
	Study Area
	CdC Carsitas gravelly sand, 0 to 9 percent slopes
	ChC Carsitas cobbly sand, 2 to 9 percent slopes
	CkB Carsitas fine sand, 0 to 5 percent slopes
	MaB Myoma fine sand, 0 to 5 percent slopes
	MaD Myoma fine sand, 5 to 15 percent slopes
	RA Riverwash

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Section 4 Discussion

4.1 SITE CONDITIONS

The project site occurs in an area that is still mostly undisturbed except for railroad tracks bordered by tamarisk windrows. Along the eastern side of the project site, a tamarisk windrow sits on a berm; this area has been subject to a high degree of human disturbance, primarily through illegal trash dumping. Outside of these areas, on-site habitats exhibited minimal disturbance and generally presented naturally-occurring desert scrub.

4.2 VEGETATION

One (1) vegetation community was documented within the project site: Sonoran creosote bush scrub (Exhibit 6, *Vegetation*). Plant species observed within the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected, or not expected to occur on-site. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were based on calls, songs, scat, tracks, burrows, and actual sightings of animals.

4.3.1 Fish

No fish or hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on or within the vicinity of the project site. Therefore, no fish are expected to occur and are presumed absent. The Morongo Wash does not support standing water that would be sufficient to support a fish population. Therefore, no fish are expected to occur and they are presumed absent.

4.3.2 Amphibians

No amphibians or hydrogeomorphic features that would provide suitable habitat for amphibian species were observed on or within the vicinity of the project site. The Morongo Wash does



Southern Pacific Railroad

Legend	
	Project Site (20 acres)
	Study Area
	Sonoran Creosote Bush Scrub (170.55 ac)
	Tamarisk Windrow (11.59 ac)
	Developed (11.73 ac)

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not support standing water that would be sufficient to support an amphibian population. Therefore, no amphibians are expected to occur and they are presumed absent.

4.3.3 Reptiles

Two (2) reptilian species were observed during the habitat assessment, desert iguana (*Dipsosaurus dorsalis*) and Colorado Desert sidewinder (*Crotalus cerastes laterorepens*). Although diversity was low during the survey, habitat on the project site is suitable for a number of reptilian species. Due to the open, sparsely vegetated habitat with fine windblown sands, the site has the potential to support reptiles such as long-nosed leopard lizard (*Gambelia wislizenii*), western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), desert horned lizard (*Phrynosoma platyrhinos*), western side-blotched lizard (*Uta stansburiana elegans*), flat-tailed horned lizard, Coachella Valley fringe-toed lizard, desert tortoise, Sonoran gopher snake (*Pituophis catenifer affinis*), and red racer (*Coluber flagellum piceus*).

4.3.4 Avian

A total of nine (9) avian species were identified during the habitat assessment, and the project site provides suitable foraging and nesting habitat for a limited variety of avian species. The species identified included white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), Eurasian collared-dove (*Streptopelia decaocto*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), verdin (*Auriparus flaviceps*), and house finch (*Haemorhous mexicanus*).

4.3.5 Mammals

Only one (1) mammalian species, desert cottontail (*Sylvilagus audubonii*), was observed during the habitat assessment. The project site provides suitable habitat for a limited variety of mammalian species, and no obvious mammal burrows were observed during the survey. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Mammalian species that could occur within the project site include coyote (*Canis latrans*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jackrabbit (*Lepus californicus*), and various bat species (*Chiroptera* spp.).

4.4 NESTING BIRDS

No nesting birds or breeding behaviors were observed during the August 5, 2015 field survey. However, this survey was conducted near the end of the typical nesting season (usually February 1 to August 31), and active nesting is generally rare by August. On-site vegetation provides nesting opportunities for avian species, particularly in larger clumps of creosote bushes and in the tamarisk windrows.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site is partially located within a designated corridor related to the Morongo Wash. This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the Whitewater Floodplain Conservation Area (where the project site is located). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the project site.

4.6 JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Branch regulates discharge of dredge and/or fill materials into “waters of the United States” pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the Fish and Game Code, and the Regional Water Quality Control Board (Regional Board) regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Based on the results of the Delineation of State and Federal Jurisdictional Waters Report, prepared under separate cover (Michael Baker, 2016), State jurisdictional areas (Morongo Wash) were identified within the project site that are subject to the Regional Water Quality Control Board (Regional Board) and California Department of Fish and Wildlife (CDFW) and approval. The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement.

4.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Vascular Plants of California and MSHCP supplied information regarding the distribution and habitats of vascular plants in the vicinity of the project site. The habitat assessment was used to assess the ability of the plant communities found on-site to provide suitable habitat for relevant sensitive plant and wildlife species.

The literature search identified thirty-seven (37) sensitive plant species, fifty-one (51) sensitive wildlife species, and three (3) sensitive habitats as having potential to occur within the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix C, *Potentially Occurring Sensitive Biological Resources*, and discussed below.

4.7.1 Sensitive Plants

According to the CNDDDB and CNPS, thirty-seven (37) sensitive plant species have been recorded in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles (refer to Appendix C). Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that the project site has a moderate or higher potential to support one (1) MSHCP-covered plant species, Coachella Valley milk-vetch, which was observed on-site during the 2016 focused surveys. In addition, it was determined that the site has a moderate potential to support five (5) sensitive plant species that are not covered under the MSHCP, including Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*), ribbed cryptantha (*Cryptantha costata*), winged cryptantha (*Cryptantha holoptera*), pointed dodder (*Cuscuta californica* var. *apiculata*), and Arizona spurge (*Euphorbia arizonica*). All other sensitive plant species, covered and non-covered, have a low potential to occur or are presumed absent. Descriptions of species determined to have a moderate or higher potential to occur within the project site, as well as of those covered species that are known to occur within the Whitewater Floodplain Conservation Area, are provided below.

Coachella Valley Milk-vetch

Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside County. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species (Exhibit 7a, *MSHCP Conserved Habitat*). Coachella Valley milk-vetch has a high potential to occur within the project site, and was observed on-site during the 2016 sensitive plant surveys.

Borrego Milk-vetch

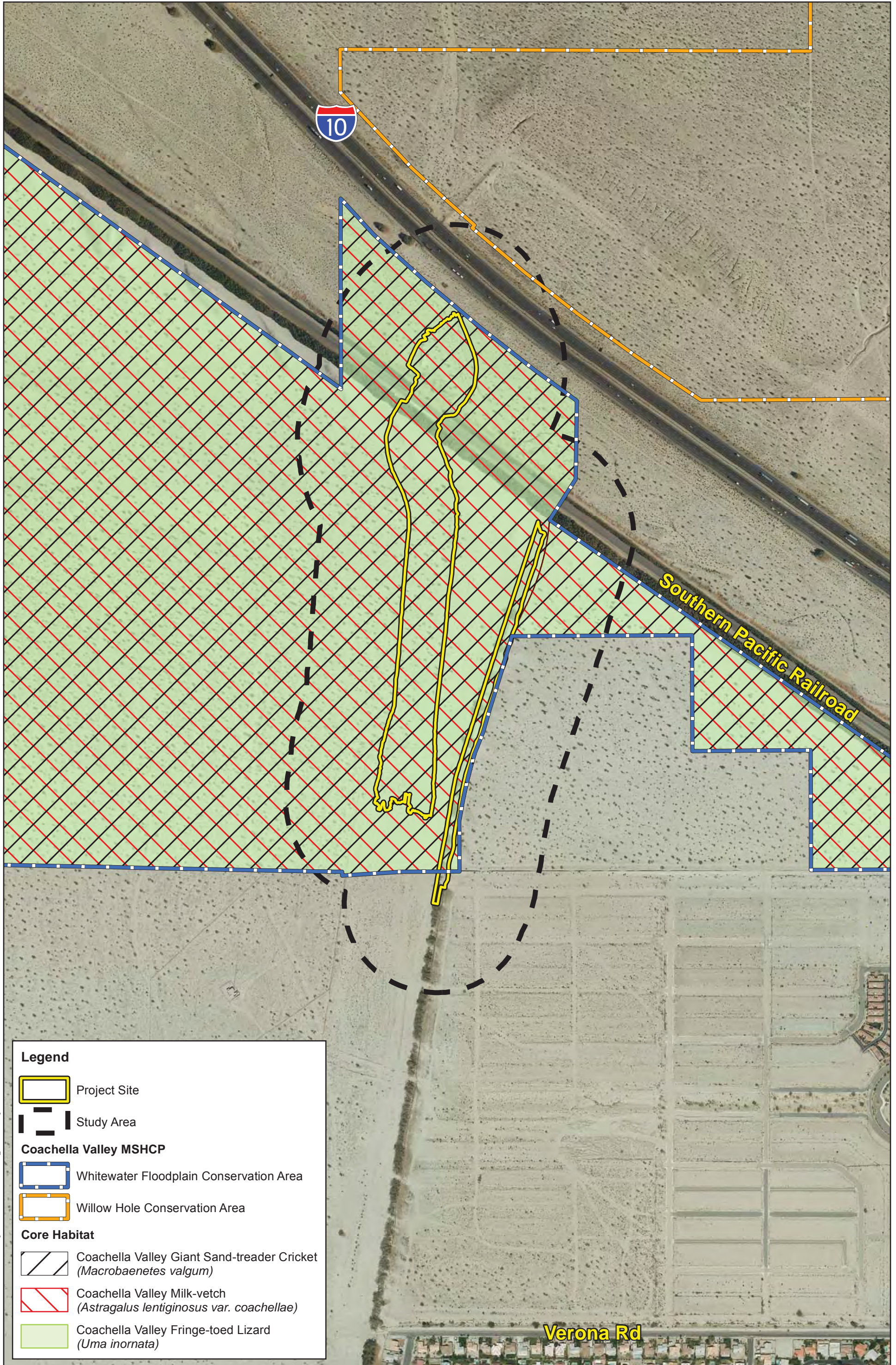
Borrego milk-vetch is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in Mojavean and Sonoran desert scrub between 98 and 1,050 feet in elevation. Borrego milk-vetch has a moderate potential to occur within the project site.

Ribbed Cryptantha

Ribbed cryptantha is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in desert dunes and Mojavean and Sonoran desert scrub between 197 and 1,640 feet in elevation. Ribbed cryptantha has a moderate potential to occur within the project site.



Winged Cryptantha

Ribbed cryptantha is an annual herb that blooms between March and April. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it




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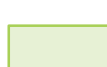
Legend

-  Project Site
-  Study Area

Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core Habitat

-  Coachella Valley Giant Sand-treader Cricket (*Macrobaenetes valgum*)
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus var. coachellae*)
-  Coachella Valley Fringe-toed Lizard (*Uma inornata*)

is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in Mojavean and Sonoran desert scrub between 328 and 5,545 feet in elevation. Winged cryptantha has a moderate potential to occur within the project site.

Pointed Dodder

Pointed dodder is an annual parasitic vine that blooms between February and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 3, indicating that it is under review and that more information about it is needed. It is not endemic to California, but in California it is known to occur in Riverside and San Bernardino Counties, where it can be found in Mojavean and Sonoran desert scrub between 0 and 1,640 feet in elevation. Pointed dodder has a moderate potential to occur within the project site.

Arizona Spurge

Arizona spurge is a perennial herb that blooms between March and April. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 2B.3, indicating that it is rare, threatened, or endangered in California and more common elsewhere, but is still not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Riverside, and San Diego Counties, where it can be found in sandy Sonoran desert scrub between 164 and 984 feet in elevation. Arizona spurge has a moderate potential to occur within the project site.

Triple-ribbed Milk-vetch

Triple-ribbed milk-vetch is a perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside and San Bernardino Counties. It occurs in sandy or gravelly soils in Joshua tree woodland and Sonoran desert scrub, where it typically grows at elevations between 1,476 and 3,904 feet. The project site is well outside of the known elevation range for this species, and triple-ribbed milk-vetch is presumed absent from the project site.

4.7.2 Sensitive Wildlife

According to the CNDDB, fifty-one (51) sensitive wildlife species have been reported in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles (refer to Appendix C). Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a moderate or higher potential to support six (6) MSHCP-covered wildlife species,

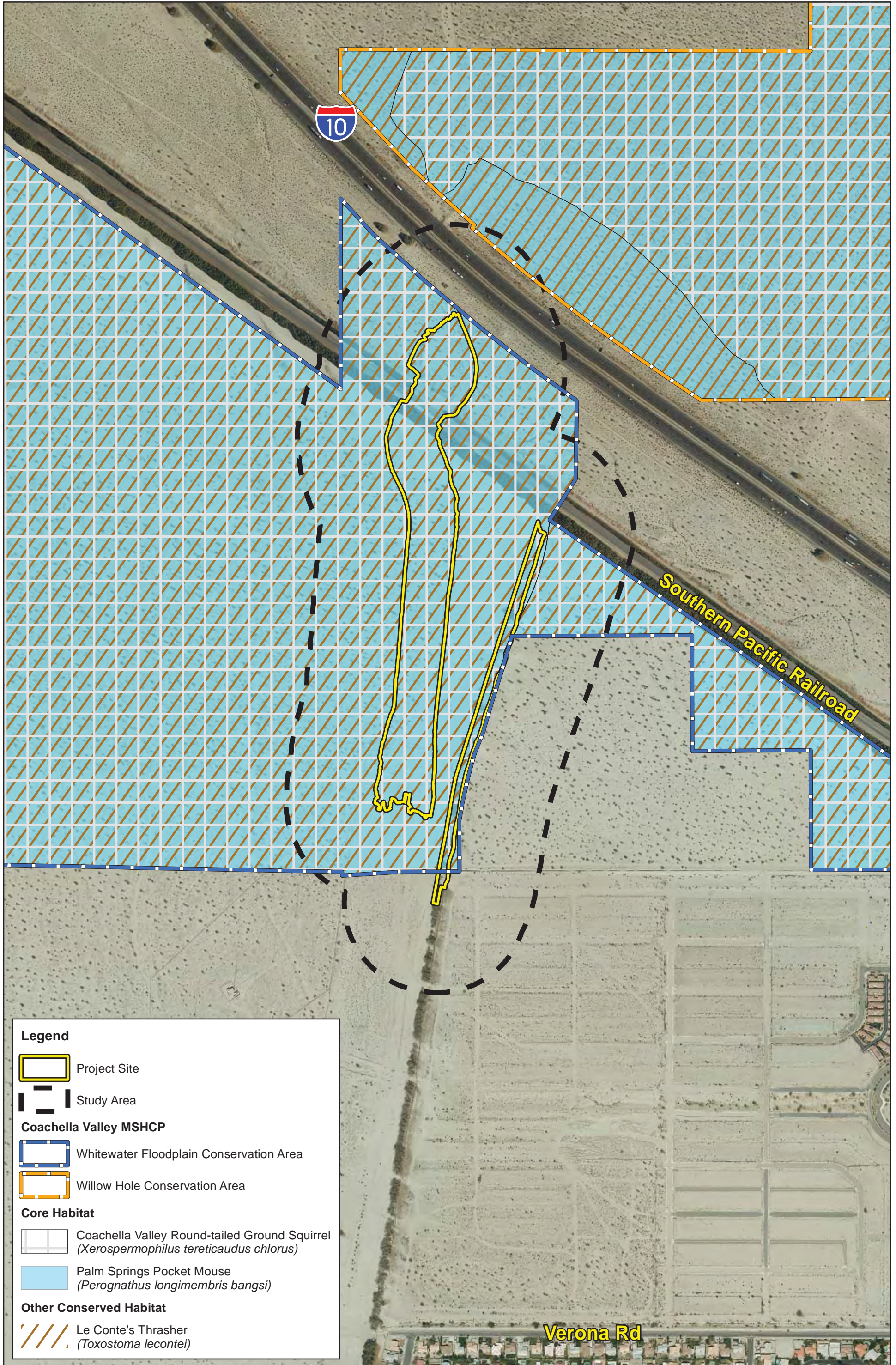
including Coachella giant sand treader cricket, Palm Springs pocket mouse, flat-tailed horned lizard, Le Conte's thrasher, Coachella Valley fringe-toed lizard, and Coachella Valley round-tailed ground squirrel. In addition, the project site has a moderate or higher potential to support three (3) sensitive wildlife species that are not covered under the MSHCP, including prairie falcon (*Falco mexicanus*), loggerhead shrike, and pocketed free-tailed bat (*Nyctinomops femorosaccus*). Multiple loggerhead shrikes were observed on-site during Michael Baker's August 2015 survey. All other sensitive wildlife species, covered and non-covered, have a low potential to occur or are presumed absent. Descriptions of species determined to have a moderate or higher potential to occur within the project site, as well as of those covered species that are known to occur within the Whitewater Floodplain Conservation Area, are provided below.

Coachella Giant Sand Treader Cricket



The Coachella giant sand treader cricket has no state or federal designation, but is covered under the MSHCP. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio. This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite (*Prosopis glandulosa*), Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species (refer to Exhibit 7a), which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.

Palm Springs Pocket Mouse

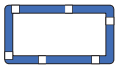

The Palm Springs pocket mouse is designated by the CDFW as a species of special concern and is also covered under the MSHCP. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Gorgonio Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands with loose and/or sandy soils and sparse to moderate vegetative cover. Areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the Whitewater Floodplain Conservation Area has been designated by the MSHCP as a core habitat area (Exhibit 7b, *MSHCP Conserved Habitat*). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.





Legend

-  Project Site
-  Study Area


Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core Habitat

-  Coachella Valley Round-tailed Ground Squirrel (*Xerospermophilus tereticaudus chlorus*)
-  Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*)

Other Conserved Habitat

-  Le Conte's Thrasher (*Toxostoma lecontei*)

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Flat-tailed Horned Lizard

Flat-tailed horned lizard is designated by the CDFW as a candidate for endangered status under the CESA, and also as a species of special concern. It is covered under the MSHCP. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area. Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Le Conte's Thrasher

Le Conte's thrasher is designated by the CDFW as a species of special concern. It is covered under the MSHCP. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.), but may still utilize areas without these plants. Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the Whitewater Floodplain Conservation Area has been modeled as conserved habitat for this species (refer to Exhibit 7b). Le Conte's thrasher has a moderate potential to occur within the project site.

Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the USFWS as threatened under the ESA and by the CDFW as endangered under the CESA. It is covered under the MSHCP. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite, and four-winged saltbush (*Atriplex canescens*). This species is

typically active from spring through fall, especially between April and October. Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west on the Whitewater Floodplain Preserve (refer to Exhibit 7a). Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Coachella Valley Round-tailed Ground Squirrel

Coachella Valley round-tailed ground squirrel is designated by the CDFW as a species of special concern. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains. Ideal habitat seems to be areas where hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the MSHCP, this species seems to particularly favor hummocks that form around mesquite. It is inactive and in its burrows from August until January. The breeding period is generally from early spring through June. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the MSHCP as core habitat (refer to Exhibit 7b). Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Prairie Falcon

Prairie falcon is designated by the CDFW as a watch list species. It is a year-round resident of southern California. This species is typically found in shrub-steppe desert, grasslands, mixed shrub and grassland ecotones, agricultural fields, and alpine tundra, but particularly in open, expansive habitats. This species primarily nests on cliffs but will also nest opportunistically if necessary on trees, utility towers, buildings, or even inside caves. The general nesting season extends from the beginning of March through the end of July. Prairie falcon is commonly sighted in the Coachella Valley and has a high potential to occur within the project site.

Loggerhead Shrike

Loggerhead shrike is designated by the CDFW as a species of special concern. It is a year-round resident of southern California. This species is typically found in open country with short vegetation, including pastures, old orchards, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. It utilizes somewhat prominent perching positions for hunting and eating. This species primarily nests in thorny shrubs and trees, but will nest in brush piles or other debris if no shrubs or trees are present. The general nesting season extends

from the end of January through the end of July. Multiple loggerhead shrikes were observed on-site during the August 2015 survey and this species is considered to be present.

Pocketed Free-tailed Bat

The pocketed free-tailed bat has been designated by the CDFW as a species of special concern. It is found in Riverside, San Diego, and Imperial Counties, where it occurs in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis habitats. Roosts and establishes colonies in rock crevices, caverns, and buildings. Pups are born in June and July, with lactation of maternal bats to their young continuing into August. Pocketed free-tailed bat has a moderate potential to occur within the project site.

Burrowing Owl

The burrowing owl is designated by the CDFW as a California species of special concern. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground. They are dependent upon the presence of burrowing mammals (such as ground squirrels) for roosting and nesting habitat. The presence or absence of colonial mammal burrows is often a major factor that limits the presence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Small mammals may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. This species requires open vegetation allowing line-of-sight observation of the surrounding habitat to forage as well as watch for predators. The burrowing owl nesting season generally extends from mid-March to the end of August. While suitable habitat is present throughout most of the project site, no suitable burrows, and very few burrows of any size, were found during the field survey. Burrowing owl has a low potential to occur on-site, and was not observed on-site during the 2016 focused burrowing owl survey.

Desert Tortoise

Desert tortoise is designated by the USFWS and by CDFW as threatened under the Endangered Species Act (ESA) and California Endangered Species Act (CESA), respectively. It is covered under the MSHCP. This species is typically found in river washes, on rocky hillsides, or in flat desert, where it is strongly associated with creosote bush, saltbush (*Atriplex* spp.), yucca (*Yucca* spp.), wildflowers, and other shrubs and grasses. It is typically active in spring, early summer, and early fall, often retreating back into its burrow during the hottest part of the summer and again in late fall and winter. Breeding generally occurs in March and April, with

eggs laid between May and July. While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows, and very few burrows at all, were observed during the habitat assessment, and desert tortoise has a low potential to occur within the project site.

Coachella Valley Jerusalem Cricket

Coachella Valley Jerusalem cricket has no state or federal designation, but is covered under the MSHCP. This species is most often found in the western Coachella Valley, where it occurs in sandy to somewhat gravelly sandy soils and are typically found in loose windblown drift sands and especially in dunes. They appear to favor areas dominated by members of the sunflower family, particularly *Ambrosia* spp. and *Encelia* spp. No dune habitat is present within the project site, and according to the MSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found. Coachella Valley Jerusalem cricket is presumed absent within the project site.

4.7.3 Sensitive Plant Communities

The CNDDDB lists three (3) sensitive habitats as being identified within the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles: Desert Fan Palm Oasis Woodland, Mesquite Bosque, and Southern Riparian Forest. No sensitive plant communities are present on-site.

4.7.4 Critical Habitat

Under the federal Endangered Species Act, “Critical Habitat” is designated at the time of listing of a species or within one year of listing. “Critical Habitat” refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. In the event that a project may result in take or in adverse effects to a species’ designated Critical Habitat, the project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 Clean Water Act permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The project site is not located within any designated Critical Habitat (Exhibit 8, *Critical Habitat*). However, it is located immediately adjacent to and west of Coachella Valley milk-vetch Critical Habitat Unit 3 (78 FR 10449 10497).





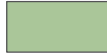
SEE INSET
MAP

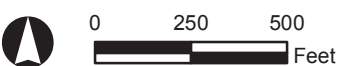
Southern Pacific Railroad



INSET MAP

Legend

-  Project Site
-  Study Area
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus* var. *cochellae*)



Section 5 Coachella Valley MSHCP Consistency Analysis

The project site is located on the eastern end of the Whitewater Floodplain Conservation Area of the MSHCP, directly across I-10 from the Willow Hole Conservation Area (Exhibit 9, *MSHCP Conservation Areas*). While the project is not a Covered Activity under the MSHCP, it is directly referenced on page 4-49 of the MSHCP (“Biological Corridors and Linkages”) as a future activity that was in the process of being designed by CVWD.

5.1 MSHCP LOCAL DEVELOPMENT MITIGATION FEE

Under the MSHCP, five categories of development are required to pay a local development mitigation fee to the City of Cathedral City in order to provide revenue for the acquisition and conservation of MSHCP lands. These five development categories include the following:

1. Residential units, density less than 8.0 dwelling units per acre;
2. Residential units, density between 8.1 and 14.0 units per acre;
3. Residential units, density greater than 14.1 dwelling units per acre;
4. Commercial acreage; and
5. Industrial acreage.

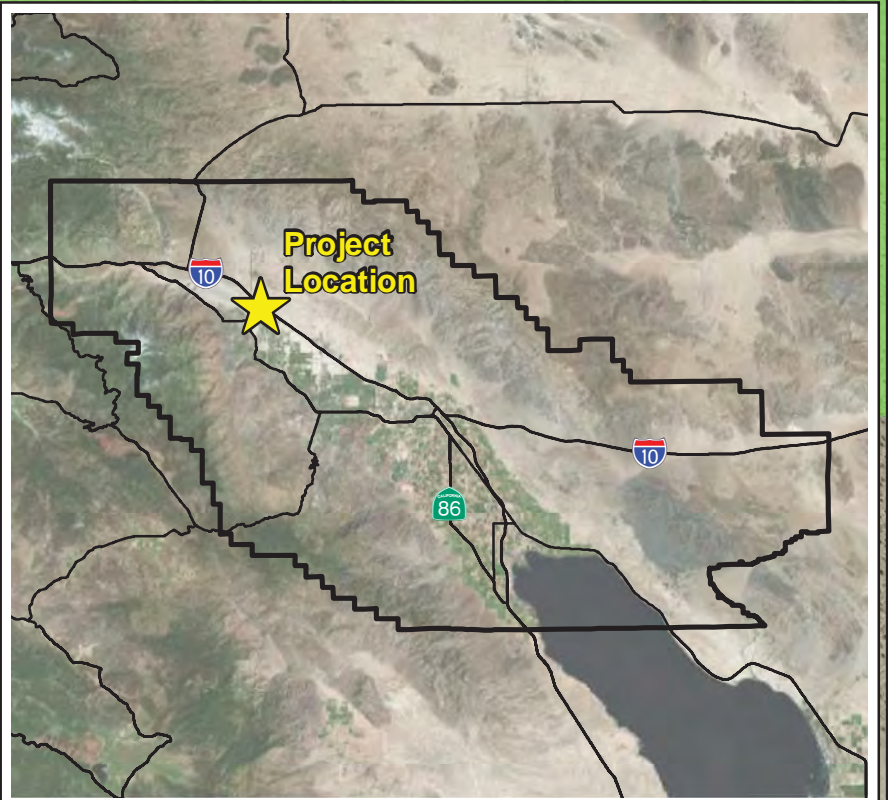
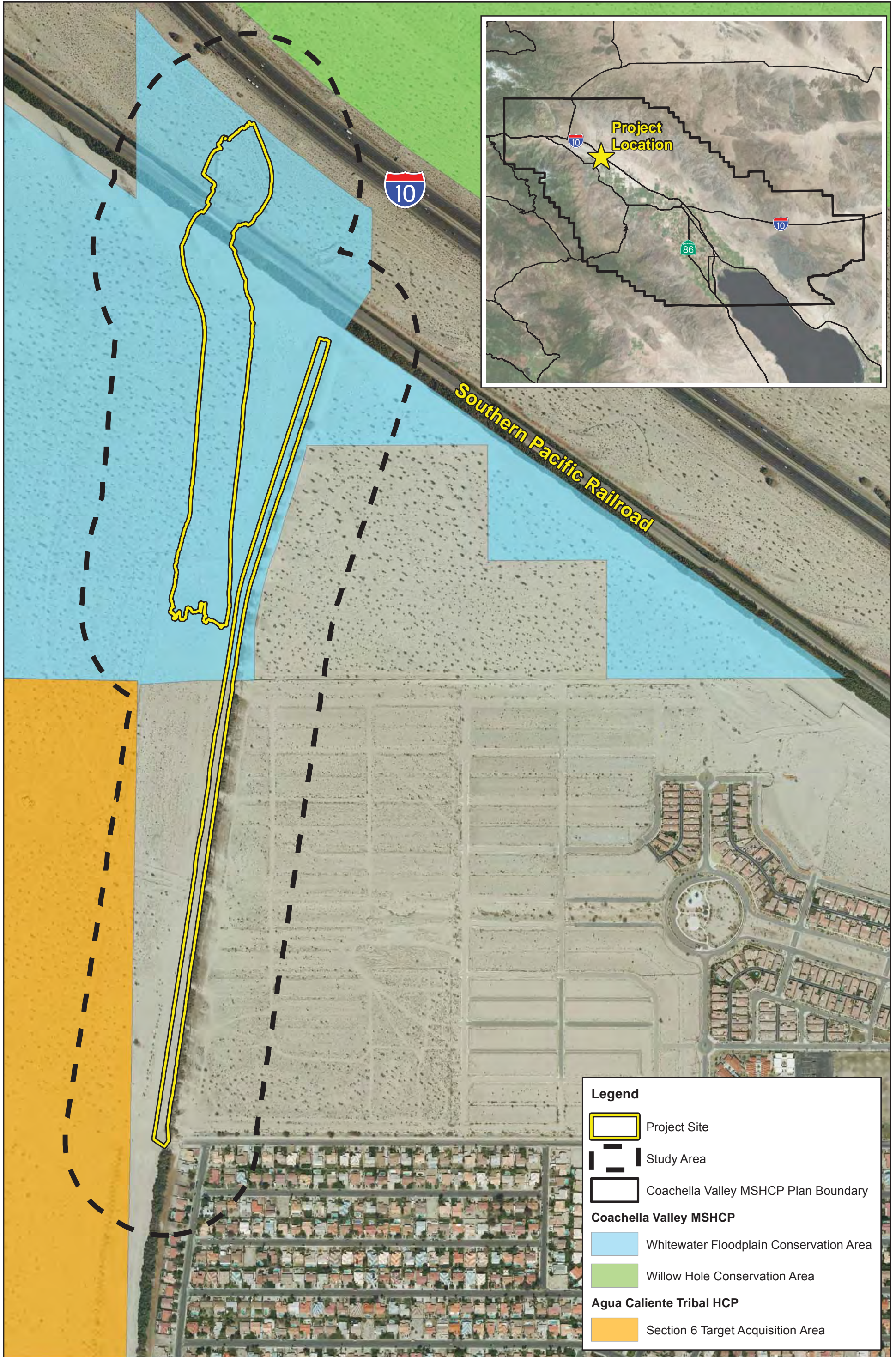
The proposed project does not fall into any of these five development categories, and thus it is exempt from the MSHCP local development mitigation fee.

5.2 JOINT PROJECT REVIEW




All projects implemented under local permittees’ jurisdiction in a conservation area that would result in disturbance to habitat, natural communities, biological corridors, or essential ecological processes are subject to a Joint Project Review Process. The purpose of the review is to allow the Coachella Valley Conservation Commission (CVCC) to facilitate and monitor the implementation of the MSHCP within the Plan Area. The proposed project is located within the Whitewater Floodplain Conservation Area and would result in both positive and negative impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e. sand transport), and thus is subject to the Joint Project Review Process.

5.3 HABITAT ASSESSMENT RESULTS AND FOCUSED SURVEYS



This section describes surveys that may be required by the MSHCP for covered species that are known to occur within the Whitewater Floodplain Conservation Area, as well as their




Legend

-  Project Site
-  Study Area
-  Coachella Valley MSHCP Plan Boundary

Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Agua Caliente Tribal HCP

-  Section 6 Target Acquisition Area

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

MSHCP Conservation Areas

potential to occur within the project site based on Michael Baker's August 2015 field survey and 2016 focused surveys results for burrowing owl and sensitive plants. Mitigation text is taken directly from Section 4.4 of the MSHCP, but only those parts that are relevant to the project site are included.

Burrowing Owl Focused Survey

Burrowing owl focused surveys were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted by Michael Baker International (Michael Baker) biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, a focused burrow survey was conducted on April 19, 2016.

Sensitive Plant Focused Survey

Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted four sensitive plant surveys to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). The project footprint and areas within 200 feet that provide suitable habitat for sensitive plant species known to occur within the vicinity of the project site were surveyed.

Specifically, the surveys focused on the presence/absence of chaparral sand-verbena (*Abronia villosa* var. *aurita*) (CNPS Rare Plant Rank 1B.1), pygmy lotus (*Acmispon haydonii*) (CNPS Rare Plant Rank 1B.3), Coachella Valley milk-vetch (CNPS Rare Plant Rank 1B.2 and federally endangered), triple-ribbed milk-vetch (*Astragalus tricarinatus*) (CNPS Rare Plant Rank 1B.2 and federally endangered), Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CNPS Rare Plant Rank 1B.1), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) (CNPS Rare Plant Rank 1B.2), flat-seeded spruce (*Euphorbia platysperma*) (CNPS Rare Plant Rank 1B.2), Little San Bernardino Mtns. Linanthus (*Linanthus maculatus*) (CNPS Rare Plant Rank 1B.2), Latimer's woodland-gilia (*Saltugilia latimeri*) (CNPS Rare Plant Rank 1B.2), and Mecca-aster (*Xylorhiza cognata*) (CNPS Rare Plant Rank 1B.2).

5.3.1 Coachella Valley Milk-vetch

Habitat Assessment Results

Nearly the entire Whitewater Floodplain Conservation Area, including the project site, is designated as core habitat for Coachella Valley milk-vetch, occurrence records are located throughout the conservation area, and designated Critical Habitat is located immediately adjacent to the project site. This species is determined by Michael Baker to have a high potential to occur on-site.

Focused Survey Results

Approximately 266 individual Coachella Valley milk-vetch plants were detected during the on April 14, April 19, May 4, and June 15, 2016 surveys.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.2 Triple-ribbed Milk-vetch

Habitat Assessment Results

While suitable habitat is located throughout the Whitewater Floodplain Conservation Area and project site, the project site is well outside of the known elevation range for this species. Triple-ribbed milk-vetch is presumed absent from the project site. However, focused surveys may still be required if the project site is still located in modeled suitable habitat. Based on information within the MSHCP, it is unknown if the project site is within any of these areas.

Focused Survey Results

Triple-ribbed milk-vetch was not detected during the on April 14, April 19, May 4, and June 15, 2016 surveys.

Avoidance, Minimization, and Mitigation Measures

The project site is not located within modeled triple-ribbed milkvetch Habitat, and this species was not observed during the 2016 focused surveys. No avoidance, minimization, and mitigation measures will be required.

5.3.3 Coachella Valley Giant Sand-treader Cricket

Habitat Assessment Results

Suitable habitat for this species is located throughout the project site, and nearly the entire Whitewater Floodplain Conservation Area has been designated as core habitat for this species. It has been extensively trapped west of Gene Autry Trail, although has not yet been captured east of this road (where the project site is located). Coachella Valley giant sand-treader cricket has a moderate to high potential to occur on-site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.4 Coachella Valley Jerusalem Cricket

Habitat Assessment Results

No dune habitat is present within the project site, and according to the MSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found. Coachella Valley Jerusalem cricket is presumed absent within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.5 Coachella Valley Fringe-toed Lizard

Habitat Assessment Results

Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west on the Whitewater Floodplain Preserve. Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.6 Desert Tortoise

Habitat Assessment Results

While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows, and very few burrows at all, were observed during the habitat assessment, and desert tortoise has a low potential to occur within the project site. However, it may inhabit the site in the future if conditions change.

Avoidance, Minimization, and Mitigation Measures

Within Conservation Areas, the Permittees will require surveys for desert tortoise for Development in modeled desert tortoise Habitat. However, the project site is not located within modeled desert tortoise Habitat, and therefore focused surveys for this species are not required.

5.3.7 Flat-tailed Horned Lizard

Habitat Assessment Results

Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard, and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.8 Burrowing Owl

Habitat Assessment Results

The project site and adjacent areas, particularly an abandoned residential development to the east, contain suitable habitat for burrowing owl. However, this species is determined by Michael Baker to have a low potential to currently be inhabiting the site, as no suitable burrows were located within the entire survey area. However, as described below, pre-construction burrowing owl surveys may still be required.

Focused Survey Results

Based on the results of the focused burrow survey conducted on April 19, 2016, it was determined the project site and survey area (i.e., areas within 500 feet of the project footprint) provides a limited amount of suitable burrows for burrowing owls. While the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent.

It should be noted that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area.

Avoidance, Minimization, and Mitigation Measures

For projects that are subject to CEQA, the Permittees will require burrowing owl surveys in the Conservation Areas using an accepted protocol (as determined by the CVCC in coordination with the Permittees and the Wildlife Agencies). Prior to Development, the construction area and adjacent areas within 500 feet of the Development site, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a burrow is located, the biologist will determine if an owl is present in the burrow. If the burrow is determined to be occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No Development or O&M activities will be permitted within the buffer until the young are no longer dependent on the burrow.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the Covered Activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation

and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

5.3.9 Le Conte's Thrasher

Habitat Assessment Results

Nearly the entire Whitewater Floodplain Conservation Area has been designated as conserved habitat for this species. Suitable habitat, including large intershrub spaces, is located throughout the project site. Le Conte's thrasher has a moderate potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

In modeled Le Conte's thrasher Habitat in all the Conservation Areas, during the nesting season, January 15 - June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500-foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season of January 15 - June 15 or until the young have fledged.

5.3.10 Coachella Valley Round-tailed Ground Squirrel

Habitat Assessment Results

Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the MSHCP as core habitat. Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.11 Palm Springs Pocket Mouse

Habitat Assessment Results

Nearly all of the Whitewater Floodplain Conservation Area has been designated by the MSHCP as a core habitat area. Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species in the Whitewater Floodplain Conservation Area to remain in compliance.

5.4 LAND USE ADJACENCY GUIDELINES

The purpose of Land Use Adjacency Guidelines is to avoid or minimize indirect effects from Development adjacent to or within the Conservation Areas. Adjacent means sharing a common boundary with any parcel in a Conservation Area. Such indirect effects are commonly referred to as edge effects, and may include noise, lighting, drainage, intrusion of people, and the introduction of non-native plants and non-native predators such as dogs and cats. The project site is located within the Whitewater Floodplain Conservation Area, and as such the following Land Use Adjacency Guidelines shall be considered and implemented where applicable.

5.4.1 Drainage

Proposed Development adjacent to or within a Conservation Area shall incorporate plans to ensure that the quantity and quality of runoff discharged to the adjacent Conservation Area is not altered in an adverse way when compared with existing conditions. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the adjacent Conservation Area.

The proposed project would alter the flow direction of water within the Whitewater River, but all existing and future flows are still located within the Whitewater River Conservation Area. There would be no changes to the quantity or quality of runoff or other water discharged to the Conservation Area.

5.4.2 Toxics

Land uses proposed adjacent to or within a Conservation Area that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife and plant species, Habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in any discharge to the adjacent Conservation Area.

The proposed project would not generate toxic bioproducts or use toxic chemicals. Any spills of hazardous materials from project vehicles or equipment would be contained, cleaned up, and disposed of immediately.

5.4.3 Lighting

For proposed Development adjacent to or within a Conservation Area, lighting shall be shielded and directed toward the developed area. Landscape shielding or other appropriate methods shall be incorporated in project designs to minimize the effects of lighting adjacent to or within the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

The proposed project would not require any additional lighting.

5.4.4 Noise

Proposed Development adjacent to or within a Conservation Area that generates noise in excess of 75 dBA Leq hourly shall incorporate setbacks, berms, or walls, as appropriate, to minimize the effects of noise on the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

It is currently unknown what level of noise would be created during construction by the proposed project. If the noise level exceeds the stated threshold, barriers or measures will be implemented.

5.4.5 Invasives

Invasive, non-native plant species shall not be incorporated in the landscape for land uses adjacent to or within a Conservation Area. Landscape treatments within or adjacent to a Conservation Area shall incorporate native plant materials to the maximum extent Feasible; recommended native species are listed in Table 4-112. The plants listed in Table 4-113 shall not be used within or adjacent to a Conservation Area. This list may be amended from time to time through a Minor Amendment with Wildlife Agency Concurrence.

The proposed project would not require any landscaping or planting.

5.4.6 Barriers

Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

The proposed project would not change any land uses in the area other than to redirect water in the Whitewater River through the project site. No human use of the site is proposed. Thus, no additional barriers would be required.

5.4.7 Grading/Land Development

Manufactured slopes associated with site Development shall not extend into adjacent land in a Conservation Area.

The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.

Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

5.5 FLUVIAL SAND TRANSPORT

“Fluvial sand transport” refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley. On the valley floor, continued occasional water flow will maintain fluvial transport, but high winds will also pick up sediment and carry it (aeolian transport). In accordance with Section 4.4 of the MSHCP, the following additional measure would be required for the proposed project to remain in compliance with the MSHCP. The following text is taken directly from Section 4.4:

Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongó Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.

The proposed project would create an opening in the tamarisk windrows for rerouting water from the washes to the north of I-10 to areas south of the railroad tracks. This would improve fluvial sand transport and may result in minor improvements to aeolian sand transport. The project is designed and intended to enhance sand transport between the Willow Hole

Conservation Area and the Whitewater Floodplain Conservation Area, and therefore is already in compliance with this measure.

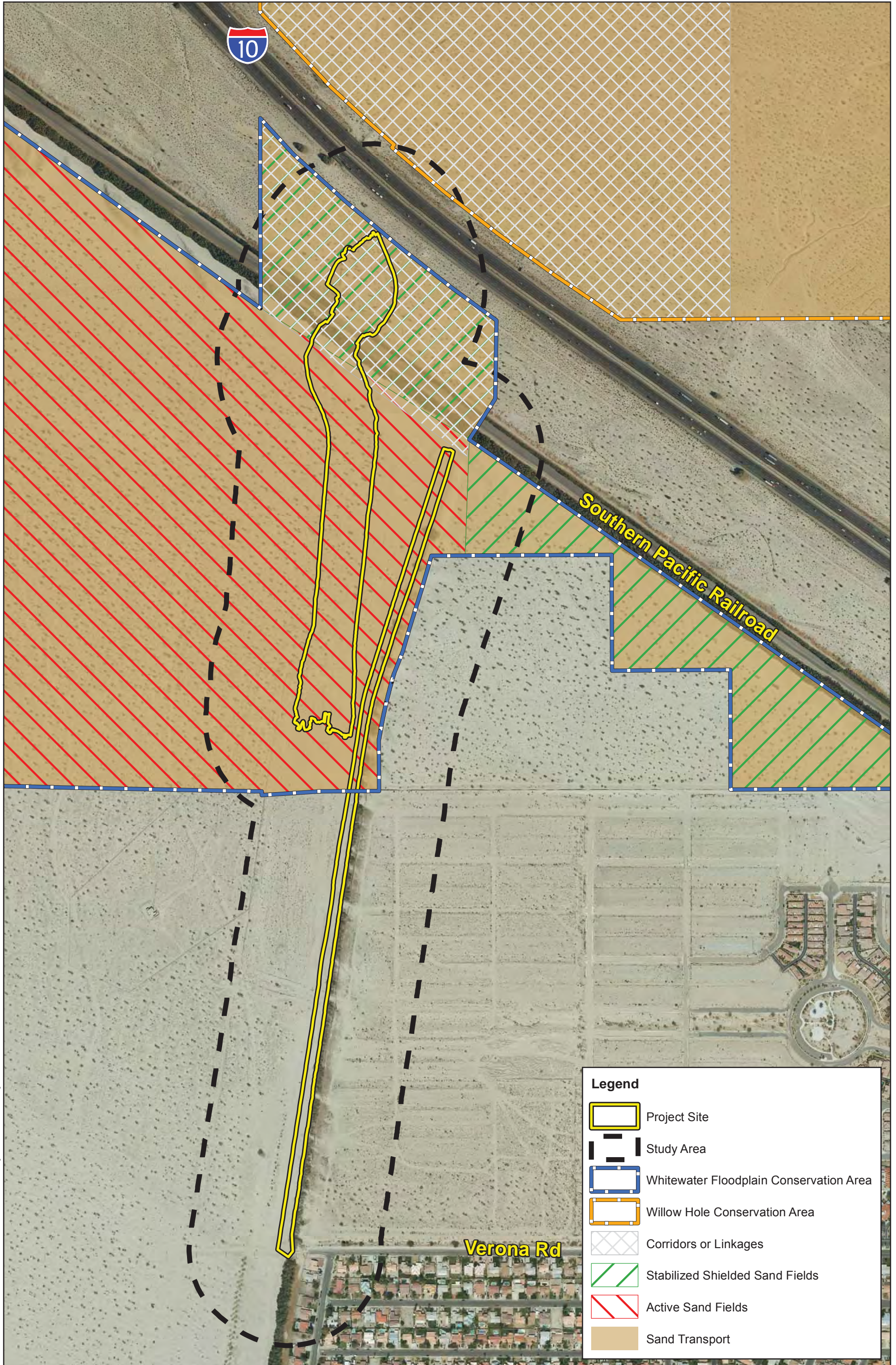
5.6 PROTECTION OF NATURAL COMMUNITIES

5.6.1 Vegetation

Vegetation within the project site is characterized as Sonoran creosote bush scrub, which is the most abundant natural community in the entire Plan Area. According to Section 10.3.1.1 of the MSHCP, adherence to other Conservation Objectives, primarily those for other species, other communities, for essential ecological processes (i.e. sand transport), or for biological corridors, will help to conserve this community. However, as described in Section 10.3.1.2 of the MSHCP, monitoring of invasive weed species within this habitat type may be needed to help ensure its continued integrity.

5.6.2 Sand Fields

The project site is underlain by stabilized shielded sand fields north of the railroad tracks and active sand fields south of the tracks (Exhibit 10, *Sand Fields, Essential Ecological Processes, and Biological Corridors*). Stabilized shield sand fields are defined as sand fields that have already been compromised by blockage or shielding of the sand source and sand transport systems by barriers such as roads, buildings, and vegetation. In this instance, the stabilized shield sand fields within the project site have been blocked from their sand source by the railroad tracks on their southern end, which include tamarisk windrows both to the north and south, and by I-10 to the north. Active sand fields are defined as areas of active sand transport, typically with little or no vegetation where the accumulated sand is not deep enough to form dunes. Monitoring of invasive weed species within the project site, limiting of activities that may result in sand stabilization, and enhancement of sand transport between the Willow Hole and Whitewater Floodplain Conservation Areas will help to protect these sand fields.



Legend

-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area
-  Corridors or Linkages
-  Stabilized Shielded Sand Fields
-  Active Sand Fields
-  Sand Transport

11/4/2016 JUN 11:44:00 AM Data\144905\WDXD\HAEx10 Sand Fields, Essential Ecological Processes, and Biological Corridors.mxd

Section 6 Recommendations

6.1 JOINT PROJECT REVIEW

The project site is located within the Whitewater Floodplain Conservation Area and would impact habitat, natural communities, biological corridors, and essential ecological processes, and thus is subject to the Joint Project Review Process.

6.2 SURVEY NEEDS

The MSHCP does not require focused surveys for Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, or Coachella Valley round-tailed ground squirrel. However, the MSHCP does require focused surveys and potentially additional mitigation for triple-ribbed milk-vetch, desert tortoise, burrowing owl, Le Conte's thrasher, and Palm Springs pocket mouse. Details of required surveys for these five species are provided in Section 5.3 above. Based on Michael Baker's assessment of the site, no focused surveys for any of the above species will be required, for the following reasons. The project site is excluded from the requirement for triple-ribbed milkvetch and desert tortoise surveys because it is not within modeled habitat. Le Conte's thrasher surveys will occur jointly as part of general pre-construction nesting bird clearance surveys and will not require a separate effort. The project site is not within a stated survey area for Palm Springs pocket mouse.

A burrowing owl focused survey was conducted in 2016. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent from the project site. However, six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east of the project site. Prior to construction, a pre-construction burrowing owl and nesting bird clearance survey shall be conducted to ensure burrowing owl remain absent from the project site.

Sensitive plant survey was conducted on April 14, April 19, May 4, and June 15, 2016 survey to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996).

One sensitive plant species, Coachella Valley milk-vetch was observed during the focused surveys. Approximately 266 individuals were observed throughout the survey area. No other sensitive plant species were observed on-site during the sensitive plant surveys.

6.3 PROTECTION OF NATURAL COMMUNITIES

To minimize adverse effects on Sonoran creosote bush scrub, active sand fields, and stabilized shielded sand fields, activities that may result in sand stabilization (e.g. excessive driving by vehicles or equipment) should be minimized and vehicles and equipment that are working within the site boundaries should be washed prior to entering to reduce the potential for transmission of invasive weed seeds.

6.4 TRIBAL HABITAT CONSERVATION PLAN

The project site is located within 500 feet to the north of the boundary for the Agua Caliente Band of Cahuilla Indians' Tribal Habitat Conservation Plan (THCP). Under the THCP, fluvial sand transport along with a number of species are protected within Section 6 of Township 4 south, Range 5 east, also known as the Section 6 Target Acquisition Area (Section 6). Habitat for Coachella Valley fringe-toed lizard, Coachella Valley giant sand-treader cricket, flat-tailed horned lizard, Palm Springs pocket mouse, Coachella Valley round-tailed ground squirrel, Coachella Valley Jerusalem cricket, Coachella Valley milk-vetch, and Le Conte's thrasher is all conserved within Section 6.

The proposed project would open a pathway underneath the railroad that would not only facilitate water transport between areas north and south of I-10 (i.e. between the Willow Hole and Whitewater Floodplain Conservation Areas), but would also improve sand transport and movement of wildlife between these areas. Required minimization for Palm Springs pocket mouse and Le Conte's thrasher may result in reduced impacts to individuals downstream within Section 6. With proper implementation of all avoidance, minimization, and mitigation measures, construction of the proposed project would not result in direct take of protected or covered species within Section 6, would not significantly disrupt downstream habitat, and would not adversely disrupt current fluvial sand transport through Section 6.

6.5 MIGRATORY BIRD TREATY ACT/FISH AND GAME CODE

Pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be conducted within thirty (30) days of the start of any ground disturbing activities to ensure that no nesting birds will be disturbed

during construction. If focused burrowing owl surveys are not required by the MSHCP, then the pre-construction nesting bird clearance survey should incorporate an emphasis on detection of burrowing owls, as well as Le Conte's thrashers. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

Pursuant to Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW will be required prior to the removal of any raptor nest on the project site, if found.

Section 7 Conclusions

The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley MSHCP. It would facilitate water transport from areas north of I-10 to areas south of I-10 by establishing a crossing underneath the existing railroad tracks. In the process, it would enhance both fluvial sand transport and wildlife movement between the two areas. The project will be subject to the Joint Project Review Process but is exempt from the local development mitigation fees.

Table 9-1a of the MSHCP notes that including Coachella Valley milk-vetch, triple-ribbed milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, burrowing owl, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse are all expected to occur within the Whitewater Floodplain Conservation Area. All of these species are covered under the MSHCP. Of these species, based on Michael Baker's habitat assessment and focused surveys Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse all have a moderate or higher potential to occur within the project site. Coachella Valley milk-vetch was observed on-site.

Desert tortoise and burrowing owl have a low potential to occur, and triple-ribbed milk-vetch and Coachella Valley Jerusalem cricket are both presumed absent from the project site. Under the MSHCP and with Michael Baker's analysis of MSHCP avoidance measures and site conditions, species-specific surveys will not be required. Le Conte's thrasher surveys will occur jointly during a general nesting bird clearance survey. No additional surveys are recommended other than a pre-construction nesting bird clearance survey.

The project site is vegetated by Sonoran creosote bush scrub and is underlain by both stabilized shielded sand fields and active sand fields. These resources can be protected by reducing the amount of unnecessary disturbance (e.g. vehicular) within the project site, requiring that all vehicles and equipment be washed prior to entering the site to reduce the transmission of invasive weed seeds, and by generally conforming to the MSHCP's avoidance, minimization, and mitigation measures.

With completion of the recommendations provided in Section 6 of this document and payment of the MSHCP mitigation fees, development of the project site is fully consistent with the Coachella Valley MSHCP.

Section 8 Certification

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

Date: 11/16/16

Signed:



Thomas J. McGill, Ph.D.

Section 9 References

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Appendix A Site Photographs



Photograph 1: Facing north into the project site, which is vegetated with Sonoran creosote bush scrub. Windrows are present to the north and east.



Photograph 2: Facing southeast. A windrow runs along the eastern boundary of the project site. This area would be stabilized as a cement slope as part of this project.



Photograph 3: Facing north. The railroad is bordered to the north and south by a tamarisk (*Tamarix* sp.) windrow. The windrow in the distance is south of the railroad tracks.



Photograph 4: Facing west. Small sand hummocks are present throughout the site, generally at the bases of shrubs. Dunes are not present within the site.



Photograph 5: Facing west from the center of the railroad tracks. Tamarisk windrows are located both to the north and south. The tracks and these windrows restrict aeolian sand transport between areas to the north and south.



Photograph 6: Facing northwest. The project would utilize this bridge undercrossing to allow the movement of water from the north to the south from the Morongo Wash to the Whitewater River.



Photograph 7: Facing southeast. The project would utilize this bridge undercrossing to allow the movement of water from the north to the south from the Morongo Wash to the Whitewater River.



Photograph 8: Facing north at Sonoran creosote bush scrub north of the railroad. Interstate 10 is in the background.



Photograph 9: Facing north. This crossing allows movement of wildlife, water, and sand under Interstate 10. However, because of the windrows and railroad tracks, water is currently restricted once it enters the area between the interstate and railroad tracks.



Photograph 10: Facing north. The area immediately east of the project site (south of the railroad) is an abandoned housing development, where deteriorating roads and housing pads are still visible.

**Appendix B Potentially Occurring Sensitive
Biological Resources**

Table B-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
WILDLIFE SPECIES				
<i>Accipiter cooperii</i> Cooper’s hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	Low. There is marginal habitat for this species on-site.
<i>Accipiter striatus</i> sharp-shinned hawk	Fed: None CA: WL	Found in pine, fir and aspen forests. They can be found hunting in forest interior and edges from sea level to near alpine areas. Can also be found in rural, suburban and agricultural areas, where they often hunt at bird feeders. Typically found in southern California in the winter months.	No	Low. There is marginal habitat for this species on-site.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (<i>Artemisia californica</i>), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	Presumed absent. No suitable habitat is present on-site.
<i>Aquila chrysaetos</i> golden eagle	Fed: None CA: FP;WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	Low. There is suitable foraging habitat for this species on-site but no suitable nesting habitat.
<i>Asio otus</i> long-eared owl	Fed: None CA: CSC	Uncommon yearlong resident throughout the state except the Central Valley and Southern California deserts where it is an uncommon winter visitor. Requires riparian habitat and uses live oak thickets and other dense stands of trees.	No	Low. The row of salt cedar provides marginal habitat for this species on-site.
<i>Athene cunicularia</i> burrowing owl	Fed: None CA: CSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	Low. There is marginal habitat for this species on-site.
<i>Aythya americana</i> redhead	Fed: None CA: CSC	Occurs year round in California, though status varies regionally. Nest in freshwater emergent wetlands where dense stands of cattails and tules are interspersed with areas of deep, open water.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	Fed: None CA: CSC	Common resident of sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California. Occurs mainly in arid coastal and desert border areas. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	Low. There is marginal habitat for this species on-site.
<i>Chaetura vauxi</i> Vaux's swift	Fed: None CA: CSC	Prefers redwood and Douglas-fir habitats with nest-sites in large hollow trees and snags, especially tall, burned-out stubs.	No	Presumed absent. This species is not usually found over open desert habitats. Local records are mostly in urban or forested areas.
<i>Circus cyaneus</i> northern harrier	Fed: None CA: CSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Mostly found in flat, or hummocky, open areas of tall, dense grasses moist or dry shrubs, and edges for nesting, cover, and feeding.	No	Low. There is marginal habitat for this species on-site.
<i>Contopus cooperi</i> olive-sided flycatcher	Fed: None CA: CSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 ft throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine.	No	Presumed absent. No suitable habitat is present on-site.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	Fed: None CA: Candidate e THR; CSC	Now considered uncommon in California. Details of its distribution are not well known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats.	No	Low. There is marginal foraging habitat for this species on-site.
<i>Crotalus ruber</i> red-diamond rattlesnake	Fed: None CA: CSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Cypseloides niger</i> black swift	Fed: None CA: CSC	Occurs in California as a summer resident and migrant from mid-April to mid-October. Restricted to a very limited supply of potential nesting locations which include, behind or beside permanent or semi-permanent waterfalls, on perpendicular cliffs near water and sea caves.	No	Presumed absent. No suitable habitat is present on-site.
<i>Dinacoma caseyi</i> Casey's June beetle	Fed: END CA: None	All <i>Dinacoma</i> populations are associated with alluvial sediments occurring in or contiguous with bases of desert alluvial fans, and the broad, gently sloping, depositional surfaces at the base of the Santa Rosa mountain ranges in the dry Coachella valley region. Most commonly associated with the Carsitas series soil.	No	Low. There is suitable habitat throughout the project site. This species is only known to occur in isolated populations approximately .5 miles southwest of the project site.
<i>Dipodomys merriami collinus</i> Aguanga kangaroo rat	Fed: None CA: CSC	Typically found in Riversidean alluvial fan sage scrub habitat, but may also be found in Riversidean sage scrub, chaparral and grassland vegetation in adjacent to upland areas. Often associated with sandy-loam soils that are common throughout the designated core drainages.	No	Presumed absent. No suitable habitat is present on-site.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	Fed: END CA: CSC	Primarily found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidean alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	Presumed absent. No suitable habitat is present on-site.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	Fed: END CA: END	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	Presumed absent. No suitable habitat is present on-site.
<i>Eremophila alpestris actia</i> California horned lark	Fed: None CA: WL	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	No	Low. There is marginal habitat for this species on-site.
<i>Falco mexicanus</i> prairie falcon	Fed: None CA: WL	Commonly occur in arid and semiarid shrubland and grassland community types. Also occasionally found in open parklands within coniferous forests. During the breeding season, they are found commonly in foothills and mountains which provide cliffs and escarpments suitable for nest sites.	No	High. There is suitable habitat throughout the site and this species is frequently sighted in the area.
<i>Gavia immer</i> common loon	Fed: None CA: CSC	Lakes with coves and islands are preferred habitat as they provide cover from predators. In their winter range along the coasts, they occur fairly close to the shore and in bays and estuaries.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Gopherus agassizii</i> desert tortoise	Fed: THR CA: THR	Widely distributed in the Mojave, Sonoran, and Colorado deserts from below sea level to 7,220 feet. Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	No	Low. While suitable habitat is present throughout the site, no desert tortoise burrows were found and very few burrows (all rodent- or lizard-sized) were found on the entire site.
<i>Icteria virens</i> yellow-breasted chat	Fed: None CA: CSC	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America.	No	Presumed absent. No suitable habitat is present on-site.
<i>Lanius ludovicianus</i> loggerhead shrike	Fed: None CA: CSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Yes	Present. Multiple individuals were on-site during the survey.
<i>Larus californicus</i> California gull	Fed: None CA: WL	Require isolated islands in rivers, reservoirs and natural lakes for nesting, where predations pressures from terrestrial mammals are diminished. Uses both fresh and saline aquatic habitats at variable elevations and degrees of aridity for nesting and for opportunistic foraging.	No	Presumed absent. No suitable habitat is present on-site. Well known to occur on lakes at nearby golf courses.
<i>Lasiurus xanthinus</i> western yellow bat	Fed: None CA: CSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	Presumed absent. No suitable habitat is present on-site.
<i>Macrobaenetes valgum</i> Coachella giant sand treader cricket	Fed: None CA: None	Nocturnal and moisture sensitive insects. Emergence occurs with winter rains and appear at maximum densities in January-February. Can be detected via their characteristic delta-shaped burrow excavations.	No	Moderate/High. There is suitable habitat throughout the project site.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	Fed: None CA: CSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	Presumed absent. No suitable habitat is present on-site. Woodrat sign (middens, scat) was not observed during the survey.
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	Moderate. There is suitable habitat throughout the project site.
<i>Nyctinomops macrotis</i> big free-tailed bat	Fed: None CA: CSC	Maternity roosts have been documented in rock crevices, with evidence of long term use. Mainly roost in crevices and rocks in cliff situations. Some have been documented roosting in buildings, caves, and tree cavities.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Oreothlypis luciae</i> Lucy's warbler	Fed: None CA: CSC	Found in desert and riparian areas of the southwestern US and northwestern Mexico. Often found in mesquite woodlands. Also breed in cottonwood-willow riparian woodlands, sycamore-oak woods, and salt cedar stands.	No	Low. While suitable habitat is present on-site, this species is a rare visitor to the Coachella Valley.
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	Fed: None CA: FP	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health.	No	Presumed absent. No suitable habitat is present on-site.
<i>Ovis canadensis nelsoni</i> pop. 2 Peninsular bighorn sheep DPS	Fed: END CA: THR,FP	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health. Found mainly in the Peninsular Ranges.	No	Presumed absent. No suitable habitat is present on-site.
<i>Pandion haliaetus</i> osprey	Fed: None CA: WL	Remain close to still or slow-moving bodies of water including oceans, rivers, lakes, mangroves, coastal wetlands, lagoons, reefs, estuaries and marshes. Generally nest in high places, such as trees, power poles, or cliffs.	No	Presumed absent. No suitable habitat is present on-site.
<i>Passerculus sandwichensis rostratus</i> large-billed savannah sparrow	Fed: None CA: CSC	Non-breeding visitor occurring primarily from late August to early March along the southern coast and from late July to mid-February at the Salton Sea. Breeding habitat is limited to open, low salt marsh vegetation, including grasses, pickleweed, and iodine bush.	No	Presumed absent. No suitable habitat is present on-site.
<i>Perognathus longimembris bangsi</i> Palm Springs pocket mouse	Fed: None CA: CSC	Inhabits areas having flat to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils on slopes ranging from 0% to approximately 15%. Remaining habitat in the Coachella Valley and environs is about 142,000 acres.	No	Moderate/High. There is suitable habitat throughout the project site. The Whitewater Floodplain Conservation Area has been designated as a core habitat area for this species.
<i>Phalacrocorax auritus</i> double-crested cormorant	Fed: None CA: WL	Yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. August to May, fairly common to locally very common along the coast and in estuaries and salt ponds. Uncommon in marine subtidal habitats from San Luis Obispo Co. south, and very rare to the north.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Phrynosoma blainvillii</i> coast horned lizard	Fed: None CA: CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	Presumed absent. The project site is outside of the typical range for this species.
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	Fed: None CA: Candidate END/CSC	Typical habitat is sandy desert hardpan or gravel flats with scattered sparse vegetation of low species diversity. Most common in areas with high density of harvester ants and fine windblown sand, but rarely occurs on dunes.	No	Moderate. There is suitable habitat throughout the site. The site is at the northern end of this species' range. Unidentified horned lizard scat was identified on-site.
<i>Piranga rubra</i> summer tanager	Fed: None CA: CSC	Breed in gaps and edges of open deciduous or pine-oak forests across the southern and mid-Atlantic U.S. Uncommon (formerly common) summer resident and breeder in desert riparian habitat along lower Colorado River. Breeds in mature, desert riparian habitat dominated by cottonwoods and willows.	No	Presumed absent. No suitable habitat is present on-site.
<i>Poliophtila melanura</i> black-tailed gnatcatcher	Fed: None CA: WL	In Mojave, Great Basin, Colorado and Sonoran desert communities, prefers nesting and foraging in densely lined arroyos and washes dominated by creosote bush and salt bush with scattered bursage, burrowed, ocotillo, saguaro, barrel cactus, nipple cactus, and prickly pear and cholla.	No	Low. There is marginal habitat for this species on-site, which is heavily associated with arboreal washes.
<i>Rana draytonii</i> California red-legged frog	Fed: THR CA: CSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	Presumed absent. No suitable habitat is present on-site.
<i>Rana muscosa</i> southern mountain yellow-legged frog	Fed: END CA: END	Inhabits lakes, ponds, meadow streams, isolated pools, sunny riverbanks in the southern Sierra Nevada Mountains. In the mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Setophaga petechia</i> yellow warbler	Fed: None CA: CSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	Presumed absent. No suitable habitat is present on-site.
<i>Stenopelmatus calhullaensis</i> Coachella Valley Jerusalem cricket	Fed: None CA: None	Restricted to desert dunes.	No	Presumed absent. No suitable habitat is present on-site.
<i>Thamnophis hammondi</i> two-striped garter snake	Fed: None CA: CSC	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	No	Presumed absent. No suitable habitat is present on-site.
<i>Toxostoma crissale</i> Crissal thrasher	Fed: None CA: CSC	Year round resident in California. Occupies a relatively large variety of desert riparian and scrub habitats from below sea level to over 6,000 feet. The common factor, regardless of habitat type and species of shrub, is dense, low scrubby vegetation. Primarily occupies riparian scrub or woodland at lower elevations.	No	Presumed absent. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area.
<i>Toxostoma lecontei</i> Le Conte's thrasher	Fed: None CA: CSC	An uncommon to rare, local resident in southern California deserts from southern Mono Co. south to the Mexican border, and in western and southern San Joaquin Valley. Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	No	Moderate. There is suitable habitat throughout the site.
<i>Uma inornata</i> Coachella Valley fringe-toed lizard	Fed: THR CA: END	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, washes, and flats with sandy hummocks formed around the bases of vegetation. Needs fine, loose sand for burrowing.	No	Moderate. There is suitable habitat throughout much of the site outside of the disturbed areas. Sandy habitat within the site is still generally sufficient for this species.
<i>Vireo bellii pusillus</i> least Bell's vireo	Fed: END CA: END	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	Presumed absent. No suitable habitat is present.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Xerospermophilus tereticaudus chlorus</i> Coachella Valley round-tailed ground squirrel	Fed: None CA: CSC	Inhabits sandy arid regions of Lower Sonoran Life Zone. Its scrub and wash habitats include mesquite and creosote dominated sand dunes, creosote bush scrub, creosote palo verde and saltbush/alkali scrub.	No	Moderate. There is suitable habitat throughout the site.
PLANT SPECIES				
<i>Abronia villosa var. aurita</i> chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet. Blooming period is from January to September.	No	Presumed absent. No suitable habitat is present. Not observed during the 2016 sensitive plant focused survey.
<i>Acmispon haydonii</i> pygmy lotus	Fed: None CA: None CNPS: 1B.3	Grows in rocky soil within Sonoran desert scrub, pinyon and juniper woodland. Found at elevations ranging from 1,706 to 3,937 feet. Blooming period is from January to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Aloysia wrightii</i> Wright's beebrush	Fed: None CA: None CNPS: 4.3	Prefers rocky and carbonate soils within Joshua tree woodland, pinyon and juniper woodland. Found at elevations ranging from 2,953 to 5,249 feet. Blooming period is from April to October.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Ambrosia monogyra</i> singlewhorl burrobrush	Fed: None CA: None CNPS: 2B.2	Found in chaparral and Sonoran desert scrub habitat within sandy soil. Found at elevations ranging from 33 to 1,640 feet in elevation. Blooming period is from August to November.	No	Presumed absent. This species was not observed during the habitat assessment. Not observed during the 2016 sensitive plant focused survey.
<i>Astragalus lentiginosus var. borreganus</i> Borrego milk-vetch	Fed: None CA: None CNPS: 4.3	Grows in sandy soils within Mojavean desert scrub and Sonoran desert scrub. Found at elevations ranging from 98 to 1,050 feet in elevation. Blooming period is from February to May.	No	Moderate. There is suitable habitat throughout the site. Not observed during the 2016 sensitive plant focused survey.
<i>Astragalus lentiginosus var. coachellae</i> Coachella Valley milk-vetch	Fed: END CA: None CNPS: 1B.2	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation. Blooming period is from February to May.	Yes	Present. Species was documented on-site during the sensitive plant focused survey. This species and its critical habitat are abundantly documented in the project vicinity.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	Fed: END CA: None CNPS: 1B.2	Found in sandy or gravelly soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 1,476 to 3,904 feet. Blooming period is from February to May.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Atriplex parishii</i> Parish's brittle-scale	Fed: None CA: None CNPS: 1B.1	Habitat types include chenopod scrub, playas, and vernal pools. Found at elevations ranging from 82 to 6,234 feet. Blooming period is from June to October.	No	Presumed absent. No suitable habitat is present.
<i>Ayenia compacta</i> California ayenia	Fed: None CA: None CNPS: 2B.3	Grows in rocky soils within Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 492 to 3,593 feet. Blooming period is from March to April.	No	Presumed absent. No suitable habitat is present.
<i>Caulanthus simulans</i> Payson's jewelflower	Fed: None CA: None CNPS: 4.2	Preferred habitats include chaparral and coastal scrub with sandy and granitic soils. Found at elevations ranging from 295 to 7,218 feet. Blooming period is from February to June.	No	Presumed absent. No suitable habitat is present.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Grows on sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Cryptantha costata</i> ribbed cryptantha	Fed: None CA: None CNPS: 4.3	Preferred habitat includes desert dunes, Mojavean desert scrub, and Sonoran desert scrub habitats on sandy soil. Found at elevations ranging from 197 to 1,640 feet. Blooming period is from February to May.	No	Moderate. There is suitable habitat on-site.
<i>Cryptantha holoptera</i> winged cryptantha	Fed: None CA: None CNPS: 4.3	Found in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 328 to 5,545 feet. Blooming period is from March to April.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Cuscuta californica</i> var. <i>apiculata</i> pointed dodder	Fed: None CA: None CNPS: 3	Occurs in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 0 to 1640 feet. Blooming period is from February to August.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.
<i>Eriastrum harwoodii</i> Harwood's eriastrum	Fed: None CA: None CNPS: 1B.2	Grows on desert dunes. Found at elevations ranging from 410 to 3,002 feet. Blooming period is from March to June.	No	Presumed absent. No suitable habitat is present.
<i>Eschscholzia androuxii</i> Joshua Tree poppy	Fed: None CA: None CNPS: 4.3	Grows in desert washes, flats, and slopes; sandy, gravelly and/or rocky within Joshua tree woodland and Mojavean desert scrub habitats. Found at elevations ranging from 1,919 to 5,528 feet. Blooming period is from February to June.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Euphorbia arizonica</i> Arizona spurge	Fed: None CA: None CNPS: 2B.3	Preferred habitat includes sandy, Sonoran desert scrub habitat. Found at elevations ranging from 164 to 984 feet. Blooming period is from March to April.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.
<i>Euphorbia misera</i> cliff spurge	Fed: None CA: None CNPS: 2B.2	Found on rocky soils within coastal bluff scrub, coastal scrub, and Mojavean desert scrub habitat. Found at elevations ranging from 33 to 1,640 feet. Blooming period is from December to October.	No	Presumed absent. No suitable habitat is present.
<i>Euphorbia platysperma</i> flat-seeded spurge	Fed: None CA: None CNPS: 1B.2	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet. Blooming period is from February to September.	No	Low. There is suitable habitat, but the project site is outside of the known elevation range for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Galium angustifolium</i> ssp. <i>gracillimum</i> slender bedstraw	Fed: None CA: None CNPS: 4.2	Grows on rocky, granitic soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 427 to 5,085 feet. Blooming period is from April to June.	No	Presumed absent. No suitable habitat is present.
<i>Galium johnstonii</i> Johnston's bedstraw	Fed: None CA: None CNPS: 4.3	Preferred habitats include chaparral, riparian woodland, lower montane coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 4,003 to 7,546 feet. Blooming period is from June to July.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Heuchera hirsutissima</i> shaggy-haired alumroot	Fed: None CA: None CNPS: 1B.3	Occurs on rocky, granitic soils in subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 4,987 to 11,483 feet. Blooming period is from May to July.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Imperata brevifolia</i> California satintail	Fed: None CA: None CNPS: 2B.1	Found in chaparral, coastal scrub, Mojavean desert scrub, riparian scrub, meadows and seeps habitats. Found at elevations ranging from 0 to 3,986 feet. Blooming period is from September to May.	No	Presumed absent. No suitable habitat is present.
<i>Lilium parryi</i> lemon lily	Fed: None CA: None CNPS: 1B.2	Habitats include lower montane coniferous forest, riparian forest, upper montane coniferous forest, meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Linanthus jaegeri</i> San Jacinto linanthus	Fed: None CA: None CNPS: 1B.2	Grows on granitic, rocky soils within subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 7,201 to 10,007 feet. Blooming period is from July to September.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Linanthus maculatus</i> Little San Bernardino Mtns. linanthus	Fed: None CA: None CNPS: 1B.2	Preferred habitats include desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub in sandy soils. Found at elevations ranging from 640 to 6,808 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Mentzelia tricuspis</i> spiny-hair blazing star	Fed: None CA: None CNPS: 2B.1	Habitats include Mojavean desert scrub. Prefers sandy, gravelly, slopes and washes. Found at elevations ranging from 492 to 4,199 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Nemacaulis denudata</i> var. <i>gracilis</i> slender cottonheads	Fed: None CA: None CNPS: 2B.2	Occurs in coastal dunes, desert dunes, and Sonoran desert scrub habitats. Found at elevations ranging from 164 to 1,312 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Penstemon clelandii</i> var. <i>connatus</i> San Jacinto beardtongue	Fed: None CA: None CNPS: 4.3	Grows on rocky soils within chaparral, Sonoran desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 1,312 to 4,921 feet. Blooming period is from March to May.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Satugilia latimeri</i> Latimer's woodland-gilia	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Mojavean desert scrub, pinyon and juniper woodland. Prefers rocky or sandy, often granitic, soils. Found at elevations ranging from 1,312 to 6,234 feet. Blooming period is from March to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Selaginella eremophila</i> desert spike-moss	Fed: None CA: None CNPS: 2B.2	Found in chaparral and Sonoran desert scrub habitats within gravelly or rocky soil. Found at elevations ranging from 656 to 2,953 feet. Blooming period is from May to July.	No	Presumed absent. No suitable habitat is present.
<i>Stemodia durantifolia</i> purple stemodia	Fed: None CA: None CNPS: 2B.1	Occurs in Sonoran desert scrub habitats. Found at elevations ranging from 591 to 984 feet. Blooming period is from January to December.	No	Presumed absent. This species is presumed extirpated in Riverside County.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Streptanthus campestris</i> southern jewelflower	Fed: None CA: None CNPS: 1B.3	Prefers chaparral, lower montane coniferous forest, pinyon and juniper woodland habitats. Found at elevations ranging from 2,953 to 7,546 feet. Blooming period is from April to July.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Thelypteris puberula var. sonorensis</i> Sonoran maiden fern	Fed: None CA: None CNPS: 2B.2	Grows within meadows and seeps. Found at elevations ranging from 164 to 2,001 feet. Blooming period is from January to September.	No	Presumed absent. No suitable habitat is present.
<i>Xylorhiza cognata</i> Mecca-aster	Fed: None CA: None CNPS: 1B.2	Occurs in Sonoran desert scrub habitat. Found at elevations ranging from 66 to 1,312 feet. Blooming period is from January to June.	No	Presumed absent. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area. Not observed during the 2016 sensitive plant focused survey.
CDFW SENSITIVE HABITATS				
Desert Fan Palm Oasis Woodland	CDFW Sensitive Habitat	Rare plant community that is one of the most unusual biological resources located within the Coachella Valley. Found within canyons and along the San Andreas Fault Zone, where water occurs naturally. Generally characterized by open to dense groves of native desert fan palms, which are the most massive native palm in North America, growing more than 66 feet.	No	Absent.
Mesquite Bosque	CDFW Sensitive Habitat	Mesquite bosques, or woodlands, occur in the Sonoran Desert and other parts of the arid southwest. Consist primarily of mesquite trees and diverse understory of vegetation that may provide habitat for a wide-variety of species.	No	Absent.
Southern Riparian Forest	CDFW Sensitive Habitat	Typically a younger successional stage of riparian forest, due to disturbance or more frequent flooding. Plant species include willow species, elderberry, oak species, sycamore, cottonwood, and smaller shrubs.	No	Absent.

U.S. Fish and Wildlife Service (USFWS) -
Federal
END- Federal Endangered
THR- Federal Threatened

California Department of Fish and Wildlife
(CDFW) - California
END- California Endangered
CSC- California Species of Concern
WL- Watch List
FP- California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix C Flora and Fauna Compendium

Table C-1: Plant Species

PLANT SPECIES	
Scientific Name	Common Name
<i>Abronia villosa</i>	desert sand verbena
<i>Ambrosia dumosa</i>	burrobush
<i>Ambrosia acanthicarpa</i>	annual bursage
<i>Ambrosia salsola</i>	cheesebush
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch
<i>Atriplex lentiformis</i>	big saltbush
<i>Brassica tournefortii</i>	Sahara mustard
<i>Camissonia californica</i>	false mustard
<i>Camissoniopsis pallida</i>	pale yellow sun cup
<i>Chorizanthe brevicornu</i>	brittle spineflower
<i>Chorizanthe rigida</i>	rigid spiny herb
<i>Chylismia calviformis</i>	brown-eyed primrose
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple godetia
<i>Croton californicus</i>	desert croton
<i>Cryptantha circumscissa</i>	cushion cryptantha
<i>Cylindropuntia echinocrpa</i>	golden cholla
<i>Dicoria canescens</i>	desert twinbugs
<i>Dithyrea californica</i>	spectacle pod
<i>Encelia farinosa</i>	brittlebush
<i>Encelia frutescens</i>	button brittlebush
<i>Eriastrum eremicum</i>	desert woollystar
<i>Ericameria nauseosa</i>	rubber rabbitbush
<i>Eriogonum thomasii</i>	Thomas' buckwheat
<i>Erodium cicutarium</i>	red stemmed filaree
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Larrea tridentata</i>	creosote bush
<i>Lupinus shockleyi</i>	Shockley lupine
<i>Oenothera californica</i>	California primrose
<i>Palafoxia arida</i>	Spanish needle
<i>Pectocarya recurvata</i>	Curvenut combseed
<i>Peritoma arborea</i>	bladderpod
<i>Petalonyx thurberi</i>	sandpaper plant
<i>Plantago ovata</i>	desert plantain
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psathyrotes ramosissima</i>	velvet turtleback
<i>Psorothamnus emoryi</i>	dyebush
<i>Psorothamnus schottii</i>	indigo bush
<i>Psorothamnus spinosus</i>	smoke tree
<i>Salsola paulsenii</i>	barbwire Russian thistle
<i>Salsola tragus</i>	Russian thistle
<i>Salvia columbariae</i>	chia sage
<i>Schismus arabicus</i>	Arabian schismus
<i>Stephanomeria pauciflora</i>	wire lettuce
<i>Stillingia spinulosa</i>	annual stillingia
<i>Tamarix aphila</i>	tamarisk
<i>Tiquilia plicata</i>	coldenia

Table C-2: Wildlife Species

WILDLIFE SPECIES	
Scientific Name	Common Name
AVES	BIRDS
<i>Auriparus flaviceps</i>	verdin
<i>Calypte costae</i>	Costa's hummingbird
<i>Corvus brachyrhynchos</i>	American crow
<i>Geococcyx californianus</i>	greater roadrunner
<i>Haemorhous mexicanus</i>	house finch
<i>Lanius ludovicianus</i>	loggerhead shrike
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Zenaida asiatica</i>	white-winged dove
<i>Zenaida macroura</i>	mourning dove
MAMMALIA	MAMMALS
<i>Sylvilagus audubonii</i>	desert cottontail
REPTILIA	REPTILES
<i>Crotalus cerastes laterorepens</i>	Colorado Desert sidewinder
<i>Dipsosaurus dorsalis</i>	desert iguana
<i>Phrynosoma</i> sp.	horned lizard (scat and tracks)

**Appendix B Delineation of State and Federal
Jurisdictional Waters (2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

Riverside County, California

DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Prepared By:

Michael Baker International

14725 Alton Parkway

Irvine, California 92618

Contact: Daniel Cardoza, PWS

(949) 330-4166

November 2016

JN 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

RIVERSIDE COUNTY, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional “waters of the U.S.” (including wetlands) and “waters of the State” determination for the above-referenced project.



Daniel Cardoza, PWS
Regulatory Analyst
Natural Resources/Regulatory Permitting



Richard Beck, PWS, CEP, CPESC
Vice President
Natural Resources/Regulatory Permitting

November 2016

Executive Summary

Introduction: At the request of the Messenger Investment Company (Messenger), Michael Baker International (Michael Baker) has prepared this Delineation of Jurisdictional Waters for the North Cathedral City Improvements Project, Phase 1 (project), located in Riverside County, California.

Methods: The field work for this delineation was conducted on January 29, 2015. This delineation documents the regulatory authority of the U.S. Army Corps of Engineers Los Angeles District (Corps), Colorado River Basin Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region (CDFW) pursuant to the Federal Clean Water Act (CWA), California Porter-Cologne Water Quality Control Act, and California Fish and Game Code¹.

Results: State jurisdictional areas (Morongo Wash) were identified within the project site. Project activities within these areas are subject to Regional Board and CDFW jurisdiction and approval. Table ES-1 identifies each regulatory agency and total jurisdiction on-site. Table ES-2 includes the proposed summary of impacts that will occur as a result of the proposed project.

TABLE ES-1. Jurisdictional Areas

Jurisdictional Feature (Morongo Wash)	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	--	--	5.22	3,528	5.22	3,528
Reach 2	--	--	4.36	4,077	5.52	4,077
Reach 3	--	--	5.97	2,849	8.39	2,849
Reach 4	--	--	2.09	1,680	2.09	1,680
Total	--	--	17.64	12,135	21.22	12,135

¹ The project area was surveyed pursuant to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008); the Practices for Documenting Jurisdiction under Section 404 of the CWA Regional Guidance Letter (Corps 2007); Minimum Standards for Acceptance of Preliminary Wetland Delineations (Corps 2001); and The Mesa Field Guide (CDFW 2014).

TABLE ES-2. Summary of Impacts

Jurisdictional Feature	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage (permanent)	Linear Feet (permanent)	Acreage (permanent)	Linear Feet (permanent)
Morongo Wash	--	--	1.19	770	1.19	770

Conclusion: The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement². This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdiction. Refer to Sections 1 through 7 for a complete discussion.

² The CDFW can issue other approvals in-lieu of a formal Agreement such as an Operation-by-Law letter or Letter of Non-Substantial Impact. A formal notification must first be submitted to the CDFW prior to approval.

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- A. Photographs
- B. Documentation

LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FAC	Facultative Vegetation
FACU	Facultative Upland Vegetation
FACW	Facultative Wetland Vegetation
GPS	Ground Positioning System
IP	Individual Permit
MESA	Mapping Episodic Stream Activity
MSL	Mean Sea Level
MS4	Municipal Separate Storm Sewer System
NWP	Nationwide Permit
OBL	Obligate Wetland Vegetation
OHWM	Ordinary High Water Mark
RPW	Relatively Permanent Waters
SAA	Streambed Alteration Agreement
SBBM	San Bernardino Base and Meridian
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Storm Water Pollution Prevention Plan
TNW	Traditional Navigable Water
UPL	Obligate Upland Vegetation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	Waters of the United States

Section 1 Introduction

This delineation has been prepared for Messenger Investment Company (Messenger), in order to delineate the U.S. Army Corps of Engineers Los Angeles District's (Corps), Colorado River Basin Regional Water Quality Control Board's (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region's (CDFW) jurisdictional authority located within Morongo Wash for the Morongo Creek Channel. The field work for this delineation was conducted on January 29, 2015.

The project site is located within the cities of Palm Springs and Cathedral City, in Riverside County, California (refer to Exhibit 1, *Regional Vicinity*, and Exhibit 2, *Site Vicinity*). The project site is generally within the corridor between I-10 and the Union Pacific Railroad line, with portions of the site extending beyond these limits.

This delineation has been designed to document the authority of the regulatory agencies, explain the methodology undertaken by Michael Baker International (Michael Baker), to document jurisdictional authority, and to support the findings made by Michael Baker within the boundaries of the project site. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

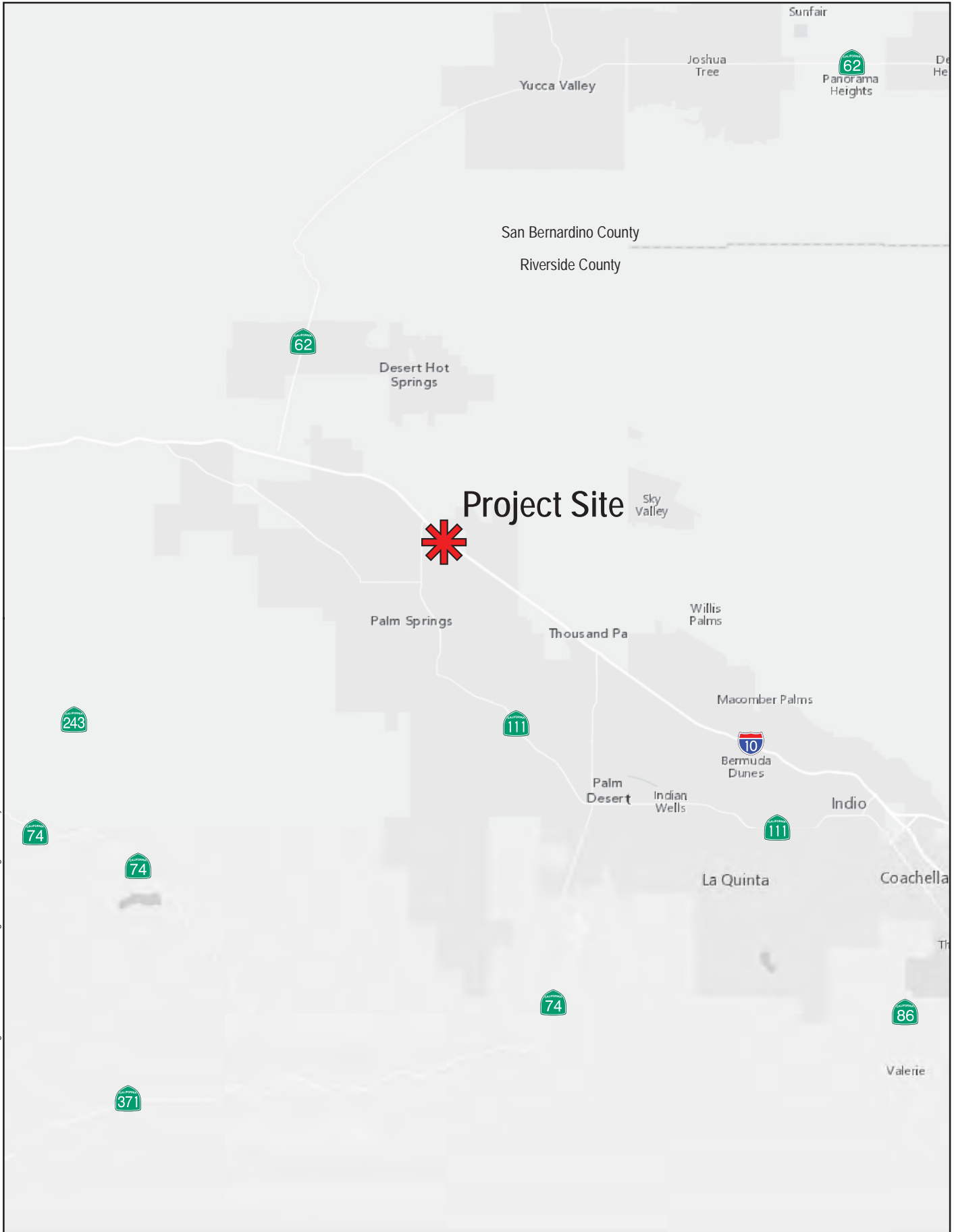
1.1 PROJECT SITE BACKGROUND

The 528-acre project site is located immediately north of the Whitewater River and consists of Morongo Wash and surrounding undeveloped open space (refer to Exhibit 3, *Project Site*). The project site primarily consists of undeveloped creosote scrub, with the exception of I-10 and the Union Pacific Railroad line extending from northwest to southeast within the northern portion of the project site. The project site below the railroad line is mostly undeveloped creosote scrub and includes a tamarisk windrow that extends from north to south for approximately 0.85-mile within the project site. The southernmost limits of the project site contain approximately 3.5 acres of residential development.

Morongo Wash is an ephemeral desert wash drainage system that enters the project site from the northwest and is funneled under three separate I-10 bridge crossings. The three reaches converge on the other side of I-10 and become restricted by the Union Pacific Railroad line to the south. Morongo Wash meanders within this approximately 850-foot corridor and is conveyed offsite. Beyond the project site, Morongo Wash enters a 5-foot reinforced concrete pipe (RCP) culvert at Date Palm Road, flows underneath Date Palm Road, and ultimately stops at Bob Hope Drive. Morongo Wash historically reached the Whitewater River prior to the development of I-10 and the railroad line. A historic crossing

exists that previously allowed Morongo Wash to travel underneath the railroad line and converge downstream with the Whitewater River, though the crossing is now choked with sediment and unable to convey flows south of the railroad line.³ The defunct crossing underneath the railroad line is substantiated by a continuous corridor of riverwash soils mapped south of the railroad and is discussed in further detail in Section 4.5, *Soil Survey*.

³ The former Morongo Wash railroad crossing is located at 33.866461°,-116.491445°.



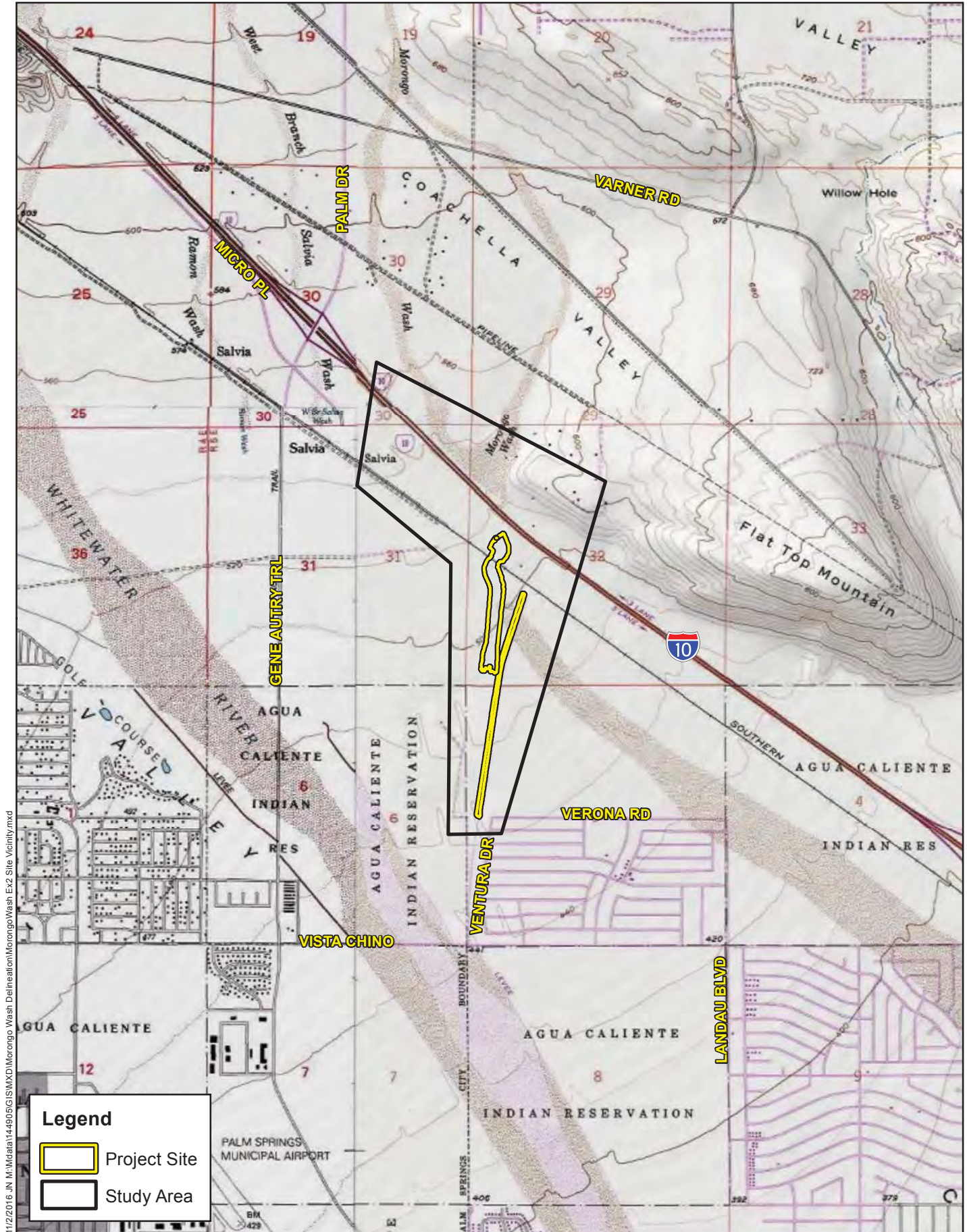
11/2/2016 JN M:\Data\144905\GIS\WDXD\Morongo Wash Delineation\MorongoWash_Ex1_Regional_Vicinity.mxd

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Regional Vicinity



Source: ArcGIS Online, County of Riverside, County of San Bernardino



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Legend

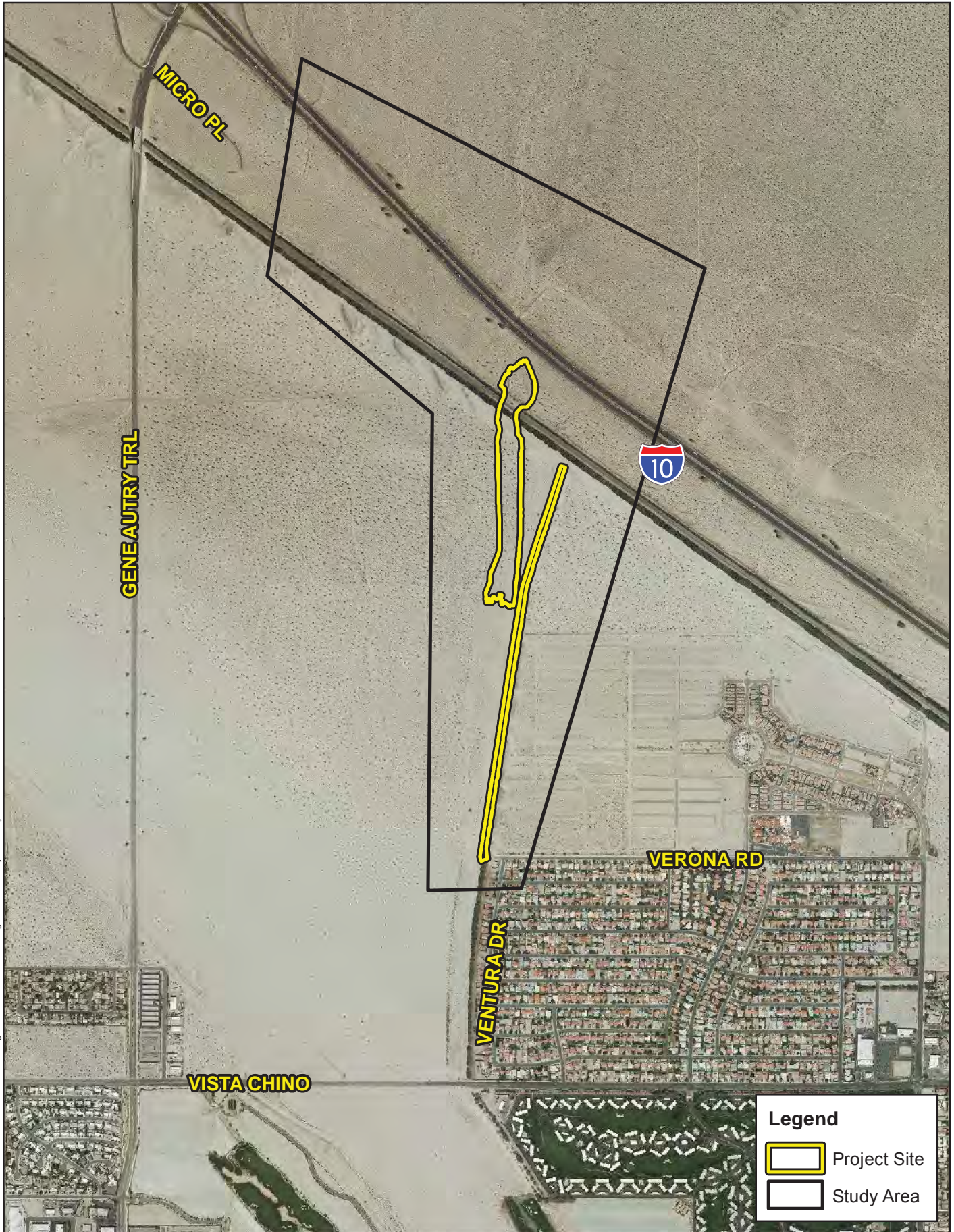
- Project Site
- Study Area



Source: ArcGIS Online, County of Riverside, County of San Bernardino

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
Site Vicinity

11/22/2016 JN M:\Data\144905\GIS\WDXD\Morongo Wash Delineation\Morongo Wash Ex3 Project_Vicinity.mxd



NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Project Site

1.2 PROJECT DESCRIPTION

The primary components of the proposed storm water improvements project include the placement of concrete channel protection on both sides of the Union Pacific Railroad (UPRR) bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino,

located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

Section 2 Summary of Regulations

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Division regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act. Of the State agencies, the CDFW regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

2.1 U.S. ARMY CORPS OF ENGINEERS

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of “waters of the U.S.” (WoUS), including wetlands, pursuant to Section 404 of the CWA. The Corps has regulatory authority over the discharge of dredged or fill material into the WoUS under Section 404 of the CWA. The Corps and EPA define “fill material” to include any “material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States.” Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and “materials used to create any structure or infrastructure in the waters of the United States.”

The term WoUS is defined under CWA regulations 33 CFR §328.3(a). Wetlands, a subset of jurisdictional waters, are jointly defined by the Corps and EPA under CWA regulations 33 CFR §328.3(b).

2.2 REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a federal license or permit for activities which may discharge to WoUS must seek Water Quality Certification from the state or Indian tribe with jurisdiction.⁴ Such Certification is based on a finding that the discharge will meet water quality standards and other applicable requirements. In California, there are nine different Regional Boards that issue or deny Certification for discharges within their geographical jurisdiction. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which are defined as numeric and narrative objectives in each Regional Board’s Basin Plan. Where applicable, the State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board’s jurisdiction extends to all waters of the State and to all WoUS, including wetlands.

⁴ Title 33, United States Code, Section 1341; Clean Water Act Section.

Additionally, the California Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC⁵ and Rapanos⁶ regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Fish and Game Code Sections 1600-1616 establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, as defined in the *Mapping Episodic Stream Activity (MESA) Field Guide* (2014).

⁵ Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)

⁶ Rapanos v. United States, 547 U.S. 715 (2006)

Section 3 Methods

The analysis presented in this document is supported by field surveys and verification of current conditions conducted on January 29, 2015. While in the field, jurisdictional areas were recorded onto a base map at a scale of 1" = 50' using the topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin 62 Ground Positioning System (GPS) Map62 in order to record and identify specific ordinary high water marks (OHWM), soil pits, picture locations, and drainage features. This data was then transferred via USB port as a .shp file and added to the project's jurisdictional map. The jurisdictional map was prepared in ESRI ArcInfo Version 10.2.

Drought conditions have developed over the past three years in California. Evaluation of temporal shifts in vegetation and periodic lack of hydrology indicators during periods of below-normal rainfall, drought conditions, and unusually low winter snowpack is considered during the field review. To the extent possible, the hydrophytic vegetation decision is based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year. The evaluation of hydrology considers the timing of the site visit in relation to normal seasonal and annual hydrologic variability, and whether the amount of rainfall prior to the site visit has been normal. In drought conditions, direct observation of plants and hydrology indicators may be misleading or problematic, so other methods of making wetland decisions may be appropriate. In general, wetland determinations on difficult or problematic sites must be based on the best information available to the field inspector, interpreted in light of his or her professional experience and knowledge of the ecology of wetlands in the region. Wetland determinations are based on a preponderance of all available information, including in many cases remote sensing and longer term data, not just the field data collected under drought conditions.⁷

3.1 WATERS OF THE U.S.

In the absence of adjacent wetlands, the limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined in CWA regulations 33 CFR §328.3(e). Indicators of an OHWM are defined in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2008). An OHWM can be determined by, but not limited to, the observation of benches, break in bank slope, particle size distribution, sediment deposits, drift, litter, and/or change in plant community. The Regional Board shares the Corps' jurisdictional methodology, unless State Waters are present.

⁷ Corps Sacramento District, Public Notice SPK-2014-00005, *Guidance on Delineations in Drought Conditions*, February 2014.

3.2 WATERS OF THE STATE

The Regional Board's jurisdiction is mapped similarly to the Corps, by defining an OHWM and utilizing the three-parameter approach for wetlands (described in Section 3.3).

The CDFW's jurisdiction is mapped based on *The Mesa Field Guide*, which was developed to provide guidance on mapping episodic streams within the inland deserts of southern California as a means of complying with the California Fish and Game Code. MESA is conducted by examining the evidence left on the landscape by the processes that created them, which includes the geology of fluvial deposits, the landforms modified by stream activity, and the features formed from terrestrial processes that operate on fluvially inactive landscapes. The characteristics of these surficial deposits and the evidence of the processes acting on them are indicators of either fluvial activity or inactivity. The surficial geologic mapping method is conducted by first interpreting images of remotely sensed landforms and surfaces, and then undertaking a field examination of landforms; surface indicators of fluvial activity and inactivity; and sometimes soil profiles in shallow, hand-dug pits. Examples of field indicators of watercourse fluvial processes include, but are not limited to, bar forms, sediment sorting, wrack, cut banks, scour, and secondary channels.

3.3 WETLANDS

For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps, 2008). This document is one of a series of Regional Supplements to the 1987 Corps Wetland Delineation Manual (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal characteristics within these three parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps' wetland data sheets, when applicable. It should be noted that both the Regional Board and the CDFW jurisdictional wetlands encompass those of the Corps.

Section 4 Project Setting

Review of relevant literature and materials often aids in preliminarily identifying areas that may fall under an agency's jurisdiction. A summary of Michael Baker's literature review is provided below (refer to Section 8.0 for a complete list of references used during the course of this delineation).

4.1 WATERSHED REVIEW

The Salton Sea Watershed is located in the Sonoran desert region in the southeastern corner of California, encompassing one-third of the Colorado River Basin Region (about 8,360 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in southern California, south of Indio and north of El Centro. The basin is more than 200 feet below sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee break along the Colorado River caused its flows to enter the basin for about 18 months. Since 1905, the Sea has fluctuated in size with varying inflow, and today has a surface area of about 365 square miles. The project site is approximately 35 miles northwest of the Salton Sea.

The Whitewater River is tributary to the Salton Sea and is defined in the Basin Plan as the reach from the headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near the Indian Avenue crossing in the City of Palm Springs. The reach of the Whitewater River from the Whitewater recharge basins near Indian Avenue to the Coachella Valley Stormwater Channel (CVSC) near Indio is defined as a Wash (Intermittent or Ephemeral Stream) in the Basin Plan. The Whitewater River is not listed as an Impaired Waterbody within the Whitewater River Region. Due to the small percentage of the Whitewater River Watershed and the Whitewater River Region in urban land uses, urban runoff constitutes a minor percentage of the total flow in the Whitewater River under storm conditions.⁸

4.2 LOCAL CLIMATE

The Coachella Valley Basin is located in the Colorado Desert Region. Located in the northern region of the Salton Trough, in Riverside County, it is characterized by hot summer days and mild winters with low average precipitation.

The project site is located in the Arid West, which is known for a significant degree of variability in spatial and temporal rainfall amounts. Rainfall is extremely limited with average annual precipitation rates of 2 to 4". Most rainfall occurs during winter months though high

⁸http://www.waterboards.ca.gov/coloradoriver/boarddecisions/adoptedorders/orders/2008/08_0001ms4_permit

intensity rains can sometimes occur during the mid-summer producing flash floods and severe erosion.

Climate in the Arid West is generally hot and dry with a long summer dry period. Average annual precipitation mostly <15 inches except along the coast. Most precipitation falls as rain. Annual temperature variations in the Coachella Valley are extreme with occasional winter lows in the mid-20s (F) and occasional summer highs in the mid-120s (F). The mean annual temperature is 74(F).⁹ On average, the warmest month is July at 107 degrees (F) and the coolest month is December at 44 degrees (F). The maximum average precipitation occurs in February with 0.66 inches. Rainfall is highly variable in either season, with long dry periods interrupted by occasional short, stormy periods. In summer, convective thunderstorms can be very intense, producing severe flash floods that fill the normally dry washes. The water soon dissipates, although some will remain below the surface.

Below is a summary of the recorded average precipitation for the regional vicinity which has been generally consolidated in ten year increments beginning in 1904 through December 2012.¹⁰

Table 1. Climate Summary

Years	Begin Date	End Date	Average Precipitation
1904-1910	1/1/1904	12/31/1910	2.87
1911-1919	1/1/1911	12/31/1919	2.93
1920-1929	1/1/1920	12/31/1929	3.61
1930-1939	1/1/1930	12/31/1939	3.91
1940-1949	1/1/1940	12/31/1949	3.69
1950-1959	1/1/1950	12/31/1959	2.42
1960-1969	1/1/1960	12/31/1969	2.56
1970-1979	1/1/1970	12/31/1979	3.77
1980-1989	1/1/1980	12/31/1989	3.07
1990-1999	1/1/1990	12/31/1999	2.70
2000-2012	1/1/2000	12/31/2012	2.26

4.3 USGS TOPOGRAPHIC QUADRANGLE

The USGS 7.5 Minute Series Topographic Quadrangle maps show geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall under an agency's jurisdiction. Additionally, the maps depict topography

⁹ <http://www.cvconservation.org/coachellavalley.html>

¹⁰ Weathersource.com, January 19, 2013

through color and contour lines, which are helpful in determining elevations and latitude and longitude within a project site.

The project site is located within Sections 5-6, Range 5 East, Township 4 South, and Sections 29-32, Range 5 East, Township 3 South, San Bernardino Meridian in the USGS *Cathedral City, California* quadrangle. On-site topography ranges from approximately 457 to 600 feet above mean sea level (msl), and is generally flat, except for a small hill in the northeast corner of the project site. According to the topographic map, the majority of the project site and surrounding areas are undeveloped, excluding I-10 and the Union Pacific Railroad line. Morongo Wash is mapped north of I-10, but does not continue beyond I-10 on the topographic map.

4.4 AERIAL PHOTOGRAPH

Michael Baker reviewed current aerial photographs dated April 27, 2014, and November 12, 2013 for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e. riparian vegetation) present within the boundaries of the project site (if any).

The November 12, 2013 aerial photograph was taken shortly after a rain event, resulting in visible flows within Morongo Wash. The signs of flow allowed us to understand where Morongo Wash is most prominent within the project site, as well as understand where the wash ultimately terminates. According to the aerial photograph, the project site consists mainly of areas adjacent to I-10 and the Union Pacific Railroad line, surrounded mostly by undeveloped land.

4.5 SOIL SURVEY

Onsite and adjoining soils were researched prior to the field visits using the U.S. Department of Agriculture National Resources Conservation Service and Soil Survey (refer to Appendix B, *Documentation*). The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use and management; and in planning, research and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). The following soil series has been reported on site:

- **Carsitas gravelly sand, 0 to 9 percent slopes (CdC):** The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this

map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 275 to 325 days. In a typical profile 0 to 10 inches and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y 4/2) when moist and 10 to 60 inches olive gray (5Y 4/2) when moist; stratified; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding and no ponding as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carsitas (4%), Myoma (4%), and other unnamed stony or gravelly soils (3%). Small slightly entrenched stream channels become less distinct as the soil of the slope decreases to 1 to 2 percent. According to the soils survey they form an indefinite pattern of braided stream channels, which are very shallow and have coarser debris deposited in them. Runoff is slow and the erosion hazard is moderate.

- **Carsitas gravelly sand, 9 to 30 percent slopes (CdE):** This soil type is similar to Carsitas gravelly sand, 0 to 9 percent slopes, with some minor variations. This strongly to moderately sloping soil is located on valley fill and remnants of dissected alluvial fans. Shallow rills or channels are common in the valley fill, and occasional shallow gullies can disappear into areas of coarser debris, with some of the gullies being filled by windblown fine sand. Runoff for this soil type is slow with a moderate erosion hazard. Available water capacity is 2 to 4 inches.
- **Carsitas cobbly sand, 2 to 9 percent slopes (ChC):** This gently sloping to moderately sloping soil is located on alluvial fans, valley fill, and remnants of dissected alluvial fans along the east, north and west edges of the Coachella Valley. The soils has a profile similar to the one described as representative of the series, but cobbles and some stones cover 1 to 3 percent of the surface. The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 300 days.

In a typical profile 0 to 10 inches is cobbly sand and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y 4/2) and 10 to 60 inches olive gray (5Y 4/2) when moist; satisfied; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the

restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding or ponding frequency as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carrizo (4%), Chuckawalla (4%), and other unnamed soils (3%). Some small entrenched stream channels form a lacy, shallow braided stream channel that starts where the primary channel is choked with coarse debris and spills out across the soils surface until it concentrates to form a new channel. Runoff is rapid and the erosion hazard is moderate.

- **Carsitas fine sand, 0 to 5 percent slopes (CkB):** This nearly level to gently sloping soil is on alluvial fans and valley fill, similar to most Carsitas series soils. It has a similar profile to the other Carsitas series soils, but typically has a fine sand surface layer that is less than 15% coarse fragments. Runoff is slow with a slight erosion hazard. The hazard of soil blowing is high. Available water capacity is 3 to 4 inches. The effective rooting depth is 60 inches or more.
- **Myoma fine sand, 0 to 5 percent slopes (MaB):** The Myoma series consists of somewhat excessively drained soils with parent material consisting of sand blown from recent alluvium. The elevation for this map unit is 200 feet below MSL to 1,800 feet above MSL. The climate is arid with an annual precipitation of 2 to 4 inches that occurs as gentle winter rain or erratic high intensity summer storms. The average temperature is 72 to 75 degrees F, with a frost free season of 290 days. This nearly level to gently sloping soil is on alluvial fans where they merge with finer textured floodplain and basin soils. Runoff is very slow with a slight erosion hazard. The hazard of soil blowing is high.
- **Myoma fine sand, 5 to 15 percent slopes (MaD):** This soil type is similar to the Myoma series described above. This moderately sloping to rolling soil is on dunes and alluvial fans. Runoff is very slow with a slight erosion hazard. The hazard of soil blowing is high.
- **Riverwash (RA):** Riverwash soils were mapped immediately south of the historical Morongo Wash crossing underneath the railroad line, showing an approximately 560-foot wide corridor that extends from the crossing to the confluence with the Whitewater River, approximately 1.4 miles downstream/south. The soils map included in Appendix B, *Documentation*, shows the historic riverwash corridor within the project site.

4.6 HYDRIC SOILS LIST OF CALIFORNIA

Michael Baker reviewed the Hydric Soils List of California (March 2014), provided by the NRCS, in an effort to verify whether or not on-site soils are considered to be hydric. It should be noted that lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for onsite investigations. According to the soils list, the following soils are considered hydric: Carsitas gravelly sand, 0 to 9 percent slopes; Carsitas gravelly sand, 9 to 30 percent slopes; Carsitas cobbly sand, 2 to 9 percent slopes; Myoma fine sand, 0 to 5 percent slopes; Myoma fine sand, 5 to 15 percent slopes; and Riverwash.

4.7 NATIONAL WETLANDS INVENTORY

Michael Baker reviewed the U.S. Fish and Wildlife Service's National Wetland Inventory maps. No wetland or riparian features were found within or adjacent to the project site (refer to Appendix B, *Documentation*, for the NWI Map).

4.8 FLOOD ZONE

Michael Baker searched the Federal Emergency Management Agency website for flood data for the project site. Based on the Flood Insurance Rate Map No. 06065C1576G, 06065C1557G, 06065C0915G, and 06065C1557G, the majority of the project site is located within Zone A, or areas subject to inundation by the 1% (100-year) annual flood plain (refer to Appendix B, *Documentation*). A small area within the southeast corner of the project site occurs in Zone X, or areas with reduced flood risk due to levees.

Section 5 Site Conditions

Michael Baker regulatory specialists Wesley Salter, PWS, Daniel Cardoza, and Tim Tidwell visited the project site from approximately 8:30 a.m. to 3:30 p.m. on January 29, 2015 to verify existing conditions and document potential jurisdictional areas. The temperature was approximately 65-75 °F. No significant rain events had occurred in the ten days prior to the site visit. Michael Baker encountered no limitations during the site visit. Refer to Appendix A, *Site Photographs*, for representative photographs taken throughout the project site.

5.1 MORONGO WASH

Morongo Wash is an earthen, ephemeral drainage that runs through the project site in a northwest to southeast direction. Morongo Wash historically flowed into the Whitewater River, but is now considered to be an isolated feature. The soils map (refer to Appendix B, *Documentation*) shows a corridor directly south of the railroad bridge mapped as riverwash, which implies that Morongo Wash historically flowed underneath the railroad bridge and into the Whitewater River. Because of the berming (build-up of fluvial material) at the railroad bridge crossing, Morongo Wash dissipates downstream between I-10 and the railroad and fails to connect to any other downstream features/waterways.

Sediment within Morongo Wash consists of sand and cobble. The low flow channel was primarily unvegetated, with creosote scrub increasing in density outside of the active floodplain. Vegetation associated with the creek (primarily on the active floodplain and low terrace) consisted of brittlebush (*Encelia farinosa*, NI), burro weed (*Ambrosia dumosa*, NI), burrobrush (*Ambrosia salsola*, NI), small seeded spurge (*Chamaesyce polycarpa*, NI), Russian thistle (*Salsola tragus*, FACU), saltcedar (*Tamarix ramosissima*, NI), annual yellow sweetclover (*Melilotus indicus*, FACU), and bladderpod (*Peritoma arborea*, NI). No surface water was present in the wash during the site visit. Evidence of an OHWM was observed via drift deposits, benches, changes in sediment size, and change in vegetation type and density. The OHWM ranged in width from one foot to approximately 300 feet.

The field investigation concluded that upland areas directly adjacent to Morongo Wash were dominated by terrestrial and aeolian features and lacked indicators of recent fluvial activity. The low flow channel for each reach of the wash north of I-10 is moderately incised within the project site, which allowed Michael Baker to delineate clear boundaries of the watercourse based on indicators of fluvial activity and inactivity. Upland islands within the watercourse were not treated separately from the watercourse since their landscape and ecosystem function did not differ from the watercourse.

The area of Morongo Wash south of I-10 and north of the railroad line required more reliance on the MESA indicators to determine areas of fluvial activity. Michael Baker

identified several MESA indicators within and outside of the mapped watercourse in order to determine the extent of terrestrial and fluvial processes. Upland indicators included bioturbation, active coppice dunes, and surface rounding. Fluvial indicators included the presence of mid-channel gravel and sand bars, bifurcated flow, flow lineations, mud cracks, mud curls, organic drift, out-of-channel flow, ripples, sediment ramps (gravel), small wrack on floodplain, cut bank (in sand), and headcuts in first order channels on terrace. Substrate staining was noted at the playa fringe or floodplain boundary. Upland areas were excluded from the mapped watercourse based on clear signs of upland processes, with topographic relief providing the most significant indicator of upland processes. Sheet flow is more common in this area of Morongo Wash due to the low magnitude events, which results in a watercourse width of approximately 320 feet at some points. The sheet flow events cause sediment splays across the floodplain, which indicates that there is no specific low flow channel in this area to convey the low magnitude flows.

5.2 WETLAND FEATURES

No wetland features were noted within the boundaries of the project site. All areas either did not contain hydrophytic vegetation or were dominated by loose sandy substrate.

Section 6 Findings

This delineation has been prepared for Messenger in order to delineate the Corps, Regional Board, and CDFW jurisdictional authority within the project site. This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries within a project site/property.

6.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

6.1.1 Non-Wetland WoUS Determination

Morong Wash exhibits evidence of an OHWM, but does not connect to downstream waters and is considered to be an isolated feature. Morong Wash is not within the 100-year floodplain of the Whitewater River and is physically restricted to the corridor between I-10 and the Union Pacific railroad line. As such, no Corps WoUS are present on-site.

6.1.2 Wetland Determination

As previously noted, an area must exhibit all three wetland parameters described in the Corps Regional Supplement to be considered a jurisdictional wetland. Based on the results of the site visit, it was determined that no portion of the project site contained all three parameters, thus no jurisdictional wetlands were observed onsite.

6.2 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

Morong Wash exhibits evidence of an OHWM and is considered to be an isolated feature with no connection to downstream waters. It is determined that 17.64 acres of Morong Wash are subject to Regional Board jurisdiction. Table 2, *Jurisdictional Areas*, summarizes the on-site jurisdiction, a Regional Board jurisdictional resource. The proposed project is anticipated to result in 1.19 acre of permanent impacts to Morong Wash. Refer to Table 3, *Summary of Impacts*, for a summary of proposed impacts to Regional Board jurisdictional areas and Exhibit 4, *Jurisdictional Map*, for an illustration of jurisdiction and proposed impacts.

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

Morong Wash is considered a CDFW jurisdictional streambed. It was determined that

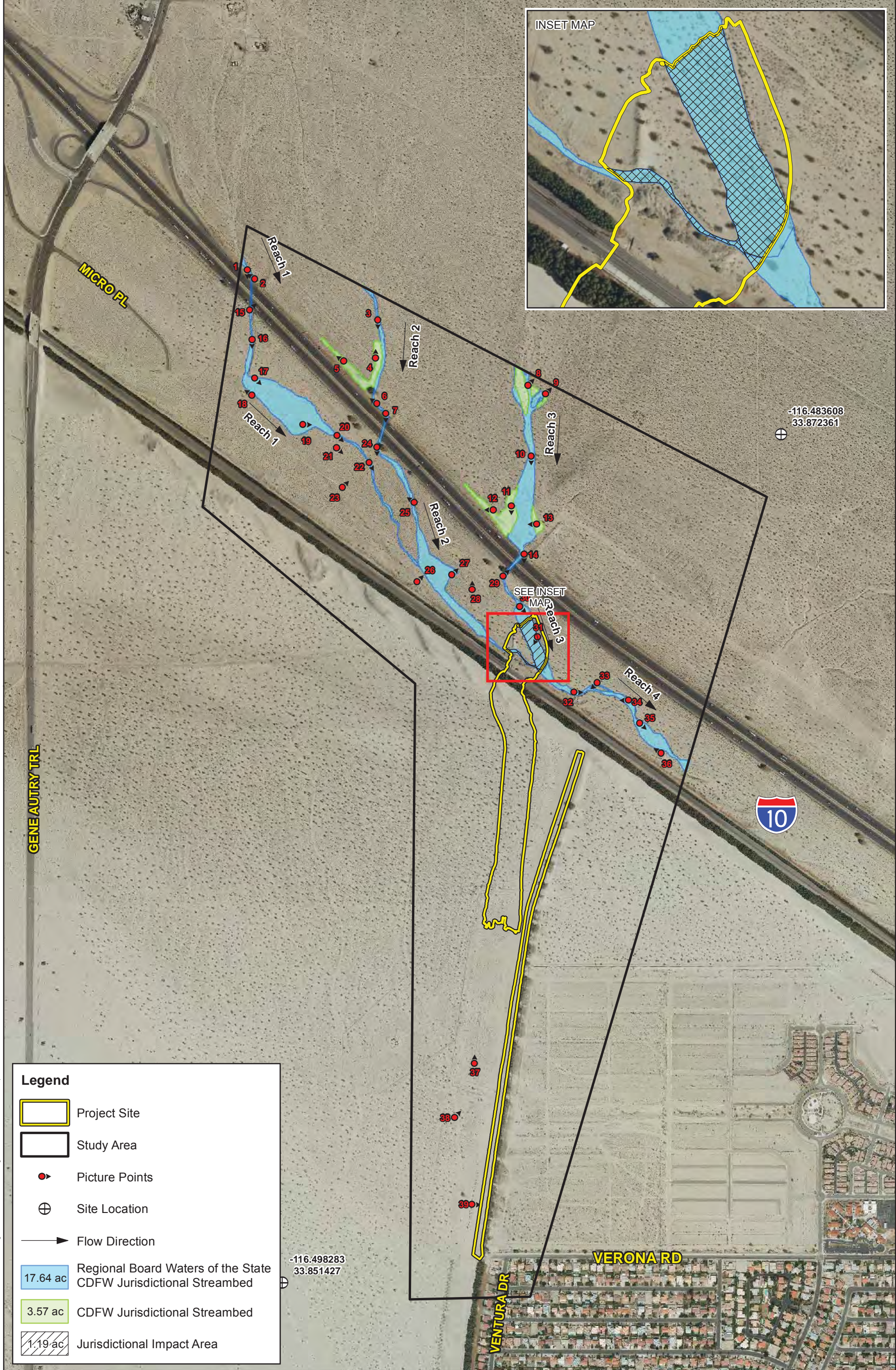
21.22 acres of CDFW jurisdictional streambed and associated vegetation is located within the project site (refer to Table 2, *Jurisdictional Areas*, and Exhibit 4, *Jurisdictional Map*). The proposed project is anticipated to result in 1.19 acre of permanent impacts to Morongo Wash, a CDFW jurisdictional resource.

Table 2: Jurisdictional Areas

Jurisdictional Feature (Morongo Wash)	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	--	--	5.22	3,528	5.22	3,528
Reach 2	--	--	4.36	4,077	5.52	4,077
Reach 3	--	--	5.97	2,849	8.39	2,849
Reach 4	--	--	2.09	1,680	2.09	1,680
Total	--	--	17.64	12,135	21.22	12,135

Table 3. Summary of Impacts

Jurisdictional Feature	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage (permanent)	Linear Feet (permanent)	Acreage (permanent)	Linear Feet (permanent)
Morongo Wash	--	--	1.19	770	1.19	770



Legend

- Project Site
- Study Area
- Picture Points
- ⊕ Site Location
- ➔ Flow Direction
- 17.64 ac Regional Board Waters of the State CDFW Jurisdictional Streambed
- 3.57 ac CDFW Jurisdictional Streambed
- 1.19 ac Jurisdictional Impact Area

-116.498283
33.851427

-116.483608
33.872361

Section 7 Regulatory Approval Process

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the jurisdictional areas.

7.1 U.S. ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. Since no Corps jurisdictional areas occur within the project site, no permit will be required from the Corps prior to commencement of construction activities. The applicant is required to obtain an Approved Jurisdictional Determination from the Corps in order to confirm the findings of this report.

7.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne). Projects that do not result in the discharge of dredged or fill materials into WoUS are required to obtain regulatory approval by the Regional Board through the Waste Discharge Requirements (WDR) Program. Due to the project's size, the WDR requirement may be waived by the Regional Board as the project will require permit coverage under the Statewide General Stormwater Permit for Construction Activities (Order No. 2009-00009 DWQ) and all related requirements therein. Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The Regional Board also requires that CEQA compliance be obtained prior to discharge approvals. A Regional Board Application fee is required with the application package, and is calculated based on the acreage and linear feet of jurisdictional impacts.

7.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates alteration to streambeds and associated vegetation under the Fish and Game Code. The CDFW must be notified prior to activities that alter jurisdictional areas. A Streambed Alteration Agreement (or other approval) from the CDFW would be required prior to commencement of any construction activities within the CDFW delineated jurisdictional areas.

7.4 GLOBAL RECOMMENDATIONS

It is highly recommended that the delineation be forwarded to each of the regulatory agencies for their concurrence.

Section 8 References

The following resources were utilized during preparation of this Delineation of State and Federal Jurisdictional Waters:

Brady, Roland H. III, Kris Vyverberg. 2013. *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants*. California Energy Commission, Publication Number: CEC-500-2014-013.

California Department of Fish and Wildlife, *Lake and Streambed Alteration Program*. (<https://www.dfg.ca.gov/habcon/1600/>)

Environmental Laboratory. 1987. *Corps of Engineers wetlands delineation manual*. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

Faber, Phyllis M., *Common Riparian Plants of California*, Pickleweed Press 1996.

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Munsell, *Soil Color Charts*, 2009 Year Revised/2009 Production.

Natural Resources Conservation Service, *Hydric Soils List of California*, April 2012. (<http://soils.usda.gov/use/hydric/>)

U.S. Army Corps of Engineers, *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*, August 2008.

U.S. Army Corps of Engineers, *Distribution of Ordinary High Water Mark Indicators and their Reliability in Identifying the Limits of "Waters of the United States" in the Arid Southwestern Channels*, February 2006.

U.S. Army Corps of Engineers, *Final Summary Report: Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest*, June 2001.

U.S. Army Corps of Engineers, *Los Angeles District Regulatory Program*. (<http://www.spl.usace.army.mil/Missions/Regulatory.aspx>)

U.S. Army Corps of Engineers, *Minimum Standards for Acceptance of Preliminary Wetland Delineations*, November 20, 2001.

U.S. Army Corps of Engineers, *Practices for Documenting Jurisdiction under Section 404 of the CWA*, Regional Guidance Letter 07-01, June 5, 2007.

U.S. Army Corps of Engineers, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, ed. J.S. Wakeley, R. W. Lichvar, and C. V. Nobel. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center, 2008.

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U.S. Army Corps of Engineers, *Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*, July 2010.

U.S. Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey*. (<http://websoilsurvey.nrcs.usda.gov/app/>)

U.S. Department of Homeland Security, Federal Emergency Management Agency, National Flood Insurance Program, *Flood Insurance Rate Map No. 06065C1576G, 06065C1557G, 06065C0915G, and 06065C1557G*

U.S. Fish and Wildlife Service, Department of Habitat and Resource Conservation, *Wetland Geodatabase*. (<http://wetlandsfws.er.usgs.gov/NWI/index.html>)

U.S. Geological Survey, 7.5 Minute Series Topographic Quadrangle, *Cathedral City, California*, 1958, photorevised 1981.

Vyverberg, Kris. *A Review of Stream Processes and Forms in Dryland Watersheds*. California Department of Fish and Game, December 2010.

Appendix A *On-Site Photographs*

Appendix A – Site Photographs



Photograph 1 – Looking south (downstream) at the Reach 1 I-10 bridge crossing.



Photograph 2 – Looking northwest (upstream) immediately upstream of the Reach 1 I-10 bridge crossing.

Appendix A – Site Photographs



Photograph 3 – Looking south (downstream) at Reach 2. Clear low flow channel visible.



Photograph 4 – Looking north (upstream) within the active floodplain of Reach 2.

Appendix A – Site Photographs



Photograph 5 – Looking northwest (away from Reach 2) within the roadside basin connected to Reach 2. Flows primarily originate from the surface of I-10, though some flow is contributed by the Reach 2 drainage.



Photograph 6 – Looking northwest (upstream) of Reach 2.

Appendix A – Site Photographs



Photograph 7 – Looking south (downstream) at the Reach 2 I-10 crossing.



Photograph 8 – Looking northeast (upstream) at an upland area outside of the Reach 3 watercourse.

Appendix A – Site Photographs



Photograph 9 – Looking northeast (upstream) at a newly developed headcut area, showing a clear demarcation between the upland and the watercourse within Reach 3.



Photograph 10 – Looking south (downstream) at the wide low flow channel and active floodplain within Reach 3.

Appendix A – Site Photographs



Photograph 11 – Looking south (downstream) within the active floodplain of Reach 3.



Photograph 12 – Looking west (away from Reach 3) at the roadside basin connected to Reach 3.

Appendix A – Site Photographs



Photograph 13 – Looking west at the active floodplain within Reach 3. The low flow channel is visible in the top third of the picture.



Photograph 14 – Looking south (downstream) at the Reach 3 I-10 crossing.

Appendix A – Site Photographs



Photograph 15 – Looking northeast at the southern side of the Reach 1 I-10 crossing.



Photograph 16 – Looking south at a confined stretch of the low flow channel of Reach 1.

Appendix A – Site Photographs



Photograph 17 – Looking southeast (downstream) within Reach 1 as the low flow channel widens and sheet flow begins.



Photograph 18 – Looking northwest (upstream) along the southern border of Reach 1. The artificial berm confines Morongo Wash to a specific area.

Appendix A – Site Photographs



Photograph 19 – Looking east (downstream) at an area that experiences wide sheet flows.



Photograph 20 – Looking southeast (downstream) within Reach 1. Sheet flows are funneled into this channel feature, which is surrounded by uplands.

Appendix A – Site Photographs



Photograph 21 – Looking southeast within an upland area that does not experience fluvial activity. This area is topographically higher than the adjacent Reach 1 watercourse.



Photograph 22 – Looking south-southeast (downstream) within Reach 1.

Appendix A – Site Photographs



Photograph 23 – Looking northeast into an area that does not experience fluvial activity.



Photograph 24 – Looking south (downstream) immediately downstream of the Reach 2 I-10 crossing.

Appendix A – Site Photographs



Photograph 25 – Looking northwest (upstream) of a confined area of Reach 2, south of I-10.



Photograph 26 – Looking northeast from the southern berm that borders the railroad tracks. Flow patterns are evident across this wide portion of Reach 2.

Appendix A – Site Photographs



Photograph 27 – Looking north at the end of a ponded area within Reach 2. Note lack of ponding and sediment size change in background.



Photograph 28 – Looking north within an upland area outside of the watercourse.

Appendix A – Site Photographs



Photograph 29 – Looking northeast (upstream) at the southern end of the Reach 3 I-10 crossing.



Photograph 30 – Looking southeast (downstream) at the active floodplain of Reach 3.

Appendix A – Site Photographs



Photograph 31 – Looking south-southwest (downstream) at the active floodplain of Reach 3.



Photograph 32 – Looking east (downstream) at a confined area of Reach 3.

Appendix A – Site Photographs



Photograph 33 – Looking southwest (downstream) along a secondary channel of Reach 3.



Photograph 34 – Looking west (upstream) at a confined portion of Reach 3.

Appendix A – Site Photographs



Photograph 35 – Looking southeast (downstream) where the Reach 3 floodplain begins to widen.



Photograph 36 – Looking northwest (upstream) from an artificial berm showing the larger landscape. The low flow channel is visible at the toe of the berm.

Appendix A – Site Photographs



Photograph 37 – Looking north near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.



Photograph 38 – Looking northeast at sand barriers near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.

Appendix A – Site Photographs



Photograph 39 – Looking east at the tamarisk-lined berm near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.

Appendix B *Documentation*

National Wetland Inventory Map



U.S. Fish and Wildlife Service National Wetlands Inventory

Morongo Wash Improvements Project

Feb 6, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

FEMA Maps

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on this FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

This map may reflect more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

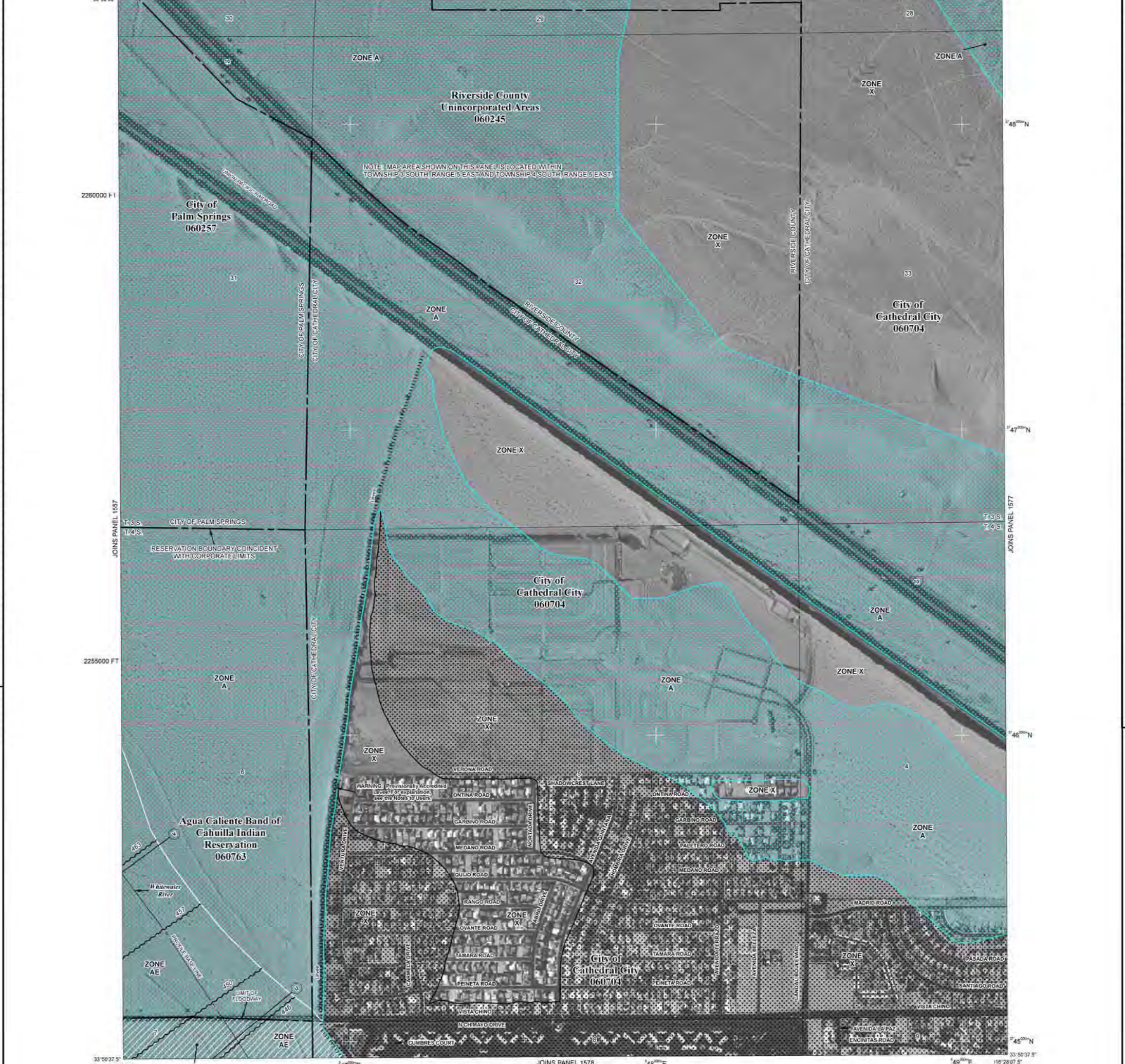
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.

WARNING: This map contains levees, dikes, or other structures that have been provisionally accredited and mapped as providing protection from the 1-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR Section 65.10 by August 8, 2009. Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.

116°30'00" W
33°52'30" N
2260000 FT
2255000 FT
116°30'00" W
33°50'37.5" N



The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain.

ZONE I Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513
(EL. 987)
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

○ Cross section line
○ Transsect line
87° 07'45", 32° 22'30"
76° N
600000 FT
DX5510 x
● M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 500 1000 FEET
150 0 150 300 METERS

NFIP PANEL 1576G

FIRM
FLOOD INSURANCE RATE MAP
RIVERSIDE COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1576 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
AGUA CALIENTE BAND OF CAHUILLA INDIAN RESERVATION	060763	1576	G
CATHEDRAL CITY CITY OF PALM SPRINGS CITY OF RIVERSIDE COUNTY	060704 060257 060245	1576	G

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C1576G

EFFECTIVE DATE
AUGUST 28, 2008

NATIONAL FLOOD INSURANCE PROGRAM

U.S. DEPARTMENT OF COMMERCE
NATIONAL FLOOD INSURANCE PROGRAM

drainage sources of similar size. The community map repository should be consulted for possible additional or modified flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the **Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations** tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

This map may reflect more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2927) or visit the FEMA website at <http://www.fema.gov>.

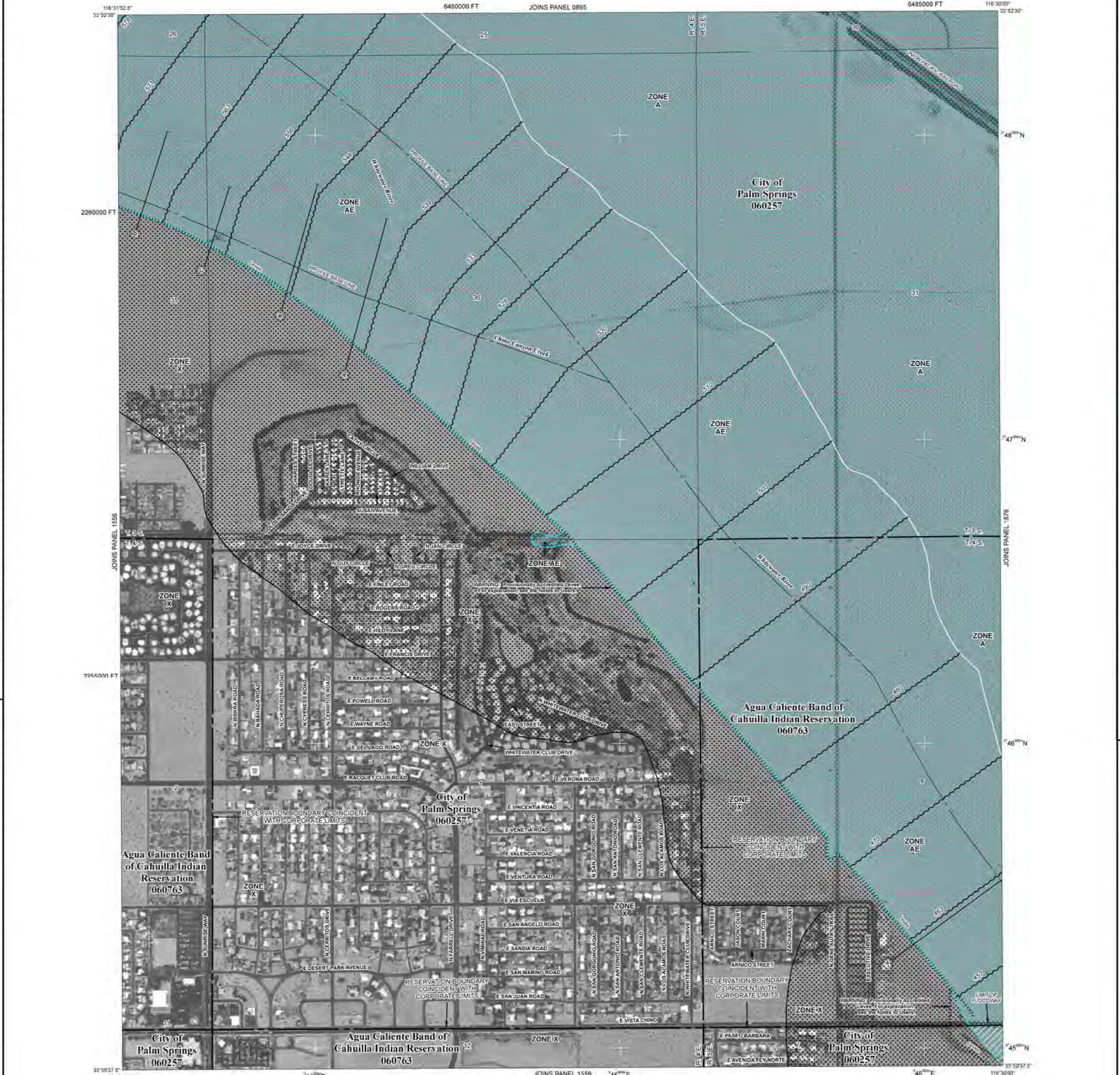
WARNING: This map contains levees, dikes, or other structures that have been provisionally accredited and mapped as providing protection from the 1-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR Section 65.10 by August 8, 2009. Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.

Agua Caliente Band of
Cahuilla Indian
Reservation
060763

City of
Palm Springs
060257

City of
Palm Springs
060257

Agua Caliente Band of
Cahuilla Indian Reservation
060763



The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain.

AREAS IN WHICH FLOOD HAZARDS ARE UNDETERMINED, BUT POSSIBLE

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988

○ A — Cross section line
○ B — Transsect line
87° 07' 45", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
76° N — 1000-meter Universal Transverse Mercator grid values, zone 11E
600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPS ZONE 0406), Lambert Conformal Conic projection
DX5510 x — bench mark (see explanation in notes to Users section of this FIRM panel)
● M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP PANEL 1557G

FIRM
FLOOD INSURANCE RATE MAP
RIVERSIDE COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1557 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
AGUA CALIENTE BAND OF CAHUILLA INDIAN RESERVATION	060763	1557	G
PALM SPRINGS, CITY OF	060257	1557	G

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C1557G

EFFECTIVE DATE

Soils Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Riverside County, Coachella Valley Area, California

Morongo Creek Channel



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

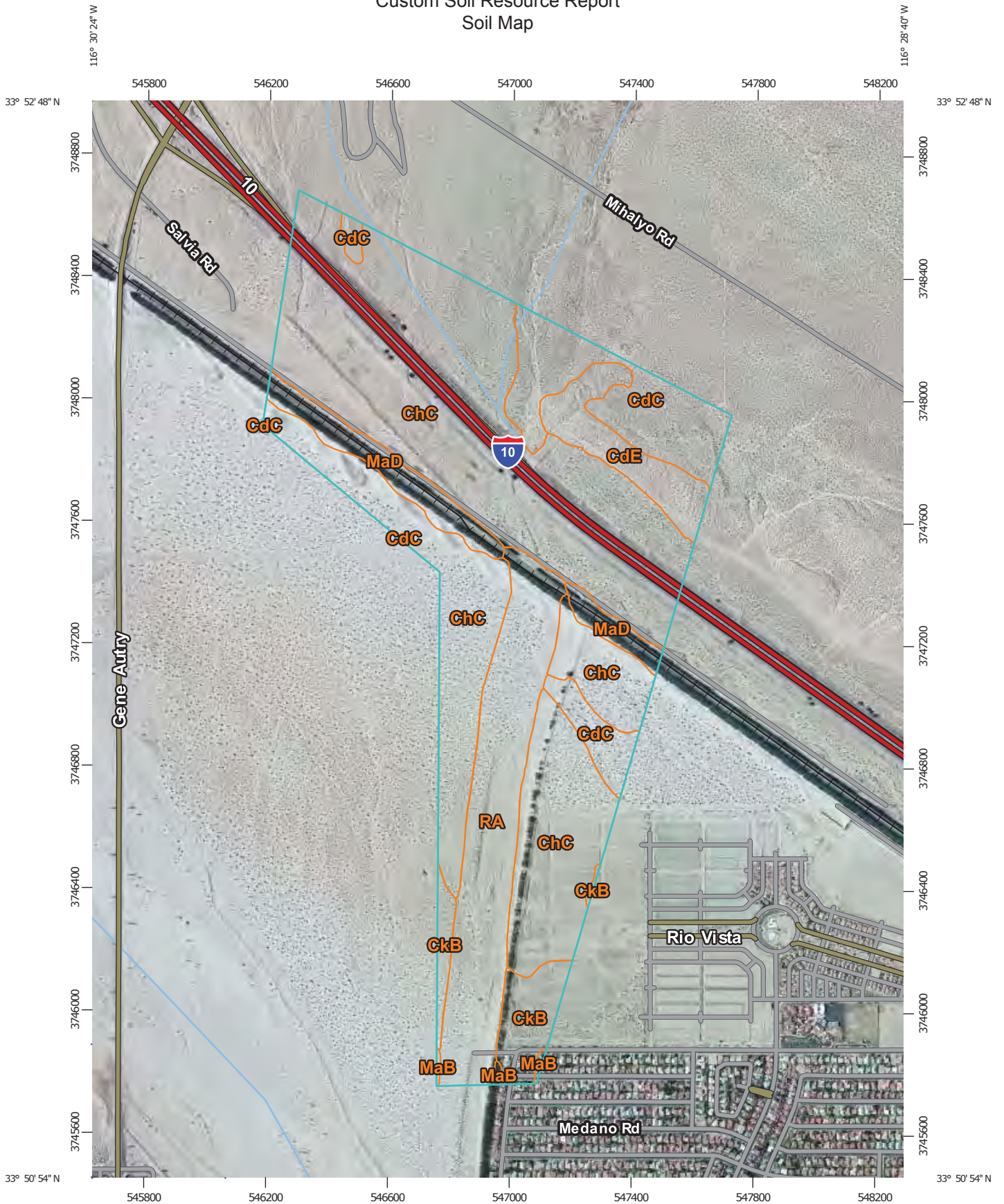
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:17,200 if printed on A portrait (8.5" x 11") sheet.




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

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Riverside County, Coachella Valley Area, California
 Survey Area Data: Version 7, Sep 9, 2014

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

Date(s) aerial images were photographed: May 2, 2010—Jun 3, 2010

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

Map Unit Legend

Riverside County, Coachella Valley Area, California (CA680)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CdC	Carsitas gravelly sand, 0 to 9 percent slopes	55.6	10.5%
CdE	Carsitas gravelly sand, 9 to 30 percent slopes	24.2	4.6%
ChC	Carsitas cobbly sand, 2 to 9 percent slopes	322.1	61.1%
CkB	Carsitas fine sand, 0 to 5 percent slopes	21.4	4.1%
MaB	Myoma fine sand, 0 to 5 percent slopes	1.3	0.3%
MaD	Myoma fine sand, 5 to 15 percent slopes	26.0	4.9%
RA	Riverwash	76.9	14.6%
Totals for Area of Interest		527.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been

observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Riverside County, Coachella Valley Area, California

CdC—Carsitas gravelly sand, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv0
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: gravelly sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Riverwash

Percent of map unit: 4 percent
Landform: Channels

Carsitas

Percent of map unit: 4 percent

Myoma

Percent of map unit: 4 percent

Unnamed, stony or gravelly

Percent of map unit: 3 percent

CdE—Carsitas gravelly sand, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: hkv1

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Gravelly alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: gravelly sand

H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 9 to 30 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Badland

Percent of map unit: 10 percent

Carrizo

Percent of map unit: 2 percent

Myoma

Percent of map unit: 1 percent

Unnamed, cobbles or stones

Percent of map unit: 1 percent

Riverwash

Percent of map unit: 1 percent

Landform: Channels

ChC—Carsitas cobbly sand, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv3

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Gravelly alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: cobbly sand

H2 - 10 to 60 inches: gravelly sand

Custom Soil Resource Report

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 6s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Chuckawalla

Percent of map unit: 4 percent

Riverwash

Percent of map unit: 4 percent

Landform: Channels

Carrizo

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 3 percent

CkB—Carsitas fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkv4

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: fine sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Myoma

Percent of map unit: 10 percent

Coachella

Percent of map unit: 3 percent

Unnamed, gravel surface

Percent of map unit: 2 percent

MaB—Myoma fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkw3
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F

Custom Soil Resource Report

Frost-free period: 270 to 320 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Myoma and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myoma

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand

H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Coachella

Percent of map unit: 4 percent

Carsitas

Percent of map unit: 4 percent

Unnamed, noncalcareous soils

Percent of map unit: 4 percent

Riverwash

Percent of map unit: 3 percent

Landform: Channels

MaD—Myoma fine sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hkw4
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Myoma

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand
H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Coachella

Percent of map unit: 5 percent

Unnamed, calcareous soils

Percent of map unit: 5 percent

Riverwash

Percent of map unit: 3 percent

Landform: Channels

Carsitas

Percent of map unit: 2 percent

RA—Riverwash

Map Unit Setting

National map unit symbol: hkwb

Elevation: 700 to 2,900 feet

Mean annual precipitation: 8 to 15 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 110 to 180 days

Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Channels

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy and gravelly alluvium

Typical profile

H1 - 0 to 6 inches: gravelly sand

H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 0 inches

Custom Soil Resource Report

Frequency of flooding: Frequent

Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Minor Components

Tujunga

Percent of map unit: 5 percent

Carsitas

Percent of map unit: 5 percent

Soboba

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 2 percent

Landform: Drainageways

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**Appendix C Burrowing Owl Focused Survey Report
(2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Burrowing Owl Focused Survey Report

Prepared By:

Michael Baker International
14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

July 2016
JN 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Burrowing Owl Focused Survey Report

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ashley M. Barton
Biologist
Natural Resources



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

July 2016
JN 144905

Executive Summary

This report contains the findings of a focused burrowing owl (*Athene cunicularia*) survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California (project site or site). The surveys for burrowing owl were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted by Michael Baker International (Michael Baker) biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, the focused burrow survey was conducted on April 19, 2016.

Based on the results of the focused burrow survey conducted on April 19, 2016, it was determined the survey area¹ provides a limited amount of suitable burrows for burrowing owls. While the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent.

It is important to note that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area. However, due to the proximity of these occupied burrows (<100 feet from the eastern boundary of the survey area), it is recommended that a pre-construction clearance survey for burrowing owl be conducted within thirty (30) days of the start of any ground disturbing activities to ensure of burrowing owls remain absent from the survey area. This will ensure that grading activities associated with the proposed project do not violate the Migratory Bird Treaty Act and California Fish and Game Code by impacting active burrowing owl burrows on or within 500 feet of the project site.

¹ As used in this report, “survey area” refers the project footprint plus a 500 foot buffer.

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APPENDIX

Appendix A	Site Photographs
Appendix B	Fauna Compendium

Section 1 Introduction

Michael Baker International (Michael Baker) conducted a focused burrowing owl survey for the North Cathedral City Improvements Project, Phase 1 (Project) located in the City of Cathedral City, Riverside County, California. Michael Baker biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington surveyed the project footprint, including areas with 500 feet that provide suitable habitat, in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation.

The focused burrowing owl survey included a single focused burrow survey and four (4) separate burrowing owl focused surveys during the 2016 avian breeding season. The surveys were conducted to determine, first, if the survey area provides suitable burrows to support burrowing owl and, second, if burrowing owls currently occupy the survey area. Based on the focused burrow survey conducted on April 19, 2016, it was determined the survey area provides a limited amount of suitable burrows for burrowing owls. Due to the presence of suitable burrows, four focused burrowing owl surveys were conducted on April 19, May 12, June 8, and July 7, 2016. All surveys were completed between 0600 to 1000 hours.

1.1 PROJECT LOCATION

The project site is generally located south of Interstate 10, on the western boundary of the City of Cathedral City, Riverside County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Cathedral City quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of Interstate 10, and east of Gene Autry Trail (Exhibit 3, *Survey Area*).

1.2 PROJECT PURPOSE AND NEED

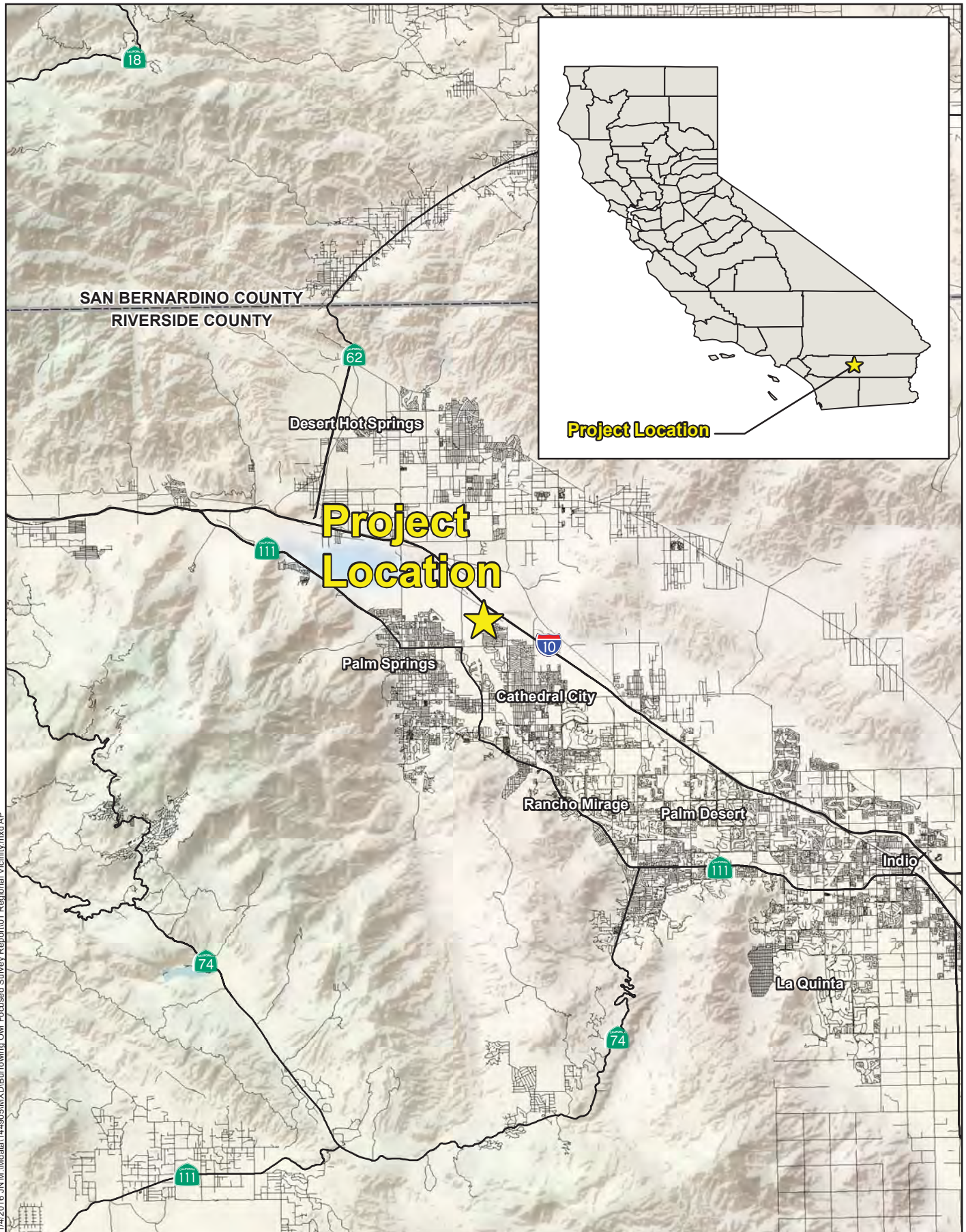
The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

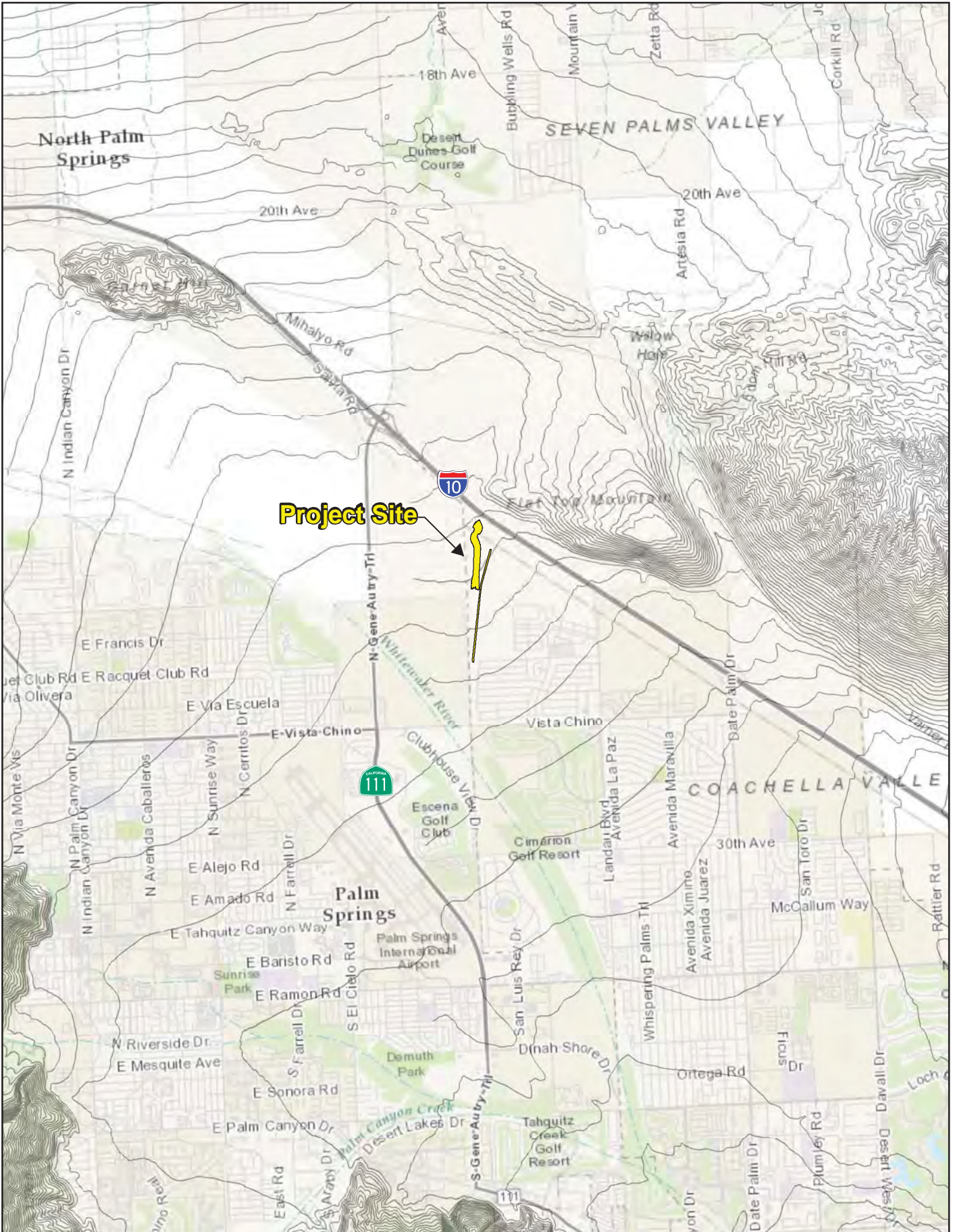
The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.



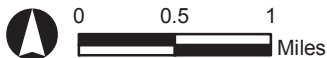
NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 BURROWING OWL FOCUSED SURVEY REPORT

Regional Vicinity

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT






Source: Riverside County, ESRI World Topographic Basemap

Site Vicinity

11/4/2016 JN M:\Mdata\144905\MXD\Burrowing Owl Focused Survey Report\03 Project Site 2.mxd



Legend

-  Project Site
-  Survey Area
-  Photograph Locations

**NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT**

Survey Area

Section 2 Species Background

2.1 SPECIES BACKGROUND

The burrowing owl is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of fossorial mammals, such as ground squirrels (*Otospermophilus beecheyi*), whose burrows are used for roosting and nesting (Haug and Didiuk 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owl have crepuscular (dawn and dusk) hunting habits but are often observed perched in or near the burrow entrance during the day. They prey upon invertebrates and small vertebrates (Thomsen 1971) through the low vegetation which allows for foraging visibility. The nesting season occurs between February 1 and August 31. Burrowing owl in California may migrate southerly, but often remain in the breeding area during the non-breeding period.

The burrowing owl was once abundant and widely distributed within coastal southern California, but it has declined precipitously in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. A petition was filed to list the California population of the western burrowing owl as an Endangered or Threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either endangered or threatened. The CDFW currently lists the burrowing owl as a California Species of Special Concern.

2.2 REGULATORY FRAMEWORK

The burrowing owl is a resident and migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA reflects agreements made between the U.S., England, Mexico, the former Soviet Union, and Japan to protect all of North America's migratory bird populations. The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined in Title 50 C.F.R. part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb "collect" applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a

nest when it contains birds or eggs, and no possession shall occur during the destruction (United States Fish and Wildlife Service, Migratory Bird Permit Memorandum, April 15, 2003). Certain exceptions to this prohibition are included in 50 C.F.R. section 21. Pursuant to CDFW Code section 3513, the Department enforces the MBTA consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Additionally, burrowing owl is protected under Sections 3503, 3503.3, 3511, and 3513 of the CDFW Code which prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). CDFW Code Section 3503.5 protects birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls, including burrowing owls) which makes it unlawful to take, possess, or destroy their nest or eggs.

Burrowing owls have been included as one of the twenty-seven (27) focal species covered by the MSHCP. The objectives for burrowing owls within the MSHCP area are to maintain and ensure the conservation of occupied burrows on current conserved lands, decrease harmful effects to burrowing owls, and identify and implement monitoring and management to sustain the burrowing owl population within the plan area. Burrowing owls can be found in a variety of habitats within the Coachella Valley including adjacent to residential and commercial development, washes, fallow fields, sand dunes, agricultural drains, and creosote dominated landscapes. Within the Plan Area, burrowing owls are scattered in low numbers on natural desert terrain throughout the lowlands. There are seventy-four (74) known locations for burrowing owl recorded in 2003 by CDFW within the Plan Area (Coachella Valley MSHCP, 2007).

CDFW's 2012 Staff Report on Burrowing Owl Mitigation offers long-term assurances for conservation of this species in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California's NCCP Act (FGC §2800 et seq.) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary federal HCPs are governed by the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.) (ESA). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls, and grasslands and other habitats.

Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or "rare" regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur

(Sections 21001(c), 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

Section 3 Methodology

General weather conditions during each of the surveys were suitable for detections of burrowing owls. All surveys had clear skies and minimal wind. In accordance with the survey protocols, surveys are not accepted if they are conducted during rain, high winds (> 20 mph), dense fog, or temperatures over 90°F. The protocol survey for burrowing owl requires a systematic survey of all areas that provide suitable habitat plus a 150-meter (approximately 500 feet) zone of influence on all sides of suitable habitat. Survey transects were conducted at 30-meter (approximately 100 feet) intervals to ensure 100% visual coverage of all areas in suitable habitat, as applicable based on topography of the site (refer to Exhibit 3, *Survey Area*). The focused burrowing owl surveys were conducted during the recognized timeframe; in the morning one hour before sunrise to two hours after sunrise.

Areas providing potential habitat for burrowing owls were surveyed for suitable burrows, consisting of natural and non-natural substrates in areas with low, open vegetation. All burrows encountered were examined for shape, scat, pellets, white-wash, feathers, tracks, and prey remains. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, with a hand-held GPS unit. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (e.g., pellets, white wash, feathers, or prey remains). Suitable burrows/cavities, including rock piles and non-natural substrates, were thoroughly examined for signs of presence.

The burrowing owl focused survey was conducted during the beginning of the 2016 breeding season (February 1 to August 31) in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley MSHCP and CDFW 2012 Staff Report on Burrowing Owl Mitigation. The survey area was assessed on foot by qualified biologists, Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington, who are knowledgeable in the habitats and behavior of burrowing owls on four (4) separate days:

Biologist	Survey Date (2016)
Ashley M. Barton	April 19, May 12, June 8, and July 7
Ryan S. Winkleman	June 8
Thomas C. Millington	April 19, May 12, and July 7

All surveys were completed between 0600 to 1000 hours.

Section 4 Results

4.1 EXISTING CONDITIONS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site and survey area occurs in an area that is mostly undisturbed. On-site habitats exhibit minimal disturbance and generally consists of a naturally occurring desert scrub habitat. Railroad tracks bordered by two parallel tamarisk (*Tamarix ramosissima*) windrows running in a northwest to southeast orientation can be found within the project site's northern portion, south of Interstate 10 freeway. Another tamarisk windrow sits on a berm within the eastern portion of the project site and runs north to south. This portion of the project site has been subject to a high degree of human disturbance, primarily through illegal trash dumping. The Morongo Wash passes through the northern portion of the survey area. Residential development can be found to the south and east of the survey area. An abandoned residential development with graded roads and building pads sits within the southeast portion of the survey area; native vegetation is slowly recovering in this area.

The majority of the project site and survey area consists of a Sonoran creosote bush scrub vegetation community. Common plant species observed within the survey area include creosote bush (*Larrea tridentata*), iodine bush (*Allenrolfea occidentalis*), cheesebush (*Ambrosia salsola*), and sandpaper plant (*Petalonyx thurberi*).

4.2 BURROWING OWL FOCUSED SURVEY

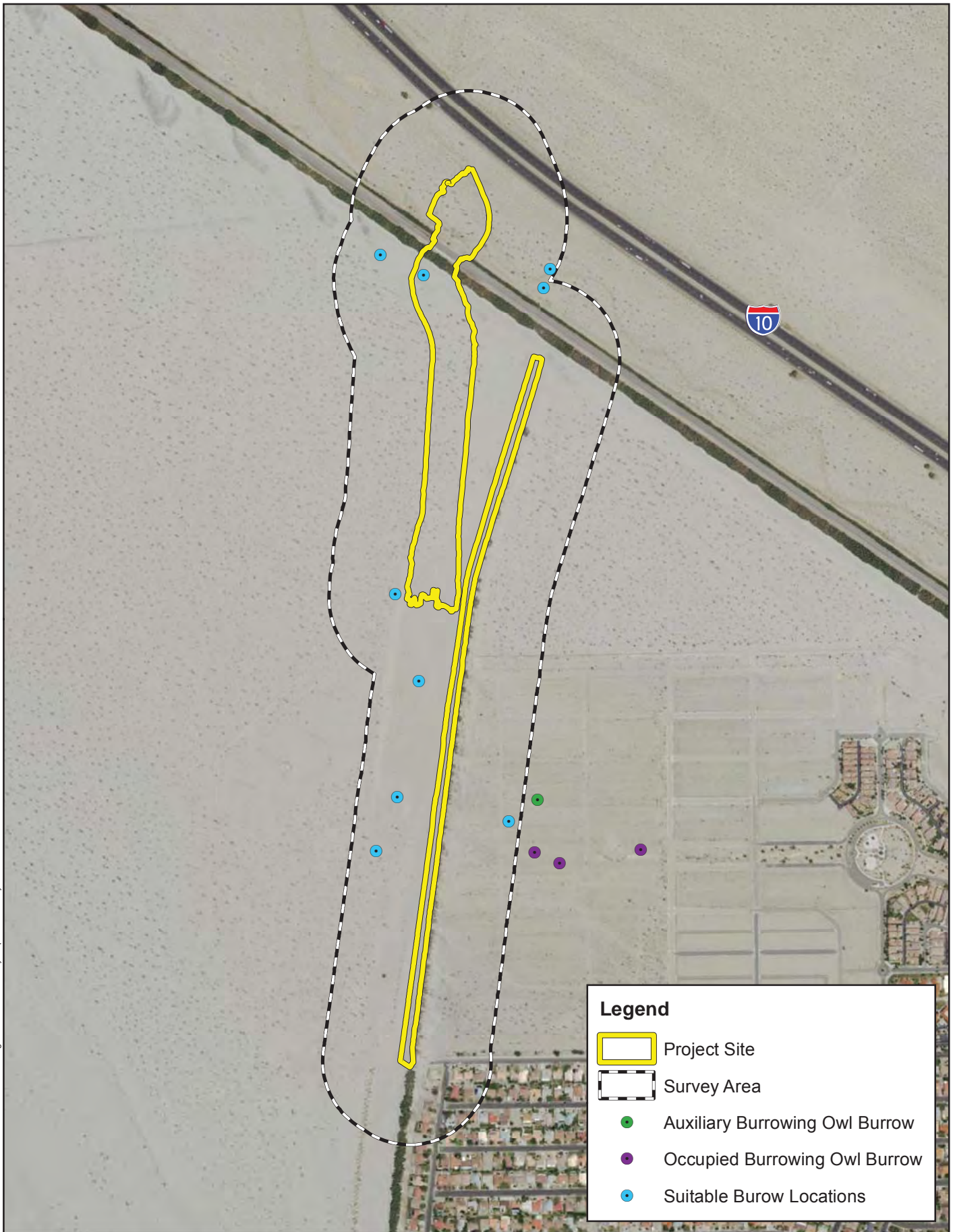
While the vegetation within the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. During the focused burrow survey conducted on April 19, 2016, it was determined the survey area provides a limited amount of suitable burrows for burrowing owls. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provide a favorable substrate for burrow construction.

Avian species detected during the focused surveys included Cooper's hawk (*Accipiter cooperii*), verdin (*Auriparus flaviceps*), house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Say's phoebe (*Sayornis saya*), northern mockingbird (*Mimus polyglottos*), Anna's hummingbird (*Calypte anna*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), hooded oriole (*Icterus cucullatus*), loggerhead shrike (*Lanius ludovicianus*), red-tailed hawk (*Buteo jamaicensis*), and common raven (*Corvus corax*). Refer to Appendix B for a complete list of wildlife species observed during the surveys.






Despite systematic searches of all suitable burrows, no burrowing owls or burrowing owl sign (i.e., scat, pellets, feathers, tracks, and prey remains) was observed during the four focused surveys.

It is important to note that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area. The closest occupied burrow is located approximately 580 feet east of the project site (Exhibit 4, *Survey Results*).

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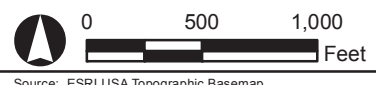


Legend

-  Project Site
-  Survey Area
-  Auxiliary Burrowing Owl Burrow
-  Occupied Burrowing Owl Burrow
-  Suitable Burrow Locations

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT

Survey Results



Section 5 Conclusion and Recommendations

Despite systematic searches of all suitable burrows, no burrowing owls or evidence (e.g., scat, pellets, feathers, tracks, and prey remains) to suggest recent use of the project site by burrowing owl was observed within the survey area. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent. However, it is important to note that six burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three burrows outside the limits of the survey area and are found on the slopes of several remnant building pads. There is no indication that these burrowing owls forage or otherwise use the project site.

Due to the proximity of these occupied burrows (<100 feet from the eastern boundary of the survey area), it is recommended that a pre-construction clearance survey for burrowing owl be conducted within thirty (30) days of the start of any ground disturbing activities to ensure burrowing owls remain absent from the survey area. This will ensure that grading activities associated with the proposed project do not violate the MBTA and California Fish and Game Code by impacting active burrowing owl burrows on or within 500 feet of the project site.

Section 6 References

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- Ramsen, Jr., J.V. 1978. *Bird Species of Special Concern in California*. Non-game Wildlife Investigations. Wildlife Management Branch Administrative Report No78-1. Report prepared for California Department of Fish and Game.
- Western Riverside County Multiple Species Habitat Conservation Plan, 1996. *Burrowing Owl Survey Requirements for the Western Riverside County MSHCP Area*. March 29.

Appendix A Site Photographs



Photograph 1: Looking northwest across the northern portion of the survey area, north of Interstate 10.



Photograph 2: Looking east across the northern portion of the project site located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 3: Looking northwest across the northern portion of the survey area located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 4: Looking northwest across the eastern portion of the survey area. The tamarisk (*Tamarix* sp.) windrow in the distance is located south of the railroad tracks.



Photograph 5: Looking southeast across the central portion of the survey area. The tamarisk windrow in the distance runs along the eastern boundary of the project site.



Photograph 6: Looking south across the central portion of the survey area.



Photograph 7: Standing along the eastern boundary of the 500 foot survey buffer looking south.



Photograph 8: Photo of three (3) of the six (6) burrowing owls located approximately 230 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 9: Photo of one (1) of the six burrowing owls located approximately 150 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 10: Photo of one of the three (3) occupied burrows located approximately 240 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 11: Looking northeast across the eastern portion of the survey area.



Photograph 12: Looking north across the southern portion of the survey area.

Appendix B Fauna Compendium

Table B – 1: Wildlife Species

Scientific Name	Common Name
Aves	Birds
<i>Accipiter cooperii</i>	Copper's hawk
<i>Athene cunicularia</i>	burrowing owl
<i>Auriparus flaviceps</i>	verdin
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Calypte anna</i>	Anna's hummingbird
<i>Calypte costae</i>	Costa's hummingbird
<i>Columba livia</i>	rock pigeon
<i>Corvus corax</i>	common raven
<i>Falco sparverius</i>	American kestrel
<i>Geococcyx californianus</i>	greater roadrunner
<i>Haemorhous mexicanus</i>	house finch
<i>Icterus cucullatus</i>	hooded oriole
<i>Lanius ludovicianus</i>	loggerhead shrike
<i>Mimus polyglottos</i>	northern mockingbird
<i>Passer domesticus</i>	house sparrow
<i>Sayornis saya</i>	Say's phoebe
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Zenaida macroura</i>	mourning dove
Mammalia	Mammals
<i>Lepus californicus</i>	black-tailed jackrabbit
<i>Sylvilagus audubonii</i>	Audubon's cottontail
Reptilia	Reptiles
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard
<i>Coluber flagellum piceus</i>	red racer
<i>Dipsosaurus dorsalis</i>	desert iguana
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard

Appendix D Sensitive Plant Survey (2016)

August 31, 2016

JN 144905

MESSENGER INVESTMENT COMPANY

Attn: *William S. Messenger, Jr.*

270 Newport Center Drive, Suite 100

Newport Beach, California 92805

SUBJECT: Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California

Michael Baker International (Michael Baker) is pleased to submit this report to document the results of a sensitive plant survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California (project site or site). Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted four sensitive plant surveys to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). The project footprint and areas within 200 feet (survey area) that provide suitable habitat for sensitive plant species known to occur within the vicinity of the project site were surveyed.

Specifically, the surveys focused on the presence/absence of chaparral sand-verbena (*Abronia villosa* var. *aurita*) (CNPS Rare Plant Rank 1B.1), pygmy lotus (*Acmispon haydonii*) (CNPS Rare Plant Rank 1B.3), Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (CNPS Rare Plant Rank 1B.2 and federally endangered), triple-ribbed milk-vetch (*Astragalus tricarinatus*) (CNPS Rare Plant Rank 1B.2 and federally endangered), Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CNPS Rare Plant Rank 1B.1), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) (CNPS Rare Plant Rank 1B.2), flat-seeded spruce (*Euphorbia platysperma*) (CNPS Rare Plant Rank 1B.2), Little San Bernardino Mtns. Linanthus (*Linanthus maculatus*) (CNPS Rare Plant Rank 1B.2), Latimer's woodland-gilia (*Saltugilia latimeri*) (CNPS Rare Plant Rank 1B.2), and Mecca-aster (*Xylorhiza cognata*) (CNPS Rare Plant Rank 1B.2). The findings of the surveys will be used to establish constraints, if any, to development including measures to avoid impacts to any federally and state listed plant species and California Native Plant Society (CNPS) *California Rare Plant Rank* listed plant species.

Project Location

The project site is generally located south of Interstate 10, on the western boundary of the City of Cathedral City, Riverside County, California. The project site is depicted on the Cathedral City quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east. Specifically, the project site is located north of Verona

Road, west and south of Interstate 10, and east of Gene Autry Trail. Refer to Attachment A, *Project Exhibits*.

Project Purpose and Need

The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

Methodology

Michael Baker field staff conducted a thorough review of relevant literature and records to determine which sensitive plants have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, focused surveys were conducted to coincide with the flowering periods of chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, Mecca-aster, and other sensitive plant species that are known to occur within the general vicinity.

Literature Review

Prior to conducting the focused surveys, a literature review and records search was conducted for chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, and Mecca-aster. Previously recorded occurrences of this species and its proximity to the project site was determined through a query of the Consortium of California Herbaria (CCH), the California Department of Fish and Wildlife's (CDFW) *California Natural Diversity Database (CNDDDB) Rarefind 5* and *BIOS*, the CNPS's *Electronic Inventory of Rare and Endangered Vascular Plants of California*, Calflora Database, as well as the following resources:

- CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009);
- CNPS *Botanical Survey Guidelines* (2001);
- U.S. Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey; and
- USFWS Critical Habitat designations for Threatened and Endangered Plant Species.

Field Investigation

Based on the plant species known to occur within the general vicinity and the suitability of the on-site habitat to support those plant species, four (4) surveys were conducted. Michael Baker biologist Dan J. Rosie and Travis

J. McGill conducted the four surveys on April 14, April 19, May 4, and June 15, 2016. Suitable habitat occurring within the project site footprint and within 200 feet was extensively surveyed on foot. Linear transects were walked throughout suitable habitat from west to east and spaced at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting sensitive plant species known to occur within the general vicinity of the project site. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed on-site and identified in the laboratory using taxonomical guides. Scientific names are provided immediately following common names of plant species (first reference only). A handheld geographic positioning systems (GPS) device and standard field data sheets were used to record all populations of chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, and Mecca-aster, if found.

Sensitive Plant Species

Chaparral sand-verbena

Chaparral sand-verbena is an annual in the *Nyctaginaceae* family that can be found in Riverside, San Diego, Imperial, and Orange counties within southern California. It requires sandy soils on sandy desert slopes, in sandy alluvial sediments near streams and rivers, on roadsides in sandy soil, and in loose soil in open pine forests. Most occurrences of this species are found on gentle or flat terrain and are associated with chaparral and coastal scrub plant communities. This species can be found at elevations ranging from 246 to 5,249 feet above mean sea level (msl). This species has a blooming period that ranges from January to September. Chaparral sand-verbena was previously identified as occurring approximately 1.67 miles east of the project site, 5 miles north of Cathedral City (CNDDDB, 1955). This species was found within a disturbed, sandy field. No subsequent observations within the general vicinity of the project site have been made since then.

Pygmy Lotus

Pygmy lotus occurs in rocky soils within Sonoran desert scrub and pinyon and juniper woodland habitats. This species can be found at elevations ranging from 1,706 to 3,937 feet above msl. This species has a blooming period that ranges from January to June. Pygmy lotus was identified as occurring approximately 3.50 southwest of the project site in Palm Springs on a rocky slope (CNDDDB, 2011). No subsequent observations around the western segment of the project site have been made since then.

Coachella Valley milk-vetch

Coachella Valley milk-vetch is endemic to the dune systems of the Coachella Valley area of Riverside County, California. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is a winter annual or short-lived perennial herb from the legume family (Fabaceae). Coachella Valley milk-vetch grows on sandy flats, outwash fans, loose

wind-blown sand dunes and partially stabilized and stabilized dunes and sand fields in Sonoran desert scrub, creosote bush scrub, or sagebrush dominated communities. This species can be found at elevations ranging from 131 to 2,149 feet above msl. This species has a blooming period that ranges from February to May. The primary threat to Coachella Valley milk-vetch is urban development which effects habitat conservation.

The project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species. The closest recorded occurrence of Coachella Valley milk-vetch is approximately 0.80 miles west of the project site along Gene Autry Trail (CNDDC, 2008). Further, this species was also observed within the boundaries of the project site and survey area during the 2016 blooming season.

Triple-ribbed milk-vetch

Triple-ribbed milk-vetch is endemic to southern California where it is restricted to dry slopes and canyons around the head of the Coachella Valley in Riverside and San Bernardino counties. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. This species is a short-lived perennial in the legume family that grows to 10 inches tall. It grow in weathered granite or gravelly soils in Joshua tree woodland and Sonoran desert scrub. Plants can mostly be found along washes in canyon bottoms and on the alluvial fans below. They can also be found as small populations or solitary individuals on weathered granite slopes in canyons. This species can be found at elevations ranging from 1,476 to 3,904 feet above msl. Triple-ribbed milk-vetch has a blooming period that ranges from February to May. Per CNDDDB records, triple-ribbed milk-vetch has not been identified as occurring within the general vicinity of the of the project site.

Parry's spineflower

Parry's spineflower occurs on alluvial fans and terraces in San Bernardino, Riverside, Los Angeles, and Orange counties. It is an annual herb in the buckwheat family (*Polygonaceae*) that occurs in the valley-floor and foothill habitats. Perry's spineflower is found in dry, sandy or gravelly soils in washes, alluvial benches, and in foothill microhabitats with unconsolidated soils and low vegetation cover. It most commonly occurs in openings in coastal sage scrub, chaparral, alluvial fan scrub, and the ecotone between chaparral and oak woodland. This species can be found at elevations ranging from 902 to 4,003 feet above msl. Parry's spineflower has a blooming period that ranges from April to June. Parry's spineflower was previously identified as occurring approximately 3.50 miles southwest of the project site (CNDDDB, 2008). No subsequent observations around the western segment of the project site have been made since then.

White-bracted spineflower

White-bracted spineflower is known from one occurrence on the San Bernardino National Forest with the rest of the occurrences are in downstream alluvial habitats. This species is in the buckwheat family and is found in

sandy to gravelly places in desert scrub communities, including Mojavean Desert scrub and pinyon-juniper woodlands. This species can be found at elevations ranging from 984 to 3,937 feet above msl. White-bracted spineflower has a blooming period that ranges from April to June. Per CNDDDB records, white-bracted spineflower has not been identified as occurring within the general vicinity of the of the project site.

Flat-seeded spurge

Flat-seeded spurge is an annual plant found on shifting dunes of low and medium height, and present on higher dunes near the Gulf of California. This species can be found at elevations ranging from 213 to 328 feet above msl. Flat-seeded spurge has a blooming period that ranges from February to September. Flat-seeded spurge was previously identified as occurring 6.50 miles southeast of the project site near Edom (CNDDDB, 1926). No subsequent observations around the western segment of the project site have been made since then.

Little San Bernardino Mountains linanthus

Little San Bernardino Mountains linanthus is an annual herb in the phlox family (Polemoniaceae) that is endemic to southern California and can be found in San Bernardino, Riverside, and Imperial counties. This species can be found on loose, well-aerated, open sandy benches and flats on the margins of desert washes. Little San Bernardino Mountains linanthus is always found in open areas that receive no shade from nearby shrubs and is associated with other small annual species. Little San Bernardino Mountains linanthus was recorded as occurring 3.60 miles southwest of the project site at the intersection of Tahquitz Canyon Way and Indian Canyon Drive in Palm Springs (CNDDDB, 1889). No subsequent observations around the western segment of the project site have been made since then.

Latimer's woodland-gilia

Latimer's woodland-gilia grows in rocky or sandy, often granitic, soils in chaparral, Mojavean desert scrub, and pinyon and juniper woodland habitats. This species can be found at elevations ranging from 1,312 to 6,234 feet above msl. Latimer's woodland-gilia has a blooming period that ranges from March to June. Latimer's woodland-gilia was recorded as occurring approximately 3.50 miles southeast of the project site within desert sand habitat in Palm Springs (CNDDDB, 1920). No subsequent observations around the western segment of the project site have been made since then.

Mecca-aster

Mecca-aster is a flowering plant in the aster family and is endemic to Riverside County, California. It is known only from the Mecca Hills and Indio Hills of the Sonoran Desert. It grows in scrubby habitat in dry desert canyons. This species can be found at elevations ranging from 66 to 1,312 feet above msl. Mecca-aster has a blooming period that ranges from January to June. Mecca-aster was observed approximately 3.56 miles southwest of the project site in Palm Springs (CNDDDB, 2010). No subsequent observations around the western segment of the project site have been made since then.

Site Conditions

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site and survey area occurs in an area that is mostly undisturbed. On-site habitats exhibit minimal disturbance and generally consists of a naturally occurring desert scrub habitat. Railroad tracks bordered by two parallel tamarisk (*Tamarix ramosissima*) windrows running in a northwest to southeast orientation can be found within the project site's northern portion, south of Interstate 10 freeway. Another tamarisk windrow sits on a berm within the eastern portion of the project site and runs north to south. This portion of the project site has been subject to a high degree of human disturbance, primarily through illegal trash dumping. The Morongo Wash passes through the northern portion of the survey area. Residential development can be found to the south and east of the survey area. An abandoned residential development with graded roads and building pads sits within the southeast portion of the survey area; native vegetation is slowly recovering in this area.

Vegetation Communities

One (1) plant community was observed within the survey area: Sonoran creosote bush scrub. Plant species that have been observed within the boundaries of the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows. These vegetation communities are described in further detail below. Refer to Attachment D, *Floral Compendium* for a list of plant species observed during the surveys.

Results

One sensitive plant species, Coachella Valley milk-vetch (CNPS Rare Plant Rank 1B.2 and Federally Endangered) was observed during the four focused surveys conducted on April 14, April 19, May 4, and June 15, 2016 (refer to Attachment A, Exhibit 4, *Survey Results*). Approximately 266 individuals were observed throughout the survey area.

Chaparral sand-verbena, pygmy lotus, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, Mecca-aster and other sensitive plant species known to occur within the general vicinity of the project site were not detected during the on April 14, April 19, May 4, and June 15, 2016 surveys. Based on the habitat requirements of these sensitive plant species and the availability and quality of habitats needed by each species, these species are presumed absent from the project site.

Conclusion and Recommendations

The sensitive plant surveys conducted on April 14, April 19, May 4, and June 15, 2016 covered all areas of

suitable habitat located within the survey area and project site. Only one sensitive plant species, Coachella Valley milk-vetch, was observed within the survey area and project site. No other sensitive plant species were observed during the surveys.

Please do not hesitate to contact me at (909) 974-4907 or tmcgill@mbakerintl.com or Travis J. McGill at (909) 974-4958 or travismcgill@mbakerintl.com should you have any questions or require further information.

Sincerely,



Thomas J. McGill, Ph.D.
Vice President
Natural Resources



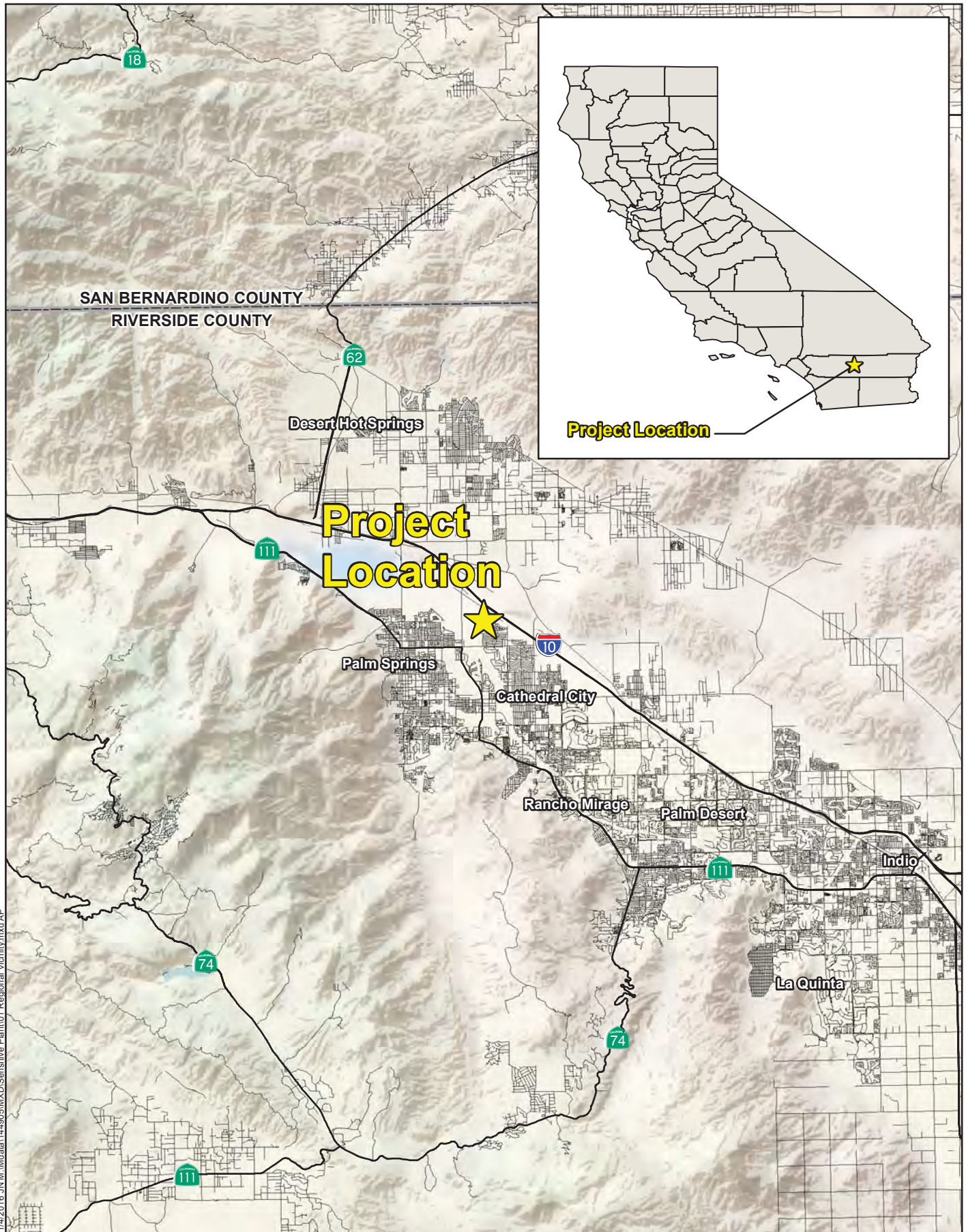
Travis J McGill
Biologist
Natural Resources

Attachments:

- A. Project Exhibits
- B. Site Photographs
- C. Target Special-Status Plant Species
- D. Flora Compendium

Attachment A

Project Exhibits



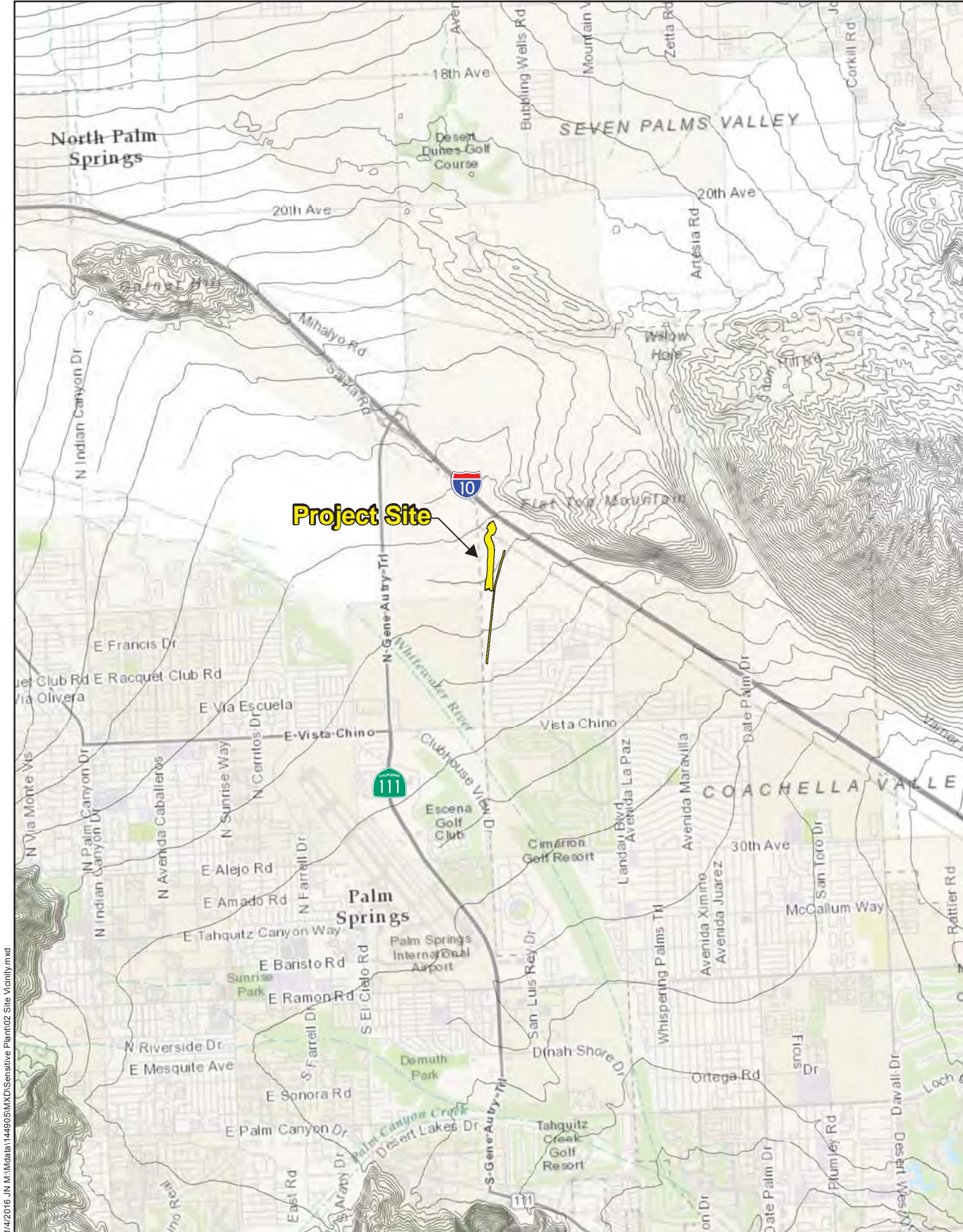
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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
SENSITIVE PLANT SURVEY

Regional Vicinity

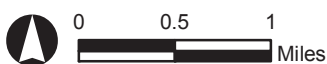


Source: ESRI Relief Map, National Highway Planning Network



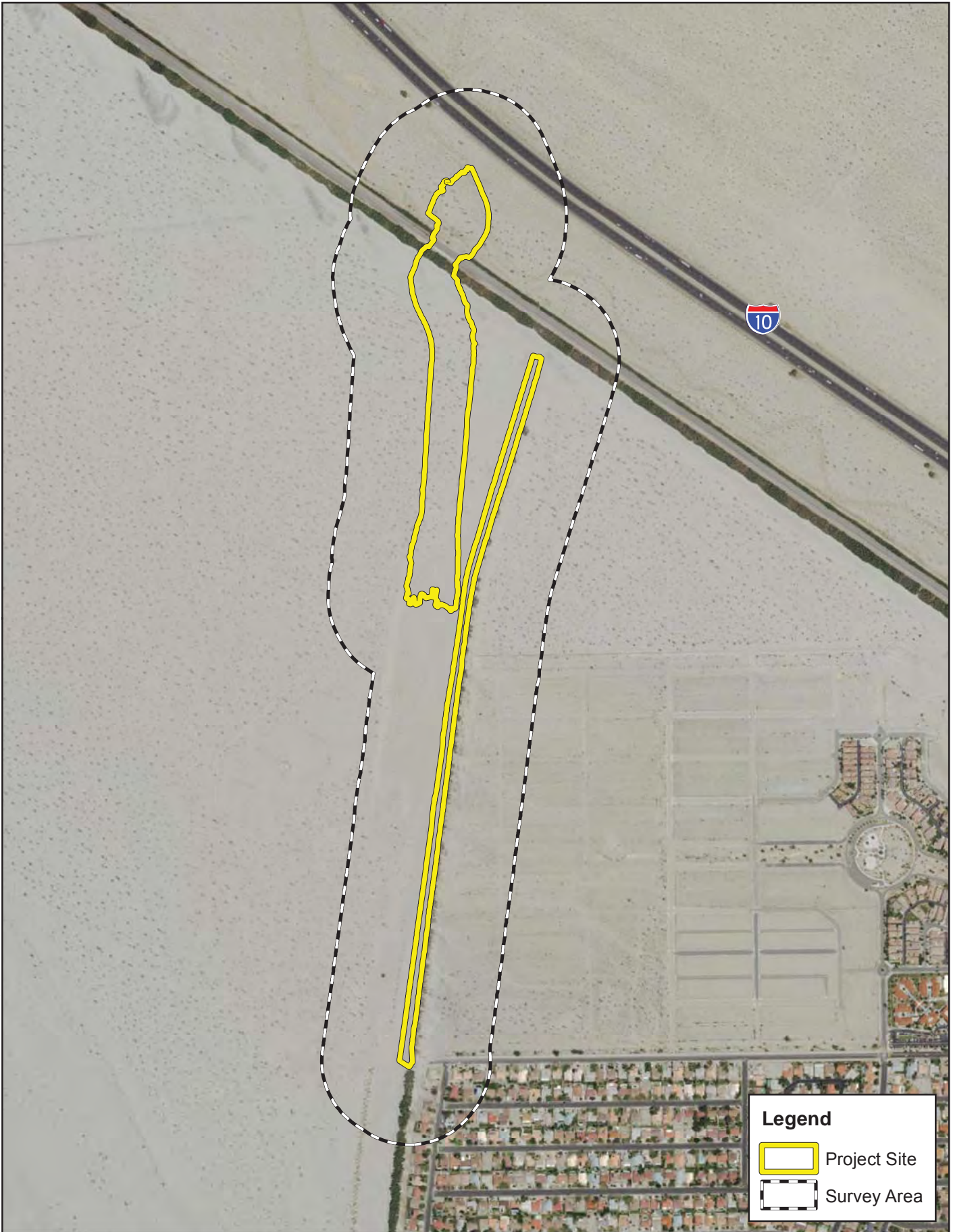
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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 SENSITIVE PLANT SURVEY
Site Vicinity



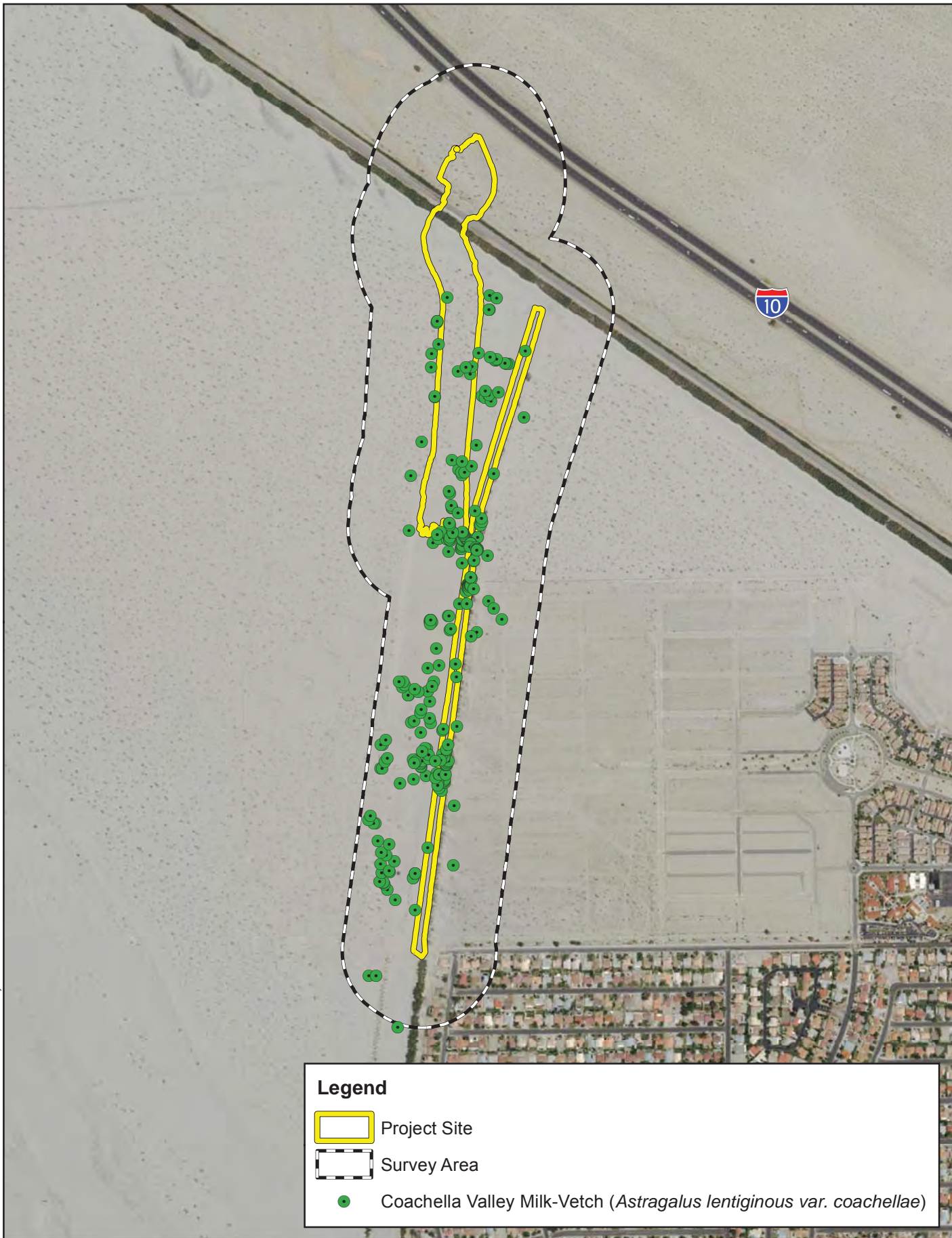
Source: Riverside County, ESRI World Topographic Basemap

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
SENSITIVE PLANT SURVEY
Survey Area

11/4/2016 JIN M:\Mdata\144905\MXD\Sensitive Plant\04 Survey Results.mxd



Legend

-  Project Site
-  Survey Area
-  Coachella Valley Milk-Vetch (*Astragalus lentiginous var. coachellae*)

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
SENSITIVE PLANT SURVEY
Survey Results

Attachment B

Site Photographs



Photograph 1: Standing within the southeast portion of the survey area looking north.



Photograph 2: Looking southwest across the central portion of the survey area. The project site can be seen in the distance.



Photograph 3: Standing within the northeastern portion of the survey area looking south.



Photograph 4: Looking west across the northern portion of the project site located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 5: Looking west across the northern portion of the survey area located south of the railroad tracks.



Photograph 6: Looking southeast at the northern portion of the project site.



Photograph 7: Photo of a Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) found within the survey area.



Photograph 8: Standing within the southwest portion of the survey area looking north.

Attachment C

Target Special-Status Plant Species

Table C-1: Target Special-Status Plant Species

Scientific Name Common Name	Status	Habitat	Blooming Period
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet.	January to September
<i>Acmispon haydonii</i> pygmy lotus	Fed: None CA: None CNPS: 1B.3	Grows in rocky soil within Sonoran desert scrub, pinyon and juniper woodland. Found at elevations ranging from 1,706 to 3,937 feet.	January to June
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	Fed: END CA: None CNPS: 1B.2	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation.	February to May
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	Fed: END CA: None CNPS: 1B.2	Found in sandy or gravelly soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 1,476 to 3,904 feet.	February to May
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet.	April to June
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Grows on sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet.	April to June
<i>Euphorbia platysperma</i> flat-seeded spurge	Fed: None CA: None CNPS: 1B.2	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet.	February to September
<i>Linanthus maculatus</i> Little San Bernardino Mtns. linanthus	Fed: None CA: None CNPS: 1B.2	Preferred habitats include desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub in sandy soils. Found at elevations ranging from 640 to 6,808 feet.	March to May
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Mojavean desert scrub, pinyon and juniper woodland. Prefers rocky or sandy, often granitic, soils. Found at elevations ranging from 1,312 to 6,234 feet.	March to June
<i>Xylorhiza cognata</i> Mecca-aster	Fed: None CA: None CNPS: 1B.2	Occurs in Sonoran desert scrub habitat. Found at elevations ranging from 66 to 1,312 feet.	January to June

Attachment D

Flora Compendium

Table D-1: Plant Species

PLANT SPECIES	
Scientific Name	Common Name
<i>Abronia villosa</i>	desert sand verbena
<i>Ambrisia dumosa</i>	burrobush
<i>Ambrosia acanthicarpa</i>	annual bursage
<i>Ambrosia salsola</i>	cheesebush
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch
<i>Atriplex lentiformis</i>	big saltbush
<i>Brassica tournefortii</i>	Sahara mustard
<i>Camissonia californica</i>	false mustard
<i>Camissoniopsis pallida</i>	pale yellow sun cup
<i>Chorizanthe brevicornu</i>	brittle spineflower
<i>Chorizanthe rigida</i>	rigid spiny herb
<i>Chylismia calviformis</i>	brown-eyed primrose
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple godetia
<i>Croton californicus</i>	desert croton
<i>Cryptantha circumscissa</i>	cushion cryptantha
<i>Cylindropuntia echinocrpa</i>	golden cholla
<i>Dicoria canescens</i>	desert twinbugs
<i>Dithyrea californica</i>	spectacle pod
<i>Encelia farinosa</i>	brittlebush
<i>Encelia frutescens</i>	button brittlebush
<i>Eriastrum eremicum</i>	desert woollystar
<i>Ericameria nauseosa</i>	rubber rabbitbush
<i>Eriogonum thomasii</i>	Thomas' buckwheat
<i>Erodium cicutarium</i>	red stemmed filaree
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Larrea tridentata</i>	creosote bush
<i>Lupinus shockleyi</i>	Shockley lupine
<i>Oenothera californica</i>	California primrose
<i>Palafoxia arida</i>	Spanish needle
<i>Pectocarya recurvata</i>	Curvenut combseed
<i>Peritoma arborea</i>	bladderpod
<i>Petalonyx thurberi</i>	sandpaper plant
<i>Plantago ovata</i>	desert plantain
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psathyrotes ramosissima</i>	velvet turtleback
<i>Psorothamnus emoryi</i>	dyebush
<i>Psorothamnus schottii</i>	indigo bush
<i>Psorothamnus spinosus</i>	smoke tree
<i>Salsola paulsenii</i>	barbwire Russian thistle
<i>Salsola tragus</i>	Russian thistle
<i>Salvia columbariae</i>	chia sage
<i>Schismus arabicus</i>	Arabian schismus

Table D-1: Plant Species

PLANT SPECIES	
<i>Scientific Name</i>	Common Name
<i>Stephanomeria pauciflora</i>	wire lettuce
<i>Stillingia spinulosa</i>	annual stillingia
<i>Tamarix aphila</i>	tamarisk
<i>Tiquilia plicata</i>	coldenia



COACHELLA VALLEY CONSERVATION COMMISSION

Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert Palm Springs • Rancho Mirage • County of Riverside • Coachella Valley Water District • Imperial Irrigation District

May 11, 2017

Luke Stowe
Environmental Specialist
Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

RE: North Cathedral City Improvement

Dear Mr. Stowe:

This project was determined to require a change of the Conservation Area boundary and was processed as a Like Exchange. This Like Exchange has received concurrence from United States Fish and Wildlife Service and California Department of Fish and Wildlife with the requirement that the addition parcels (660-320-002, 660-350-002, 660-350-009,010,015 and 677-050-001) be acquired and either be deeded to Coachella Valley Conservation Commission (CVCC) or have a conservation easement in favor of CVCC placed on the parcels for this Like Exchange to be effective.

A copy of the Concurrence Letter is enclosed. If you have questions on this JPR, please do not hesitate to contact me or Jim Sullivan at jsullivan@cvag.org or 760-346-1127.

Sincerely,

Katie Barrows
Director of Environmental Resources

Cc: Heather Pert, CDFW
Ken Corey, USFWS

Enclosure



U.S. Fish and Wildlife Service
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262
760-322-2070
FAX 760-322-4648



California Department of Fish and Wildlife
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, California 91764
909-484-0167
FAX 909-481-2945

In Reply Refer To:
FWS/CDFW-ERIV-09B0023-17TA0477

March 15, 2017
Sent by Email

Mr. Jim Sullivan
Coachella Valley Conservation Commission
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92260

Subject: North Cathedral City Improvements Project, Phase I, City of Cathedral City,
Riverside County, California

Dear Mr. Sullivan:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department) have reviewed the Like Exchange Equivalency Analysis for Phase I of the North Cathedral City Improvements Project (Project), prepared by Michael Baker International on behalf of the Coachella Valley Water District (CVWD) for submission to the Coachella Valley Conservation Commission (CVCC). The CVWD proposes to re-establish a stormwater drain to convey flows from Morongo Wash under the Union Pacific Railroad Bridge, southward to the Whitewater River Stormwater Channel, as part of the North Cathedral City Stormwater Master Plan. The project is located in the Whitewater Floodplain Conservation Area (WFCA) within the jurisdiction of the City of Cathedral City.

The Project includes a total of 23 acres of impacts from 5.7 acres of hardscape permanent impacts and 17.3 acres of temporary impacts (16.9 acres of earthen improvements and 0.4 acres from a temporary earthen construction access road). The project impacts exceed the 7 acres of authorized disturbance for the WFCA in the City of Cathedral City Area. To offset the 23 acres of impacts to biological resources, CVWD will acquire 42 acres within and immediately adjacent to the WFCA and record a conservation easement in favor of CVCC on the acquired properties; resulting in a net increase of 19 acres added to the Conservation Area. The re-establishment of connectivity between the WFCA and the Willow Hole Conservation Area will help restore an important corridor for wildlife movement and sand transport. This proposed modification to the Conservation Area will result in biologically equivalent or superior conservation value and is consistent with the Like Exchange criteria in Section 6.12.2 of the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan.

We concur that the following Conservation Area boundary adjustment is allowable through this Like Exchange and will be effective either (1) upon the transfer of property titles to CVCC or (2) the recording of conservation easements on the properties in favor of CVCC.

Mr. Jim Sullivan (FWS/CDFW-ERIV-09B0023-17TA0477)

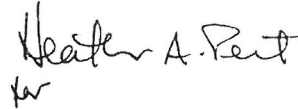
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If you have any questions regarding this letter, please contact Jenness McBride of the Service at 760-322-2070, extension 403, or Heather A. Pert of the Department at 858-395-9692.

Sincerely,

JENNESS
MCBRIDE

Digitally signed by
JENNESS MCBRIDE
Date: 2017.03.15
14:46:51 -07'00'

Handwritten signature of Heather A. Pert in black ink.

Kennon A. Corey
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Leslie MacNair
Inland Deserts Region
Regional Manager
California Department of Fish and Wildlife

cc:
Luke Stowe, CVWD

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Equivalency Analysis

Prepared For:

Coachella Valley Water District

75515 Hovely Lane East
Palm Desert, California 92211
Contact: *Mr. Luke Stowe*
760.398.2651

Prepared By:

Michael Baker International

14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

September 2016

Updated November 2016

JN: 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Equivalency Analysis

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

September 2016
Updated November 2016

Executive Summary

The Coachella Valley Water District (CVWD) proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) Bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR Bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of the North Cathedral City Stormwater Master Plan. This project provides a reliable and engineered channel under the bridge that will provide a long term solution for conveying flows downstream to the WWRSC. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the North City Extended Specific Plan.

The project site is located within the Plan Area for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP or Plan). Specifically, the project sited is located along the eastern portion of the Whitewater Floodplain Conservation Area (WFCA) of the MSHCP, directly south of the Willow Hole Conservation Area and is, therefore, subject to the Coachella Valley Conservation Commission's (CVCC) Joint Project Review (JPR) Process. Development of the project would result in both positive and negative impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport).

The proposed project would result in a total of approximately 23 acres of impact to the WFCA. This would include 5.7 acres of hardscape (concrete) improvements, 16.9 acres of earthen improvements, and 0.4 acres associated with the temporary earthen construction access road. The area of impact within the WFCA has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The use of concrete-lined facilities has been limited to areas subject to high levels of erosion and scour during storm events. It should be noted that the bottom of these concrete lined facilities will naturally fill with sand over time as sand transport occurs during storm events, increasing the available habitat for the sand dune species. All areas affected by project construction activities would be regraded to match existing conditions as closely as possible.

The MSHCP allows for a maximum of 7 acres of permanent impacts for development within the City of Cathedral City's portion of the WFCA, and any proposed development should be consistent with this requirement. As noted above, the project would impact a total of 23 acres of land within the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact).

To offset impacts related to biological resources (23 acres), CVWD proposes to place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA and adjacent to the project site. Twenty-three of the 42 acres will be used to offset the 23 acres of impacts to land within City of Cathedral City's portion of the WFCA from implementation of the proposed project, resulting in a net increase of 19 acres of land being added to the conservation area.

This proposed modification to conservation within the WFCA will result in biologically superior (equivalent) conservation acreage and value using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12.2, summarized as follows:

- The conservation of suitable habitat and level of take of MSHCP covered species with the proposed modification to the WFCA would be biologically equivalent or superior to what would otherwise occur;
- The proposed conservation would result in equal or greater benefits to natural communities as compared to those benefits analyzed under the MSHCP;
- The function and value of sand transport corridor between the Willow Hole Conservation Area and the Whitewater River Conservation Area would be restored and enhanced by the conveyance of stormwater between the two Conservation areas;
- The proposed conservation would result in biologically equivalent conservation configuration and management requirements compared to what could have occurred under the MSHCP;
- Ecotones and overall species diversity are not expected to be reduced by the proposed conservation;
- The 42 acres of proposed additional conservation land exceeds the 23 acres of impact (5.7 acres of permanent impacts and 17.3 acres of temporary loss), resulting in a net increase of conservation area within the City of Cathedral City's portion of the WFCA; and
- All contributed parcels are under the ownership of the applicant.

Based on this analysis, the proposed modification of conservation within the WFCA will result in biologically equivalent or superior conservation value compared with implementation of the MSHCP without the proposed project and additional conservation that will be added as a result of the project.

The CVWD has met with the CVCC during the JPR process to discuss this project, its benefit to the overall structure of conservation in the Plan area and the benefits of restoring the wildlife corridor under the UPRR Bridge and restoring fluvial transport of sand into the southeast portion of the WFCA. The CVCC is in concurrence both over the need for and benefit from the North Cathedral City Improvements Project, as well as the recommended additional

conservation lands that will be added to the WFCR, through the acquisition of privately owned, undeveloped parcels, implementation of several avoidance and minimization measures during construction of the improvements, and the restoration of all areas of temporary impacts.

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Appendix D Sensitive Plant Survey (2016)

LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVWD	Coachella Valley Water District
ESA	Endangered Species Act (federal)
HMMP	Habitat Mitigation and Monitoring Plan
I	Interstate
JPR	Joint Project Review
Michael Baker	Michael Baker International
MSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
SAA	Streambed Alteration Agreement
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WFCA	Whitewater Floodplain Conservation Area
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

The Coachella Valley Water District (CVWD) proposes to develop regional stormwater improvements in northern Cathedral City, County of Riverside that would convey stormwater flows from the vicinity of the I-10 Freeway and the Union Pacific Railroad (UPRR) Bridge in a southerly direction to the Whitewater River Stormwater Channel. This report presents an equivalency analysis of the proposed project and the accompanying conservation measures and demonstrates how the approved biological goals and objectives for the Whitewater Floodplain Conservation Area (WFCA) will be accomplished.

As required by the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP or Plan), the equivalency analysis for the requested modification contains the following information:

1. Clear delineation of the proposed boundary adjustment;
2. Description of the proposed project;
3. Description of biological information available, including vegetation mapping, modeled habitat and appropriate species surveys, land identified as part of a biological corridor or linkage, and land identified as part of an essential ecological process area;
4. Description of the project's efforts to be consistent with the MSHCP Conservation Area Conservation Objectives and rationale of why consistency has been determined to be infeasible; and
5. Description of the effects/benefits of the proposed action on habitats for covered species, natural communities, biological corridors and linkages, essential ecological processes, and MSHCP Conservation Area design and function.

The majority of the 23-acre project site is undeveloped and is located within the boundaries of the MSHCP (Coachella Valley Association of Governments [CVAG] 2007a), which requires that the proposed project be consistent with the Plan. The MSHCP was approved in 2008 to conserve 240,000 acres of open space and to protect 27 plant and wildlife species. Through its implementation, the Plan provides Coachella Valley with a regional vision for balanced growth while meeting the requirements of the federal and state endangered species acts. As part of its conservation obligations under the MSHCP, the Coachella Valley Association of Governments (CVAG) has designated 21 Conservation Areas.

The MSHCP is a comprehensive, multi-jurisdictional effort that focuses on the conservation of 27 species of plants and animals within 21 identified Conservation Areas (refer to Exhibit 1, *MSHCP Conservation Areas*). For each Conservation Area, conservation objectives are articulated for conserving covered species; essential ecological processes necessary to maintain habitat viability; biological corridors and linkages, as needed; and authorized acreage

of land within a conservation area that may be impacted by site development. The MSHCP includes certain requirements for proposed projects within the Conservation Areas to avoid, minimize, and mitigate impacts to covered plant and animal species.

The primary conservation goals for the WFCA include (1) maintaining “Core Habitat” within the WFCA; (2) conserving modeled habitat for Covered Species and conserving Covered Species where they occur; and (3) maintaining key ecological processes (fluvial sand transport). Specifically, the project site contains MSHCP modeled habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley fringe-toed lizard (*Uma inornata*), Palm Springs pocket mouse (*Pereognathus longimembris bangsi*), and Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*). Other species having conserved habitat within the project site or known to occur in the general vicinity are *Le Conte’s thrasher* (*Toxostoma lecontei*), burrowing owl (*Athene cunicularia*), and *flat-tailed horned lizard* (*Phrynosoma mcallii*).

Section 6.12, *Modifications, Like Exchanges to Conservation Areas, and Amendments to the MSHCP*, in the MSHCP acknowledges that in some instances it may be possible to achieve the Plan’s conservation goals through modification or a different configuration of one or more conservation areas if it can be demonstrated that the proposed modification to a conservation area will provide biological equivalent preservation. Through this process, impacts allowed within a conservation area may be modified in exchange for increasing the available conservation opportunities elsewhere in the conservation area. Two key conditions for determining whether the equivalency requirements are met is by demonstrating that the project will (1) result in equal or greater benefits to MSHCP covered species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing conservation area), and (2) the level of take of (impact to) MSHCP covered species must be no greater than that analyzed in the Plan.

The opportunity for proposed modifications to the existing WFCA is provided in the Plan which acknowledges that in some instances it may be possible to achieve the Plan’s conservation goals through a different configuration of one or more Conservation Areas. Through this process, the boundary of a conservation area may be modified if the resulting conservation is biological equivalent to that approved under the Plan.

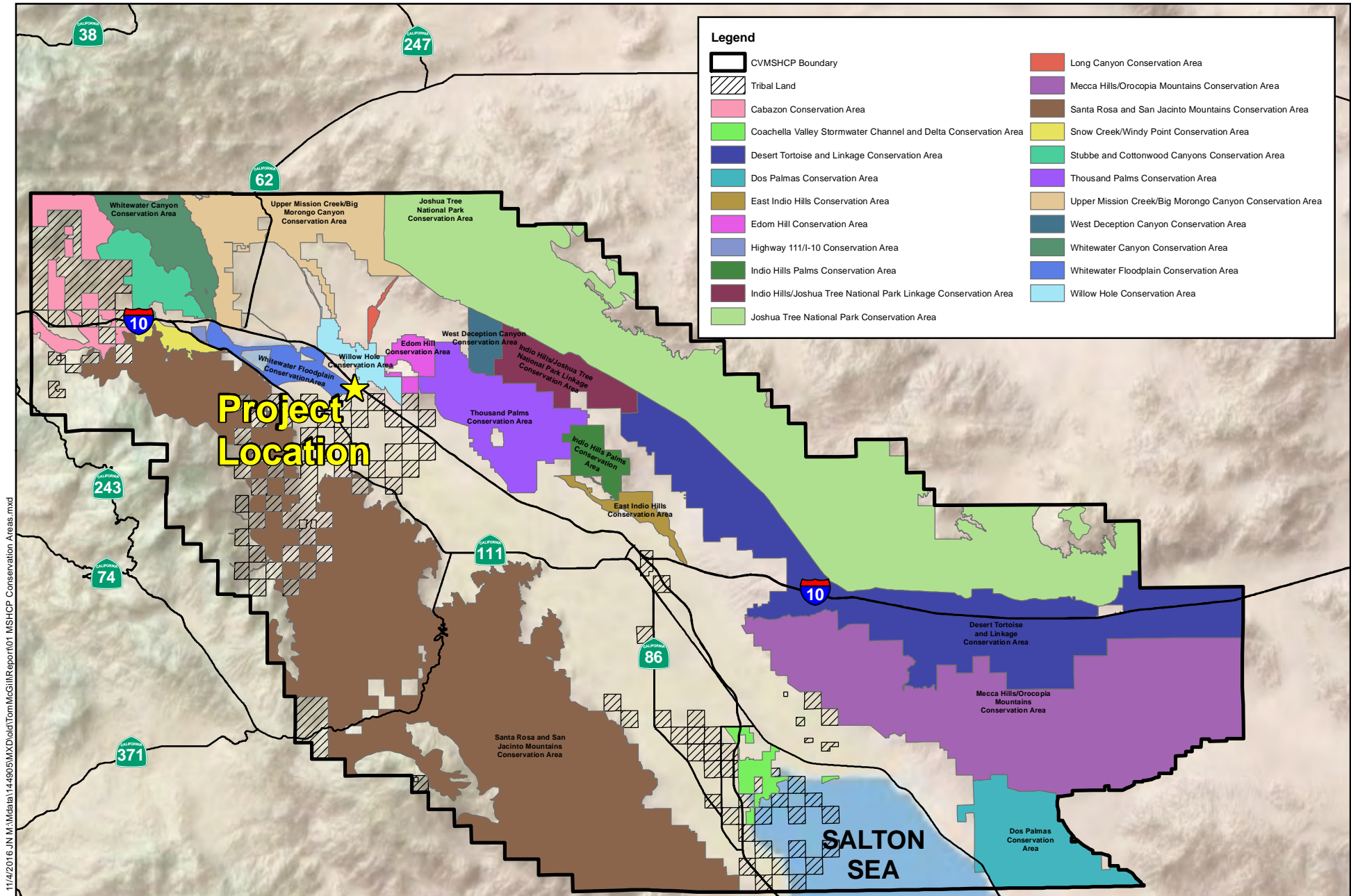
The proposed stormwater improvements project site is located in the southeast corner of the 7,400-acre WFCA (refer to Exhibit 2, *Whitewater Floodplain Conservation Area*). The WFCA encompasses the former Whitewater River floodplain habitat south of Interstate 10 (I-10). Currently, there is an existing UPRR Bridge at the north end of the project site that was constructed but backfilled until the design of the North Cathedral City Stormwater Master Plan

was finished and the future stormwater channel could be constructed and incorporated into the existing bridge. Completion of the stormwater channel in association with the existing bridge will allow natural flows to be re-established under the railroad track and restore the fluvial transport of sand that is integral to the active sand field habitats in the northern portion of Cathedral City. The channel will also re-establish a movement corridor for wildlife under the UPRR tracks, connecting wildlife habitats above and below the UPRR Bridge and the I-10 Freeway. Although the stormwater improvements will result in temporary impacts during construction and minor losses of the natural plants communities in the area, the overall benefits of restoring flows and the fluvial transport of sand in the area will have superior positive impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport). Since this project is located within the WFCA and will have impacts, positive and negative, on the natural communities, biological movement corridors and essential ecological processes, the project is subject to the Joint Project Review (JPR) process.

Constructing the improvements needed for establishing the stormwater channel would result in a total of 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impacts) to land within the City of Cathedral City's portion of the WFCA. The area of impact has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The use of concrete-lined facilities has been limited to areas subject to high levels of erosion and scour during storm events.

The MSHCP allows for a maximum of 7 acres of development impacts on private lands within the City of Cathedral City's portion of the WFCA. CVWD land is considered privately-owned under the MSHCP and the proposed development should be consistent with this requirement. As noted above, the project would impact a total of 23 acres of land within the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact).

To offset impacts related to biological resources (23 acres), CVWD proposes to place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA and adjacent to the project site. This action would result in a net increase of 19 acres to the conservation area since 23 of the 42 acres will be used to offset the 23 acres of impacts to land within the City of Cathedral City's portion of the WFCA from implementation of the proposed project.



Legend

CVMSHCP Boundary	Long Canyon Conservation Area
Tribal Land	Mecca Hills/Orocopia Mountains Conservation Area
Cabazon Conservation Area	Santa Rosa and San Jacinto Mountains Conservation Area
Coachella Valley Stormwater Channel and Delta Conservation Area	Snow Creek/Windy Point Conservation Area
Desert Tortoise and Linkage Conservation Area	Stubbe and Cottonwood Canyons Conservation Area
Dos Palmas Conservation Area	Thousand Palms Conservation Area
East Indio Hills Conservation Area	Upper Mission Creek/Big Morongo Canyon Conservation Area
Edom Hill Conservation Area	West Deception Canyon Conservation Area
Highway 111/I-10 Conservation Area	Whitewater Canyon Conservation Area
Indio Hills Palms Conservation Area	Whitewater Floodplain Conservation Area
Indio Hills/Joshua Tree National Park Linkage Conservation Area	Willow Hole Conservation Area
Joshua Tree National Park Conservation Area	

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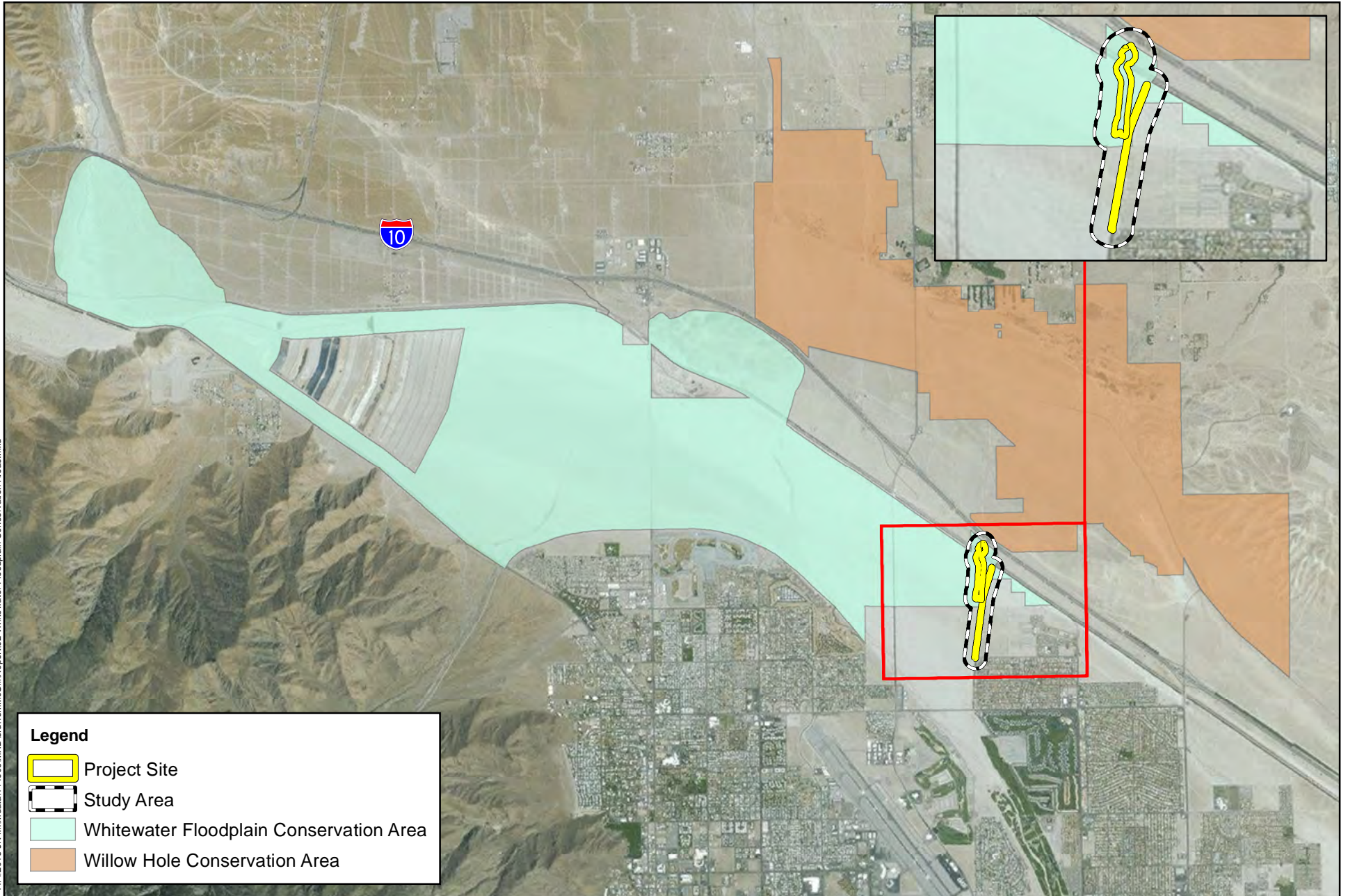
Project Location

SALTON SEA





NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS
MSHCP Conservation Areas

Source: CVMSHCP, ESRI Imagery

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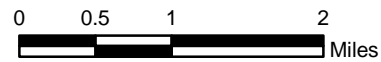


Legend

-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Whitewater Floodplain Conservation Area



Source: Riverside County, ESRI World Imagery

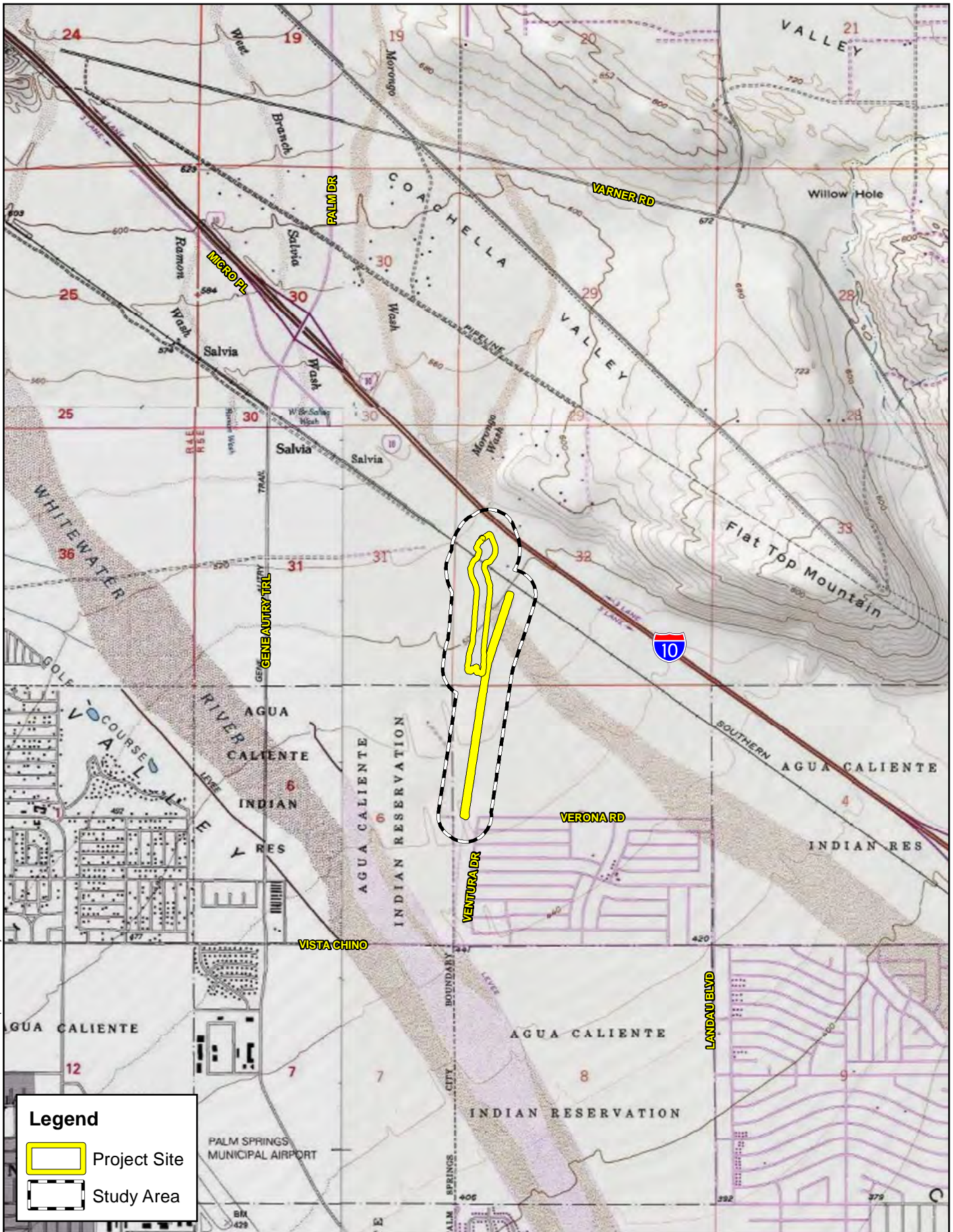
Section 2 Definition of Planning Area

The project site is located south of Interstate 10 (I-10) and the UPRR tracks in the northwest corner of the City of Cathedral City, Riverside County, California. The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 3, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of I-10, and east of Gene Autry Trail (Exhibit 4, *Depiction of Proposed Project*).

The CVWD proposes regional stormwater improvements that would convey stormwater flows from north of the UPRR tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR Bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

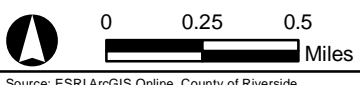
Specifically, the proposed storm drain channel will begin just north of the UPRR tracks and will receive stormwater from Morongo Wash flowing south and will convey the 11,500 cfs flows across the I-10 Freeway and under an existing UPRR Bridge composed of three (3) box culverts that was constructed over the natural drainage crossing under the tracks but backfilled with sand until an appropriated storm drain channel could be designed as part of the North Cathedral City's stormwater master plan for this area. The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes and would convey stormwater flows in a southerly direction to the WWRSC.

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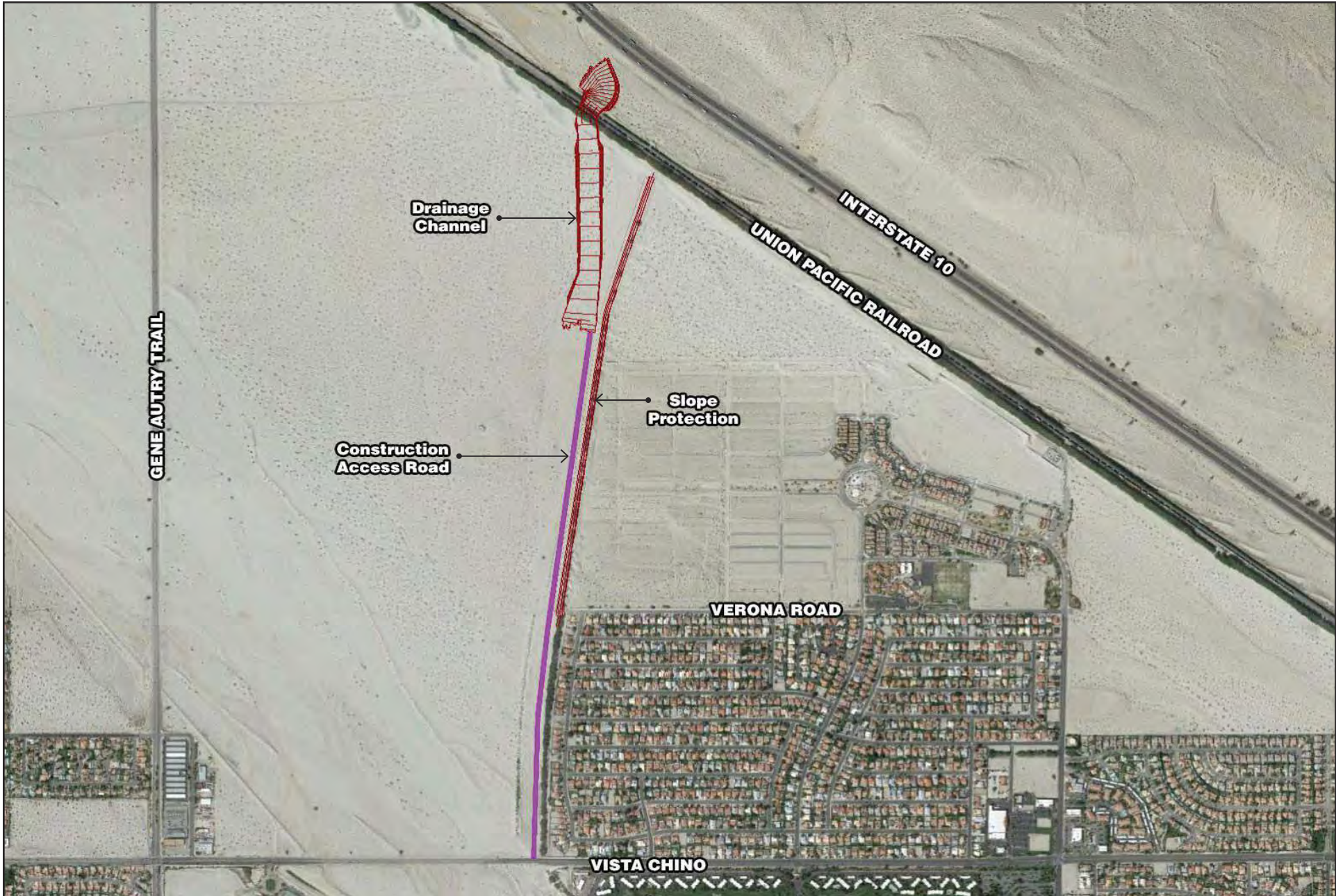
Legend

- Project Site
- Study Area



Source: ESRI ArcGIS Online, County of Riverside

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS
Site Vicinity



NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Depiction of Proposed Project

Section 3 Project Description

The proposed project consists of 2 distinct elements: (1) the proposed development of flood control activities, and (2) the proposed conservation measures that are an integral part of the proposed project and will contribute to conservation within the WFCAs. Both of these elements are important factors in determining whether the proposed modification to the conservation area would result in equal or greater biological values, compared to implementation of the MSHCP without the proposed project.

3.1 FLOOD CONTROL ACTIVITIES

The primary components of the proposed storm water improvements project include the placement of concrete channel protection on both sides of the UPRR Bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR Bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

3.2 OPERATIONS AND MAINTENANCE

The proposed project would be regularly maintained throughout the life of the project to ensure safe operation of the drainage facility but will be conducted seasonally to avoid impacts to sensitive plant and wildlife species and to promote wildlife movement. Maintenance activities would focus primarily on the concrete-lined areas beneath and adjacent to the UPRR Bridge to ensure that the culvert can adequately convey stormwater flows. The drainage crossing beneath the UPRR bridge would be kept clear of substantial debris, sediment, and other impediments to allow for both drainage and wildlife connectivity. Sediment would be cleared (via dozer or similar equipment) on a regular basis to maintain the operational characteristics of the UPRR Bridge.

Maintenance activities would also include invasive species control measures to protect native habitat within the project area. It is anticipated that an invasive species control program would be implemented as part of the Habitat Mitigation and Monitoring Plan (HMMP) required under the Section 1600 Streambed Alteration Agreement (SAA) anticipated for the project. The program would include measures such as a five-year period where non-native species are controlled/removed, photo documentation, a project completion report, and annual reporting to ensure compliance with the plan.

3.3 CONSERVATION MEASURES

In addition to improved conditions related to regional stormwater flows and flood protection, the project would also provide biological benefits to natural habitats, covered species and ecological processes in the Coachella Valley. The creation of a permanent, unimpeded channel crossing beneath the UPRR Bridge would facilitate wildlife movement between the northern and southern sides of the UPRR tracks. The project would not include any fencing, structures, or other facilities that would impede wildlife movement under the UPRR Bridge. The proposed

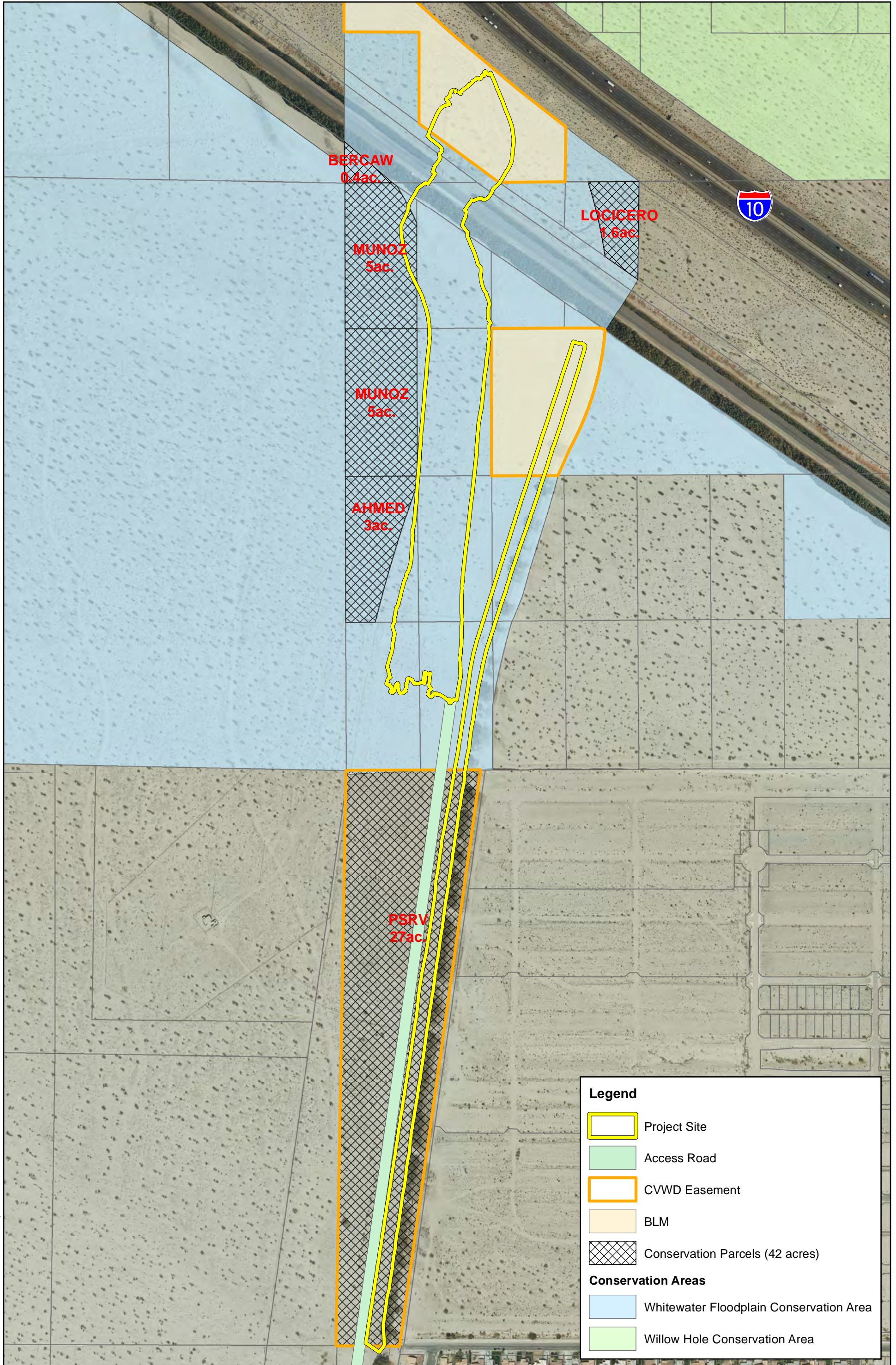
project, when combined with future planned Phase 2 of the North Cathedral City Stormwater Master Plan that would improve regional stormwater flows and wildlife connectivity beneath I-10 and the UPRR Bridge, would serve as an important wildlife corridor/linkage between the Willow Hole Conservation Area (northeast of the project site) and the WFCA (encompassing a portion of the site and extending west of the project site) under the MSHCP. By providing a connection to the WWRSC, the project would allow for stormwater flows and associated sand transport, resulting in an increase in sand habitat within the project area. The proposed project was recognized in the MSHCP as a means to “enhance sand transport and wildlife movement between the Willow Hole Conservation Area and the WFCA,” since this area is designated a Biological Corridor/Linkage between the Whitewater Floodplain and Willow Hole Conservation Areas.

The proposed project would result in a total of 23 acres of impact to habitats in the WFCA. This would include 5.7 acres of hardscape (concrete) improvements, 16.9 acres of earthen improvements, and 0.4 acres associated with the temporary earthen construction access road. The area of impact within the WFCA has been minimized to the maximum extent practicable. The project footprint includes the minimum improvements required to safely convey flows beneath the UPRR Bridge while protecting adjacent uses during heavy storm events. The minimum amount of concrete-lined facilities has been incorporated, limited only to areas subject to high levels of erosion and scour during storm events. In addition, concrete-bottom facilities will naturally fill with sand over time as sand transport occurs during storm events. All areas affected by project construction activities would be regraded to match existing conditions as closely as possible.

As noted above, the project site is located within the WFCA of the MSHCP. Based on the MSHCP, the entire project site is within the modeled habitat for the Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, Le Conte’s thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. A single natural community occurs with the project site, a Sonoran creosote bush scrub plant community and the underlying soils are part of an active desert sand field, an essential component to maintaining ecological processes needed to support the sand dune plant communities found within the WFCA.

To offset impacts to 23 acres (5.7 acres of permanent impact, and 17.3 acres of temporary impact), CVWD proposes to place a conservation easement upon the 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA, west of the project site. Exhibit 5, *Conservation Parcels*, shows the locations of the six conservation parcels either owned or available for acquisition by CVWD that total 42 acres of committed conservation that are either within the boundaries of the WFCA or immediately adjacent to the Conservation Area and that will be added to the acreage of the existing WFCA. Twenty-three

of the 42 acres will be used to offset the 23 acres of land that will be impacted within the City of Cathedral City's portion of the WFCA from implementation of the proposed project, resulting in a net increase of 19 acres of land being added to the conservation area.



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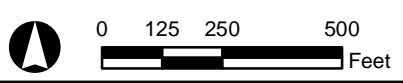
- Project Site
- Access Road
- CVWD Easement
- BLM
- Conservation Parcels (42 acres)

Conservation Areas

- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
EQUIVALENCY ANALYSIS

Conservation Parcels



Source: County of Riverside, Eagle Imagery

Section 4 Biological Information

4.1 VEGETATION MAPPING

One (1) natural plant community was documented within the project site: Sonoran creosote bush scrub (refer to Exhibit 6, *Vegetation Map*). Plant species observed within the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows.

4.2 COVERED SPECIES



The WFCAs provide core habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley fringe-toed lizard (*Uma inornata*), Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*), and Palm Springs pocket mouse (*Pereognathus longimembris bangsi*). Other species for which habitat occurs include Le Conte’s thrasher (*Toxostoma lecontei*). Descriptions of covered species with modeled habitat within the project site, as well as of those covered species that are known to occur within the WFCAs, are provided below. Table 1 lists the amount of modeled habitat for each of these species within the proposed project site and additional conservation areas.

Table 1: Modeled Habitat for Covered Species (acres)


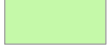

Species	Project Parcels	Conservation Parcels
Coachella Valley milk-vetch	23.0	42.0
Coachella Valley Fringe-toed Lizard	23.0	42.0
Le Conte’s thrasher	23.0	42.0
Palm Springs pocket mouse	23.0	42.0
Coachella Valley round-tailed ground squirrel	23.0	42.0
Coachella Valley Giant Sand-treader Cricket	23.0	42.0
Flat-tailed Horned Lizard	23.0	42.0



Legend

-  Project Site
-  Study Area

Vegetation

-  Sonoran Creosote Bush Scrub (170.55 acres)
-  Tamarisk Windrow (11.59 acres)
-  Developed (11.73 acres)

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4.2.1 Coachella Valley Milk-vetch

Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside County. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Within the sand dunes and sand fields, this milk-vetch tends to occur in the coarser sands at the margins of dunes, not in the most active blow sand areas. It may also occur in sandy substrates in creosote bush scrub, not directly associated with sand dune habitats (CVAG 2007a). Nearly all of the WFCAs has been designated as core habitat, including the entirety of the proposed project site, for this species (refer to Exhibit 7, *Core Habitat*). Focused surveys for Coachella Valley milk-vetch in Spring 2016 found this species throughout the project site (refer to Exhibit 8, *Sensitive Plant Survey Results*).

4.2.2 Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket has no state or federal designation, but is covered under the MSHCP. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio. This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite (*Prosopis glandulosa*), Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the WFCAs has been designated as core habitat, including the entirety of the proposed project site, for this species (Exhibit 7), which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.

4.2.3 Palm Springs Pocket Mouse

The Palm Springs pocket mouse is designated by the California Department of Fish and Wildlife (CDFW) as a species of special concern and is also covered under the MSHCP. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Geronimo Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands

with loose and/or sandy soils and sparse to moderate vegetative cover. Areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the WFCA has been designated by the MSHCP as core habitat, including the entirety of the proposed project site, for this species (Exhibit 7). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

4.2.4 Le Conte's Thrasher

Le Conte's thrasher is designated by the CDFW as a species of special concern. It is covered under the MSHCP. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.), but may still utilize areas without these plants. Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the WFCA has been modeled as conserved habitat, including the entirety of the proposed project site, for this species (Exhibit 9, *Core/Otherwise Conserved Habitat*). Le Conte's thrasher has a moderate potential to occur within the project site.

4.2.5 Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the United States Fish and Wildlife Service (USFWS) as threatened under the federal Endangered Species Act (ESA) and by the CDFW as endangered under the California Endangered Species Act (CESA). It is covered under the MSHCP. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite, and four-winged saltbush (*Atriplex canescens*). This species is typically active from spring through fall, especially between April and October. Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the WFCA has been designated as core habitat, including the entirety of the proposed project site, for this species (Exhibit 9). Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site.

4.2.6 Coachella Valley Round-tailed Ground Squirrel

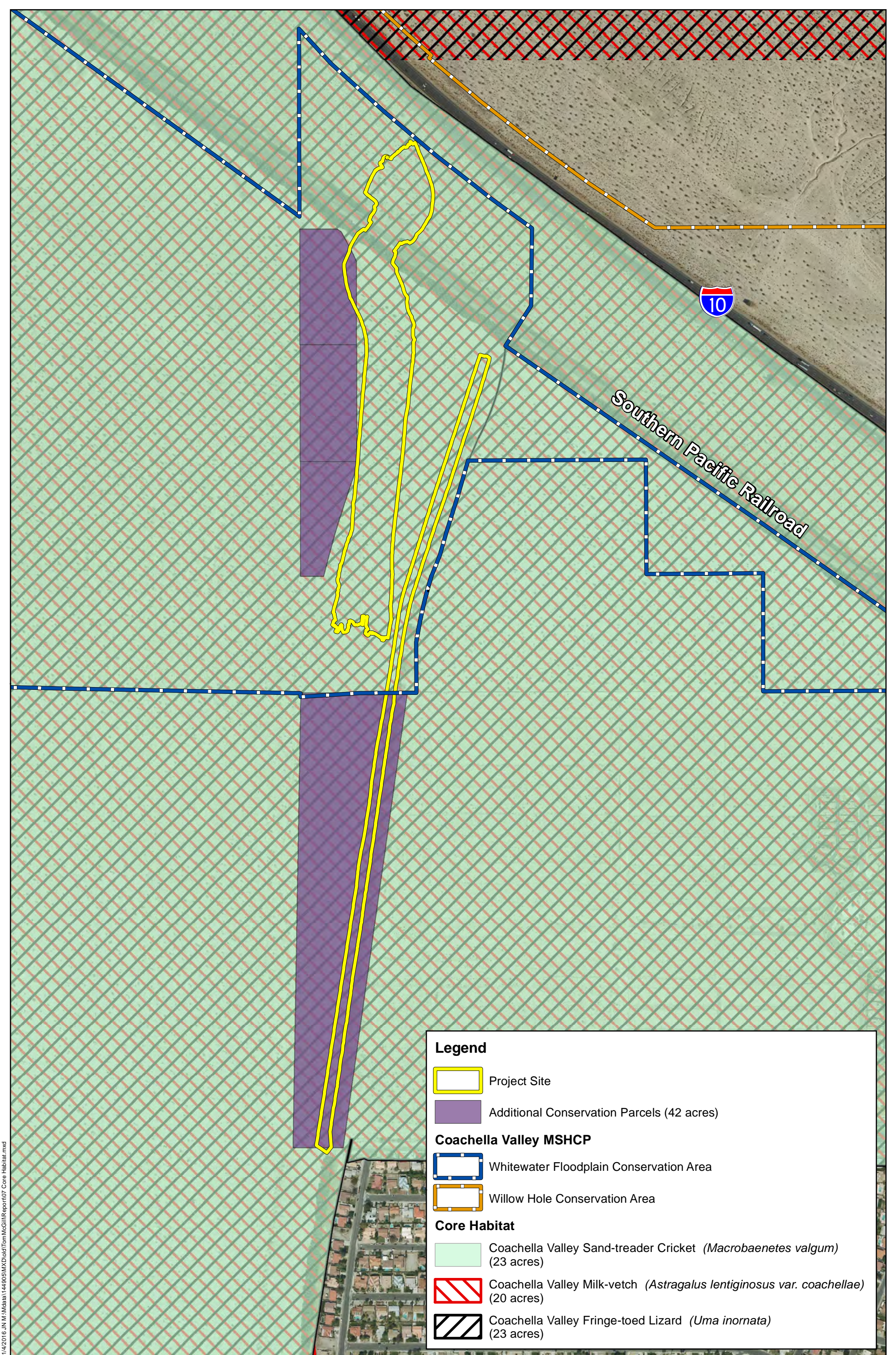
Coachella Valley round-tailed ground squirrel is designated by the CDFW as a species of special concern. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains. Ideal habitat seems to be areas were

hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the MSHCP, this species seems to particularly favor hummocks that form around mesquite. It is inactive and in its burrows from August until January. The breeding period is generally from early spring through June. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire WFCAs, including the entirety of the proposed project site, has been designated by the MSHCP as core habitat (refer to Exhibit 9, *Core/Otherwise Conserved Habitat*). Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a low to moderate potential to occur within the project site.

4.2.7 Flat-tailed Horned Lizard

Flat-tailed horned lizard is designated by the CDFW as a candidate for endangered status under the CESA, and also as a species of special concern. It is covered under the MSHCP. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area. Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the WFCAs has been designated as predicted and potential conserved habitat, including the entirety of the proposed project site, for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site. For the purposes of the equivalency analysis, it is assumed that the observed lizard was a flat-tailed horned lizard.



Legend

-  Project Site
-  Additional Conservation Parcels (42 acres)

Coachella Valley MSHCP

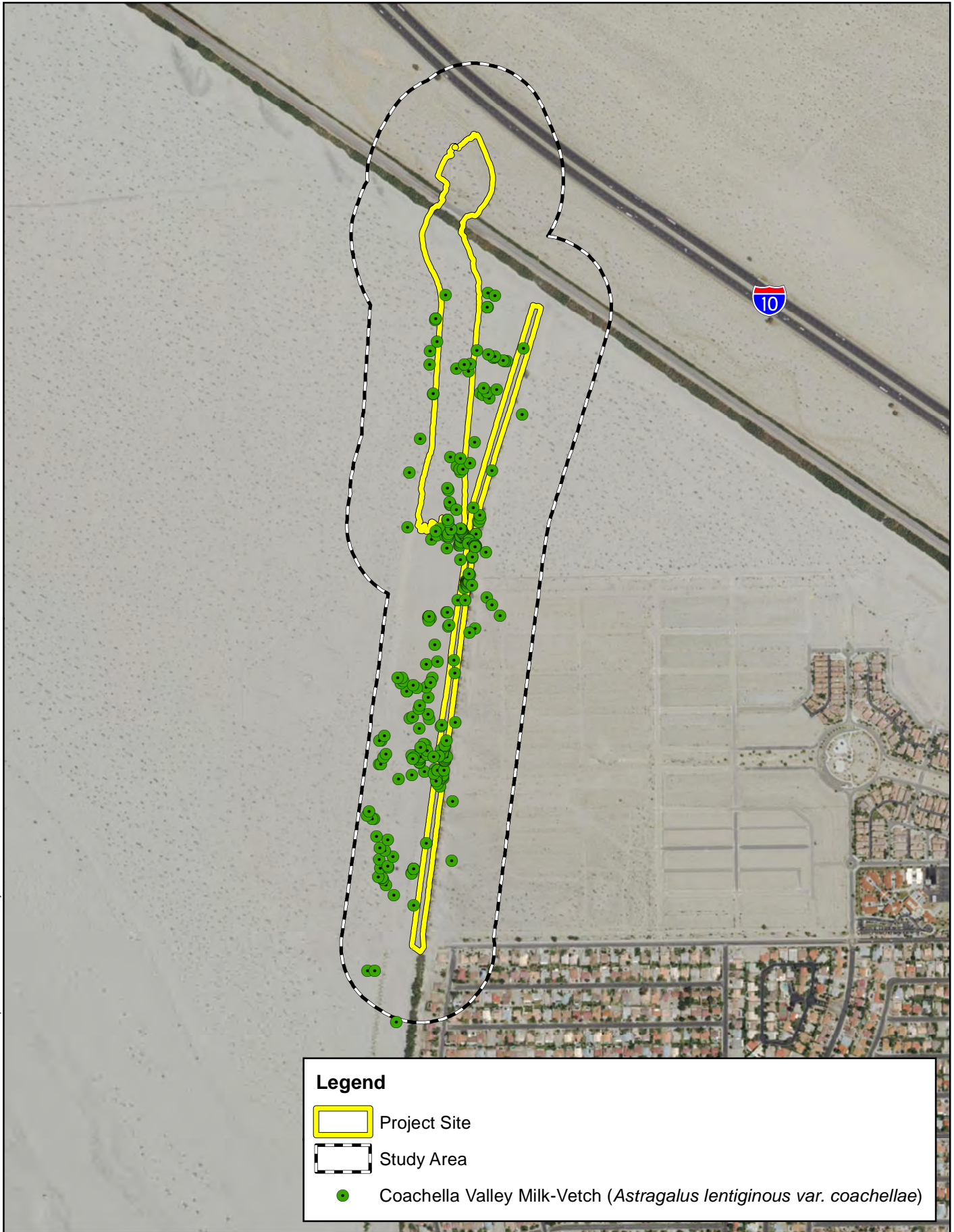
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core Habitat

-  Coachella Valley Sand-treader Cricket (*Macrobaenetes valgum*) (23 acres)
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus var. coachellae*) (20 acres)
-  Coachella Valley Fringe-toed Lizard (*Uma inornata*) (23 acres)

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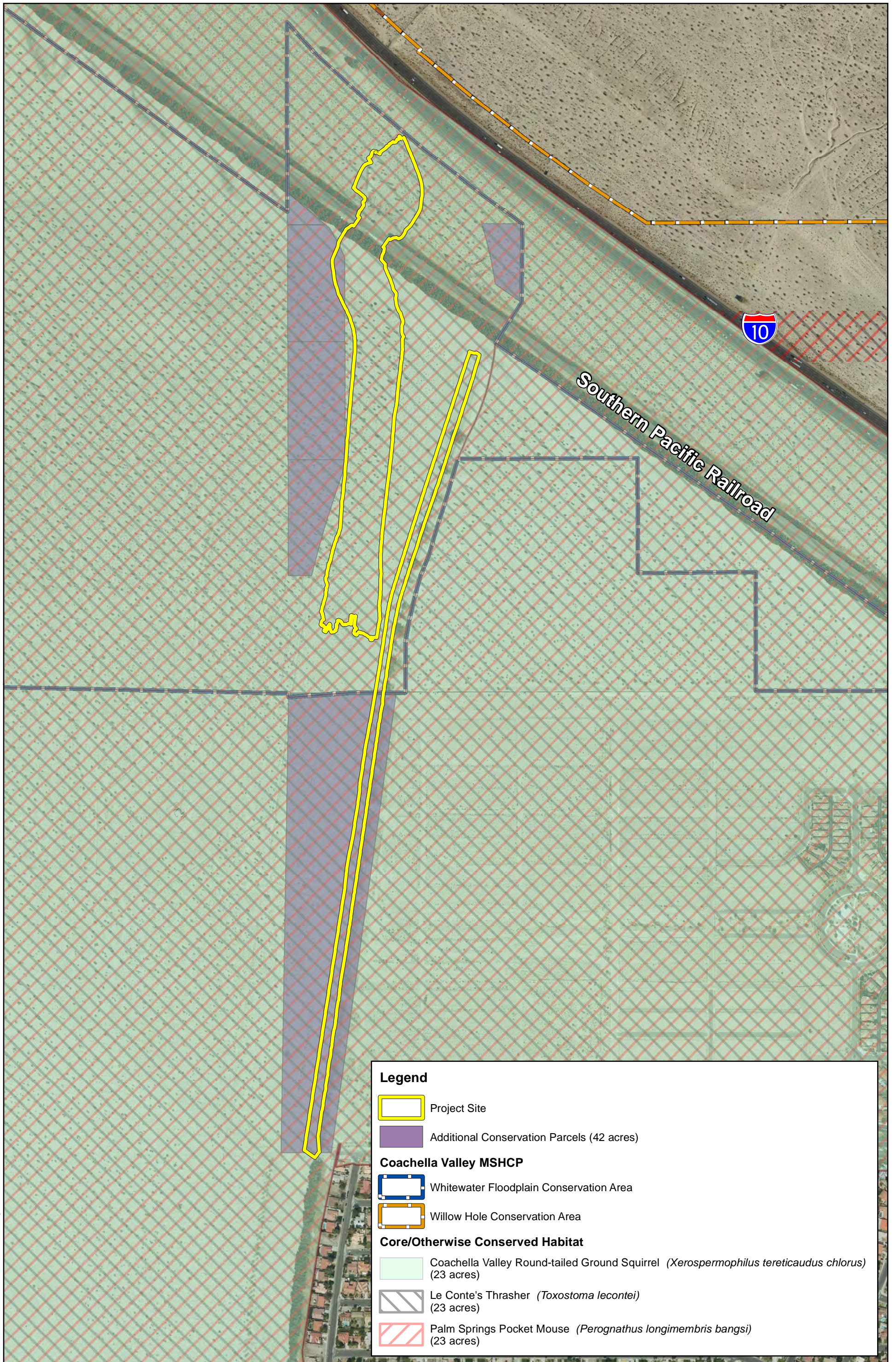
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Legend

-  Project Site
-  Study Area
-  Coachella Valley Milk-Vetch (*Astragalus lentiginous var. coachellae*)



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


Legend

-  Project Site
-  Additional Conservation Parcels (42 acres)

Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core/Otherwise Conserved Habitat

-  Coachella Valley Round-tailed Ground Squirrel (*Xerospermophilus tereticaudus chlorus*) (23 acres)
-  Le Conte's Thrasher (*Toxostoma lecontei*) (23 acres)
-  Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*) (23 acres)

4.3 BIOLOGICAL CORRIDOR OR LINKAGE

The project site is partially located within a designated corridor related to the Whitewater River/Fluvial Sand Transport Biological Corridor (refer to Exhibit 10, *Biological Corridor and Ecological Processes*). This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the WFCAs. The corridor is intended to provide habitat connectivity for Coachella Valley giant-sand-treader cricket, Coachella Valley fringe-toed lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse, as well as to maintain ecosystem function for covered species (CVAG 2007a). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the project site.

4.4 ESSENTIAL ECOLOGICAL PROCESS AREA

"Fluvial sand transport" refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley (Exhibit 10). On the valley floor, continued occasional water flow associated with storm events will maintain fluvial transport, but high winds will also pick up sediment and carry it (aeolian transport). In accordance with Section 4.4 of the MSHCP, the following additional measure would be required for the proposed project to remain in compliance with the MSHCP.

The following text is taken directly from Section 4.4 of the MSHCP:

Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongo Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.






The proposed project would create an opening in the tamarisk windrows that run east-west along the railroad tracks and reroute the water from the washes north of I-10 through the opening in the tamarisk windrows to areas south of the railroad tracks. This would improve fluvial sand transport and will likely result in minor improvements to aeolian sand transport.



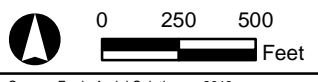
Southern Pacific Railroad

Verona Rd

Legend

-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area
-  Corridors or Linkages
-  Stabilized Shielded Sand Fields
-  Active Sand Fields
-  Sand Transport

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Source: Eagle Aerial Solutions -- 2013

Section 5 Rationale in Equivalency Analysis

The rationale for the equivalency analysis is based on:

- The MSHCP’s acknowledgement that it may be possible to achieve the Plan’s conservation goals through a different configuration or modification of the WFCAs;
- The proposed modification or Like Exchange will result in equal or greater benefits to Covered Species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing Conservation Area boundaries);
- The level of take of (impact to) Covered Species is no greater than that analyzed in the Plan; and
- The ecological processes associated with the project will improve the ecological processes associated with the WFCAs from what was assumed when the MSHCP was adopted.

This section presents the above rationale, identifies the proposed modification or Like Exchange acreage requirements, describes the baseline against which the modification or Like Exchange is compared, and summarizes the required equivalency findings.

5.1 ABILITY TO ACHIEVE CONSERVATION GOALS

The primary conservation goals for Cathedral City’s portion of the WFCAs include (1) conserving up to 61 acres of “Core Habitat” for the seven Covered Sand Species discussed above, as well as conserving Covered Species where they occur; (2) maintaining key ecological processes (active sand fields and fluvial sand transport), and (3) maintaining the functionality of the biological corridor or linkage between the Willow Hole Conservation Area and the WFCAs. The proposed modification will support these objectives by (1) conserving 42 acres of modeled core habitat for the above listed Covered Sand Species which increases the acreage of conserved habitat than would occur without the Like Exchange; (2) conserving 42 acres of active sand fields; (3) enhancing fluvial sand transport within the WFCAs with the construction of the storm drain; and (4) enhancing the functionality of the biological corridor or linkage between the Willow Hole Conservation Area and the WFCAs through project implementation.

5.2 PROVIDE EQUAL OR GREATER BENEFITS TO COVERED SPECIES AND NATURAL COMMUNITIES

Modeled habitat for each of the Covered Species addressed in the WFCAs will be conserved at a higher acreage total as a result of the proposed modification. Further, with the proposed project, fluvial sand transport will be enhanced, improving habitat values for the natural communities and covered species associated with the active sand fields that found in the

eastern portion of the WFCa. The proposed project will unblock the passages under the UPRR Bridge, enhancing wildlife movement opportunities for Covered Species from the Willow Hole Conservation Area to the WFCa.

5.3 THE LEVEL OF TAKE IS NO GREATER THAN THAT ANALYZED IN THE PLAN

Focused surveys for Coachella Valley milk-vetch found the species throughout the proposed project area, as well as areas proposed for additional conservation. Under the Plan, only 7 acres of disturbance to Coachella Valley milk-vetch habitat is allowed within the City of Cathedral City's portion of the WFCa. The project, as proposed, will result in 5.7 acres of permanent impact and 17.3 acres of temporary impact. However, the proposed project also include the acquisition of 42 acres of private lands that will be permanently conserved, adding to the acreage of conserved habitat for Coachella Valley milk-vetch with the WFCa. Although, focused surveys were not conducted for several sand dune species, including Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, Palm Springs Pocket Mouse, Le Conte's Thrasher, and Flat-tailed Horned Lizard, CVAG habitat modeling identifies Core habitat for each of these species within the project site. The proposed project would increase the acreage of core habitat being conserved for all of these species.

5.3.1 Ecological Processes

The restoration or enhance of fluvial ecological processes within those portions of the 100-year floodplain associated with the proposed project would provide for the fluvial transport of sand that is critical to conservation of a number of species endemic to the sand fields in the Coachella Valley. The scouring of this area that would result from this project would also be expected to enhance habitat types/values in the project site and surrounding active sand field.

5.3.2 Equivalency Analysis for the Proposed Modification

As shown in Table 4-37b of the MSHCP, disturbance or habitat loss is limited to 7 acres within the City of Cathedral City's portion of the WFCa. In order to authorize the proposed 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impact) in the existing WFCa, a modification supported by an equivalency analysis is proposed. The equivalency analysis for the proposed modification will ensure consistency with the MSHCP and will result in a net increase of 19 acres of conserved core habitat. Refer to Table 2, *Disturbances within the WFCa* below:

Table 2: Disturbances within the WFCFA

Description	Acres
Disturbance authorized within the City of Cathedral City's portion of the WFCFA (gross)	7.0
Project Impacts (gross) <ul style="list-style-type: none"> • Direct Impact 5.7 • Temporary Impact 17.3 	23.0
Proposed Additional Conservation Land (gross)	42.0
Net Increase in Conservation Area <ul style="list-style-type: none"> • The difference between the proposed additional conservation land and the anticipated project impacts 	19.0

Section 6 Equivalency Analysis for the Proposed Modification to the Whitewater Floodplain Conservation Area

In accordance with the requirements of the MSHCP, this section compares the effects/benefits of the proposed project with the proposed modification, and a project on the same site not deviating from the Conservation Area Conservation Objectives.

6.1 COVERED SPECIES HABITAT AND LEVEL OF TAKE

As explained in detail below, the conservation of suitable habitat and level of take of Covered Species with the proposed modification will be biologically equivalent or superior to what would otherwise occur. This section addresses the specific habitat requirements of the species of concern on the site.

6.1.1 Coachella Valley Milk-vetch

This species was found during a sensitive plant survey in 2016 to occur throughout the 20 acres of proposed impacts, all of which are modeled as Core Habitat for the species (Exhibit 8). The Plan allows for up to 7.0 acres of permanent impacts with the City of Cathedral City's portion of the WFCA. The project will result in a total of approximately 23 acres of impact to the WFCA (5.7 acres of permanent impact and 17.3 acres of temporary impact). CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCA and 27 acres immediately adjacent to the southeast corner of the WFCA (Exhibit 5) which will be added to the Conservation Area. This action would result in a net increase of 19 acres to the conservation area since 23 of the 42 acres will be used to offset the 23 acres of impacts to land within the City of Cathedral City's portion of the WFCA from implementation of the proposed project. This will result in a net increase of 19 acres of conservation of core habitat for Coachella Valley milk-vetch to compensate for the 23 acres of impacts to Coachella Valley milk-vetch habitat. Based on this information, the level of take of this species will be biologically equivalent or superior to what would otherwise occur.

6.1.2 Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, Palm Springs Pocket Mouse, and Le Conte's Thrasher

As the project site is modeled as core habitat for Coachella Valley Giant Sand-treader Cricket, Coachella Valley Fringe-toed Lizard, Coachella Valley Round-tailed Ground Squirrel, and Palm Spring Pocket Mouse. It is also considered conserved habitat for Le Conte's Thrasher. Development of the project site, will result in a total of 23 acres of impacts to the WFCA (5.7

acres of permanent impact and 17.3 acres of temporary impact). The Plan allows for up to 7.0 acres of impacts within the City of Cathedral City's portion of the WFCAs. CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCAs and 27 acres immediately adjacent to the southeast corner of the WFCAs (Exhibit 5) which will be added to the Conservation Area. All 42 acres are considered core or otherwise conserved habitat for each of these species. This will result in a net increase of 19 acres of conservation of modeled core or otherwise conserved habitat to compensate for the 23 acres of impacts to habitat for these species. Based on this information, the level of take of all of these species will be biologically equivalent or superior to what would otherwise occur.

6.1.3 Flat-tailed Horned Lizard

Development of the project site, will result in a total of 23 acres of impacts to the WFCAs (5.7 acres of permanent impact and 17.3 acres of temporary impact). The Plan allows for up to 7.0 acres of impacts within the City of Cathedral City's portion of the WFCAs. CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFCAs and 27 acres immediately adjacent to the southeast corner of the WFCAs (Exhibit 5) which will be added to the Conservation Area. The added conservation lands are a continuum of the active sand field habitat that supports MSHCP Covered Sand Species. All 42 acres are considered, predicted and potential habitat for flat-tailed horned lizard. This will result in a net increase of 19 acres of conservation of predicted and potential flat-tailed horned lizard habitat to compensate for the 23 acres of impacts to potential flat-tailed horned lizard habitat associated with this project. Based on this information, the level of take of flat-tailed horned lizard habitat will be biologically equivalent or superior to what would otherwise occur.

6.2 NATURAL COMMUNITIES

The entire project site, as well as the additional conservation areas, supports Sonoran creosote bush scrub. The proposed modification will result in an increase in acreage of conserved Sonoran creosote bush with the same overall habitat function and values.

6.3 BIOLOGICAL CORRIDORES AND LINKAGES

The Whitewater River Fluvial Sand Transport Biological Corridor in the vicinity of the project site is intended to provide a linkage or biological corridor between the Willow Hole Conservation Area and the WFCAs. It is also intended to provide habitat connectivity for several covered species, as well as to maintain ecosystem functions for these species. The configuration of the proposed project, including the additional conserved lands, would continue to meet these biological objectives.

The proposed modification will not only maintain the corridor but would increase its function and values by opening the clearing under the UPRR Bridge that had previously been backfilled.

The newly available movement corridor under the bridge would allow wildlife to more freely move between the Willow Hole Conservation Area and the WFC. The proposed project would, therefore, provide a biologically equivalent or superior corridor to that analyzed in the MSHCP.

6.4 ESSENTIAL ECOLOGICAL PROCESSES

The key ecological process that the MSHCP is intended to maintain in this portion of the WFC is fluvial sand transport. This ecological objective appears to have been constrained by the backfill of the openings under the UPRR Bridge. With the proposed project the openings under the bridge would be restored. Further, the proposed project would further enhance the flow of storm waters from the north to the south and into the floodplain habitats south of the railroad tracks. The proposed project would result in the provision of essential ecological processes that are biologically equivalent or superior to what would occur without the proposed modification.

6.5 CONSERVATION AREA CONFIGURATION AND MANAGEMENT

Five of the six addition conservation lands that would be added to the WFC are within the existing boundaries of the conservation area but exist as unmanaged private lands that are not part of the WFC. Their acquisition would improve that overall configuration and management of the WFC. The sixth and largest parcel is a 27 acres parcel, immediately outside of the existing conservation area, at its southeast corner and adjacent to Tribal land. The acquisition of this sixth parcel is not expected to create any new or additional concerns regarding the configuration and/or management of existing WFC Conservation Area.

Overall, considering the configuration of the additional conservation area and the lack of changes in otherwise allowable uses in the WFC, the proposed modification would result in biologically equivalent or superior conservation configuration and management requirements as compared to what was analyzed under the MSHCP.

6.6 ECOTONES AND OTHER CONDITIONS AFFECTING SPECIES DIVERSITY

The entire project site is mapped as Sonoran creosote bush scrub and occurs in a larger area of active desert sand fields with little or no topographic relief, thereby limiting the presence of ecotones within or adjacent to the project site. The proposed modification would result in overall equivalent conditions affecting species diversity as that analyzed under the MSHCP.

6.7 ACREAGE CONTRIBUTED TO THE CONSERVATION AREAS

Development of the project site, will result in a total of 23 acres of impacts to the WFC (5.7 acres of permanent impact and 17.3 acres of temporary impact). CVWD has agreed to acquire 42 acres of private land (15 acres within the existing boundary of the WFC and 27 acres immediately adjacent to the southeast corner of the WFC (Exhibit 5) which will be added to the Conservation Area. The proposed additional conservation land, totaling 42 acres, results in a net contribution of 19 acres of conserved habitat.

6.8 CONTROL OVER MITIGATION PROPERTY

The mitigation properties are presently privately owned parcels but will be acquired by CVWD and a conservation easement will be recorded in favor of the CVAG. This will allow these properties to be managed as part of the existing WFC. CVWD has control over all mitigation property for the proposed project and will contribute properties to the conservation areas.

Section 7 Equivalency Findings

The proposed modification would result in biologically equivalent or superior conservation acreage and value, as summarized here using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12. A more complete analysis is provided in above Section 6 of this report:

- **Level of Habitat Conservation and Take of Covered Species.** The conservation of suitable habitat and level of take of covered species with the proposed modification would be biologically equivalent or superior to what would otherwise occur for all potentially occurring species. Surveys have been conducted for Coachella Valley milk-vetch and this species is known to occur on the property. In addition, the project area, including areas of permanent and temporary impacts, as well as the all six parcels proposed as additional conservation lands are within core habitat for Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. Other species for which habitat occurs within the project site and the additional conservation properties, include *Le Conte's* thrasher and flat-tailed horned lizard. While impacts will be limited to 5.7 acres, of permanent impacts (7 acres are authorized, within the City of Cathedral City's portion of the WFCA), CVWD will acquire 42 acres of habitat that is also recognized as core habitat or otherwise conserved habitat for these various Covered Sand Species. This will result in the net increase of 19 acres to active desert sand fields modeled to provide core habitats or otherwise conserved habitats for these Covered Sand Species. The level of habitat conservation and take of covered species will be biologically equivalent or superior to what would otherwise occur without the proposed modification.
- **Effects on Natural Communities.** Both the impact area and the addition of conservation properties are part of the same Sonoran creosote bush scrub natural community, and therefore provide similar overall functions and values.
- **Effects on Biological Corridors and Linkages.** The 23 acres of impacts occur at the eastern edge of the Whitewater River Fluvial Sand Transport Biological Corridor that connects the Willow Hole Conservation Area and the WFCA. The UPRR Bridge was constructed to provide a passageway for wildlife under the railroad track, however, the openings under the bridge were backfilled pending approval of a flood control structure that would provide adequate movement opportunities for wildlife while meeting County Standards as a regional flood control facility. The proposed project represents the final design for the regional flood control facility under the UPRR Bridge. Its development will facilitate wildlife movement through the corridor will meeting the requirements for regional flood control.

- **Effects on Essential Ecological Processes.** With the opening of the passageway under the UPRR Bridge and development of the regional flood control facility at this location, the project will enhance the essential ecological processes, primarily fluvial sand transport, for this location in the WFCA. The proposed project would result in the provision of essential ecological processes that are biological equivalent or superior to what would occur without the proposed modification.
- **Effects on Conservation Area Configuration and Management.** The maintenance of the proposed project site, following construction of the flood control facility, and the acquisition of conservation lands that would be added to the WFCA will improve the overall configuration and management of the WFCA.
- **Effects on Ecotones and Other Conditions Affecting Species Diversity.** The project area and proposed additional conservation lands are part of a larger mapped area of Sonoran creosote bush scrub, thereby limiting the presence of ecotones associated with the project site and/or additional conservation areas. Overall species diversity is not expected to be reduced by the proposed modification.
- **Equivalent or Greater Acreage.** The proposed project, with the contribution of 6 parcels of additional conservation totaling 42 acres of Core Habitat, will result in greater conservation acreage (19 additional acres like habitat) than would otherwise occur without the proposed modification.
- **Control Over Mitigation Property.** The applicant has control over all mitigation property for the proposed project and will deed all properties to CVAG. The six parcels of mitigation property are presently privately owned parcels but will be acquired by CVWD and deeded to the CVAG as conservation properties to be managed as part of the existing WFCA.

Section 8 Conclusion

The proposed modification is proposed in order to allow the construction of a planned storm drain channel at the UPRR Bridge. Besides providing needed flood protection measures, this project will enhance the biological corridor and restore the ecological process of fluvial sand transport south of the I-10 Freeway and the Union Pacific Rail Road tracks. The project will result in 23 acres of impacts (5.7 acres of permanent impacts and 17.3 acres of temporary impacts). The Plan authorizes up to 7 acres of habitat loss in the City of Cathedral City's portion of the WFCA. The proposed modification or Like Exchange consists of two conservation measures that will be implemented by CVWD:

- Enhancement of Wildlife Movement and Essential Ecological Processes
- Additional Habitat Conservation

The rationale for this equivalency analysis in support of the proposed modification is based on:

- The MSHCP's acknowledgement that it may be possible to achieve the Plan's conservation goals through a modification or different configuration of 1 or more conservation areas;
- The proposed modification will result in equal or greater benefits to Covered Species and conserved natural communities as compared to those benefits analyzed in the MSHCP (existing Conservation Area boundaries);
- The level of take of (impact to) Covered Species is no greater than that analyzed in the Plan;
- The restoration and enhancement of the biological corridor between the Willow Hole Conservation Area and the WFCA; and
- The restoration of essential ecological processes of fluvial sand transport south of the I-10 Freeway at the eastern edge of the WFCA with project implementation.

The proposed modification would result in biologically equivalent or superior conservation acreage and value using the mandatory categories for equivalency analysis listed in MSHCP Section 6.12, summarized as follows:

- The conservation of core habitat in exchange for authorized take of Covered Species with the proposed modification would be biologically equivalent to what would otherwise occur;
- The proposed modification would result in equal or greater benefits to natural communities as compared to those benefits analyzed under the MSHCP;

- The proposed project will restore and enhance the function and values of the existing biological corridor between the Willow Hole Conservation Area and the WFCA, resulting in a Biological Corridor and essential ecological processes (i.e., fluvial sand transport) that are biological equivalent or superior to what would otherwise occur without the proposed modification;
- The proposed modification would result in biologically equivalent conservation configuration and management requirements as what could have occurred under the MSHCP;
- Ecotones and overall species diversity are not expected to be reduced by the proposed modification;
- The additional conservation parcels are the greater in size, resulting in an greater acreage in the WFCA ; and
- The six parcels that constitutes the additional conservation will be acquired by CVWD and, therefore, will be under the direct ownership of the applicant before being deeded to CVAG.

Based on this analysis, the proposed modification would result in biologically equivalent or superior conservation value compared with implementation of the MSHCP without the proposed modification for this project.

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**Appendix A Habitat Assessment and MSHCP
Consistency Analysis (2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Habitat Assessment and MSHCP Consistency Analysis

Prepared By:

Michael Baker International
14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

March 2016
Updated November 2016
JN: 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Habitat Assessment and MSHCP Consistency Analysis

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Travis J. McGill
Biologist
Natural Resources



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

March 2016
Updated November 2016

Executive Summary

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the North Cathedral City Improvements Project, Phase 1 (project site or site) located in the City of Cathedral City, Riverside County, California. The project site is located within the Morongo Wash on the western edge of Cathedral City. Most of the project is located within an open area, but approximately the northernmost 20% of the project is located within a constrained corridor located between Interstate 10 (I-10) to the north and railroad tracks to the south. The project would create a transport system underneath the railroad tracks to allow water from the Morongo Wash to cross underneath the tracks. Ultimately this would allow water from north of I-10 to connect with water south of I-10 (i.e. the Whitewater River). The vegetation on-site can be characterized as Sonoran creosote bush scrub, as well as two tamarisk windrows associated with the railroad tracks. The project site is underlain by active sand fields south of the railroads and stabilized shielded sand fields north of the tracks.

Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that the project site has a moderate or higher potential to support one (1) MSHCP-covered plant species, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), which was observed during the 2016 sensitive plant surveys. In addition, the site has a moderate or higher potential to support five (5) sensitive plant species that are not covered under the MSHCP, including Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*), ribbed cryptantha (*Cryptantha costata*), winged cryptantha (*Cryptantha holoptera*), pointed dodder (*Cuscuta californica* var. *apiculata*), and Arizona spurge (*Euphorbia arizonica*). All other sensitive plant species, covered and non-covered, have a low potential to occur or are presumed absent.

Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a moderate or higher potential to support six (6) MSHCP-covered wildlife species, including Coachella Valley giant sand treader cricket (*Macrobaenetes valgum*), Palm Springs pocket mouse (*Perognathus longimembris bangsi*), flat-tailed horned lizard (*Phrynosoma mcallii*), Le Conte's thrasher (*Toxostoma lecontei*), Coachella Valley fringe-toed lizard (*Uma inornata*), and Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*). In addition, the project site has a moderate or higher potential to support three (3) sensitive wildlife species that are not covered under the MSHCP, including prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). Loggerhead shrikes was observed on-site during Michael Baker's August 2015 survey. All other sensitive wildlife species, covered and non-covered, have a low potential to occur or are presumed absent.

The project site is located within the Whitewater Floodplain Conservation Area of the MSHCP. Because the site is located within a conservation area and will have impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e. sand transport), the project will be required to undergo the Joint Project Review Process, which allows the Coachella Valley Conservation Commission to monitor MSHCP progress and implementation. To remain in compliance with the MSHCP, focused surveys may be required under MSHCP Section 4.4 for burrowing owl (*Athene cunicularia*) and Le Conte's thrasher. However, sands in the area are very soft and no suitable burrowing owl burrows were found anywhere within the survey area during Michael Baker's field survey. To reduce the potential for degradation of the Sonoran creosote bush scrub, active sand fields, or stabilized shielded sand fields, activities that may result in sand stabilization or compaction within the project site should be limited, and all vehicles and equipment should be washed prior to entering the site to reduce the potential for transmission of invasive weed seeds.

Burrowing owl focused surveys were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, a focused burrow survey was conducted on April 19, 2016. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent from the project site. However, six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east of the project site. Prior to construction, a pre-construction burrowing owl and nesting bird clearance survey shall be conducted to ensure burrowing owl remain absent from the project site.

Sensitive plant survey was conducted on April 14, April 19, May 4, and June 15, 2016 survey to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). Coachella Valley milk-vetch was the only sensitive plant observed during the focused surveys. Approximately 266 individuals were observed throughout the survey area. No other sensitive plant species were observed on-site during the sensitive plant surveys

Based on the results of the Delineation of State and Federal Jurisdictional Waters Report, prepared under separate cover (Michael Baker, 2016), State jurisdictional areas (Morongo Wash) were identified within the project site that are subject to the Regional Water Quality Control Board (Regional Board) and California Department of Fish and Wildlife (CDFW) and approval. The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement¹.

Pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from February 1 through August 31, but can vary slightly from year to year based upon seasonal weather conditions. However, out of an abundance of caution, a pre-construction nesting bird clearance survey will be conducted prior to any construction or vegetation clearing activities. No burrowing owls were observed on the project site during the 2016 focused surveys; however, burrowing owl have the potential to occur within the project footprint and the pre-construction nesting bird clearance survey should focus on the continued absence of burrowing owl to ensure burrowing owl remain absent from the project site.

¹ The CDFW can issue other approvals in-lieu of a formal Agreement such as an Operation-by-Law letter or Letter of Non-Substantial Impact. A formal notification must first be submitted to the CDFW prior to approval.

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APPENDIX

- Appendix A Site Photographs
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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corp of Engineers
CVCC	Coachella Valley Conservation Commission
CVWD	Coachella Valley Water District
CWA	Clean Water Act
F	Fahrenheit
FR	Federal Register
GIS	Geographic Information System
I	Interstate
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
MSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
NRCS	Natural Resources Conservation Service
Regional Board	Regional Water Quality Control Board
Section 6	Section 6 Target Acquisition Area
Specific Plan	North City Extended Specific Plan
THCP	Tribal Habitat Conservation Plan
UPRR	Union Pacific Railroad
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California. A habitat assessment/field investigation was conducted by Michael Baker biologists Travis J. McGill, Ryan S. Winkleman, Thomas C. Millington, and Ashley M. Barton on August 5, 2015 to verify existing site conditions and assess the probability of occurrence for sensitive plant and wildlife species that could pose a constraint to development of the proposed project site. A formal delineation of state and federal jurisdictional waters was prepared under separate cover.

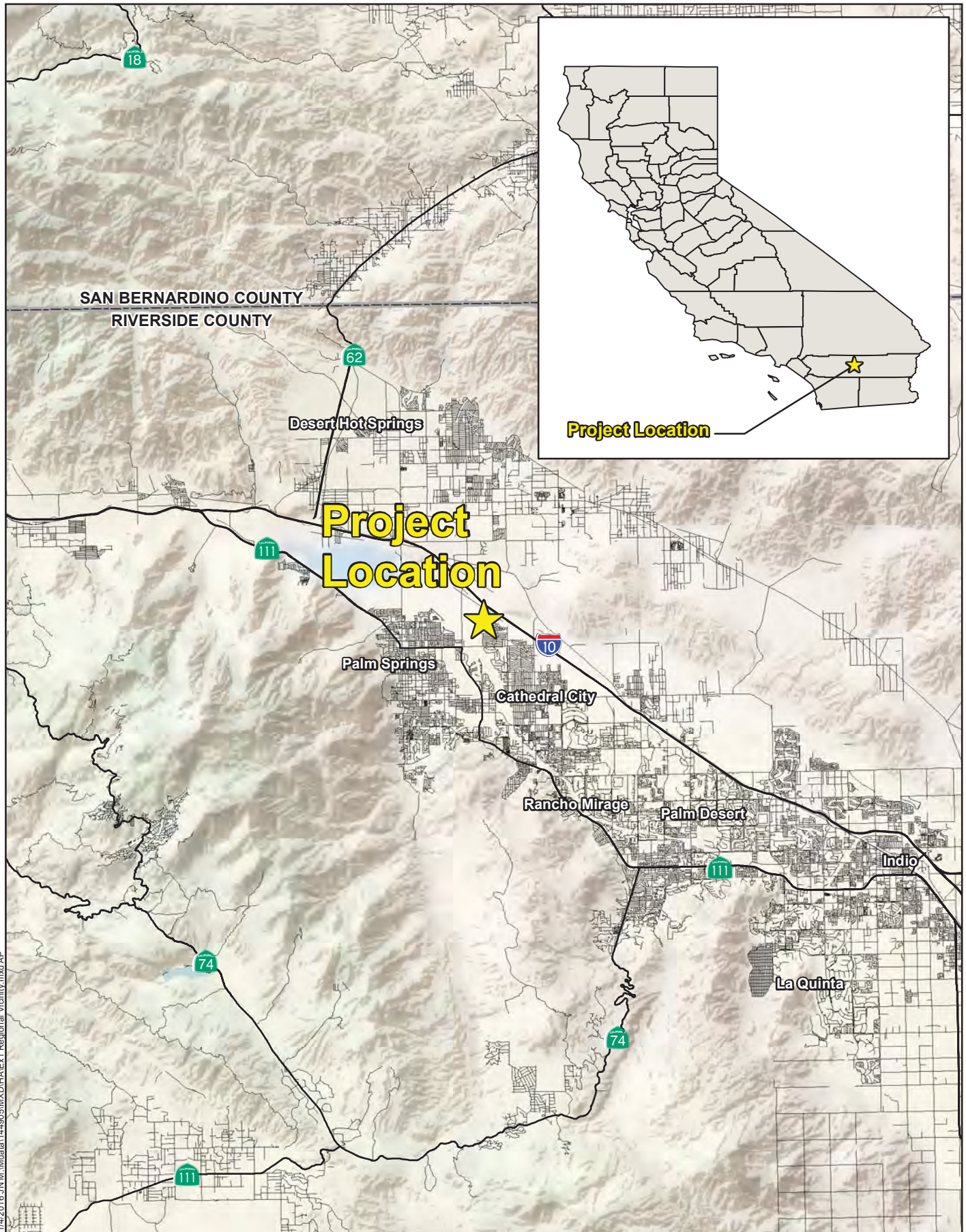
Special attention was given to the suitability of the on-site habitat to support species whose habitat has been conserved within the Whitewater Floodplain Conservation Area by the MSHCP, including Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), triple-ribbed milk-vetch (*Astragalus tricarinatus*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*), Coachella Valley fringe-toed lizard (*Uma inornata*), desert tortoise (*Gopherus agassizii*), flat-tailed horned lizard (*Phrynosoma mcallii*), burrowing owl (*Athene cunicularia*), Le Conte's thrasher (*Toxostoma lecontei*), Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*), as well as other sensitive species identified by the California Natural Diversity Database (CNDDDB) and other electronic databases as potentially occurring on or within the general vicinity of the project site.

1.1 PROJECT LOCATION

The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of I-10, and east of Gene Autry Trail (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

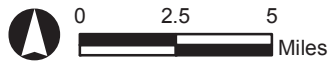
The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently,



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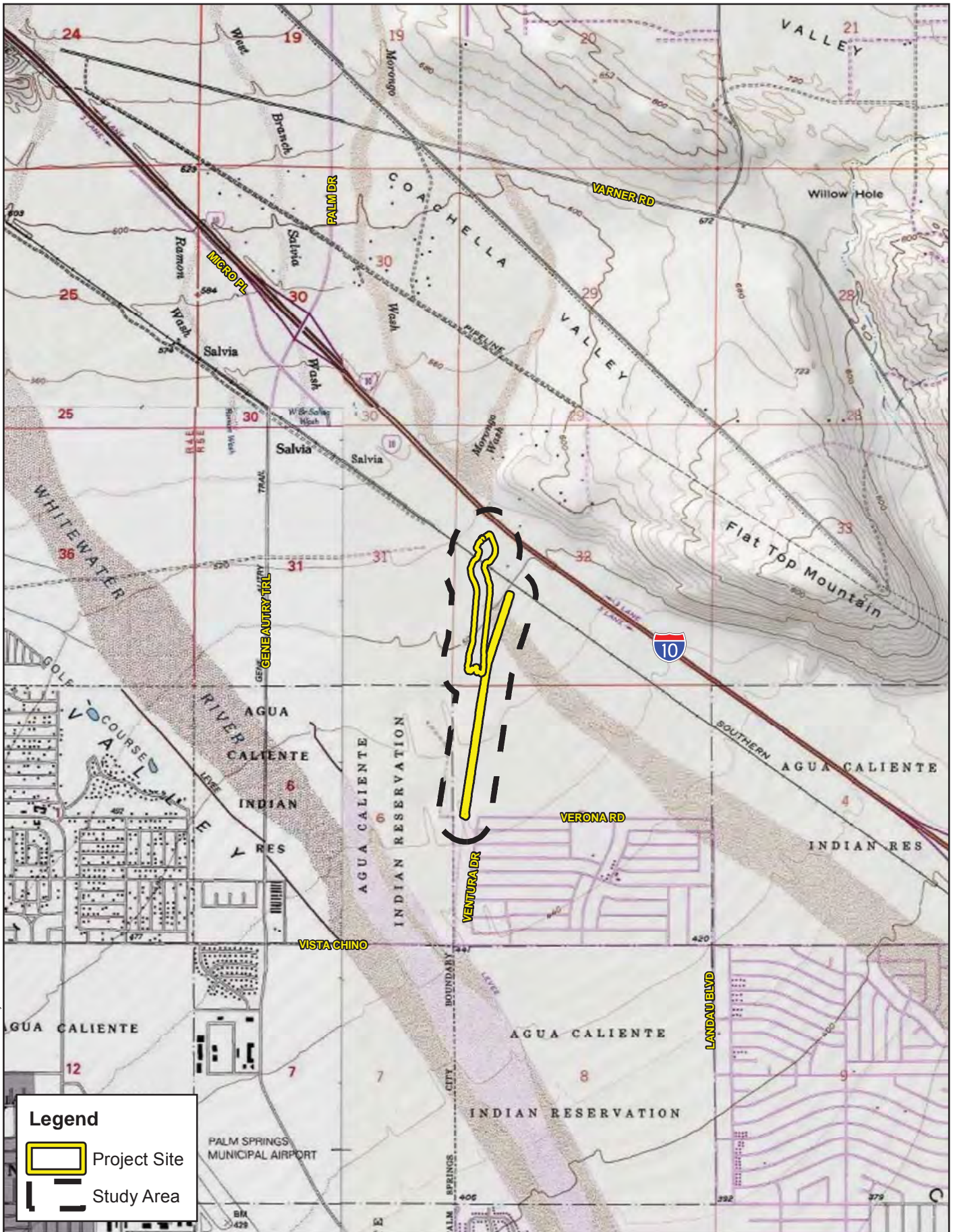
NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

Regional Vicinity



Source: ESRI Relief Map, National Highway Planning Network

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

Site Vicinity





Source: ArcGIS Online, County of Riverside, County of San Bernardino



Southern Pacific Railroad

Verona Rd

Legend

-  Project Site
-  Study Area

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Source: Eagle Aerial Solutions -- 2013

there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet (Exhibit 4, *Depiction of Proposed Project*). Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.



NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS
Depiction of Proposed Project

Section 2 Methodology

2.1 COACHELLA VALLEY MSHCP CONSISTENCY ANALYSIS

CVWD is a permittee under the Coachella Valley MSHCP, and although the proposed project was in the planning process during the construction of the MSHCP and is directly referenced in Section 4.3 under the Whitewater Floodplain Conservation Area, the proposed project is not a covered activity.

The project site was reviewed to determine consistency with the MSHCP. Geographic Information System (GIS) software was utilized to map the project site in relation to MSHCP areas including conservation areas, corridors and linkages, and sand transport areas. The MSHCP requires that local permittees, such as CVWD, comply with a number of protection measures for species, communities, essential ecological processes, and biological corridors. In addition, certain projects may be subject to local development mitigation fees, a Joint Project Review Process, or other conservation or implementation measures. These are discussed in greater detail in regards to the proposed project in Section 5.0.

2.2 HABITAT ASSESSMENT

The first step in determining consistency against the above listed sections of the MSHCP is to conduct a habitat assessment of the project site. Prior to conducting this assessment, Michael Baker biologists conducted a literature review and records search for sensitive biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of sensitive² plant and wildlife species and their proximity to the project site were determined through a query of the CDFW's CNDDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of sensitive species published by CDFW, the United States Fish and Wildlife Service (USFWS) species listings, and the Coachella Valley MSHCP and associated technical documents. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey;

² As used in this report, "sensitive" refers to plant and animal species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society Rare Plant Rank; and animal species that are designated by the CDFW as fully protected, species of special concern, or watch list species.

- USFWS Critical Habitat designations for Threatened and Endangered Species;
- Habitat requirements for Coachella Valley milk-vetch, triple-ribbed milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, burrowing owl, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse; and
- Primary Constituent Elements for Coachella Valley milk-vetch, Coachella Valley fringe-toed lizard, and desert tortoise.

Following the literature review, Michael Baker biologists Travis J. McGill, Ryan S. Winkleman, Thomas C. Millington, and Ashley M. Barton inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the project site on August 5, 2015. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. In addition, field staff identified any jurisdictional features, riparian/riverine habitat, and natural corridors and linkages that may support the movement of wildlife through the area.

Special attention was given to any sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species. Areas providing suitable habitat for desert tortoise, flat-tailed horned lizard, and Coachella Valley fringe-toed lizard were closely surveyed for signs of presence during the habitat assessment. Methods to detect the presence of DT included direct observation and signs of presence including burrows, scat, scutes, and carapaces. Methods to detect the presence of flat-tailed horned lizard and Coachella Valley fringe-toed lizard included availability of suitable blowsand habitat and direct observation of sign (lizard scat and tracks).

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features as well as riparian/riverine areas were noted.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

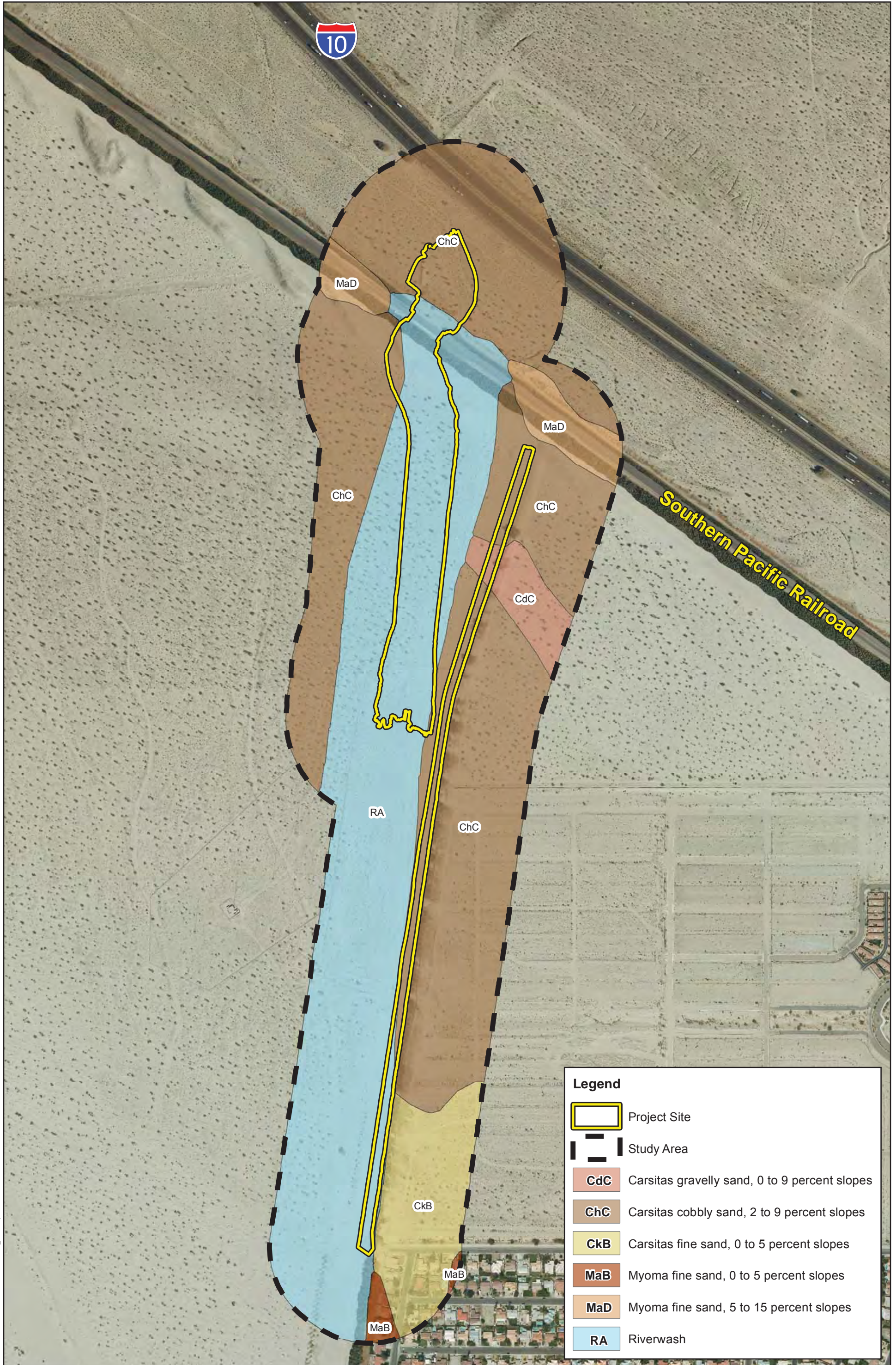
Riverside County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures common. Climatological data obtained for the City of Cathedral City indicates the annual precipitation averages 5.23 inches per year. Almost all of the precipitation occurs in the months between December and March, with hardly any occurring between the months of April and November. The wettest month is January, with a monthly average total precipitation of 1.27 inches. The average maximum and minimum temperatures for the City of Cathedral City are 88.9 and 59.0 degrees Fahrenheit (F) respectively with July being the hottest month (monthly average 108.0° F) and December being the coldest (monthly average 43.0° F). Temperatures during the site visits were in the mid- to high 90s (degrees Fahrenheit) with infrequent, light winds and little to no cloud cover.

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). Based on the NRCS USDA Web Soil Survey, the project site is underlain by the following soil units: Carsitas cobbly sand (2 to 9 percent) and Riverwash (Exhibit 5, *Soils*).

3.3 SURROUNDING LAND USES

Land uses in the vicinity of the project site include residential development to the south and west as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex sits immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly recovering. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the southwest, south, and southeast. The Morongo Wash passes through the project site, and the Whitewater River crosses south of the project site.



Southern Pacific Railroad

Legend	
	Project Site
	Study Area
	CdC Carsitas gravelly sand, 0 to 9 percent slopes
	ChC Carsitas cobbly sand, 2 to 9 percent slopes
	CkB Carsitas fine sand, 0 to 5 percent slopes
	MaB Myoma fine sand, 0 to 5 percent slopes
	MaD Myoma fine sand, 5 to 15 percent slopes
	RA Riverwash

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Section 4 Discussion

4.1 SITE CONDITIONS

The project site occurs in an area that is still mostly undisturbed except for railroad tracks bordered by tamarisk windrows. Along the eastern side of the project site, a tamarisk windrow sits on a berm; this area has been subject to a high degree of human disturbance, primarily through illegal trash dumping. Outside of these areas, on-site habitats exhibited minimal disturbance and generally presented naturally-occurring desert scrub.

4.2 VEGETATION

One (1) vegetation community was documented within the project site: Sonoran creosote bush scrub (Exhibit 6, *Vegetation*). Plant species observed within the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected, or not expected to occur on-site. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were based on calls, songs, scat, tracks, burrows, and actual sightings of animals.

4.3.1 Fish

No fish or hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on or within the vicinity of the project site. Therefore, no fish are expected to occur and are presumed absent. The Morongo Wash does not support standing water that would be sufficient to support a fish population. Therefore, no fish are expected to occur and they are presumed absent.

4.3.2 Amphibians

No amphibians or hydrogeomorphic features that would provide suitable habitat for amphibian species were observed on or within the vicinity of the project site. The Morongo Wash does



Southern Pacific Railroad

Legend	
	Project Site (20 acres)
	Study Area
	Sonoran Creosote Bush Scrub (170.55 ac)
	Tamarisk Windrow (11.59 ac)
	Developed (11.73 ac)

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not support standing water that would be sufficient to support an amphibian population. Therefore, no amphibians are expected to occur and they are presumed absent.

4.3.3 Reptiles

Two (2) reptilian species were observed during the habitat assessment, desert iguana (*Dipsosaurus dorsalis*) and Colorado Desert sidewinder (*Crotalus cerastes laterorepens*). Although diversity was low during the survey, habitat on the project site is suitable for a number of reptilian species. Due to the open, sparsely vegetated habitat with fine windblown sands, the site has the potential to support reptiles such as long-nosed leopard lizard (*Gambelia wislizenii*), western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), desert horned lizard (*Phrynosoma platyrhinos*), western side-blotched lizard (*Uta stansburiana elegans*), flat-tailed horned lizard, Coachella Valley fringe-toed lizard, desert tortoise, Sonoran gopher snake (*Pituophis catenifer affinis*), and red racer (*Coluber flagellum piceus*).

4.3.4 Avian

A total of nine (9) avian species were identified during the habitat assessment, and the project site provides suitable foraging and nesting habitat for a limited variety of avian species. The species identified included white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), Eurasian collared-dove (*Streptopelia decaocto*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), verdin (*Auriparus flaviceps*), and house finch (*Haemorhous mexicanus*).

4.3.5 Mammals

Only one (1) mammalian species, desert cottontail (*Sylvilagus audubonii*), was observed during the habitat assessment. The project site provides suitable habitat for a limited variety of mammalian species, and no obvious mammal burrows were observed during the survey. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Mammalian species that could occur within the project site include coyote (*Canis latrans*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jackrabbit (*Lepus californicus*), and various bat species (*Chiroptera* spp.).

4.4 NESTING BIRDS

No nesting birds or breeding behaviors were observed during the August 5, 2015 field survey. However, this survey was conducted near the end of the typical nesting season (usually February 1 to August 31), and active nesting is generally rare by August. On-site vegetation provides nesting opportunities for avian species, particularly in larger clumps of creosote bushes and in the tamarisk windrows.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site is partially located within a designated corridor related to the Morongo Wash. This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the Whitewater Floodplain Conservation Area (where the project site is located). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the project site.

4.6 JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Branch regulates discharge of dredge and/or fill materials into “waters of the United States” pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the Fish and Game Code, and the Regional Water Quality Control Board (Regional Board) regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Based on the results of the Delineation of State and Federal Jurisdictional Waters Report, prepared under separate cover (Michael Baker, 2016), State jurisdictional areas (Morongo Wash) were identified within the project site that are subject to the Regional Water Quality Control Board (Regional Board) and California Department of Fish and Wildlife (CDFW) and approval. The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement.

4.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Vascular Plants of California and MSHCP supplied information regarding the distribution and habitats of vascular plants in the vicinity of the project site. The habitat assessment was used to assess the ability of the plant communities found on-site to provide suitable habitat for relevant sensitive plant and wildlife species.

The literature search identified thirty-seven (37) sensitive plant species, fifty-one (51) sensitive wildlife species, and three (3) sensitive habitats as having potential to occur within the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix C, *Potentially Occurring Sensitive Biological Resources*, and discussed below.

4.7.1 Sensitive Plants

According to the CNDDDB and CNPS, thirty-seven (37) sensitive plant species have been recorded in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles (refer to Appendix C). Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that the project site has a moderate or higher potential to support one (1) MSHCP-covered plant species, Coachella Valley milk-vetch, which was observed on-site during the 2016 focused surveys. In addition, it was determined that the site has a moderate potential to support five (5) sensitive plant species that are not covered under the MSHCP, including Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*), ribbed cryptantha (*Cryptantha costata*), winged cryptantha (*Cryptantha holoptera*), pointed dodder (*Cuscuta californica* var. *apiculata*), and Arizona spurge (*Euphorbia arizonica*). All other sensitive plant species, covered and non-covered, have a low potential to occur or are presumed absent. Descriptions of species determined to have a moderate or higher potential to occur within the project site, as well as of those covered species that are known to occur within the Whitewater Floodplain Conservation Area, are provided below.

Coachella Valley Milk-vetch

Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside County. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species (Exhibit 7a, *MSHCP Conserved Habitat*). Coachella Valley milk-vetch has a high potential to occur within the project site, and was observed on-site during the 2016 sensitive plant surveys.

Borrego Milk-vetch

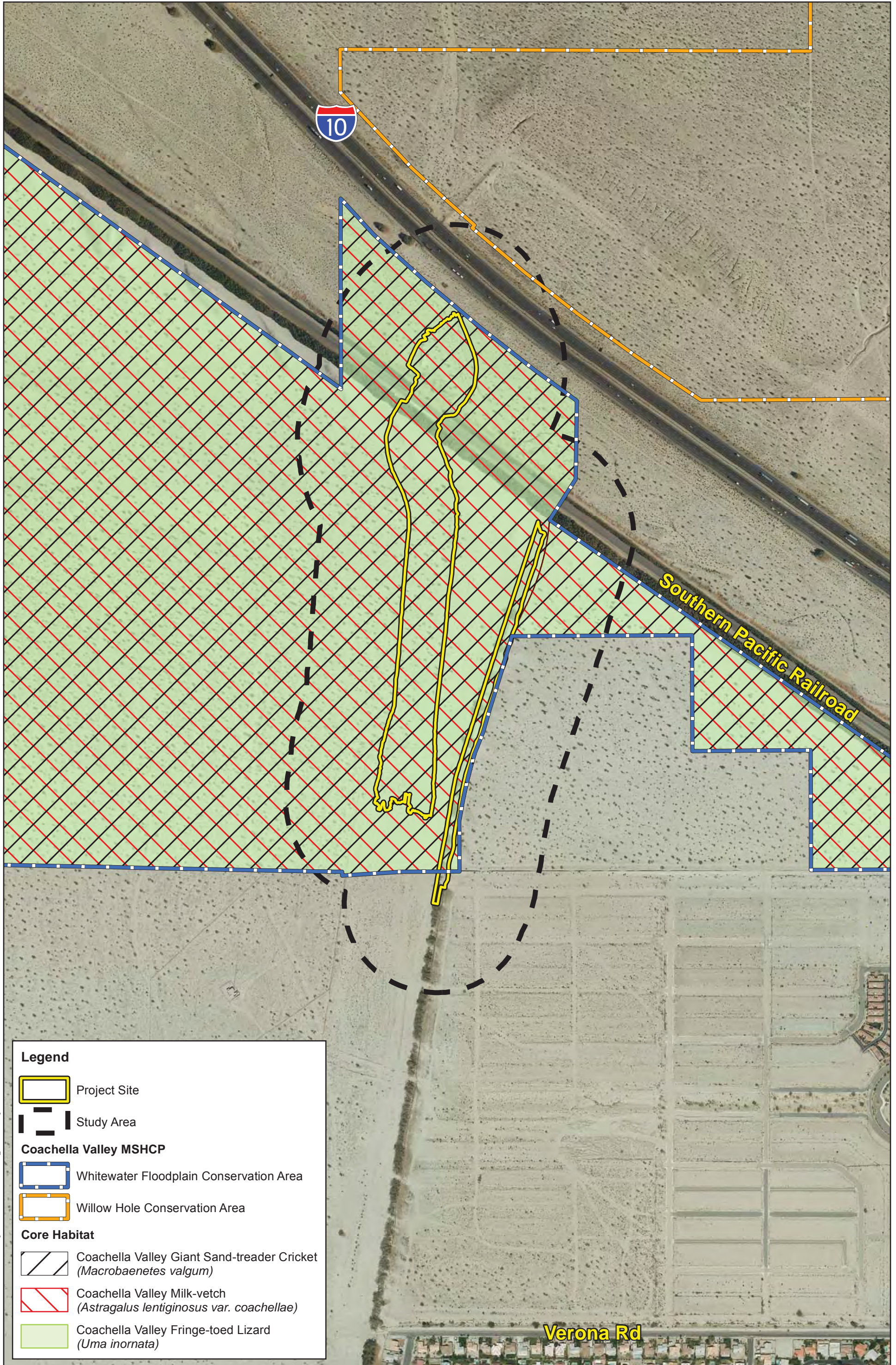
Borrego milk-vetch is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in Mojavean and Sonoran desert scrub between 98 and 1,050 feet in elevation. Borrego milk-vetch has a moderate potential to occur within the project site.

Ribbed Cryptantha

Ribbed cryptantha is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in desert dunes and Mojavean and Sonoran desert scrub between 197 and 1,640 feet in elevation. Ribbed cryptantha has a moderate potential to occur within the project site.



Winged Cryptantha

Ribbed cryptantha is an annual herb that blooms between March and April. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it




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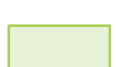
Legend

-  Project Site
-  Study Area

Coachella Valley MSHCP

-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area

Core Habitat

-  Coachella Valley Giant Sand-treader Cricket (*Macrobaenetes valgum*)
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus var. coachellae*)
-  Coachella Valley Fringe-toed Lizard (*Uma inornata*)

is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in Mojavean and Sonoran desert scrub between 328 and 5,545 feet in elevation. Winged cryptantha has a moderate potential to occur within the project site.

Pointed Dodder

Pointed dodder is an annual parasitic vine that blooms between February and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 3, indicating that it is under review and that more information about it is needed. It is not endemic to California, but in California it is known to occur in Riverside and San Bernardino Counties, where it can be found in Mojavean and Sonoran desert scrub between 0 and 1,640 feet in elevation. Pointed dodder has a moderate potential to occur within the project site.

Arizona Spurge

Arizona spurge is a perennial herb that blooms between March and April. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 2B.3, indicating that it is rare, threatened, or endangered in California and more common elsewhere, but is still not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Riverside, and San Diego Counties, where it can be found in sandy Sonoran desert scrub between 164 and 984 feet in elevation. Arizona spurge has a moderate potential to occur within the project site.

Triple-ribbed Milk-vetch

Triple-ribbed milk-vetch is a perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside and San Bernardino Counties. It occurs in sandy or gravelly soils in Joshua tree woodland and Sonoran desert scrub, where it typically grows at elevations between 1,476 and 3,904 feet. The project site is well outside of the known elevation range for this species, and triple-ribbed milk-vetch is presumed absent from the project site.

4.7.2 Sensitive Wildlife

According to the CNDDB, fifty-one (51) sensitive wildlife species have been reported in the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles (refer to Appendix C). Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a moderate or higher potential to support six (6) MSHCP-covered wildlife species,

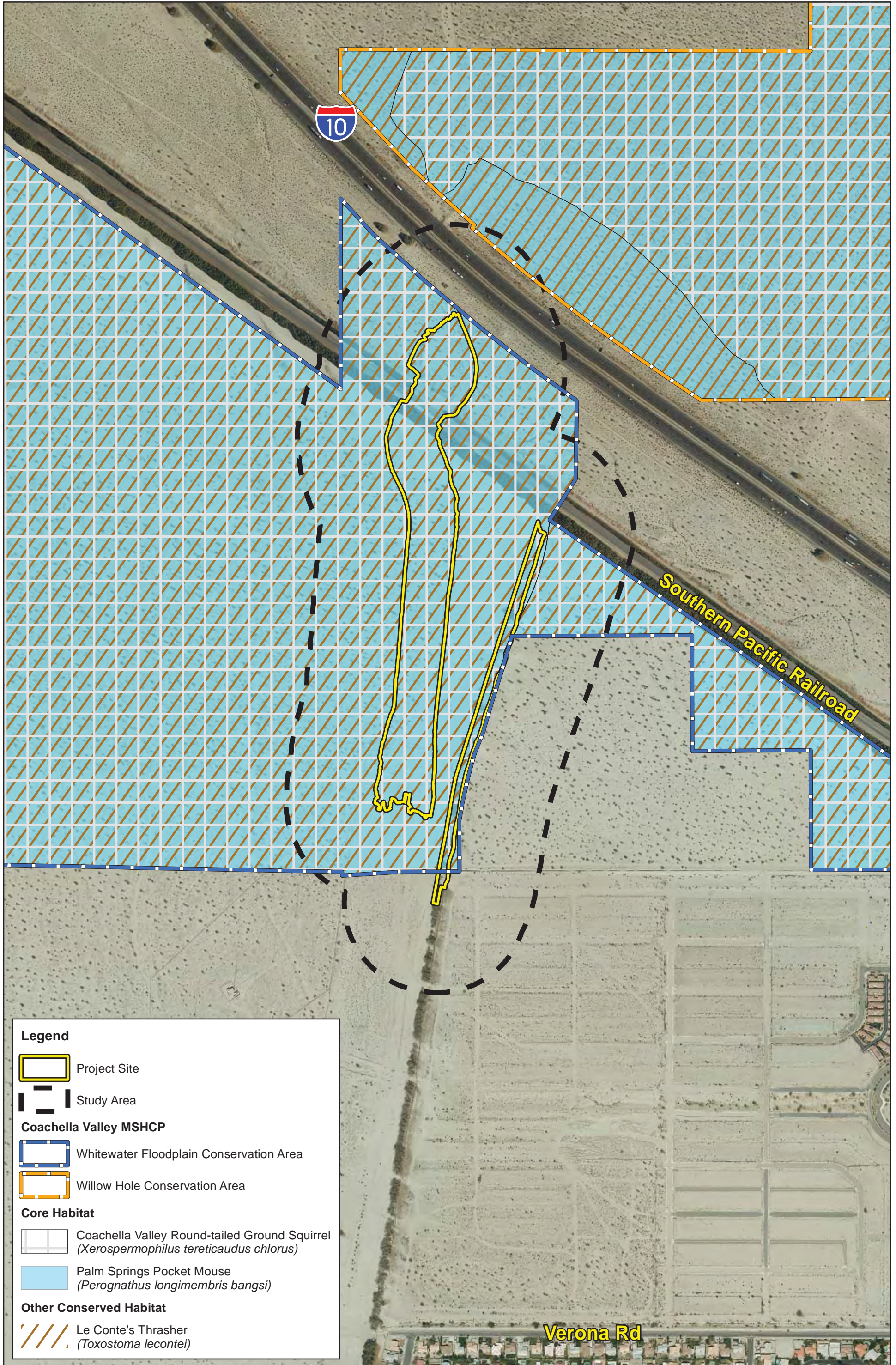
including Coachella giant sand treader cricket, Palm Springs pocket mouse, flat-tailed horned lizard, Le Conte's thrasher, Coachella Valley fringe-toed lizard, and Coachella Valley round-tailed ground squirrel. In addition, the project site has a moderate or higher potential to support three (3) sensitive wildlife species that are not covered under the MSHCP, including prairie falcon (*Falco mexicanus*), loggerhead shrike, and pocketed free-tailed bat (*Nyctinomops femorosaccus*). Multiple loggerhead shrikes were observed on-site during Michael Baker's August 2015 survey. All other sensitive wildlife species, covered and non-covered, have a low potential to occur or are presumed absent. Descriptions of species determined to have a moderate or higher potential to occur within the project site, as well as of those covered species that are known to occur within the Whitewater Floodplain Conservation Area, are provided below.

Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket has no state or federal designation, but is covered under the MSHCP. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio. This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite (*Prosopis glandulosa*), Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species (refer to Exhibit 7a), which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.



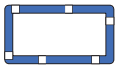




Palm Springs Pocket Mouse

The Palm Springs pocket mouse is designated by the CDFW as a species of special concern and is also covered under the MSHCP. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Gorgonio Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands with loose and/or sandy soils and sparse to moderate vegetative cover. Areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the Whitewater Floodplain Conservation Area has been designated by the MSHCP as a core habitat area (Exhibit 7b, *MSHCP Conserved Habitat*). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.



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Legend

-  Project Site
-  Study Area
- Coachella Valley MSHCP**
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area
- Core Habitat**
-  Coachella Valley Round-tailed Ground Squirrel (*Xerospermophilus tereticaudus chlorus*)
-  Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*)
- Other Conserved Habitat**
-  Le Conte's Thrasher (*Toxostoma lecontei*)

Flat-tailed Horned Lizard

Flat-tailed horned lizard is designated by the CDFW as a candidate for endangered status under the CESA, and also as a species of special concern. It is covered under the MSHCP. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area. Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Le Conte's Thrasher

Le Conte's thrasher is designated by the CDFW as a species of special concern. It is covered under the MSHCP. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.), but may still utilize areas without these plants. Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the Whitewater Floodplain Conservation Area has been modeled as conserved habitat for this species (refer to Exhibit 7b). Le Conte's thrasher has a moderate potential to occur within the project site.

Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the USFWS as threatened under the ESA and by the CDFW as endangered under the CESA. It is covered under the MSHCP. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite, and four-winged saltbush (*Atriplex canescens*). This species is

typically active from spring through fall, especially between April and October. Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west on the Whitewater Floodplain Preserve (refer to Exhibit 7a). Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Coachella Valley Round-tailed Ground Squirrel

Coachella Valley round-tailed ground squirrel is designated by the CDFW as a species of special concern. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains. Ideal habitat seems to be areas where hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the MSHCP, this species seems to particularly favor hummocks that form around mesquite. It is inactive and in its burrows from August until January. The breeding period is generally from early spring through June. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the MSHCP as core habitat (refer to Exhibit 7b). Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Prairie Falcon

Prairie falcon is designated by the CDFW as a watch list species. It is a year-round resident of southern California. This species is typically found in shrub-steppe desert, grasslands, mixed shrub and grassland ecotones, agricultural fields, and alpine tundra, but particularly in open, expansive habitats. This species primarily nests on cliffs but will also nest opportunistically if necessary on trees, utility towers, buildings, or even inside caves. The general nesting season extends from the beginning of March through the end of July. Prairie falcon is commonly sighted in the Coachella Valley and has a high potential to occur within the project site.

Loggerhead Shrike

Loggerhead shrike is designated by the CDFW as a species of special concern. It is a year-round resident of southern California. This species is typically found in open country with short vegetation, including pastures, old orchards, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. It utilizes somewhat prominent perching positions for hunting and eating. This species primarily nests in thorny shrubs and trees, but will nest in brush piles or other debris if no shrubs or trees are present. The general nesting season extends

from the end of January through the end of July. Multiple loggerhead shrikes were observed on-site during the August 2015 survey and this species is considered to be present.

Pocketed Free-tailed Bat

The pocketed free-tailed bat has been designated by the CDFW as a species of special concern. It is found in Riverside, San Diego, and Imperial Counties, where it occurs in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis habitats. Roosts and establishes colonies in rock crevices, caverns, and buildings. Pups are born in June and July, with lactation of maternal bats to their young continuing into August. Pocketed free-tailed bat has a moderate potential to occur within the project site.

Burrowing Owl

The burrowing owl is designated by the CDFW as a California species of special concern. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground. They are dependent upon the presence of burrowing mammals (such as ground squirrels) for roosting and nesting habitat. The presence or absence of colonial mammal burrows is often a major factor that limits the presence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Small mammals may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. This species requires open vegetation allowing line-of-sight observation of the surrounding habitat to forage as well as watch for predators. The burrowing owl nesting season generally extends from mid-March to the end of August. While suitable habitat is present throughout most of the project site, no suitable burrows, and very few burrows of any size, were found during the field survey. Burrowing owl has a low potential to occur on-site, and was not observed on-site during the 2016 focused burrowing owl survey.

Desert Tortoise

Desert tortoise is designated by the USFWS and by CDFW as threatened under the Endangered Species Act (ESA) and California Endangered Species Act (CESA), respectively. It is covered under the MSHCP. This species is typically found in river washes, on rocky hillsides, or in flat desert, where it is strongly associated with creosote bush, saltbush (*Atriplex* spp.), yucca (*Yucca* spp.), wildflowers, and other shrubs and grasses. It is typically active in spring, early summer, and early fall, often retreating back into its burrow during the hottest part of the summer and again in late fall and winter. Breeding generally occurs in March and April, with

eggs laid between May and July. While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows, and very few burrows at all, were observed during the habitat assessment, and desert tortoise has a low potential to occur within the project site.

Coachella Valley Jerusalem Cricket

Coachella Valley Jerusalem cricket has no state or federal designation, but is covered under the MSHCP. This species is most often found in the western Coachella Valley, where it occurs in sandy to somewhat gravelly sandy soils and are typically found in loose windblown drift sands and especially in dunes. They appear to favor areas dominated by members of the sunflower family, particularly *Ambrosia* spp. and *Encelia* spp. No dune habitat is present within the project site, and according to the MSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found. Coachella Valley Jerusalem cricket is presumed absent within the project site.

4.7.3 Sensitive Plant Communities

The CNDDDB lists three (3) sensitive habitats as being identified within the Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley quadrangles: Desert Fan Palm Oasis Woodland, Mesquite Bosque, and Southern Riparian Forest. No sensitive plant communities are present on-site.

4.7.4 Critical Habitat

Under the federal Endangered Species Act, “Critical Habitat” is designated at the time of listing of a species or within one year of listing. “Critical Habitat” refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. In the event that a project may result in take or in adverse effects to a species’ designated Critical Habitat, the project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 Clean Water Act permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The project site is not located within any designated Critical Habitat (Exhibit 8, *Critical Habitat*). However, it is located immediately adjacent to and west of Coachella Valley milk-vetch Critical Habitat Unit 3 (78 FR 10449 10497).





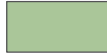
SEE INSET
MAP

Southern Pacific Railroad



INSET MAP

Legend

-  Project Site
-  Study Area
-  Coachella Valley Milk-vetch (*Astragalus lentiginosus* var. *cochellae*)



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Section 5 Coachella Valley MSHCP Consistency Analysis

The project site is located on the eastern end of the Whitewater Floodplain Conservation Area of the MSHCP, directly across I-10 from the Willow Hole Conservation Area (Exhibit 9, *MSHCP Conservation Areas*). While the project is not a Covered Activity under the MSHCP, it is directly referenced on page 4-49 of the MSHCP (“Biological Corridors and Linkages”) as a future activity that was in the process of being designed by CVWD.

5.1 MSHCP LOCAL DEVELOPMENT MITIGATION FEE

Under the MSHCP, five categories of development are required to pay a local development mitigation fee to the City of Cathedral City in order to provide revenue for the acquisition and conservation of MSHCP lands. These five development categories include the following:

1. Residential units, density less than 8.0 dwelling units per acre;
2. Residential units, density between 8.1 and 14.0 units per acre;
3. Residential units, density greater than 14.1 dwelling units per acre;
4. Commercial acreage; and
5. Industrial acreage.

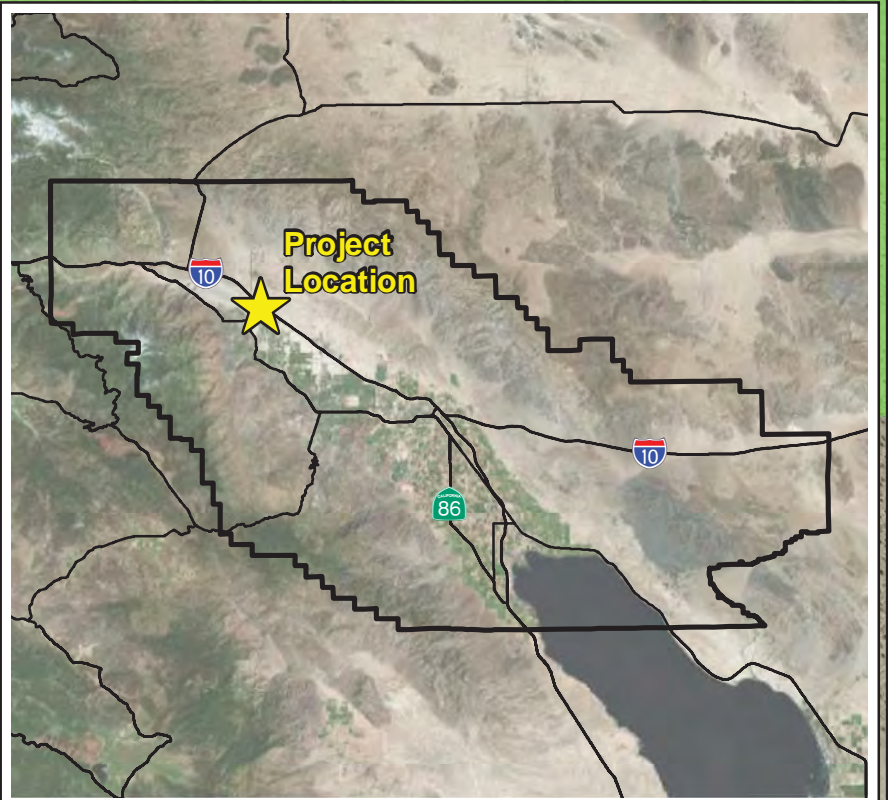
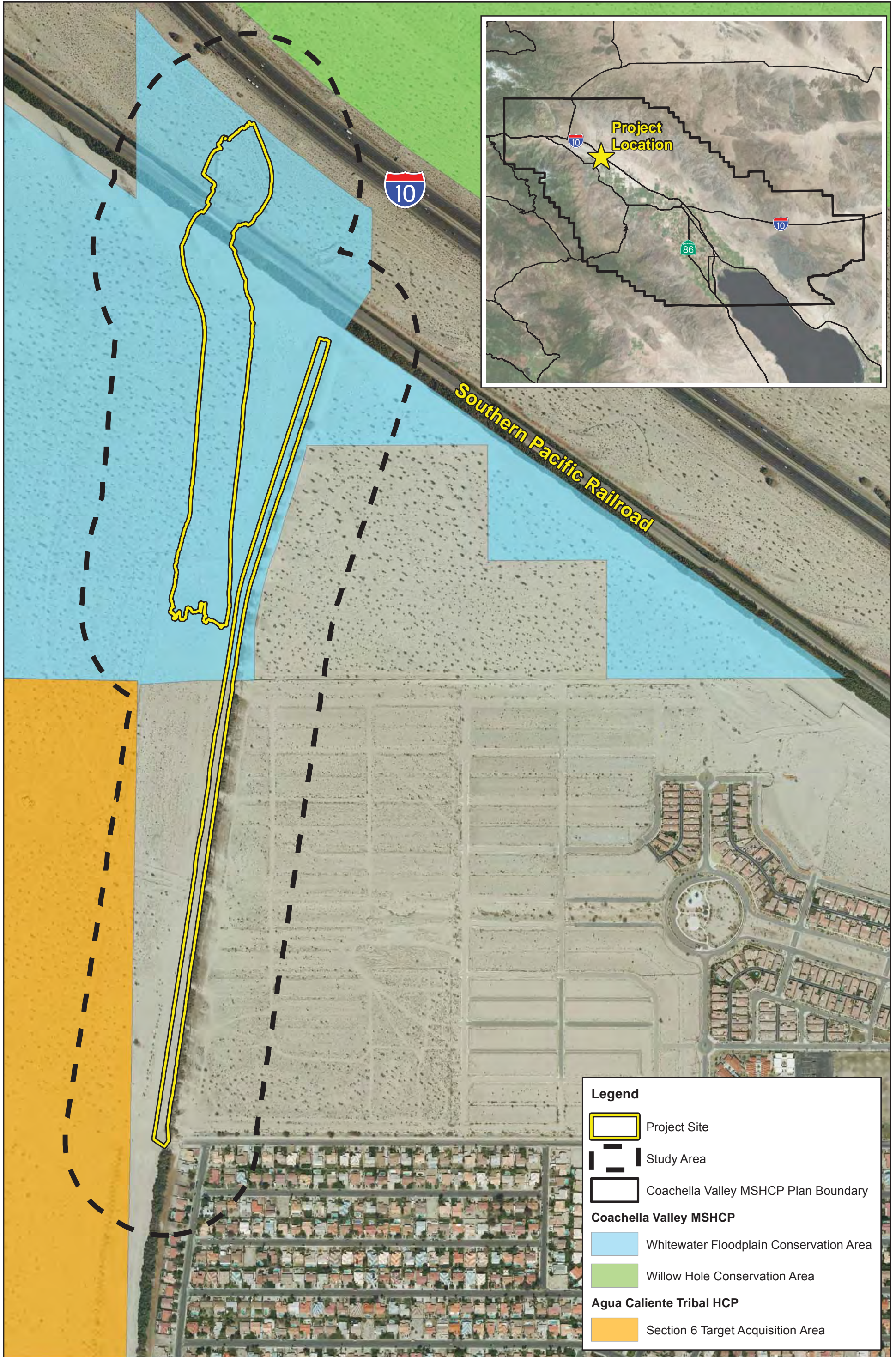
The proposed project does not fall into any of these five development categories, and thus it is exempt from the MSHCP local development mitigation fee.

5.2 JOINT PROJECT REVIEW

All projects implemented under local permittees’ jurisdiction in a conservation area that would result in disturbance to habitat, natural communities, biological corridors, or essential ecological processes are subject to a Joint Project Review Process. The purpose of the review is to allow the Coachella Valley Conservation Commission (CVCC) to facilitate and monitor the implementation of the MSHCP within the Plan Area. The proposed project is located within the Whitewater Floodplain Conservation Area and would result in both positive and negative impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e. sand transport), and thus is subject to the Joint Project Review Process.

5.3 HABITAT ASSESSMENT RESULTS AND FOCUSED SURVEYS

This section describes surveys that may be required by the MSHCP for covered species that are known to occur within the Whitewater Floodplain Conservation Area, as well as their



Legend

- Project Site
- Study Area
- Coachella Valley MSHCP Plan Boundary

Coachella Valley MSHCP

- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area

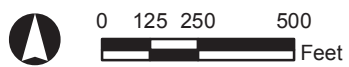
Agua Caliente Tribal HCP

- Section 6 Target Acquisition Area

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

MSHCP Conservation Areas



Source: CVMSHCP- http://www.cvmshcp.org/GIS_Data.htm, County of Riverside, Eagle Aerial Solutions -- 2013

potential to occur within the project site based on Michael Baker's August 2015 field survey and 2016 focused surveys results for burrowing owl and sensitive plants. Mitigation text is taken directly from Section 4.4 of the MSHCP, but only those parts that are relevant to the project site are included.

Burrowing Owl Focused Survey

Burrowing owl focused surveys were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted by Michael Baker International (Michael Baker) biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, a focused burrow survey was conducted on April 19, 2016.

Sensitive Plant Focused Survey

Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted four sensitive plant surveys to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). The project footprint and areas within 200 feet that provide suitable habitat for sensitive plant species known to occur within the vicinity of the project site were surveyed.

Specifically, the surveys focused on the presence/absence of chaparral sand-verbena (*Abronia villosa* var. *aurita*) (CNPS Rare Plant Rank 1B.1), pygmy lotus (*Acmispon haydonii*) (CNPS Rare Plant Rank 1B.3), Coachella Valley milk-vetch (CNPS Rare Plant Rank 1B.2 and federally endangered), triple-ribbed milk-vetch (*Astragalus tricarinatus*) (CNPS Rare Plant Rank 1B.2 and federally endangered), Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CNPS Rare Plant Rank 1B.1), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) (CNPS Rare Plant Rank 1B.2), flat-seeded spruce (*Euphorbia platysperma*) (CNPS Rare Plant Rank 1B.2), Little San Bernardino Mtns. Linanthus (*Linanthus maculatus*) (CNPS Rare Plant Rank 1B.2), Latimer's woodland-gilia (*Saltugilia latimeri*) (CNPS Rare Plant Rank 1B.2), and Mecca-aster (*Xylorhiza cognata*) (CNPS Rare Plant Rank 1B.2).

5.3.1 Coachella Valley Milk-vetch

Habitat Assessment Results

Nearly the entire Whitewater Floodplain Conservation Area, including the project site, is designated as core habitat for Coachella Valley milk-vetch, occurrence records are located throughout the conservation area, and designated Critical Habitat is located immediately adjacent to the project site. This species is determined by Michael Baker to have a high potential to occur on-site.

Focused Survey Results

Approximately 266 individual Coachella Valley milk-vetch plants were detected during the on April 14, April 19, May 4, and June 15, 2016 surveys.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.2 Triple-ribbed Milk-vetch

Habitat Assessment Results

While suitable habitat is located throughout the Whitewater Floodplain Conservation Area and project site, the project site is well outside of the known elevation range for this species. Triple-ribbed milk-vetch is presumed absent from the project site. However, focused surveys may still be required if the project site is still located in modeled suitable habitat. Based on information within the MSHCP, it is unknown if the project site is within any of these areas.

Focused Survey Results

Triple-ribbed milk-vetch was not detected during the on April 14, April 19, May 4, and June 15, 2016 surveys.

Avoidance, Minimization, and Mitigation Measures

The project site is not located within modeled triple-ribbed milkvetch Habitat, and this species was not observed during the 2016 focused surveys. No avoidance, minimization, and mitigation measures will be required.

5.3.3 Coachella Valley Giant Sand-treader Cricket

Habitat Assessment Results

Suitable habitat for this species is located throughout the project site, and nearly the entire Whitewater Floodplain Conservation Area has been designated as core habitat for this species. It has been extensively trapped west of Gene Autry Trail, although has not yet been captured east of this road (where the project site is located). Coachella Valley giant sand-treader cricket has a moderate to high potential to occur on-site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.4 Coachella Valley Jerusalem Cricket

Habitat Assessment Results

No dune habitat is present within the project site, and according to the MSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found. Coachella Valley Jerusalem cricket is presumed absent within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.5 Coachella Valley Fringe-toed Lizard

Habitat Assessment Results

Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west on the Whitewater Floodplain Preserve. Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.6 Desert Tortoise

Habitat Assessment Results

While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows, and very few burrows at all, were observed during the habitat assessment, and desert tortoise has a low potential to occur within the project site. However, it may inhabit the site in the future if conditions change.

Avoidance, Minimization, and Mitigation Measures

Within Conservation Areas, the Permittees will require surveys for desert tortoise for Development in modeled desert tortoise Habitat. However, the project site is not located within modeled desert tortoise Habitat, and therefore focused surveys for this species are not required.

5.3.7 Flat-tailed Horned Lizard

Habitat Assessment Results

Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard, and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.8 Burrowing Owl

Habitat Assessment Results

The project site and adjacent areas, particularly an abandoned residential development to the east, contain suitable habitat for burrowing owl. However, this species is determined by Michael Baker to have a low potential to currently be inhabiting the site, as no suitable burrows were located within the entire survey area. However, as described below, pre-construction burrowing owl surveys may still be required.

Focused Survey Results

Based on the results of the focused burrow survey conducted on April 19, 2016, it was determined the project site and survey area (i.e., areas within 500 feet of the project footprint) provides a limited amount of suitable burrows for burrowing owls. While the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent.

It should be noted that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area.

Avoidance, Minimization, and Mitigation Measures

For projects that are subject to CEQA, the Permittees will require burrowing owl surveys in the Conservation Areas using an accepted protocol (as determined by the CVCC in coordination with the Permittees and the Wildlife Agencies). Prior to Development, the construction area and adjacent areas within 500 feet of the Development site, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a burrow is located, the biologist will determine if an owl is present in the burrow. If the burrow is determined to be occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No Development or O&M activities will be permitted within the buffer until the young are no longer dependent on the burrow.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the Covered Activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation

and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

5.3.9 Le Conte's Thrasher

Habitat Assessment Results

Nearly the entire Whitewater Floodplain Conservation Area has been designated as conserved habitat for this species. Suitable habitat, including large intershrub spaces, is located throughout the project site. Le Conte's thrasher has a moderate potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

In modeled Le Conte's thrasher Habitat in all the Conservation Areas, during the nesting season, January 15 - June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500-foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season of January 15 - June 15 or until the young have fledged.

5.3.10 Coachella Valley Round-tailed Ground Squirrel

Habitat Assessment Results

Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the MSHCP as core habitat. Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species to remain in compliance.

5.3.11 Palm Springs Pocket Mouse

Habitat Assessment Results

Nearly all of the Whitewater Floodplain Conservation Area has been designated by the MSHCP as a core habitat area. Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

Avoidance, Minimization, and Mitigation Measures

The MSHCP does not require any surveys or additional measures for this species in the Whitewater Floodplain Conservation Area to remain in compliance.

5.4 LAND USE ADJACENCY GUIDELINES

The purpose of Land Use Adjacency Guidelines is to avoid or minimize indirect effects from Development adjacent to or within the Conservation Areas. Adjacent means sharing a common boundary with any parcel in a Conservation Area. Such indirect effects are commonly referred to as edge effects, and may include noise, lighting, drainage, intrusion of people, and the introduction of non-native plants and non-native predators such as dogs and cats. The project site is located within the Whitewater Floodplain Conservation Area, and as such the following Land Use Adjacency Guidelines shall be considered and implemented where applicable.

5.4.1 Drainage

Proposed Development adjacent to or within a Conservation Area shall incorporate plans to ensure that the quantity and quality of runoff discharged to the adjacent Conservation Area is not altered in an adverse way when compared with existing conditions. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the adjacent Conservation Area.

The proposed project would alter the flow direction of water within the Whitewater River, but all existing and future flows are still located within the Whitewater River Conservation Area. There would be no changes to the quantity or quality of runoff or other water discharged to the Conservation Area.

5.4.2 Toxics

Land uses proposed adjacent to or within a Conservation Area that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife and plant species, Habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in any discharge to the adjacent Conservation Area.

The proposed project would not generate toxic bioproducts or use toxic chemicals. Any spills of hazardous materials from project vehicles or equipment would be contained, cleaned up, and disposed of immediately.

5.4.3 Lighting

For proposed Development adjacent to or within a Conservation Area, lighting shall be shielded and directed toward the developed area. Landscape shielding or other appropriate methods shall be incorporated in project designs to minimize the effects of lighting adjacent to or within the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

The proposed project would not require any additional lighting.

5.4.4 Noise

Proposed Development adjacent to or within a Conservation Area that generates noise in excess of 75 dBA Leq hourly shall incorporate setbacks, berms, or walls, as appropriate, to minimize the effects of noise on the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

It is currently unknown what level of noise would be created during construction by the proposed project. If the noise level exceeds the stated threshold, barriers or measures will be implemented.

5.4.5 Invasives

Invasive, non-native plant species shall not be incorporated in the landscape for land uses adjacent to or within a Conservation Area. Landscape treatments within or adjacent to a Conservation Area shall incorporate native plant materials to the maximum extent Feasible; recommended native species are listed in Table 4-112. The plants listed in Table 4-113 shall not be used within or adjacent to a Conservation Area. This list may be amended from time to time through a Minor Amendment with Wildlife Agency Concurrence.

The proposed project would not require any landscaping or planting.

5.4.6 Barriers

Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

The proposed project would not change any land uses in the area other than to redirect water in the Whitewater River through the project site. No human use of the site is proposed. Thus, no additional barriers would be required.

5.4.7 Grading/Land Development

Manufactured slopes associated with site Development shall not extend into adjacent land in a Conservation Area.

The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.

Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

5.5 FLUVIAL SAND TRANSPORT

“Fluvial sand transport” refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley. On the valley floor, continued occasional water flow will maintain fluvial transport, but high winds will also pick up sediment and carry it (aeolian transport). In accordance with Section 4.4 of the MSHCP, the following additional measure would be required for the proposed project to remain in compliance with the MSHCP. The following text is taken directly from Section 4.4:

Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongó Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.

The proposed project would create an opening in the tamarisk windrows for rerouting water from the washes to the north of I-10 to areas south of the railroad tracks. This would improve fluvial sand transport and may result in minor improvements to aeolian sand transport. The project is designed and intended to enhance sand transport between the Willow Hole

Conservation Area and the Whitewater Floodplain Conservation Area, and therefore is already in compliance with this measure.

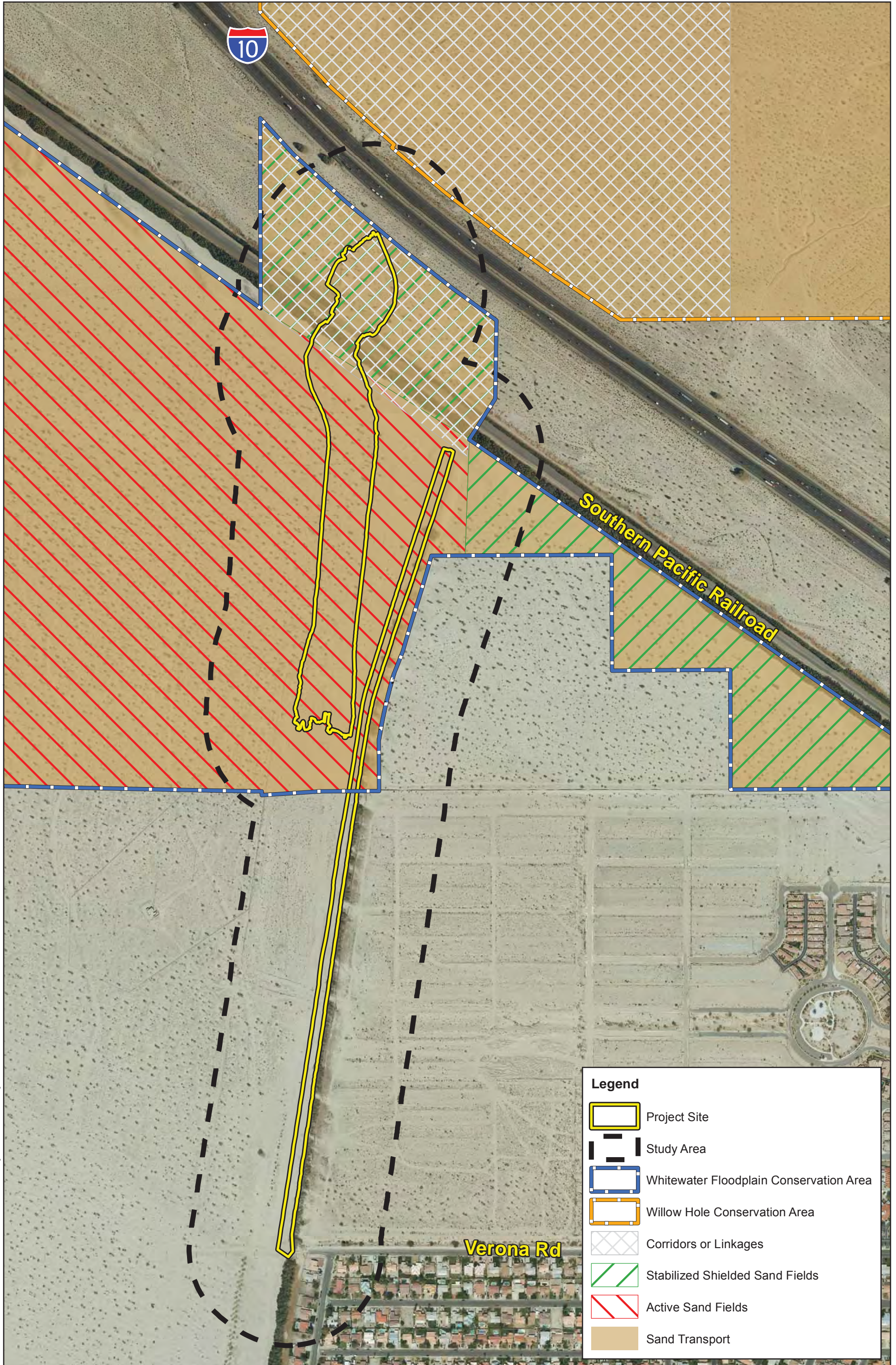
5.6 PROTECTION OF NATURAL COMMUNITIES

5.6.1 Vegetation

Vegetation within the project site is characterized as Sonoran creosote bush scrub, which is the most abundant natural community in the entire Plan Area. According to Section 10.3.1.1 of the MSHCP, adherence to other Conservation Objectives, primarily those for other species, other communities, for essential ecological processes (i.e. sand transport), or for biological corridors, will help to conserve this community. However, as described in Section 10.3.1.2 of the MSHCP, monitoring of invasive weed species within this habitat type may be needed to help ensure its continued integrity.

5.6.2 Sand Fields

The project site is underlain by stabilized shielded sand fields north of the railroad tracks and active sand fields south of the tracks (Exhibit 10, *Sand Fields, Essential Ecological Processes, and Biological Corridors*). Stabilized shield sand fields are defined as sand fields that have already been compromised by blockage or shielding of the sand source and sand transport systems by barriers such as roads, buildings, and vegetation. In this instance, the stabilized shield sand fields within the project site have been blocked from their sand source by the railroad tracks on their southern end, which include tamarisk windrows both to the north and south, and by I-10 to the north. Active sand fields are defined as areas of active sand transport, typically with little or no vegetation where the accumulated sand is not deep enough to form dunes. Monitoring of invasive weed species within the project site, limiting of activities that may result in sand stabilization, and enhancement of sand transport between the Willow Hole and Whitewater Floodplain Conservation Areas will help to protect these sand fields.



Legend

-  Project Site
-  Study Area
-  Whitewater Floodplain Conservation Area
-  Willow Hole Conservation Area
-  Corridors or Linkages
-  Stabilized Shielded Sand Fields
-  Active Sand Fields
-  Sand Transport

11/4/2016 JUN 11:44:05\W\DXD\HA\Ex10 Sand Fields, Essential Ecological Processes, and Biological Corridors.mxd

Section 6 Recommendations

6.1 JOINT PROJECT REVIEW

The project site is located within the Whitewater Floodplain Conservation Area and would impact habitat, natural communities, biological corridors, and essential ecological processes, and thus is subject to the Joint Project Review Process.

6.2 SURVEY NEEDS

The MSHCP does not require focused surveys for Coachella Valley milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, or Coachella Valley round-tailed ground squirrel. However, the MSHCP does require focused surveys and potentially additional mitigation for triple-ribbed milk-vetch, desert tortoise, burrowing owl, Le Conte's thrasher, and Palm Springs pocket mouse. Details of required surveys for these five species are provided in Section 5.3 above. Based on Michael Baker's assessment of the site, no focused surveys for any of the above species will be required, for the following reasons. The project site is excluded from the requirement for triple-ribbed milkvetch and desert tortoise surveys because it is not within modeled habitat. Le Conte's thrasher surveys will occur jointly as part of general pre-construction nesting bird clearance surveys and will not require a separate effort. The project site is not within a stated survey area for Palm Springs pocket mouse.

A burrowing owl focused survey was conducted in 2016. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent from the project site. However, six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east of the project site. Prior to construction, a pre-construction burrowing owl and nesting bird clearance survey shall be conducted to ensure burrowing owl remain absent from the project site.

Sensitive plant survey was conducted on April 14, April 19, May 4, and June 15, 2016 survey to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996).

One sensitive plant species, Coachella Valley milk-vetch was observed during the focused surveys. Approximately 266 individuals were observed throughout the survey area. No other sensitive plant species were observed on-site during the sensitive plant surveys.

6.3 PROTECTION OF NATURAL COMMUNITIES

To minimize adverse effects on Sonoran creosote bush scrub, active sand fields, and stabilized shielded sand fields, activities that may result in sand stabilization (e.g. excessive driving by vehicles or equipment) should be minimized and vehicles and equipment that are working within the site boundaries should be washed prior to entering to reduce the potential for transmission of invasive weed seeds.

6.4 TRIBAL HABITAT CONSERVATION PLAN

The project site is located within 500 feet to the north of the boundary for the Agua Caliente Band of Cahuilla Indians' Tribal Habitat Conservation Plan (THCP). Under the THCP, fluvial sand transport along with a number of species are protected within Section 6 of Township 4 south, Range 5 east, also known as the Section 6 Target Acquisition Area (Section 6). Habitat for Coachella Valley fringe-toed lizard, Coachella Valley giant sand-treader cricket, flat-tailed horned lizard, Palm Springs pocket mouse, Coachella Valley round-tailed ground squirrel, Coachella Valley Jerusalem cricket, Coachella Valley milk-vetch, and Le Conte's thrasher is all conserved within Section 6.

The proposed project would open a pathway underneath the railroad that would not only facilitate water transport between areas north and south of I-10 (i.e. between the Willow Hole and Whitewater Floodplain Conservation Areas), but would also improve sand transport and movement of wildlife between these areas. Required minimization for Palm Springs pocket mouse and Le Conte's thrasher may result in reduced impacts to individuals downstream within Section 6. With proper implementation of all avoidance, minimization, and mitigation measures, construction of the proposed project would not result in direct take of protected or covered species within Section 6, would not significantly disrupt downstream habitat, and would not adversely disrupt current fluvial sand transport through Section 6.

6.5 MIGRATORY BIRD TREATY ACT/FISH AND GAME CODE

Pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be conducted within thirty (30) days of the start of any ground disturbing activities to ensure that no nesting birds will be disturbed

during construction. If focused burrowing owl surveys are not required by the MSHCP, then the pre-construction nesting bird clearance survey should incorporate an emphasis on detection of burrowing owls, as well as Le Conte's thrashers. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

Pursuant to Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW will be required prior to the removal of any raptor nest on the project site, if found.

Section 7 Conclusions

The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley MSHCP. It would facilitate water transport from areas north of I-10 to areas south of I-10 by establishing a crossing underneath the existing railroad tracks. In the process, it would enhance both fluvial sand transport and wildlife movement between the two areas. The project will be subject to the Joint Project Review Process but is exempt from the local development mitigation fees.

Table 9-1a of the MSHCP notes that including Coachella Valley milk-vetch, triple-ribbed milk-vetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, desert tortoise, flat-tailed horned lizard, burrowing owl, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse are all expected to occur within the Whitewater Floodplain Conservation Area. All of these species are covered under the MSHCP. Of these species, based on Michael Baker's habitat assessment and focused surveys Coachella Valley giant sand-treader cricket, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse all have a moderate or higher potential to occur within the project site. Coachella Valley milk-vetch was observed on-site.

Desert tortoise and burrowing owl have a low potential to occur, and triple-ribbed milk-vetch and Coachella Valley Jerusalem cricket are both presumed absent from the project site. Under the MSHCP and with Michael Baker's analysis of MSHCP avoidance measures and site conditions, species-specific surveys will not be required. Le Conte's thrasher surveys will occur jointly during a general nesting bird clearance survey. No additional surveys are recommended other than a pre-construction nesting bird clearance survey.

The project site is vegetated by Sonoran creosote bush scrub and is underlain by both stabilized shielded sand fields and active sand fields. These resources can be protected by reducing the amount of unnecessary disturbance (e.g. vehicular) within the project site, requiring that all vehicles and equipment be washed prior to entering the site to reduce the transmission of invasive weed seeds, and by generally conforming to the MSHCP's avoidance, minimization, and mitigation measures.

With completion of the recommendations provided in Section 6 of this document and payment of the MSHCP mitigation fees, development of the project site is fully consistent with the Coachella Valley MSHCP.

Section 8 Certification

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

Date: 11/16/16

Signed:



Thomas J. McGill, Ph.D.

Section 9 References

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Appendix A Site Photographs



Photograph 1: Facing north into the project site, which is vegetated with Sonoran creosote bush scrub. Windrows are present to the north and east.



Photograph 2: Facing southeast. A windrow runs along the eastern boundary of the project site. This area would be stabilized as a cement slope as part of this project.



Photograph 3: Facing north. The railroad is bordered to the north and south by a tamarisk (*Tamarix* sp.) windrow. The windrow in the distance is south of the railroad tracks.



Photograph 4: Facing west. Small sand hummocks are present throughout the site, generally at the bases of shrubs. Dunes are not present within the site.



Photograph 5: Facing west from the center of the railroad tracks. Tamarisk windrows are located both to the north and south. The tracks and these windrows restrict aeolian sand transport between areas to the north and south.



Photograph 6: Facing northwest. The project would utilize this bridge undercrossing to allow the movement of water from the north to the south from the Morongo Wash to the Whitewater River.



Photograph 7: Facing southeast. The project would utilize this bridge undercrossing to allow the movement of water from the north to the south from the Morongo Wash to the Whitewater River.



Photograph 8: Facing north at Sonoran creosote bush scrub north of the railroad. Interstate 10 is in the background.



Photograph 9: Facing north. This crossing allows movement of wildlife, water, and sand under Interstate 10. However, because of the windrows and railroad tracks, water is currently restricted once it enters the area between the interstate and railroad tracks.



Photograph 10: Facing north. The area immediately east of the project site (south of the railroad) is an abandoned housing development, where deteriorating roads and housing pads are still visible.

**Appendix B Potentially Occurring Sensitive
Biological Resources**

Table B-1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
WILDLIFE SPECIES				
<i>Accipiter cooperii</i> Cooper's hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	Low. There is marginal habitat for this species on-site.
<i>Accipiter striatus</i> sharp-shinned hawk	Fed: None CA: WL	Found in pine, fir and aspen forests. They can be found hunting in forest interior and edges from sea level to near alpine areas. Can also be found in rural, suburban and agricultural areas, where they often hunt at bird feeders. Typically found in southern California in the winter months.	No	Low. There is marginal habitat for this species on-site.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (<i>Artemisia californica</i>), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	Presumed absent. No suitable habitat is present on-site.
<i>Aquila chrysaetos</i> golden eagle	Fed: None CA: FP;WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	Low. There is suitable foraging habitat for this species on-site but no suitable nesting habitat.
<i>Asio otus</i> long-eared owl	Fed: None CA: CSC	Uncommon yearlong resident throughout the state except the Central Valley and Southern California deserts where it is an uncommon winter visitor. Requires riparian habitat and uses live oak thickets and other dense stands of trees.	No	Low. The row of salt cedar provides marginal habitat for this species on-site.
<i>Athene cunicularia</i> burrowing owl	Fed: None CA: CSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	Low. There is marginal habitat for this species on-site.
<i>Aythya americana</i> redhead	Fed: None CA: CSC	Occurs year round in California, though status varies regionally. Nest in freshwater emergent wetlands where dense stands of cattails and tules are interspersed with areas of deep, open water.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	Fed: None CA: CSC	Common resident of sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California. Occurs mainly in arid coastal and desert border areas. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	Low. There is marginal habitat for this species on-site.
<i>Chaetura vauxi</i> Vaux's swift	Fed: None CA: CSC	Prefers redwood and Douglas-fir habitats with nest-sites in large hollow trees and snags, especially tall, burned-out stubs.	No	Presumed absent. This species is not usually found over open desert habitats. Local records are mostly in urban or forested areas.
<i>Circus cyaneus</i> northern harrier	Fed: None CA: CSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Mostly found in flat, or hummocky, open areas of tall, dense grasses moist or dry shrubs, and edges for nesting, cover, and feeding.	No	Low. There is marginal habitat for this species on-site.
<i>Contopus cooperi</i> olive-sided flycatcher	Fed: None CA: CSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 ft throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine.	No	Presumed absent. No suitable habitat is present on-site.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	Fed: None CA: Candidate e THR; CSC	Now considered uncommon in California. Details of its distribution are not well known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats.	No	Low. There is marginal foraging habitat for this species on-site.
<i>Crotalus ruber</i> red-diamond rattlesnake	Fed: None CA: CSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Cypseloides niger</i> black swift	Fed: None CA: CSC	Occurs in California as a summer resident and migrant from mid-April to mid-October. Restricted to a very limited supply of potential nesting locations which include, behind or beside permanent or semi-permanent waterfalls, on perpendicular cliffs near water and sea caves.	No	Presumed absent. No suitable habitat is present on-site.
<i>Dinacoma caseyi</i> Casey's June beetle	Fed: END CA: None	All <i>Dinacoma</i> populations are associated with alluvial sediments occurring in or contiguous with bases of desert alluvial fans, and the broad, gently sloping, depositional surfaces at the base of the Santa Rosa mountain ranges in the dry Coachella valley region. Most commonly associated with the Carsitas series soil.	No	Low. There is suitable habitat throughout the project site. This species is only known to occur in isolated populations approximately .5 miles southwest of the project site.
<i>Dipodomys merriami collinus</i> Aguanga kangaroo rat	Fed: None CA: CSC	Typically found in Riversidean alluvial fan sage scrub habitat, but may also be found in Riversidean sage scrub, chaparral and grassland vegetation in adjacent to upland areas. Often associated with sandy-loam soils that are common throughout the designated core drainages.	No	Presumed absent. No suitable habitat is present on-site.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	Fed: END CA: CSC	Primarily found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidean alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	Presumed absent. No suitable habitat is present on-site.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	Fed: END CA: END	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	Presumed absent. No suitable habitat is present on-site.
<i>Eremophila alpestris actia</i> California horned lark	Fed: None CA: WL	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	No	Low. There is marginal habitat for this species on-site.
<i>Falco mexicanus</i> prairie falcon	Fed: None CA: WL	Commonly occur in arid and semiarid shrubland and grassland community types. Also occasionally found in open parklands within coniferous forests. During the breeding season, they are found commonly in foothills and mountains which provide cliffs and escarpments suitable for nest sites.	No	High. There is suitable habitat throughout the site and this species is frequently sighted in the area.
<i>Gavia immer</i> common loon	Fed: None CA: CSC	Lakes with coves and islands are preferred habitat as they provide cover from predators. In their winter range along the coasts, they occur fairly close to the shore and in bays and estuaries.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Gopherus agassizii</i> desert tortoise	Fed: THR CA: THR	Widely distributed in the Mojave, Sonoran, and Colorado deserts from below sea level to 7,220 feet. Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	No	Low. While suitable habitat is present throughout the site, no desert tortoise burrows were found and very few burrows (all rodent- or lizard-sized) were found on the entire site.
<i>Icteria virens</i> yellow-breasted chat	Fed: None CA: CSC	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America.	No	Presumed absent. No suitable habitat is present on-site.
<i>Lanius ludovicianus</i> loggerhead shrike	Fed: None CA: CSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Yes	Present. Multiple individuals were on-site during the survey.
<i>Larus californicus</i> California gull	Fed: None CA: WL	Require isolated islands in rivers, reservoirs and natural lakes for nesting, where predations pressures from terrestrial mammals are diminished. Uses both fresh and saline aquatic habitats at variable elevations and degrees of aridity for nesting and for opportunistic foraging.	No	Presumed absent. No suitable habitat is present on-site. Well known to occur on lakes at nearby golf courses.
<i>Lasiurus xanthinus</i> western yellow bat	Fed: None CA: CSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	Presumed absent. No suitable habitat is present on-site.
<i>Macrobaenetes valgum</i> Coachella giant sand treader cricket	Fed: None CA: None	Nocturnal and moisture sensitive insects. Emergence occurs with winter rains and appear at maximum densities in January-February. Can be detected via their characteristic delta-shaped burrow excavations.	No	Moderate/High. There is suitable habitat throughout the project site.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	Fed: None CA: CSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	Presumed absent. No suitable habitat is present on-site. Woodrat sign (middens, scat) was not observed during the survey.
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	Moderate. There is suitable habitat throughout the project site.
<i>Nyctinomops macrotis</i> big free-tailed bat	Fed: None CA: CSC	Maternity roosts have been documented in rock crevices, with evidence of long term use. Mainly roost in crevices and rocks in cliff situations. Some have been documented roosting in buildings, caves, and tree cavities.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Oreothlypis luciae</i> Lucy's warbler	Fed: None CA: CSC	Found in desert and riparian areas of the southwestern US and northwestern Mexico. Often found in mesquite woodlands. Also breed in cottonwood-willow riparian woodlands, sycamore-oak woods, and salt cedar stands.	No	Low. While suitable habitat is present on-site, this species is a rare visitor to the Coachella Valley.
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	Fed: None CA: FP	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health.	No	Presumed absent. No suitable habitat is present on-site.
<i>Ovis canadensis nelsoni</i> pop. 2 Peninsular bighorn sheep DPS	Fed: END CA: THR,FP	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health. Found mainly in the Peninsular Ranges.	No	Presumed absent. No suitable habitat is present on-site.
<i>Pandion haliaetus</i> osprey	Fed: None CA: WL	Remain close to still or slow-moving bodies of water including oceans, rivers, lakes, mangroves, coastal wetlands, lagoons, reefs, estuaries and marshes. Generally nest in high places, such as trees, power poles, or cliffs.	No	Presumed absent. No suitable habitat is present on-site.
<i>Passerculus sandwichensis rostratus</i> large-billed savannah sparrow	Fed: None CA: CSC	Non-breeding visitor occurring primarily from late August to early March along the southern coast and from late July to mid-February at the Salton Sea. Breeding habitat is limited to open, low salt marsh vegetation, including grasses, pickleweed, and iodine bush.	No	Presumed absent. No suitable habitat is present on-site.
<i>Perognathus longimembris bangsi</i> Palm Springs pocket mouse	Fed: None CA: CSC	Inhabits areas having flat to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils on slopes ranging from 0% to approximately 15%. Remaining habitat in the Coachella Valley and environs is about 142,000 acres.	No	Moderate/High. There is suitable habitat throughout the project site. The Whitewater Floodplain Conservation Area has been designated as a core habitat area for this species.
<i>Phalacrocorax auritus</i> double-crested cormorant	Fed: None CA: WL	Yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. August to May, fairly common to locally very common along the coast and in estuaries and salt ponds. Uncommon in marine subtidal habitats from San Luis Obispo Co. south, and very rare to the north.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Phrynosoma blainvillii</i> coast horned lizard	Fed: None CA: CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	Presumed absent. The project site is outside of the typical range for this species.
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	Fed: None CA: Candidate END/CSC	Typical habitat is sandy desert hardpan or gravel flats with scattered sparse vegetation of low species diversity. Most common in areas with high density of harvester ants and fine windblown sand, but rarely occurs on dunes.	No	Moderate. There is suitable habitat throughout the site. The site is at the northern end of this species' range. Unidentified horned lizard scat was identified on-site.
<i>Piranga rubra</i> summer tanager	Fed: None CA: CSC	Breed in gaps and edges of open deciduous or pine-oak forests across the southern and mid-Atlantic U.S. Uncommon (formerly common) summer resident and breeder in desert riparian habitat along lower Colorado River. Breeds in mature, desert riparian habitat dominated by cottonwoods and willows.	No	Presumed absent. No suitable habitat is present on-site.
<i>Poliophtila melanura</i> black-tailed gnatcatcher	Fed: None CA: WL	In Mojave, Great Basin, Colorado and Sonoran desert communities, prefers nesting and foraging in densely lined arroyos and washes dominated by creosote bush and salt bush with scattered bursage, burrowed, ocotillo, saguaro, barrel cactus, nipple cactus, and prickly pear and cholla.	No	Low. There is marginal habitat for this species on-site, which is heavily associated with arboreal washes.
<i>Rana draytonii</i> California red-legged frog	Fed: THR CA: CSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	Presumed absent. No suitable habitat is present on-site.
<i>Rana muscosa</i> southern mountain yellow-legged frog	Fed: END CA: END	Inhabits lakes, ponds, meadow streams, isolated pools, sunny riverbanks in the southern Sierra Nevada Mountains. In the mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt.	No	Presumed absent. No suitable habitat is present on-site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Setophaga petechia</i> yellow warbler	Fed: None CA: CSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	Presumed absent. No suitable habitat is present on-site.
<i>Stenopelmatus calhullaensis</i> Coachella Valley Jerusalem cricket	Fed: None CA: None	Restricted to desert dunes.	No	Presumed absent. No suitable habitat is present on-site.
<i>Thamnophis hammondi</i> two-striped garter snake	Fed: None CA: CSC	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	No	Presumed absent. No suitable habitat is present on-site.
<i>Toxostoma crissale</i> Crissal thrasher	Fed: None CA: CSC	Year round resident in California. Occupies a relatively large variety of desert riparian and scrub habitats from below sea level to over 6,000 feet. The common factor, regardless of habitat type and species of shrub, is dense, low scrubby vegetation. Primarily occupies riparian scrub or woodland at lower elevations.	No	Presumed absent. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area.
<i>Toxostoma lecontei</i> Le Conte's thrasher	Fed: None CA: CSC	An uncommon to rare, local resident in southern California deserts from southern Mono Co. south to the Mexican border, and in western and southern San Joaquin Valley. Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	No	Moderate. There is suitable habitat throughout the site.
<i>Uma inornata</i> Coachella Valley fringe-toed lizard	Fed: THR CA: END	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, washes, and flats with sandy hummocks formed around the bases of vegetation. Needs fine, loose sand for burrowing.	No	Moderate. There is suitable habitat throughout much of the site outside of the disturbed areas. Sandy habitat within the site is still generally sufficient for this species.
<i>Vireo bellii pusillus</i> least Bell's vireo	Fed: END CA: END	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	Presumed absent. No suitable habitat is present.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Xerospermophilus tereticaudus chlorus</i> Coachella Valley round-tailed ground squirrel	Fed: None CA: CSC	Inhabits sandy arid regions of Lower Sonoran Life Zone. Its scrub and wash habitats include mesquite and creosote dominated sand dunes, creosote bush scrub, creosote palo verde and saltbush/alkali scrub.	No	Moderate. There is suitable habitat throughout the site.
PLANT SPECIES				
<i>Abronia villosa var. aurita</i> chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet. Blooming period is from January to September.	No	Presumed absent. No suitable habitat is present. Not observed during the 2016 sensitive plant focused survey.
<i>Acmispon haydonii</i> pygmy lotus	Fed: None CA: None CNPS: 1B.3	Grows in rocky soil within Sonoran desert scrub, pinyon and juniper woodland. Found at elevations ranging from 1,706 to 3,937 feet. Blooming period is from January to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Aloysia wrightii</i> Wright's beebrush	Fed: None CA: None CNPS: 4.3	Prefers rocky and carbonate soils within Joshua tree woodland, pinyon and juniper woodland. Found at elevations ranging from 2,953 to 5,249 feet. Blooming period is from April to October.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Ambrosia monogyra</i> singlewhorl burrobrush	Fed: None CA: None CNPS: 2B.2	Found in chaparral and Sonoran desert scrub habitat within sandy soil. Found at elevations ranging from 33 to 1,640 feet in elevation. Blooming period is from August to November.	No	Presumed absent. This species was not observed during the habitat assessment. Not observed during the 2016 sensitive plant focused survey.
<i>Astragalus lentiginosus var. borreganus</i> Borrego milk-vetch	Fed: None CA: None CNPS: 4.3	Grows in sandy soils within Mojavean desert scrub and Sonoran desert scrub. Found at elevations ranging from 98 to 1,050 feet in elevation. Blooming period is from February to May.	No	Moderate. There is suitable habitat throughout the site. Not observed during the 2016 sensitive plant focused survey.
<i>Astragalus lentiginosus var. coachellae</i> Coachella Valley milk-vetch	Fed: END CA: None CNPS: 1B.2	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation. Blooming period is from February to May.	Yes	Present. Species was documented on-site during the sensitive plant focused survey. This species and its critical habitat are abundantly documented in the project vicinity.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	Fed: END CA: None CNPS: 1B.2	Found in sandy or gravelly soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 1,476 to 3,904 feet. Blooming period is from February to May.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Atriplex parishii</i> Parish's brittlestem	Fed: None CA: None CNPS: 1B.1	Habitat types include chenopod scrub, playas, and vernal pools. Found at elevations ranging from 82 to 6,234 feet. Blooming period is from June to October.	No	Presumed absent. No suitable habitat is present.
<i>Ayenia compacta</i> California ayenia	Fed: None CA: None CNPS: 2B.3	Grows in rocky soils within Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 492 to 3,593 feet. Blooming period is from March to April.	No	Presumed absent. No suitable habitat is present.
<i>Caulanthus simulans</i> Payson's jewelflower	Fed: None CA: None CNPS: 4.2	Preferred habitats include chaparral and coastal scrub with sandy and granitic soils. Found at elevations ranging from 295 to 7,218 feet. Blooming period is from February to June.	No	Presumed absent. No suitable habitat is present.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Grows on sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Cryptantha costata</i> ribbed cryptantha	Fed: None CA: None CNPS: 4.3	Preferred habitat includes desert dunes, Mojavean desert scrub, and Sonoran desert scrub habitats on sandy soil. Found at elevations ranging from 197 to 1,640 feet. Blooming period is from February to May.	No	Moderate. There is suitable habitat on-site.
<i>Cryptantha holoptera</i> winged cryptantha	Fed: None CA: None CNPS: 4.3	Found in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 328 to 5,545 feet. Blooming period is from March to April.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Cuscuta californica</i> var. <i>apiculata</i> pointed dodder	Fed: None CA: None CNPS: 3	Occurs in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 0 to 1640 feet. Blooming period is from February to August.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.
<i>Eriastrum harwoodii</i> Harwood's eriastrum	Fed: None CA: None CNPS: 1B.2	Grows on desert dunes. Found at elevations ranging from 410 to 3,002 feet. Blooming period is from March to June.	No	Presumed absent. No suitable habitat is present.
<i>Eschscholzia androuxii</i> Joshua Tree poppy	Fed: None CA: None CNPS: 4.3	Grows in desert washes, flats, and slopes; sandy, gravelly and/or rocky within Joshua tree woodland and Mojavean desert scrub habitats. Found at elevations ranging from 1,919 to 5,528 feet. Blooming period is from February to June.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Euphorbia arizonica</i> Arizona spurge	Fed: None CA: None CNPS: 2B.3	Preferred habitat includes sandy, Sonoran desert scrub habitat. Found at elevations ranging from 164 to 984 feet. Blooming period is from March to April.	No	Moderate. There is suitable habitat on-site. Not observed during the 2016 sensitive plant focused survey.
<i>Euphorbia misera</i> cliff spurge	Fed: None CA: None CNPS: 2B.2	Found on rocky soils within coastal bluff scrub, coastal scrub, and Mojavean desert scrub habitat. Found at elevations ranging from 33 to 1,640 feet. Blooming period is from December to October.	No	Presumed absent. No suitable habitat is present.
<i>Euphorbia platysperma</i> flat-seeded spurge	Fed: None CA: None CNPS: 1B.2	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet. Blooming period is from February to September.	No	Low. There is suitable habitat, but the project site is outside of the known elevation range for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Galium angustifolium</i> ssp. <i>gracillimum</i> slender bedstraw	Fed: None CA: None CNPS: 4.2	Grows on rocky, granitic soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 427 to 5,085 feet. Blooming period is from April to June.	No	Presumed absent. No suitable habitat is present.
<i>Galium johnstonii</i> Johnston's bedstraw	Fed: None CA: None CNPS: 4.3	Preferred habitats include chaparral, riparian woodland, lower montane coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 4,003 to 7,546 feet. Blooming period is from June to July.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Heuchera hirsutissima</i> shaggy-haired alumroot	Fed: None CA: None CNPS: 1B.3	Occurs on rocky, granitic soils in subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 4,987 to 11,483 feet. Blooming period is from May to July.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Imperata brevifolia</i> California satintail	Fed: None CA: None CNPS: 2B.1	Found in chaparral, coastal scrub, Mojavean desert scrub, riparian scrub, meadows and seeps habitats. Found at elevations ranging from 0 to 3,986 feet. Blooming period is from September to May.	No	Presumed absent. No suitable habitat is present.
<i>Lilium parryi</i> lemon lily	Fed: None CA: None CNPS: 1B.2	Habitats include lower montane coniferous forest, riparian forest, upper montane coniferous forest, meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Linanthus jaegeri</i> San Jacinto linanthus	Fed: None CA: None CNPS: 1B.2	Grows on granitic, rocky soils within subalpine coniferous forest and upper montane coniferous forest. Found at elevations ranging from 7,201 to 10,007 feet. Blooming period is from July to September.	No	Presumed absent. The project site is well outside of the typical known elevation for this species.
<i>Linanthus maculatus</i> Little San Bernardino Mtns. linanthus	Fed: None CA: None CNPS: 1B.2	Preferred habitats include desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub in sandy soils. Found at elevations ranging from 640 to 6,808 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Mentzelia tricuspis</i> spiny-hair blazing star	Fed: None CA: None CNPS: 2B.1	Habitats include Mojavean desert scrub. Prefers sandy, gravelly, slopes and washes. Found at elevations ranging from 492 to 4,199 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Nemacaulis denudata</i> var. <i>gracilis</i> slender cottonheads	Fed: None CA: None CNPS: 2B.2	Occurs in coastal dunes, desert dunes, and Sonoran desert scrub habitats. Found at elevations ranging from 164 to 1,312 feet. Blooming period is from March to May.	No	Low. There is marginal habitat on-site.
<i>Penstemon clelandii</i> var. <i>connatus</i> San Jacinto beardtongue	Fed: None CA: None CNPS: 4.3	Grows on rocky soils within chaparral, Sonoran desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 1,312 to 4,921 feet. Blooming period is from March to May.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Satugilia latimeri</i> Latimer's woodland-gilia	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Mojavean desert scrub, pinyon and juniper woodland. Prefers rocky or sandy, often granitic, soils. Found at elevations ranging from 1,312 to 6,234 feet. Blooming period is from March to June.	No	Presumed absent. The project site is outside of the typical known elevation for this species. Not observed during the 2016 sensitive plant focused survey.
<i>Selaginella eremophila</i> desert spike-moss	Fed: None CA: None CNPS: 2B.2	Found in chaparral and Sonoran desert scrub habitats within gravelly or rocky soil. Found at elevations ranging from 656 to 2,953 feet. Blooming period is from May to July.	No	Presumed absent. No suitable habitat is present.
<i>Stemodia durantifolia</i> purple stemodia	Fed: None CA: None CNPS: 2B.1	Occurs in Sonoran desert scrub habitats. Found at elevations ranging from 591 to 984 feet. Blooming period is from January to December.	No	Presumed absent. This species is presumed extirpated in Riverside County.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
<i>Streptanthus campestris</i> southern jewelflower	Fed: None CA: None CNPS: 1B.3	Prefers chaparral, lower montane coniferous forest, pinyon and juniper woodland habitats. Found at elevations ranging from 2,953 to 7,546 feet. Blooming period is from April to July.	No	Presumed absent. The project site is outside of the typical known elevation for this species.
<i>Thelypteris puberula var. sonorensis</i> Sonoran maiden fern	Fed: None CA: None CNPS: 2B.2	Grows within meadows and seeps. Found at elevations ranging from 164 to 2,001 feet. Blooming period is from January to September.	No	Presumed absent. No suitable habitat is present.
<i>Xylorhiza cognata</i> Mecca-aster	Fed: None CA: None CNPS: 1B.2	Occurs in Sonoran desert scrub habitat. Found at elevations ranging from 66 to 1,312 feet. Blooming period is from January to June.	No	Presumed absent. According to the MSHCP, this species does not occur or is not known to occur within the Whitewater Floodplain Conservation Area. Not observed during the 2016 sensitive plant focused survey.
CDFW SENSITIVE HABITATS				
Desert Fan Palm Oasis Woodland	CDFW Sensitive Habitat	Rare plant community that is one of the most unusual biological resources located within the Coachella Valley. Found within canyons and along the San Andreas Fault Zone, where water occurs naturally. Generally characterized by open to dense groves of native desert fan palms, which are the most massive native palm in North America, growing more than 66 feet.	No	Absent.
Mesquite Bosque	CDFW Sensitive Habitat	Mesquite bosques, or woodlands, occur in the Sonoran Desert and other parts of the arid southwest. Consist primarily of mesquite trees and diverse understory of vegetation that may provide habitat for a wide-variety of species.	No	Absent.
Southern Riparian Forest	CDFW Sensitive Habitat	Typically a younger successional stage of riparian forest, due to disturbance or more frequent flooding. Plant species include willow species, elderberry, oak species, sycamore, cottonwood, and smaller shrubs.	No	Absent.

U.S. Fish and Wildlife Service (USFWS) -
Federal
END- Federal Endangered
THR- Federal Threatened

California Department of Fish and Wildlife
(CDFW) - California
END- California Endangered
CSC- California Species of Concern
WL- Watch List
FP- California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix C Flora and Fauna Compendium

Table C-1: Plant Species

PLANT SPECIES	
Scientific Name	Common Name
<i>Abronia villosa</i>	desert sand verbena
<i>Ambrosia dumosa</i>	burrobush
<i>Ambrosia acanthicarpa</i>	annual bursage
<i>Ambrosia salsola</i>	cheesebush
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch
<i>Atriplex lentiformis</i>	big saltbush
<i>Brassica tournefortii</i>	Sahara mustard
<i>Camissonia californica</i>	false mustard
<i>Camissoniopsis pallida</i>	pale yellow sun cup
<i>Chorizanthe brevicornu</i>	brittle spineflower
<i>Chorizanthe rigida</i>	rigid spiny herb
<i>Chylismia calviformis</i>	brown-eyed primrose
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple godetia
<i>Croton californicus</i>	desert croton
<i>Cryptantha circumscissa</i>	cushion cryptantha
<i>Cylindropuntia echinocrpa</i>	golden cholla
<i>Dicoria canescens</i>	desert twinbugs
<i>Dithyrea californica</i>	spectacle pod
<i>Encelia farinosa</i>	brittlebush
<i>Encelia frutescens</i>	button brittlebush
<i>Eriastrum eremicum</i>	desert woollystar
<i>Ericameria nauseosa</i>	rubber rabbitbush
<i>Eriogonum thomasii</i>	Thomas' buckwheat
<i>Erodium cicutarium</i>	red stemmed filaree
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Larrea tridentata</i>	creosote bush
<i>Lupinus shockleyi</i>	Shockley lupine
<i>Oenothera californica</i>	California primrose
<i>Palafoxia arida</i>	Spanish needle
<i>Pectocarya recurvata</i>	Curvenut combseed
<i>Peritoma arborea</i>	bladderpod
<i>Petalonyx thurberi</i>	sandpaper plant
<i>Plantago ovata</i>	desert plantain
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psathyrotes ramosissima</i>	velvet turtleback
<i>Psorothamnus emoryi</i>	dyebush
<i>Psorothamnus schottii</i>	indigo bush
<i>Psorothamnus spinosus</i>	smoke tree
<i>Salsola paulsenii</i>	barbwire Russian thistle
<i>Salsola tragus</i>	Russian thistle
<i>Salvia columbariae</i>	chia sage
<i>Schismus arabicus</i>	Arabian schismus
<i>Stephanomeria pauciflora</i>	wire lettuce
<i>Stillingia spinulosa</i>	annual stillingia
<i>Tamarix aphila</i>	tamarisk
<i>Tiquilia plicata</i>	coldenia

Table C-2: Wildlife Species

WILDLIFE SPECIES	
Scientific Name	Common Name
AVES	BIRDS
<i>Auriparus flaviceps</i>	verdin
<i>Calypte costae</i>	Costa's hummingbird
<i>Corvus brachyrhynchos</i>	American crow
<i>Geococcyx californianus</i>	greater roadrunner
<i>Haemorhous mexicanus</i>	house finch
<i>Lanius ludovicianus</i>	loggerhead shrike
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Zenaida asiatica</i>	white-winged dove
<i>Zenaida macroura</i>	mourning dove
MAMMALIA	MAMMALS
<i>Sylvilagus audubonii</i>	desert cottontail
REPTILIA	REPTILES
<i>Crotalus cerastes laterorepens</i>	Colorado Desert sidewinder
<i>Dipsosaurus dorsalis</i>	desert iguana
<i>Phrynosoma</i> sp.	horned lizard (scat and tracks)

**Appendix B Delineation of State and Federal
Jurisdictional Waters (2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

Riverside County, California

DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Prepared By:

Michael Baker International

14725 Alton Parkway

Irvine, California 92618

Contact: Daniel Cardoza, PWS

(949) 330-4166

November 2016

JN 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

RIVERSIDE COUNTY, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional “waters of the U.S.” (including wetlands) and “waters of the State” determination for the above-referenced project.



Daniel Cardoza, PWS
Regulatory Analyst
Natural Resources/Regulatory Permitting



Richard Beck, PWS, CEP, CPESC
Vice President
Natural Resources/Regulatory Permitting

November 2016

Executive Summary

Introduction: At the request of the Messenger Investment Company (Messenger), Michael Baker International (Michael Baker) has prepared this Delineation of Jurisdictional Waters for the North Cathedral City Improvements Project, Phase 1 (project), located in Riverside County, California.

Methods: The field work for this delineation was conducted on January 29, 2015. This delineation documents the regulatory authority of the U.S. Army Corps of Engineers Los Angeles District (Corps), Colorado River Basin Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region (CDFW) pursuant to the Federal Clean Water Act (CWA), California Porter-Cologne Water Quality Control Act, and California Fish and Game Code¹.

Results: State jurisdictional areas (Morongo Wash) were identified within the project site. Project activities within these areas are subject to Regional Board and CDFW jurisdiction and approval. Table ES-1 identifies each regulatory agency and total jurisdiction on-site. Table ES-2 includes the proposed summary of impacts that will occur as a result of the proposed project.

TABLE ES-1. Jurisdictional Areas

Jurisdictional Feature (Morongo Wash)	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	--	--	5.22	3,528	5.22	3,528
Reach 2	--	--	4.36	4,077	5.52	4,077
Reach 3	--	--	5.97	2,849	8.39	2,849
Reach 4	--	--	2.09	1,680	2.09	1,680
Total	--	--	17.64	12,135	21.22	12,135

¹ The project area was surveyed pursuant to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008); the Practices for Documenting Jurisdiction under Section 404 of the CWA Regional Guidance Letter (Corps 2007); Minimum Standards for Acceptance of Preliminary Wetland Delineations (Corps 2001); and The Mesa Field Guide (CDFW 2014).

TABLE ES-2. Summary of Impacts

Jurisdictional Feature	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage (permanent)	Linear Feet (permanent)	Acreage (permanent)	Linear Feet (permanent)
Morongo Wash	--	--	1.19	770	1.19	770

Conclusion: The project applicant shall obtain the following regulatory approvals prior to commencement of any construction activities within the identified jurisdictional areas: Regional Board Report of Waste Discharge (or reference of other approval) and CDFW Section 1602 Streambed Alteration Agreement². This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdiction. Refer to Sections 1 through 7 for a complete discussion.

² The CDFW can issue other approvals in-lieu of a formal Agreement such as an Operation-by-Law letter or Letter of Non-Substantial Impact. A formal notification must first be submitted to the CDFW prior to approval.

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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FAC	Facultative Vegetation
FACU	Facultative Upland Vegetation
FACW	Facultative Wetland Vegetation
GPS	Ground Positioning System
IP	Individual Permit
MESA	Mapping Episodic Stream Activity
MSL	Mean Sea Level
MS4	Municipal Separate Storm Sewer System
NWP	Nationwide Permit
OBL	Obligate Wetland Vegetation
OHWM	Ordinary High Water Mark
RPW	Relatively Permanent Waters
SAA	Streambed Alteration Agreement
SBBM	San Bernardino Base and Meridian
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Storm Water Pollution Prevention Plan
TNW	Traditional Navigable Water
UPL	Obligate Upland Vegetation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	Waters of the United States

Section 1 Introduction

This delineation has been prepared for Messenger Investment Company (Messenger), in order to delineate the U.S. Army Corps of Engineers Los Angeles District's (Corps), Colorado River Basin Regional Water Quality Control Board's (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region's (CDFW) jurisdictional authority located within Morongo Wash for the Morongo Creek Channel. The field work for this delineation was conducted on January 29, 2015.

The project site is located within the cities of Palm Springs and Cathedral City, in Riverside County, California (refer to Exhibit 1, *Regional Vicinity*, and Exhibit 2, *Site Vicinity*). The project site is generally within the corridor between I-10 and the Union Pacific Railroad line, with portions of the site extending beyond these limits.

This delineation has been designed to document the authority of the regulatory agencies, explain the methodology undertaken by Michael Baker International (Michael Baker), to document jurisdictional authority, and to support the findings made by Michael Baker within the boundaries of the project site. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

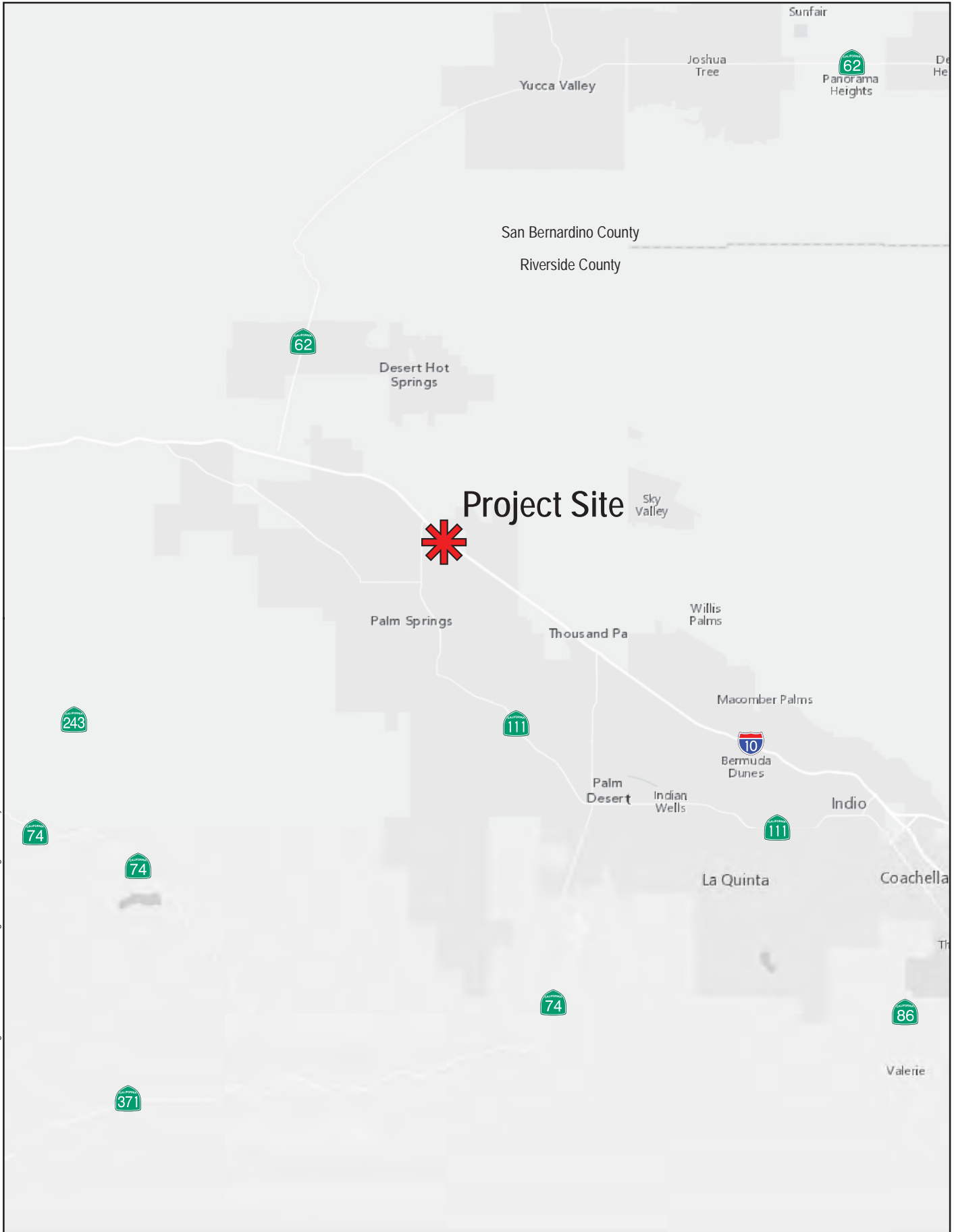
1.1 PROJECT SITE BACKGROUND

The 528-acre project site is located immediately north of the Whitewater River and consists of Morongo Wash and surrounding undeveloped open space (refer to Exhibit 3, *Project Site*). The project site primarily consists of undeveloped creosote scrub, with the exception of I-10 and the Union Pacific Railroad line extending from northwest to southeast within the northern portion of the project site. The project site below the railroad line is mostly undeveloped creosote scrub and includes a tamarisk windrow that extends from north to south for approximately 0.85-mile within the project site. The southernmost limits of the project site contain approximately 3.5 acres of residential development.

Morongo Wash is an ephemeral desert wash drainage system that enters the project site from the northwest and is funneled under three separate I-10 bridge crossings. The three reaches converge on the other side of I-10 and become restricted by the Union Pacific Railroad line to the south. Morongo Wash meanders within this approximately 850-foot corridor and is conveyed offsite. Beyond the project site, Morongo Wash enters a 5-foot reinforced concrete pipe (RCP) culvert at Date Palm Road, flows underneath Date Palm Road, and ultimately stops at Bob Hope Drive. Morongo Wash historically reached the Whitewater River prior to the development of I-10 and the railroad line. A historic crossing

exists that previously allowed Morongo Wash to travel underneath the railroad line and converge downstream with the Whitewater River, though the crossing is now choked with sediment and unable to convey flows south of the railroad line.³ The defunct crossing underneath the railroad line is substantiated by a continuous corridor of riverwash soils mapped south of the railroad and is discussed in further detail in Section 4.5, *Soil Survey*.

³ The former Morongo Wash railroad crossing is located at 33.866461°,-116.491445°.



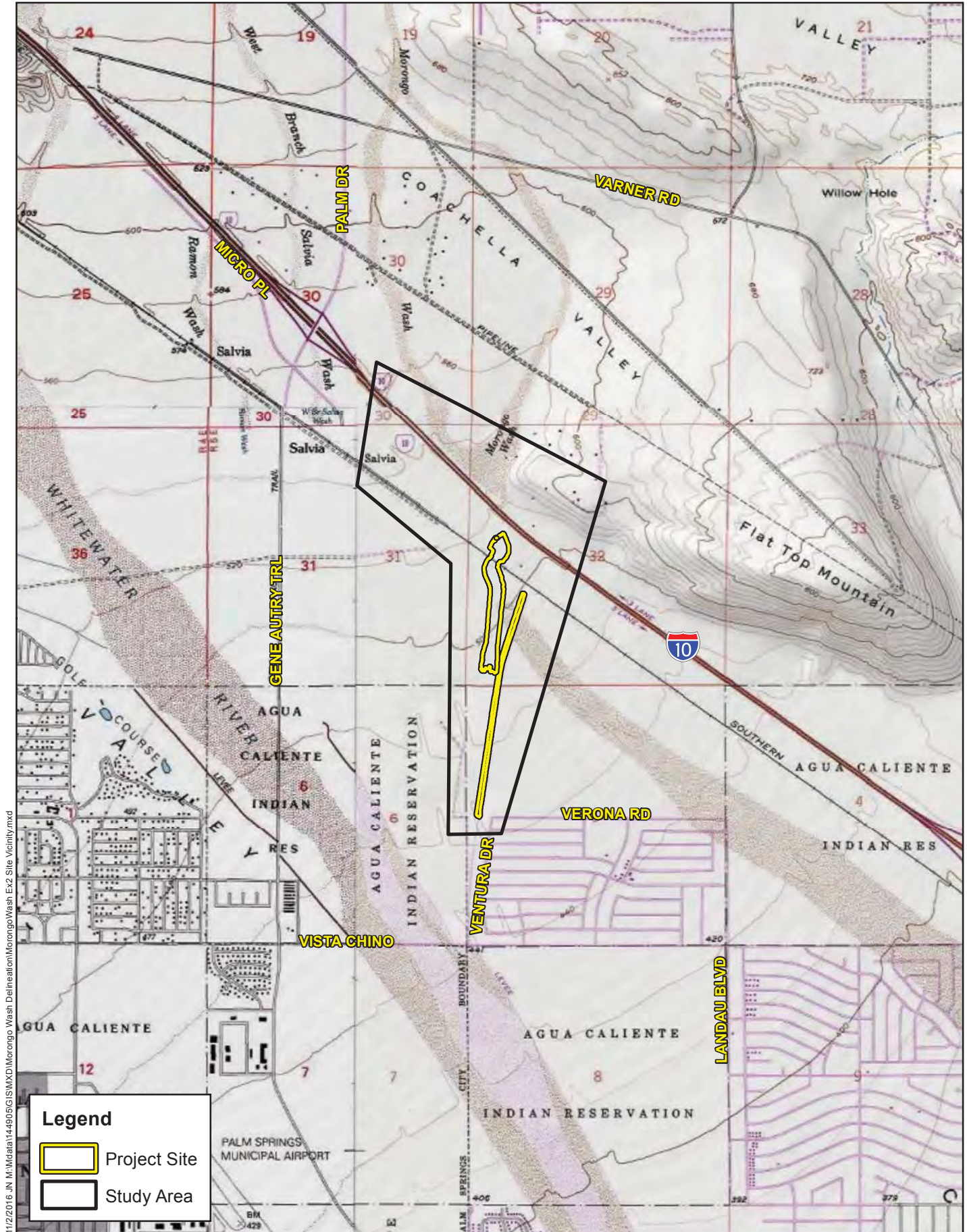
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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Regional Vicinity



Source: ArcGIS Online, County of Riverside, County of San Bernardino



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Legend

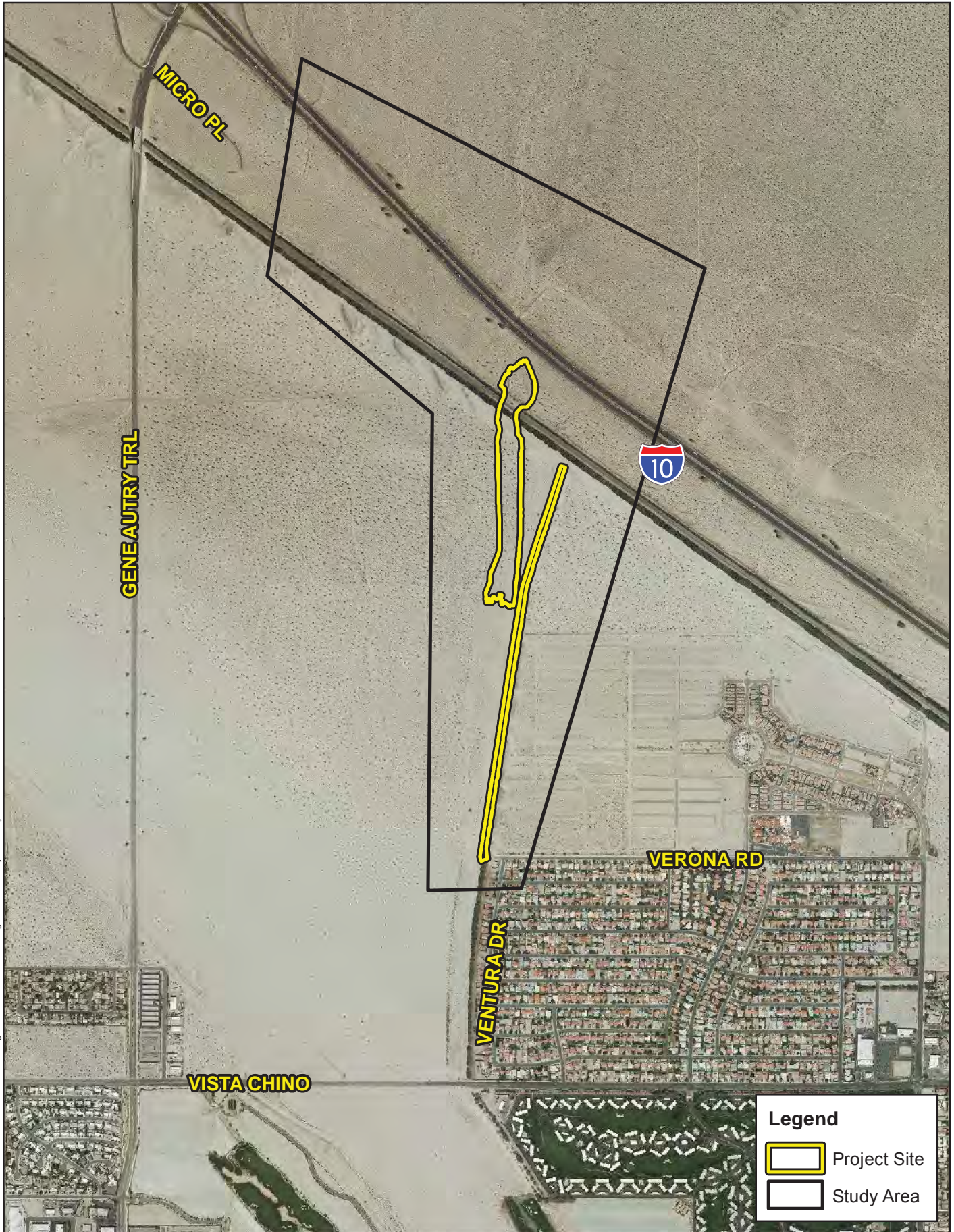
- Project Site
- Study Area



Source: ArcGIS Online, County of Riverside, County of San Bernardino

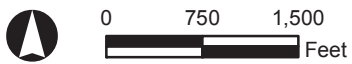
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Site Vicinity

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Project Site



Source: ArcGIS Online, County of Riverside, County of San Bernardino

1.2 PROJECT DESCRIPTION

The primary components of the proposed storm water improvements project include the placement of concrete channel protection on both sides of the Union Pacific Railroad (UPRR) bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino,

located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

Section 2 Summary of Regulations

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Division regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act. Of the State agencies, the CDFW regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

2.1 U.S. ARMY CORPS OF ENGINEERS

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of “waters of the U.S.” (WoUS), including wetlands, pursuant to Section 404 of the CWA. The Corps has regulatory authority over the discharge of dredged or fill material into the WoUS under Section 404 of the CWA. The Corps and EPA define “fill material” to include any “material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States.” Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and “materials used to create any structure or infrastructure in the waters of the United States.”

The term WoUS is defined under CWA regulations 33 CFR §328.3(a). Wetlands, a subset of jurisdictional waters, are jointly defined by the Corps and EPA under CWA regulations 33 CFR §328.3(b).

2.2 REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a federal license or permit for activities which may discharge to WoUS must seek Water Quality Certification from the state or Indian tribe with jurisdiction.⁴ Such Certification is based on a finding that the discharge will meet water quality standards and other applicable requirements. In California, there are nine different Regional Boards that issue or deny Certification for discharges within their geographical jurisdiction. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which are defined as numeric and narrative objectives in each Regional Board’s Basin Plan. Where applicable, the State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board’s jurisdiction extends to all waters of the State and to all WoUS, including wetlands.

⁴ Title 33, United States Code, Section 1341; Clean Water Act Section.

Additionally, the California Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC⁵ and Rapanos⁶ regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Fish and Game Code Sections 1600-1616 establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, as defined in the *Mapping Episodic Stream Activity (MESA) Field Guide* (2014).

⁵ Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)

⁶ Rapanos v. United States, 547 U.S. 715 (2006)

Section 3 Methods

The analysis presented in this document is supported by field surveys and verification of current conditions conducted on January 29, 2015. While in the field, jurisdictional areas were recorded onto a base map at a scale of 1" = 50' using the topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin 62 Ground Positioning System (GPS) Map62 in order to record and identify specific ordinary high water marks (OHWM), soil pits, picture locations, and drainage features. This data was then transferred via USB port as a .shp file and added to the project's jurisdictional map. The jurisdictional map was prepared in ESRI ArcInfo Version 10.2.

Drought conditions have developed over the past three years in California. Evaluation of temporal shifts in vegetation and periodic lack of hydrology indicators during periods of below-normal rainfall, drought conditions, and unusually low winter snowpack is considered during the field review. To the extent possible, the hydrophytic vegetation decision is based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year. The evaluation of hydrology considers the timing of the site visit in relation to normal seasonal and annual hydrologic variability, and whether the amount of rainfall prior to the site visit has been normal. In drought conditions, direct observation of plants and hydrology indicators may be misleading or problematic, so other methods of making wetland decisions may be appropriate. In general, wetland determinations on difficult or problematic sites must be based on the best information available to the field inspector, interpreted in light of his or her professional experience and knowledge of the ecology of wetlands in the region. Wetland determinations are based on a preponderance of all available information, including in many cases remote sensing and longer term data, not just the field data collected under drought conditions.⁷

3.1 WATERS OF THE U.S.

In the absence of adjacent wetlands, the limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined in CWA regulations 33 CFR §328.3(e). Indicators of an OHWM are defined in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2008). An OHWM can be determined by, but not limited to, the observation of benches, break in bank slope, particle size distribution, sediment deposits, drift, litter, and/or change in plant community. The Regional Board shares the Corps' jurisdictional methodology, unless State Waters are present.

⁷ Corps Sacramento District, Public Notice SPK-2014-00005, *Guidance on Delineations in Drought Conditions*, February 2014.

3.2 WATERS OF THE STATE

The Regional Board's jurisdiction is mapped similarly to the Corps, by defining an OHWM and utilizing the three-parameter approach for wetlands (described in Section 3.3).

The CDFW's jurisdiction is mapped based on *The Mesa Field Guide*, which was developed to provide guidance on mapping episodic streams within the inland deserts of southern California as a means of complying with the California Fish and Game Code. MESA is conducted by examining the evidence left on the landscape by the processes that created them, which includes the geology of fluvial deposits, the landforms modified by stream activity, and the features formed from terrestrial processes that operate on fluvially inactive landscapes. The characteristics of these surficial deposits and the evidence of the processes acting on them are indicators of either fluvial activity or inactivity. The surficial geologic mapping method is conducted by first interpreting images of remotely sensed landforms and surfaces, and then undertaking a field examination of landforms; surface indicators of fluvial activity and inactivity; and sometimes soil profiles in shallow, hand-dug pits. Examples of field indicators of watercourse fluvial processes include, but are not limited to, bar forms, sediment sorting, wrack, cut banks, scour, and secondary channels.

3.3 WETLANDS

For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps, 2008). This document is one of a series of Regional Supplements to the 1987 Corps Wetland Delineation Manual (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal characteristics within these three parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps' wetland data sheets, when applicable. It should be noted that both the Regional Board and the CDFW jurisdictional wetlands encompass those of the Corps.

Section 4 Project Setting

Review of relevant literature and materials often aids in preliminarily identifying areas that may fall under an agency's jurisdiction. A summary of Michael Baker's literature review is provided below (refer to Section 8.0 for a complete list of references used during the course of this delineation).

4.1 WATERSHED REVIEW

The Salton Sea Watershed is located in the Sonoran desert region in the southeastern corner of California, encompassing one-third of the Colorado River Basin Region (about 8,360 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in southern California, south of Indio and north of El Centro. The basin is more than 200 feet below sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee break along the Colorado River caused its flows to enter the basin for about 18 months. Since 1905, the Sea has fluctuated in size with varying inflow, and today has a surface area of about 365 square miles. The project site is approximately 35 miles northwest of the Salton Sea.

The Whitewater River is tributary to the Salton Sea and is defined in the Basin Plan as the reach from the headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near the Indian Avenue crossing in the City of Palm Springs. The reach of the Whitewater River from the Whitewater recharge basins near Indian Avenue to the Coachella Valley Stormwater Channel (CVSC) near Indio is defined as a Wash (Intermittent or Ephemeral Stream) in the Basin Plan. The Whitewater River is not listed as an Impaired Waterbody within the Whitewater River Region. Due to the small percentage of the Whitewater River Watershed and the Whitewater River Region in urban land uses, urban runoff constitutes a minor percentage of the total flow in the Whitewater River under storm conditions.⁸

4.2 LOCAL CLIMATE

The Coachella Valley Basin is located in the Colorado Desert Region. Located in the northern region of the Salton Trough, in Riverside County, it is characterized by hot summer days and mild winters with low average precipitation.

The project site is located in the Arid West, which is known for a significant degree of variability in spatial and temporal rainfall amounts. Rainfall is extremely limited with average annual precipitation rates of 2 to 4". Most rainfall occurs during winter months though high

⁸http://www.waterboards.ca.gov/coloradoriver/boarddecisions/adoptedorders/orders/2008/08_0001ms4_permit

intensity rains can sometimes occur during the mid-summer producing flash floods and severe erosion.

Climate in the Arid West is generally hot and dry with a long summer dry period. Average annual precipitation mostly <15 inches except along the coast. Most precipitation falls as rain. Annual temperature variations in the Coachella Valley are extreme with occasional winter lows in the mid-20s (F) and occasional summer highs in the mid-120s (F). The mean annual temperature is 74(F).⁹ On average, the warmest month is July at 107 degrees (F) and the coolest month is December at 44 degrees (F). The maximum average precipitation occurs in February with 0.66 inches. Rainfall is highly variable in either season, with long dry periods interrupted by occasional short, stormy periods. In summer, convective thunderstorms can be very intense, producing severe flash floods that fill the normally dry washes. The water soon dissipates, although some will remain below the surface.

Below is a summary of the recorded average precipitation for the regional vicinity which has been generally consolidated in ten year increments beginning in 1904 through December 2012.¹⁰

Table 1. Climate Summary

Years	Begin Date	End Date	Average Precipitation
1904-1910	1/1/1904	12/31/1910	2.87
1911-1919	1/1/1911	12/31/1919	2.93
1920-1929	1/1/1920	12/31/1929	3.61
1930-1939	1/1/1930	12/31/1939	3.91
1940-1949	1/1/1940	12/31/1949	3.69
1950-1959	1/1/1950	12/31/1959	2.42
1960-1969	1/1/1960	12/31/1969	2.56
1970-1979	1/1/1970	12/31/1979	3.77
1980-1989	1/1/1980	12/31/1989	3.07
1990-1999	1/1/1990	12/31/1999	2.70
2000-2012	1/1/2000	12/31/2012	2.26

4.3 USGS TOPOGRAPHIC QUADRANGLE

The USGS 7.5 Minute Series Topographic Quadrangle maps show geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall under an agency's jurisdiction. Additionally, the maps depict topography

⁹ <http://www.cvconservation.org/coachellavalley.html>

¹⁰ Weathersource.com, January 19, 2013

through color and contour lines, which are helpful in determining elevations and latitude and longitude within a project site.

The project site is located within Sections 5-6, Range 5 East, Township 4 South, and Sections 29-32, Range 5 East, Township 3 South, San Bernardino Meridian in the USGS *Cathedral City, California* quadrangle. On-site topography ranges from approximately 457 to 600 feet above mean sea level (msl), and is generally flat, except for a small hill in the northeast corner of the project site. According to the topographic map, the majority of the project site and surrounding areas are undeveloped, excluding I-10 and the Union Pacific Railroad line. Morongo Wash is mapped north of I-10, but does not continue beyond I-10 on the topographic map.

4.4 AERIAL PHOTOGRAPH

Michael Baker reviewed current aerial photographs dated April 27, 2014, and November 12, 2013 for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e. riparian vegetation) present within the boundaries of the project site (if any).

The November 12, 2013 aerial photograph was taken shortly after a rain event, resulting in visible flows within Morongo Wash. The signs of flow allowed us to understand where Morongo Wash is most prominent within the project site, as well as understand where the wash ultimately terminates. According to the aerial photograph, the project site consists mainly of areas adjacent to I-10 and the Union Pacific Railroad line, surrounded mostly by undeveloped land.

4.5 SOIL SURVEY

Onsite and adjoining soils were researched prior to the field visits using the U.S. Department of Agriculture National Resources Conservation Service and Soil Survey (refer to Appendix B, *Documentation*). The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use and management; and in planning, research and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). The following soil series has been reported on site:

- **Carsitas gravelly sand, 0 to 9 percent slopes (CdC):** The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this

map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 275 to 325 days. In a typical profile 0 to 10 inches and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y 4/2) when moist and 10 to 60 inches olive gray (5Y 4/2) when moist; stratified; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding and no ponding as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carsitas (4%), Myoma (4%), and other unnamed stony or gravelly soils (3%). Small slightly entrenched stream channels become less distinct as the soil of the slope decreases to 1 to 2 percent. According to the soils survey they form an indefinite pattern of braided stream channels, which are very shallow and have coarser debris deposited in them. Runoff is slow and the erosion hazard is moderate.

- **Carsitas gravelly sand, 9 to 30 percent slopes (CdE):** This soil type is similar to Carsitas gravelly sand, 0 to 9 percent slopes, with some minor variations. This strongly to moderately sloping soil is located on valley fill and remnants of dissected alluvial fans. Shallow rills or channels are common in the valley fill, and occasional shallow gullies can disappear into areas of coarser debris, with some of the gullies being filled by windblown fine sand. Runoff for this soil type is slow with a moderate erosion hazard. Available water capacity is 2 to 4 inches.
- **Carsitas cobbly sand, 2 to 9 percent slopes (ChC):** This gently sloping to moderately sloping soil is located on alluvial fans, valley fill, and remnants of dissected alluvial fans along the east, north and west edges of the Coachella Valley. The soils has a profile similar to the one described as representative of the series, but cobbles and some stones cover 1 to 3 percent of the surface. The Carsitas series consists of excessively drained soils with parent material consisting of gravelly alluvium derived from granite. These soils are found on alluvial fans, with an elevation for this map unit at 800 feet. Mean annual precipitation is 4 inches. The mean annual air temperature is 72 to 73 degrees F with a frost-free period of 300 days.

In a typical profile 0 to 10 inches is cobbly sand and 10 to 60 inches is gravelly sand. A representative profile of the Carsitas gravelly sand 0 to 10 inches olive gray (5Y 4/2) and 10 to 60 inches olive gray (5Y 4/2) when moist; satisfied; single grain; loose, nonsticky and nonplastic; few coarse roots and very few fine roots; common fine interstitial pores; slightly effervescent, and moderately alkaline. The depth to the

restrictive feature is more than 80 inches and a depth to water table more than 80 inches. This soil drainage class is excessively drained with no flooding or ponding frequency as identified in the soil survey. The available water capacity is very low (about 3.0 inches). The map unit composition consists of minor components of Riverwash (4%), Carrizo (4%), Chuckawalla (4%), and other unnamed soils (3%). Some small entrenched stream channels form a lacy, shallow braided stream channel that starts where the primary channel is choked with coarse debris and spills out across the soils surface until it concentrates to form a new channel. Runoff is rapid and the erosion hazard is moderate.

- **Carsitas fine sand, 0 to 5 percent slopes (CkB):** This nearly level to gently sloping soil is on alluvial fans and valley fill, similar to most Carsitas series soils. It has a similar profile to the other Carsitas series soils, but typically has a fine sand surface layer that is less than 15% coarse fragments. Runoff is slow with a slight erosion hazard. The hazard of soil blowing is high. Available water capacity is 3 to 4 inches. The effective rooting depth is 60 inches or more.
- **Myoma fine sand, 0 to 5 percent slopes (MaB):** The Myoma series consists of somewhat excessively drained soils with parent material consisting of sand blown from recent alluvium. The elevation for this map unit is 200 feet below MSL to 1,800 feet above MSL. The climate is arid with an annual precipitation of 2 to 4 inches that occurs as gentle winter rain or erratic high intensity summer storms. The average temperature is 72 to 75 degrees F, with a frost free season of 290 days. This nearly level to gently sloping soil is on alluvial fans where they merge with finer textured floodplain and basin soils. Runoff is very slow with a slight erosion hazard. The hazard of soil blowing is high.
- **Myoma fine sand, 5 to 15 percent slopes (MaD):** This soil type is similar to the Myoma series described above. This moderately sloping to rolling soil is on dunes and alluvial fans. Runoff is very slow with a slight erosion hazard. The hazard of soil blowing is high.
- **Riverwash (RA):** Riverwash soils were mapped immediately south of the historical Morongo Wash crossing underneath the railroad line, showing an approximately 560-foot wide corridor that extends from the crossing to the confluence with the Whitewater River, approximately 1.4 miles downstream/south. The soils map included in Appendix B, *Documentation*, shows the historic riverwash corridor within the project site.

4.6 HYDRIC SOILS LIST OF CALIFORNIA

Michael Baker reviewed the Hydric Soils List of California (March 2014), provided by the NRCS, in an effort to verify whether or not on-site soils are considered to be hydric. It should be noted that lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for onsite investigations. According to the soils list, the following soils are considered hydric: Carsitas gravelly sand, 0 to 9 percent slopes; Carsitas gravelly sand, 9 to 30 percent slopes; Carsitas cobbly sand, 2 to 9 percent slopes; Myoma fine sand, 0 to 5 percent slopes; Myoma fine sand, 5 to 15 percent slopes; and Riverwash.

4.7 NATIONAL WETLANDS INVENTORY

Michael Baker reviewed the U.S. Fish and Wildlife Service's National Wetland Inventory maps. No wetland or riparian features were found within or adjacent to the project site (refer to Appendix B, *Documentation*, for the NWI Map).

4.8 FLOOD ZONE

Michael Baker searched the Federal Emergency Management Agency website for flood data for the project site. Based on the Flood Insurance Rate Map No. 06065C1576G, 06065C1557G, 06065C0915G, and 06065C1557G, the majority of the project site is located within Zone A, or areas subject to inundation by the 1% (100-year) annual flood plain (refer to Appendix B, *Documentation*). A small area within the southeast corner of the project site occurs in Zone X, or areas with reduced flood risk due to levees.

Section 5 Site Conditions

Michael Baker regulatory specialists Wesley Salter, PWS, Daniel Cardoza, and Tim Tidwell visited the project site from approximately 8:30 a.m. to 3:30 p.m. on January 29, 2015 to verify existing conditions and document potential jurisdictional areas. The temperature was approximately 65-75 °F. No significant rain events had occurred in the ten days prior to the site visit. Michael Baker encountered no limitations during the site visit. Refer to Appendix A, *Site Photographs*, for representative photographs taken throughout the project site.

5.1 MORONGO WASH

Morongo Wash is an earthen, ephemeral drainage that runs through the project site in a northwest to southeast direction. Morongo Wash historically flowed into the Whitewater River, but is now considered to be an isolated feature. The soils map (refer to Appendix B, *Documentation*) shows a corridor directly south of the railroad bridge mapped as riverwash, which implies that Morongo Wash historically flowed underneath the railroad bridge and into the Whitewater River. Because of the berming (build-up of fluvial material) at the railroad bridge crossing, Morongo Wash dissipates downstream between I-10 and the railroad and fails to connect to any other downstream features/waterways.

Sediment within Morongo Wash consists of sand and cobble. The low flow channel was primarily unvegetated, with creosote scrub increasing in density outside of the active floodplain. Vegetation associated with the creek (primarily on the active floodplain and low terrace) consisted of brittlebush (*Encelia farinosa*, NI), burro weed (*Ambrosia dumosa*, NI), burrobrush (*Ambrosia salsola*, NI), small seeded spurge (*Chamaesyce polycarpa*, NI), Russian thistle (*Salsola tragus*, FACU), saltcedar (*Tamarix ramosissima*, NI), annual yellow sweetclover (*Melilotus indicus*, FACU), and bladderpod (*Peritoma arborea*, NI). No surface water was present in the wash during the site visit. Evidence of an OHWM was observed via drift deposits, benches, changes in sediment size, and change in vegetation type and density. The OHWM ranged in width from one foot to approximately 300 feet.

The field investigation concluded that upland areas directly adjacent to Morongo Wash were dominated by terrestrial and aeolian features and lacked indicators of recent fluvial activity. The low flow channel for each reach of the wash north of I-10 is moderately incised within the project site, which allowed Michael Baker to delineate clear boundaries of the watercourse based on indicators of fluvial activity and inactivity. Upland islands within the watercourse were not treated separately from the watercourse since their landscape and ecosystem function did not differ from the watercourse.

The area of Morongo Wash south of I-10 and north of the railroad line required more reliance on the MESA indicators to determine areas of fluvial activity. Michael Baker

identified several MESA indicators within and outside of the mapped watercourse in order to determine the extent of terrestrial and fluvial processes. Upland indicators included bioturbation, active coppice dunes, and surface rounding. Fluvial indicators included the presence of mid-channel gravel and sand bars, bifurcated flow, flow lineations, mud cracks, mud curls, organic drift, out-of-channel flow, ripples, sediment ramps (gravel), small wrack on floodplain, cut bank (in sand), and headcuts in first order channels on terrace. Substrate staining was noted at the playa fringe or floodplain boundary. Upland areas were excluded from the mapped watercourse based on clear signs of upland processes, with topographic relief providing the most significant indicator of upland processes. Sheet flow is more common in this area of Morongo Wash due to the low magnitude events, which results in a watercourse width of approximately 320 feet at some points. The sheet flow events cause sediment splays across the floodplain, which indicates that there is no specific low flow channel in this area to convey the low magnitude flows.

5.2 WETLAND FEATURES

No wetland features were noted within the boundaries of the project site. All areas either did not contain hydrophytic vegetation or were dominated by loose sandy substrate.

Section 6 Findings

This delineation has been prepared for Messenger in order to delineate the Corps, Regional Board, and CDFW jurisdictional authority within the project site. This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries within a project site/property.

6.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

6.1.1 Non-Wetland WoUS Determination

Morong Wash exhibits evidence of an OHWM, but does not connect to downstream waters and is considered to be an isolated feature. Morong Wash is not within the 100-year floodplain of the Whitewater River and is physically restricted to the corridor between I-10 and the Union Pacific railroad line. As such, no Corps WoUS are present on-site.

6.1.2 Wetland Determination

As previously noted, an area must exhibit all three wetland parameters described in the Corps Regional Supplement to be considered a jurisdictional wetland. Based on the results of the site visit, it was determined that no portion of the project site contained all three parameters, thus no jurisdictional wetlands were observed onsite.

6.2 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

Morong Wash exhibits evidence of an OHWM and is considered to be an isolated feature with no connection to downstream waters. It is determined that 17.64 acres of Morong Wash are subject to Regional Board jurisdiction. Table 2, *Jurisdictional Areas*, summarizes the on-site jurisdiction, a Regional Board jurisdictional resource. The proposed project is anticipated to result in 1.19 acre of permanent impacts to Morong Wash. Refer to Table 3, *Summary of Impacts*, for a summary of proposed impacts to Regional Board jurisdictional areas and Exhibit 4, *Jurisdictional Map*, for an illustration of jurisdiction and proposed impacts.

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

Morong Wash is considered a CDFW jurisdictional streambed. It was determined that

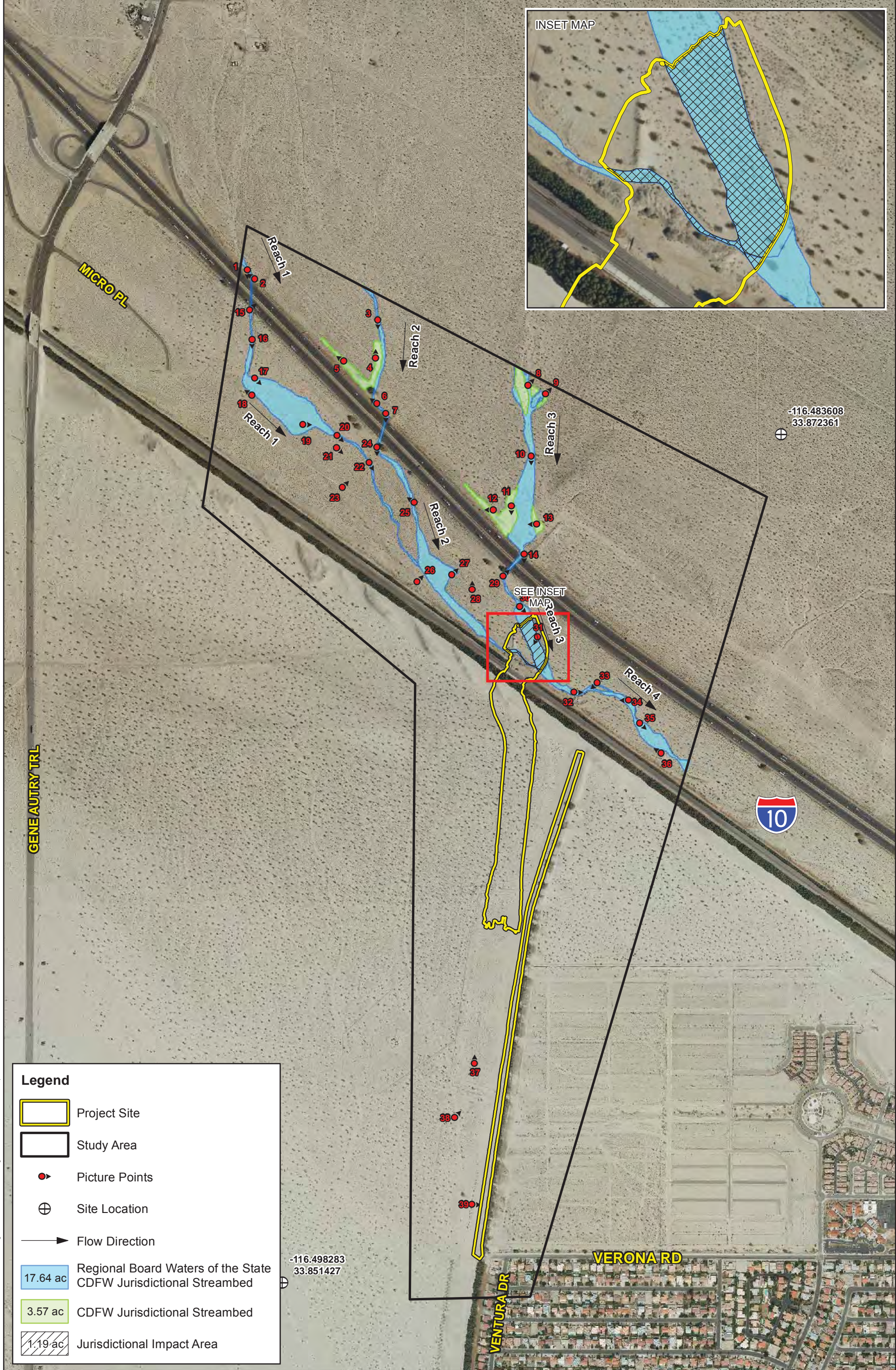
21.22 acres of CDFW jurisdictional streambed and associated vegetation is located within the project site (refer to Table 2, *Jurisdictional Areas*, and Exhibit 4, *Jurisdictional Map*). The proposed project is anticipated to result in 1.19 acre of permanent impacts to Morongo Wash, a CDFW jurisdictional resource.

Table 2: Jurisdictional Areas






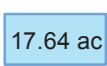

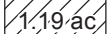
Jurisdictional Feature (Morongo Wash)	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage	Linear Feet	Acreage	Linear Feet
Reach 1	--	--	5.22	3,528	5.22	3,528
Reach 2	--	--	4.36	4,077	5.52	4,077
Reach 3	--	--	5.97	2,849	8.39	2,849
Reach 4	--	--	2.09	1,680	2.09	1,680
Total	--	--	17.64	12,135	21.22	12,135

Table 3. Summary of Impacts

Jurisdictional Feature	Corps (non-wetland)		Regional Board (non-wetland)		CDFW Streambed	
	Acreage	Linear Feet	Acreage (permanent)	Linear Feet (permanent)	Acreage (permanent)	Linear Feet (permanent)
Morongo Wash	--	--	1.19	770	1.19	770



Legend

-  Project Site
-  Study Area
-  Picture Points
-  Site Location
-  Flow Direction
-  17.64 ac Regional Board Waters of the State CDFW Jurisdictional Streambed
-  3.57 ac CDFW Jurisdictional Streambed
-  1.19 ac Jurisdictional Impact Area

-116.498283
33.851427

-116.483608
33.872361

INSET MAP

SEE INSET MAP

11/2/2016 10:11:44 AM \\data1\448059\GIS\MXD\Morongo_Wash_Delineation\MorongoWash_Ex4_Jurisdictional_Map_10.27.16.mxd

Section 7 Regulatory Approval Process

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the jurisdictional areas.

7.1 U.S. ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. Since no Corps jurisdictional areas occur within the project site, no permit will be required from the Corps prior to commencement of construction activities. The applicant is required to obtain an Approved Jurisdictional Determination from the Corps in order to confirm the findings of this report.

7.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne). Projects that do not result in the discharge of dredged or fill materials into WoUS are required to obtain regulatory approval by the Regional Board through the Waste Discharge Requirements (WDR) Program. Due to the project's size, the WDR requirement may be waived by the Regional Board as the project will require permit coverage under the Statewide General Stormwater Permit for Construction Activities (Order No. 2009-00009 DWQ) and all related requirements therein. Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The Regional Board also requires that CEQA compliance be obtained prior to discharge approvals. A Regional Board Application fee is required with the application package, and is calculated based on the acreage and linear feet of jurisdictional impacts.

7.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates alteration to streambeds and associated vegetation under the Fish and Game Code. The CDFW must be notified prior to activities that alter jurisdictional areas. A Streambed Alteration Agreement (or other approval) from the CDFW would be required prior to commencement of any construction activities within the CDFW delineated jurisdictional areas.

7.4 GLOBAL RECOMMENDATIONS

It is highly recommended that the delineation be forwarded to each of the regulatory agencies for their concurrence.

Section 8 References

The following resources were utilized during preparation of this Delineation of State and Federal Jurisdictional Waters:

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Appendix A *On-Site Photographs*

Appendix A – Site Photographs



Photograph 1 – Looking south (downstream) at the Reach 1 I-10 bridge crossing.



Photograph 2 – Looking northwest (upstream) immediately upstream of the Reach 1 I-10 bridge crossing.

Appendix A – Site Photographs



Photograph 3 – Looking south (downstream) at Reach 2. Clear low flow channel visible.



Photograph 4 – Looking north (upstream) within the active floodplain of Reach 2.

Appendix A – Site Photographs



Photograph 5 – Looking northwest (away from Reach 2) within the roadside basin connected to Reach 2. Flows primarily originate from the surface of I-10, though some flow is contributed by the Reach 2 drainage.



Photograph 6 – Looking northwest (upstream) of Reach 2.

Appendix A – Site Photographs



Photograph 7 – Looking south (downstream) at the Reach 2 I-10 crossing.



Photograph 8 – Looking northeast (upstream) at an upland area outside of the Reach 3 watercourse.

Appendix A – Site Photographs



Photograph 9 – Looking northeast (upstream) at a newly developed headcut area, showing a clear demarcation between the upland and the watercourse within Reach 3.



Photograph 10 – Looking south (downstream) at the wide low flow channel and active floodplain within Reach 3.

Appendix A – Site Photographs



Photograph 11 – Looking south (downstream) within the active floodplain of Reach 3.



Photograph 12 – Looking west (away from Reach 3) at the roadside basin connected to Reach 3.

Appendix A – Site Photographs



Photograph 13 – Looking west at the active floodplain within Reach 3. The low flow channel is visible in the top third of the picture.



Photograph 14 – Looking south (downstream) at the Reach 3 I-10 crossing.

Appendix A – Site Photographs



Photograph 15 – Looking northeast at the southern side of the Reach 1 I-10 crossing.



Photograph 16 – Looking south at a confined stretch of the low flow channel of Reach 1.

Appendix A – Site Photographs



Photograph 17 – Looking southeast (downstream) within Reach 1 as the low flow channel widens and sheet flow begins.



Photograph 18 – Looking northwest (upstream) along the southern border of Reach 1. The artificial berm confines Morongo Wash to a specific area.

Appendix A – Site Photographs



Photograph 19 – Looking east (downstream) at an area that experiences wide sheet flows.



Photograph 20 – Looking southeast (downstream) within Reach 1. Sheet flows are funneled into this channel feature, which is surrounded by uplands.

Appendix A – Site Photographs



Photograph 21 – Looking southeast within an upland area that does not experience fluvial activity. This area is topographically higher than the adjacent Reach 1 watercourse.



Photograph 22 – Looking south-southeast (downstream) within Reach 1.

Appendix A – Site Photographs



Photograph 23 – Looking northeast into an area that does not experience fluvial activity.



Photograph 24 – Looking south (downstream) immediately downstream of the Reach 2 I-10 crossing.

Appendix A – Site Photographs



Photograph 25 – Looking northwest (upstream) of a confined area of Reach 2, south of I-10.



Photograph 26 – Looking northeast from the southern berm that borders the railroad tracks. Flow patterns are evident across this wide portion of Reach 2.

Appendix A – Site Photographs



Photograph 27 – Looking north at the end of a ponded area within Reach 2. Note lack of ponding and sediment size change in background.



Photograph 28 – Looking north within an upland area outside of the watercourse.

Appendix A – Site Photographs



Photograph 29 – Looking northeast (upstream) at the southern end of the Reach 3 I-10 crossing.



Photograph 30 – Looking southeast (downstream) at the active floodplain of Reach 3.

Appendix A – Site Photographs



Photograph 31 – Looking south-southwest (downstream) at the active floodplain of Reach 3.



Photograph 32 – Looking east (downstream) at a confined area of Reach 3.

Appendix A – Site Photographs



Photograph 33 – Looking southwest (downstream) along a secondary channel of Reach 3.



Photograph 34 – Looking west (upstream) at a confined portion of Reach 3.

Appendix A – Site Photographs



Photograph 35 – Looking southeast (downstream) where the Reach 3 floodplain begins to widen.



Photograph 36 – Looking northwest (upstream) from an artificial berm showing the larger landscape. The low flow channel is visible at the toe of the berm.

Appendix A – Site Photographs



Photograph 37 – Looking north near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.



Photograph 38 – Looking northeast at sand barriers near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.

Appendix A – Site Photographs



Photograph 39 – Looking east at the tamarisk-lined berm near the southern limits of the project site. No jurisdictional water resources exist south of the railroad line.

Appendix B *Documentation*

National Wetland Inventory Map



U.S. Fish and Wildlife Service National Wetlands Inventory

Morongo Wash Improvements Project

Feb 6, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

FEMA Maps

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on this FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

This map may reflect more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

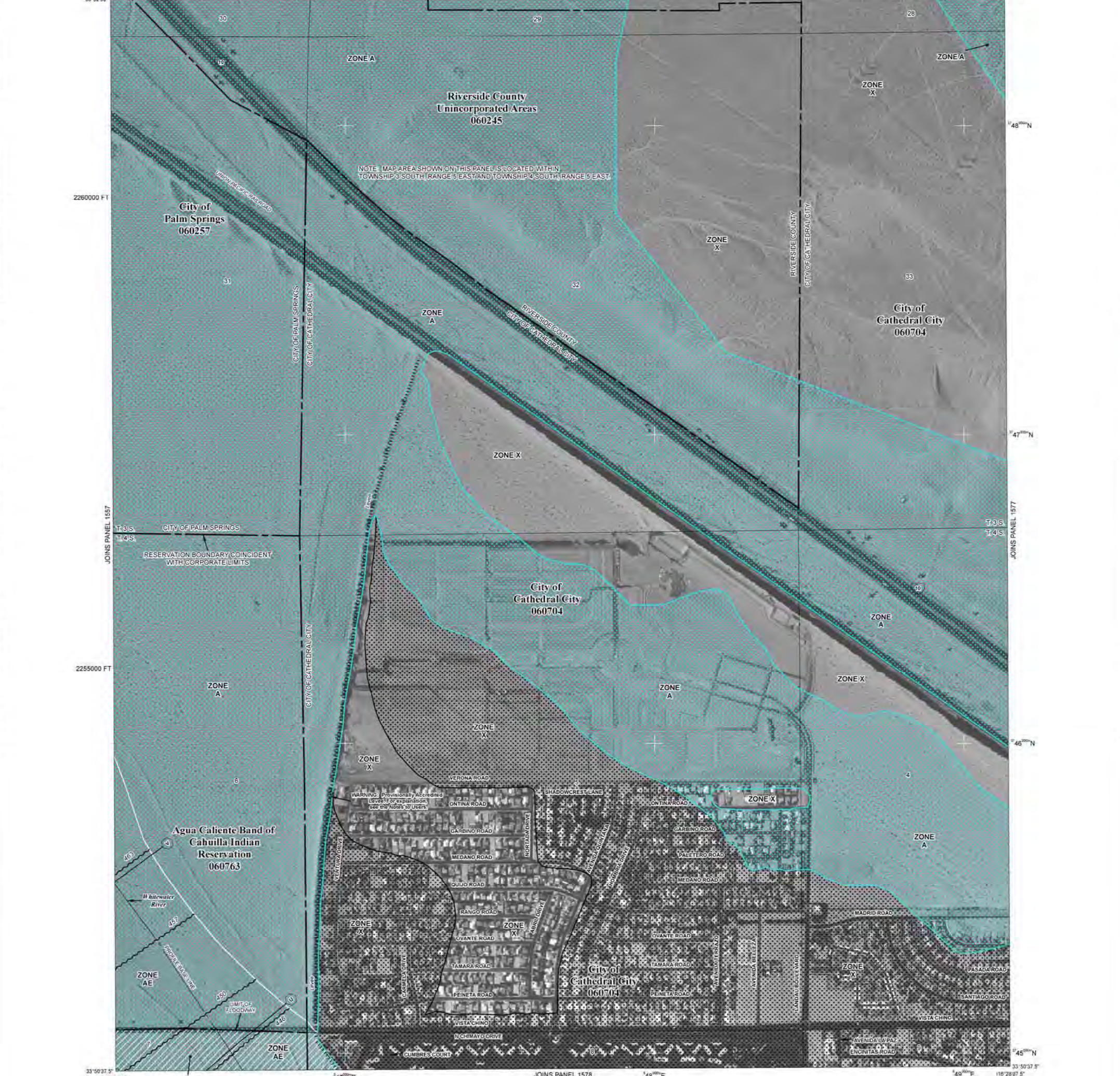
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.

WARNING: This map contains levees, dikes, or other structures that have been provisionally accredited and mapped as providing protection from the 1-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR Section 65.10 by August 8, 2009. Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.

116°30'00" W
33°52'30" N
2260000 FT
2255000 FT
116°30'00" W
33°50'37.5" N



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 3 SOUTH, RANGE 9 EAST AND TOWNSHIP 4 SOUTH, RANGE 9 EAST.

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain.

ZONE I Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513
(EL. 987)
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

○ Cross section line
○ Transsect line
87°07'45", 32°22'30"
76°N
600000 FT
DX5510 x
M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 500 1000 FEET
150 0 150 300 METERS

NFIP PANEL 1576G

FIRM
FLOOD INSURANCE RATE MAP
RIVERSIDE COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1576 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
AGUA CALIENTE BAND OF CABUILLA INDIAN RESERVATION	060763	1576	G
CATHEDRAL CITY CITY OF PALM SPRINGS CITY OF RIVERSIDE COUNTY	060704 060257 060245	1576	G

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C1576G

EFFECTIVE DATE
AUGUST 28, 2008

drainage sources of similar size. The community map repository should be consulted for possible additional or modified flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

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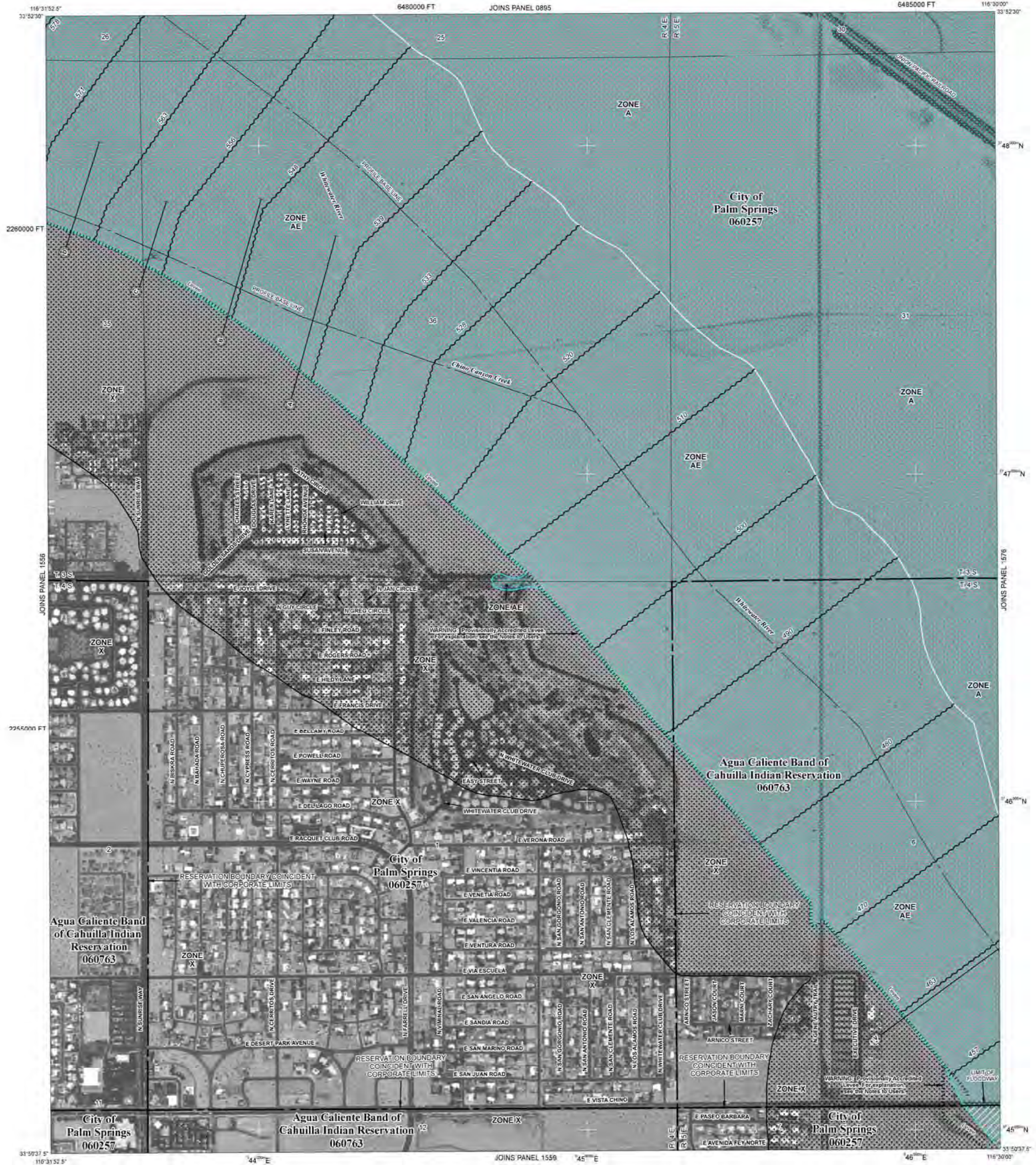
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- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS
ZONE D Areas determined to be outside the 0.2% annual chance floodplain.
Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)

- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 (EL. 597) Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

- * Referenced to the North American Vertical Datum of 1988
- A — Cross section line
- B — Transsect line
- 87° 07' 45", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 76° N — 1000-meter Universal Transverse Mercator grid values, zone 11E
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPS ZONE 0406), Lambert Conformal Conic projection
- DX5510 x — bench mark (see explanation in notes to Users section of this FIRM panel)
- M1.5 — River Mile

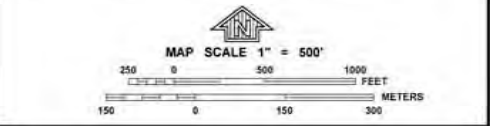
MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

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NFIP PANEL 1557G

FIRM
FLOOD INSURANCE RATE MAP
RIVERSIDE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1557 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
AGUA CALIENTE BAND OF CAHUILLA INDIAN RESERVATION	060763	1557	G
PALM SPRINGS, CITY OF	060257	1557	G

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C1557G

EFFECTIVE DATE

Soils Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Riverside County, Coachella Valley Area, California

Morongo Creek Channel



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

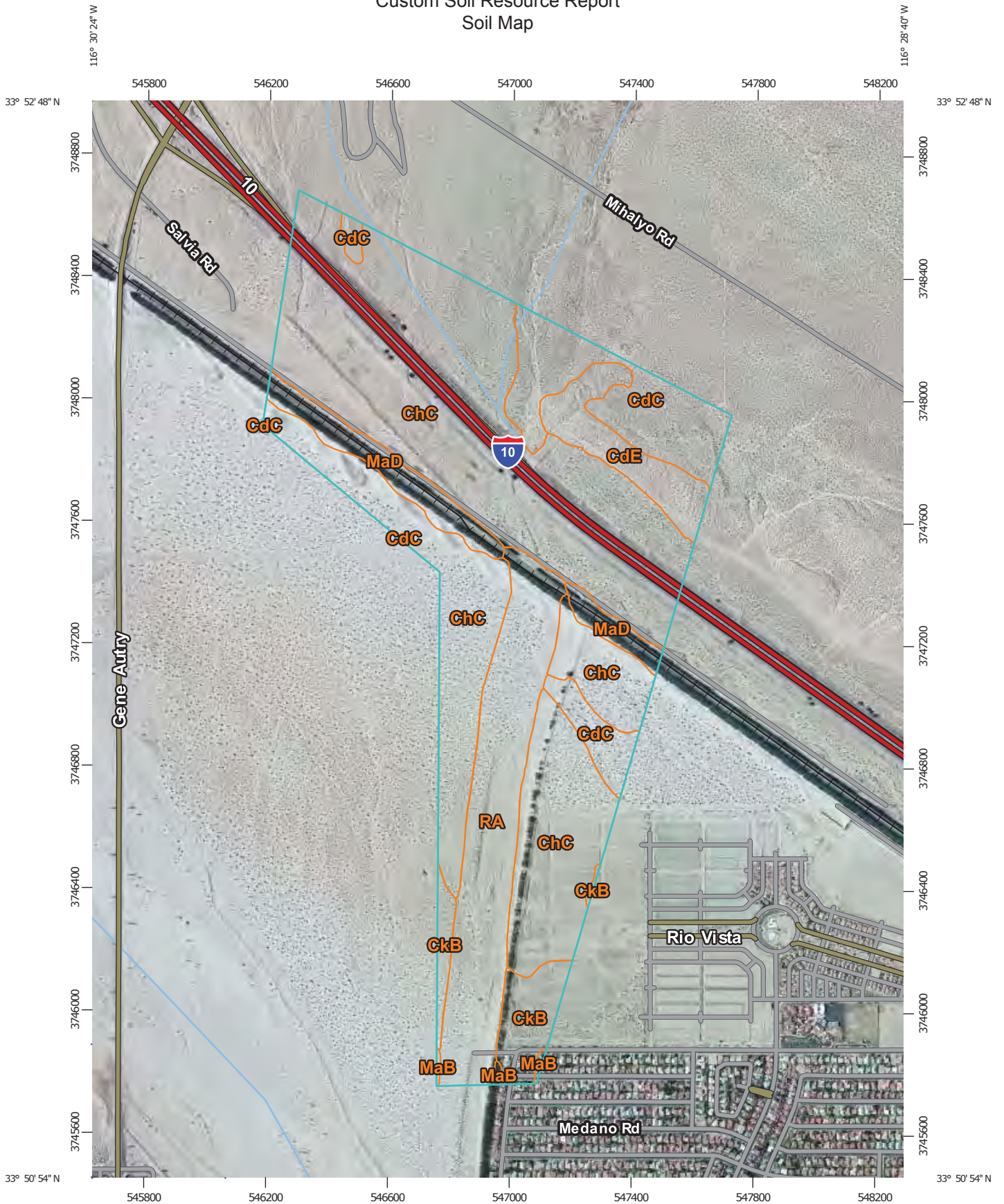
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:17,200 if printed on A portrait (8.5" x 11") sheet.



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

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Riverside County, Coachella Valley Area, California
 Survey Area Data: Version 7, Sep 9, 2014

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

Date(s) aerial images were photographed: May 2, 2010—Jun 3, 2010

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

Map Unit Legend

Riverside County, Coachella Valley Area, California (CA680)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CdC	Carsitas gravelly sand, 0 to 9 percent slopes	55.6	10.5%
CdE	Carsitas gravelly sand, 9 to 30 percent slopes	24.2	4.6%
ChC	Carsitas cobbly sand, 2 to 9 percent slopes	322.1	61.1%
CkB	Carsitas fine sand, 0 to 5 percent slopes	21.4	4.1%
MaB	Myoma fine sand, 0 to 5 percent slopes	1.3	0.3%
MaD	Myoma fine sand, 5 to 15 percent slopes	26.0	4.9%
RA	Riverwash	76.9	14.6%
Totals for Area of Interest		527.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been

Custom Soil Resource Report

observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Riverside County, Coachella Valley Area, California

CdC—Carsitas gravelly sand, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv0
Elevation: 800 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: gravelly sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Riverwash

Percent of map unit: 4 percent
Landform: Channels

Carsitas

Percent of map unit: 4 percent

Myoma

Percent of map unit: 4 percent

Unnamed, stony or gravelly

Percent of map unit: 3 percent

CdE—Carsitas gravelly sand, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: hkv1

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Gravelly alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: gravelly sand

H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 9 to 30 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

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Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Badland

Percent of map unit: 10 percent

Carrizo

Percent of map unit: 2 percent

Myoma

Percent of map unit: 1 percent

Unnamed, cobbles or stones

Percent of map unit: 1 percent

Riverwash

Percent of map unit: 1 percent

Landform: Channels

ChC—Carsitas cobbly sand, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hkv3

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Gravelly alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: cobbly sand

H2 - 10 to 60 inches: gravelly sand

Custom Soil Resource Report

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 6s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Chuckawalla

Percent of map unit: 4 percent

Riverwash

Percent of map unit: 4 percent

Landform: Channels

Carrizo

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 3 percent

CkB—Carsitas fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkv4

Elevation: 800 feet

Mean annual precipitation: 4 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Carsitas and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carsitas

Setting

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

Typical profile

H1 - 0 to 10 inches: fine sand
H2 - 10 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Myoma

Percent of map unit: 10 percent

Coachella

Percent of map unit: 3 percent

Unnamed, gravel surface

Percent of map unit: 2 percent

MaB—Myoma fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hkw3
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F

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Frost-free period: 270 to 320 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Myoma and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myoma

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand

H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Minor Components

Coachella

Percent of map unit: 4 percent

Carsitas

Percent of map unit: 4 percent

Unnamed, noncalcareous soils

Percent of map unit: 4 percent

Riverwash

Percent of map unit: 3 percent

Landform: Channels

MaD—Myoma fine sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hkw4
Elevation: -200 to 1,800 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Myoma

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind blown sandy alluvium

Typical profile

H1 - 0 to 18 inches: fine sand
H2 - 18 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Minor Components

Coachella

Percent of map unit: 5 percent

Unnamed, calcareous soils

Percent of map unit: 5 percent

Riverwash

Percent of map unit: 3 percent

Landform: Channels

Carsitas

Percent of map unit: 2 percent

RA—Riverwash

Map Unit Setting

National map unit symbol: hkwb

Elevation: 700 to 2,900 feet

Mean annual precipitation: 8 to 15 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 110 to 180 days

Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Channels

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy and gravelly alluvium

Typical profile

H1 - 0 to 6 inches: gravelly sand

H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Natural drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 0 inches

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Frequency of flooding: Frequent

Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Minor Components

Tujunga

Percent of map unit: 5 percent

Carsitas

Percent of map unit: 5 percent

Soboba

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 2 percent

Landform: Drainageways

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**Appendix C Burrowing Owl Focused Survey Report
(2016)**

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Burrowing Owl Focused Survey Report

Prepared By:

Michael Baker International
14725 Alton Parkway
Irvine, California 92618
Contact: *Thomas J. McGill, Ph.D.*
909.974.4907

July 2016
JN 144905

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, RIVERSIDE COUNTY, CALIFORNIA

Burrowing Owl Focused Survey Report

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ashley M. Barton
Biologist
Natural Resources



Thomas J. McGill, Ph.D.
Vice President
Natural Resources

July 2016
JN 144905

Executive Summary

This report contains the findings of a focused burrowing owl (*Athene cunicularia*) survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California (project site or site). The surveys for burrowing owl were conducted in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. The burrowing owl focused surveys were conducted by Michael Baker International (Michael Baker) biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington on four (4) separate days: April 19, May 12, June 8, and July 7, 2016. Concurrently with the first focused burrowing owl survey, the focused burrow survey was conducted on April 19, 2016.

Based on the results of the focused burrow survey conducted on April 19, 2016, it was determined the survey area¹ provides a limited amount of suitable burrows for burrowing owls. While the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or evidence (i.e. scat, pellets, feathers, tracks, and prey remains) to suggest recent use by burrowing owls was observed within the survey area during the four focused surveys. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent.

It is important to note that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area. However, due to the proximity of these occupied burrows (<100 feet from the eastern boundary of the survey area), it is recommended that a pre-construction clearance survey for burrowing owl be conducted within thirty (30) days of the start of any ground disturbing activities to ensure of burrowing owls remain absent from the survey area. This will ensure that grading activities associated with the proposed project do not violate the Migratory Bird Treaty Act and California Fish and Game Code by impacting active burrowing owl burrows on or within 500 feet of the project site.

¹ As used in this report, “survey area” refers the project footprint plus a 500 foot buffer.

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APPENDIX

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Section 1 Introduction

Michael Baker International (Michael Baker) conducted a focused burrowing owl survey for the North Cathedral City Improvements Project, Phase 1 (Project) located in the City of Cathedral City, Riverside County, California. Michael Baker biologists Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington surveyed the project footprint, including areas with 500 feet that provide suitable habitat, in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) and California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation.

The focused burrowing owl survey included a single focused burrow survey and four (4) separate burrowing owl focused surveys during the 2016 avian breeding season. The surveys were conducted to determine, first, if the survey area provides suitable burrows to support burrowing owl and, second, if burrowing owls currently occupy the survey area. Based on the focused burrow survey conducted on April 19, 2016, it was determined the survey area provides a limited amount of suitable burrows for burrowing owls. Due to the presence of suitable burrows, four focused burrowing owl surveys were conducted on April 19, May 12, June 8, and July 7, 2016. All surveys were completed between 0600 to 1000 hours.

1.1 PROJECT LOCATION

The project site is generally located south of Interstate 10, on the western boundary of the City of Cathedral City, Riverside County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Cathedral City quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of Verona Road, west and south of Interstate 10, and east of Gene Autry Trail (Exhibit 3, *Survey Area*).

1.2 PROJECT PURPOSE AND NEED

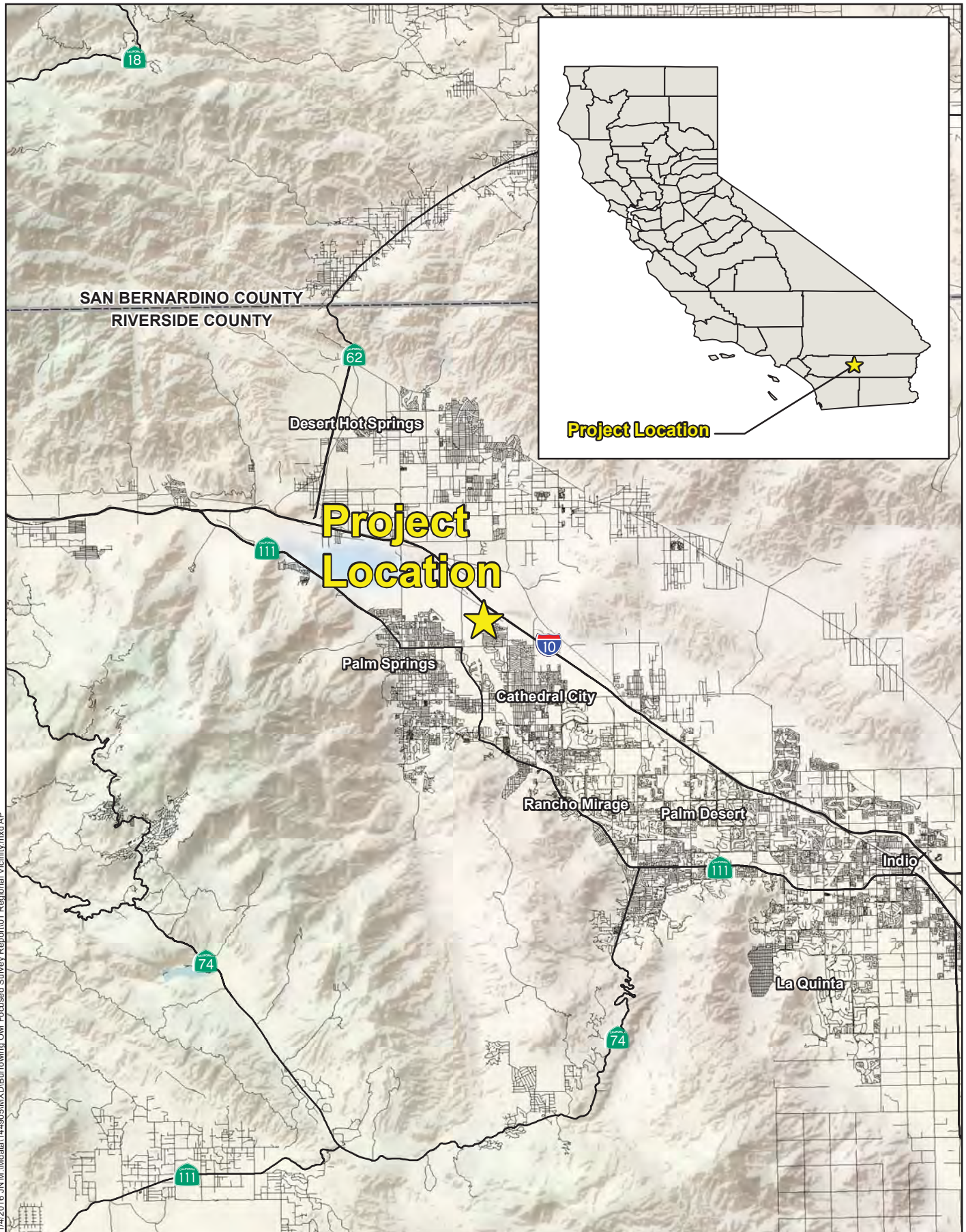
The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.



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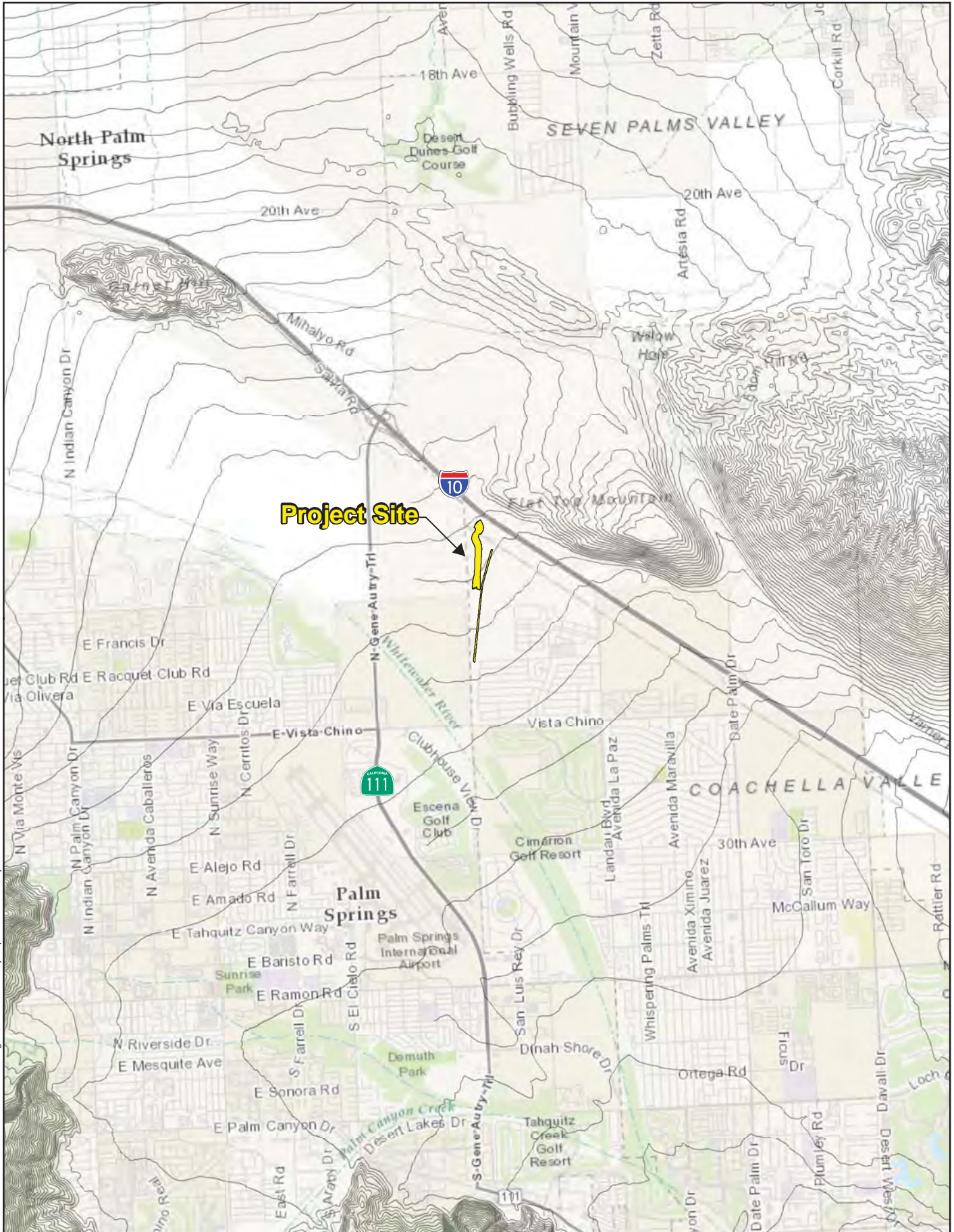
NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT



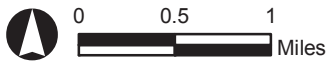
Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 BURROWING OWL FOCUSED SURVEY REPORT
Site Vicinity






Source: Riverside County, ESRI World Topographic Basemap

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Legend

-  Project Site
-  Survey Area
-  Photograph Locations

**NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT**

Survey Area



Source: ESRI USA Topographic Basemap

Section 2 Species Background

2.1 SPECIES BACKGROUND

The burrowing owl is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of fossorial mammals, such as ground squirrels (*Otospermophilus beecheyi*), whose burrows are used for roosting and nesting (Haug and Didiuk 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owl have crepuscular (dawn and dusk) hunting habits but are often observed perched in or near the burrow entrance during the day. They prey upon invertebrates and small vertebrates (Thomsen 1971) through the low vegetation which allows for foraging visibility. The nesting season occurs between February 1 and August 31. Burrowing owl in California may migrate southerly, but often remain in the breeding area during the non-breeding period.

The burrowing owl was once abundant and widely distributed within coastal southern California, but it has declined precipitously in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. A petition was filed to list the California population of the western burrowing owl as an Endangered or Threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either endangered or threatened. The CDFW currently lists the burrowing owl as a California Species of Special Concern.

2.2 REGULATORY FRAMEWORK

The burrowing owl is a resident and migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA reflects agreements made between the U.S., England, Mexico, the former Soviet Union, and Japan to protect all of North America's migratory bird populations. The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined in Title 50 C.F.R. part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb "collect" applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a

nest when it contains birds or eggs, and no possession shall occur during the destruction (United States Fish and Wildlife Service, Migratory Bird Permit Memorandum, April 15, 2003). Certain exceptions to this prohibition are included in 50 C.F.R. section 21. Pursuant to CDFW Code section 3513, the Department enforces the MBTA consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Additionally, burrowing owl is protected under Sections 3503, 3503.3, 3511, and 3513 of the CDFW Code which prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). CDFW Code Section 3503.5 protects birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls, including burrowing owls) which makes it unlawful to take, possess, or destroy their nest or eggs.

Burrowing owls have been included as one of the twenty-seven (27) focal species covered by the MSHCP. The objectives for burrowing owls within the MSHCP area are to maintain and ensure the conservation of occupied burrows on current conserved lands, decrease harmful effects to burrowing owls, and identify and implement monitoring and management to sustain the burrowing owl population within the plan area. Burrowing owls can be found in a variety of habitats within the Coachella Valley including adjacent to residential and commercial development, washes, fallow fields, sand dunes, agricultural drains, and creosote dominated landscapes. Within the Plan Area, burrowing owls are scattered in low numbers on natural desert terrain throughout the lowlands. There are seventy-four (74) known locations for burrowing owl recorded in 2003 by CDFW within the Plan Area (Coachella Valley MSHCP, 2007).

CDFW's 2012 Staff Report on Burrowing Owl Mitigation offers long-term assurances for conservation of this species in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California's NCCP Act (FGC §2800 et seq.) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary federal HCPs are governed by the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.) (ESA). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls, and grasslands and other habitats.

Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or "rare" regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur

(Sections 21001(c), 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

Section 3 Methodology

General weather conditions during each of the surveys were suitable for detections of burrowing owls. All surveys had clear skies and minimal wind. In accordance with the survey protocols, surveys are not accepted if they are conducted during rain, high winds (> 20 mph), dense fog, or temperatures over 90°F. The protocol survey for burrowing owl requires a systematic survey of all areas that provide suitable habitat plus a 150-meter (approximately 500 feet) zone of influence on all sides of suitable habitat. Survey transects were conducted at 30-meter (approximately 100 feet) intervals to ensure 100% visual coverage of all areas in suitable habitat, as applicable based on topography of the site (refer to Exhibit 3, *Survey Area*). The focused burrowing owl surveys were conducted during the recognized timeframe; in the morning one hour before sunrise to two hours after sunrise.

Areas providing potential habitat for burrowing owls were surveyed for suitable burrows, consisting of natural and non-natural substrates in areas with low, open vegetation. All burrows encountered were examined for shape, scat, pellets, white-wash, feathers, tracks, and prey remains. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, with a hand-held GPS unit. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (e.g., pellets, white wash, feathers, or prey remains). Suitable burrows/cavities, including rock piles and non-natural substrates, were thoroughly examined for signs of presence.

The burrowing owl focused survey was conducted during the beginning of the 2016 breeding season (February 1 to August 31) in accordance with the survey protocols listed in the Burrowing Owl Survey Requirements for the Coachella Valley MSHCP and CDFW 2012 Staff Report on Burrowing Owl Mitigation. The survey area was assessed on foot by qualified biologists, Ashley M. Barton, Ryan S. Winkleman, and Thomas C. Millington, who are knowledgeable in the habitats and behavior of burrowing owls on four (4) separate days:

Biologist	Survey Date (2016)
Ashley M. Barton	April 19, May 12, June 8, and July 7
Ryan S. Winkleman	June 8
Thomas C. Millington	April 19, May 12, and July 7

All surveys were completed between 0600 to 1000 hours.

Section 4 Results

4.1 EXISTING CONDITIONS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site and survey area occurs in an area that is mostly undisturbed. On-site habitats exhibit minimal disturbance and generally consists of a naturally occurring desert scrub habitat. Railroad tracks bordered by two parallel tamarisk (*Tamarix ramosissima*) windrows running in a northwest to southeast orientation can be found within the project site's northern portion, south of Interstate 10 freeway. Another tamarisk windrow sits on a berm within the eastern portion of the project site and runs north to south. This portion of the project site has been subject to a high degree of human disturbance, primarily through illegal trash dumping. The Morongo Wash passes through the northern portion of the survey area. Residential development can be found to the south and east of the survey area. An abandoned residential development with graded roads and building pads sits within the southeast portion of the survey area; native vegetation is slowly recovering in this area.

The majority of the project site and survey area consists of a Sonoran creosote bush scrub vegetation community. Common plant species observed within the survey area include creosote bush (*Larrea tridentata*), iodine bush (*Allenrolfea occidentalis*), cheesebush (*Ambrosia salsola*), and sandpaper plant (*Petalonyx thurberi*).

4.2 BURROWING OWL FOCUSED SURVEY

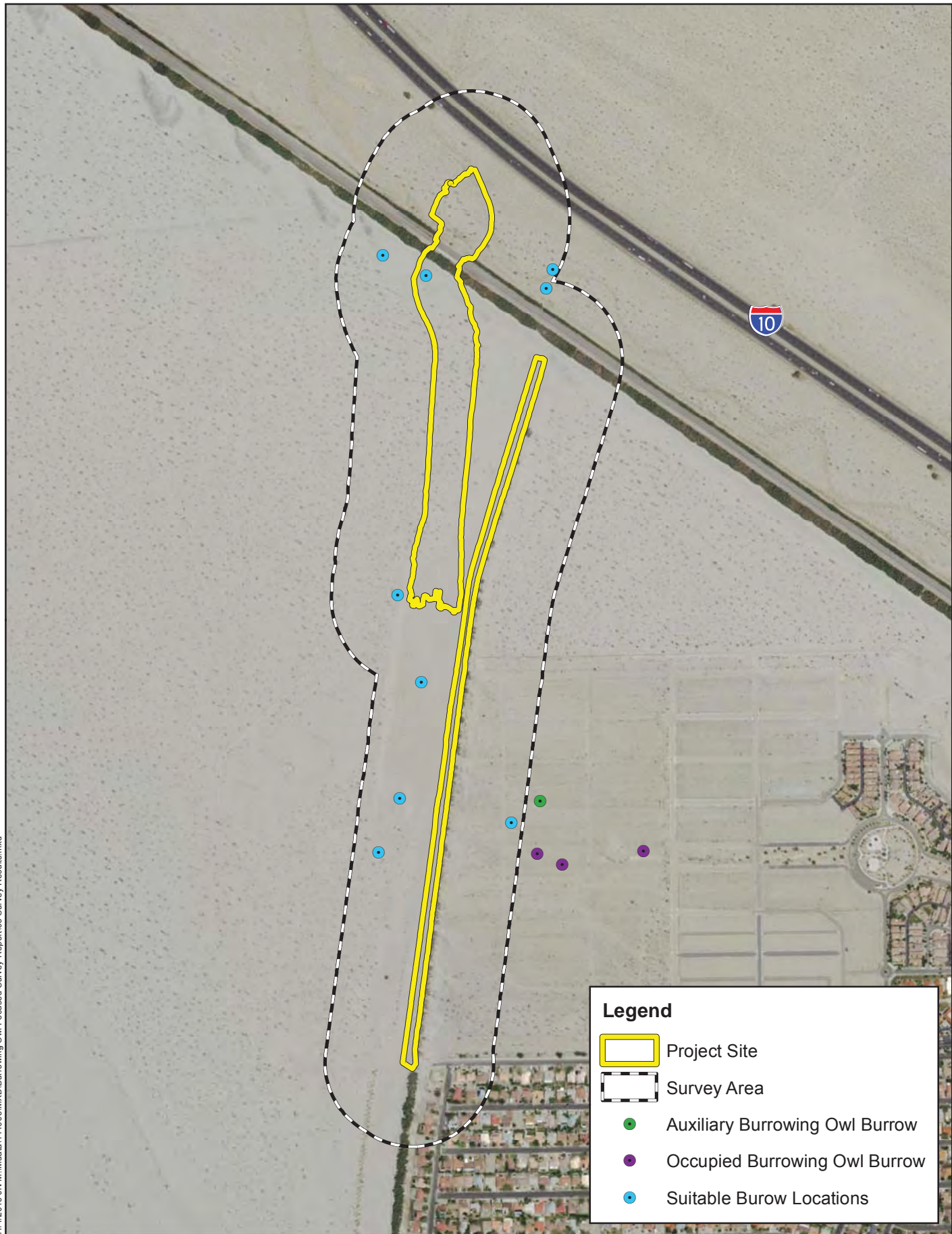
While the vegetation within the survey area is generally open and provides clear line-of-site opportunities favored by burrowing owls, the survey area is located within a sand transport corridor and on-site soils are dominated by loose, friable sandy material that does not provide favorable conditions for burrow construction. During the focused burrow survey conducted on April 19, 2016, it was determined the survey area provides a limited amount of suitable burrows for burrowing owls. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provide a favorable substrate for burrow construction.

Avian species detected during the focused surveys included Cooper's hawk (*Accipiter cooperii*), verdin (*Auriparus flaviceps*), house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Say's phoebe (*Sayornis saya*), northern mockingbird (*Mimus polyglottos*), Anna's hummingbird (*Calypte anna*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), hooded oriole (*Icterus cucullatus*), loggerhead shrike (*Lanius ludovicianus*), red-tailed hawk (*Buteo jamaicensis*), and common raven (*Corvus corax*). Refer to Appendix B for a complete list of wildlife species observed during the surveys.






Despite systematic searches of all suitable burrows, no burrowing owls or burrowing owl sign (i.e., scat, pellets, feathers, tracks, and prey remains) was observed during the four focused surveys.

It is important to note that six (6) burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three (3) burrows outside the limits of the survey area and are found on the slopes of several remnant building pads and do not appear to be foraging near the project area. The closest occupied burrow is located approximately 580 feet east of the project site (Exhibit 4, *Survey Results*).

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Legend

-  Project Site
-  Survey Area
-  Auxiliary Burrowing Owl Burrow
-  Occupied Burrowing Owl Burrow
-  Suitable Burrow Locations

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BURROWING OWL FOCUSED SURVEY REPORT

Survey Results

Section 5 Conclusion and Recommendations

Despite systematic searches of all suitable burrows, no burrowing owls or evidence (e.g., scat, pellets, feathers, tracks, and prey remains) to suggest recent use of the project site by burrowing owl was observed within the survey area. Therefore, it can be concluded that burrowing owls do not currently occupy the survey area and are presumed absent. However, it is important to note that six burrowing owls were observed approximately 70 feet outside of the survey area to the east. These burrowing owls occupy three burrows outside the limits of the survey area and are found on the slopes of several remnant building pads. There is no indication that these burrowing owls forage or otherwise use the project site.

Due to the proximity of these occupied burrows (<100 feet from the eastern boundary of the survey area), it is recommended that a pre-construction clearance survey for burrowing owl be conducted within thirty (30) days of the start of any ground disturbing activities to ensure burrowing owls remain absent from the survey area. This will ensure that grading activities associated with the proposed project do not violate the MBTA and California Fish and Game Code by impacting active burrowing owl burrows on or within 500 feet of the project site.

Section 6 References

- California Burrowing Owl Consortium, 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. Accessed online at: www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf
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- Ramsen, Jr., J.V. 1978. *Bird Species of Special Concern in California*. Non-game Wildlife Investigations. Wildlife Management Branch Administrative Report No78-1. Report prepared for California Department of Fish and Game.
- Western Riverside County Multiple Species Habitat Conservation Plan, 1996. *Burrowing Owl Survey Requirements for the Western Riverside County MSHCP Area*. March 29.

Appendix A Site Photographs



Photograph 1: Looking northwest across the northern portion of the survey area, north of Interstate 10.



Photograph 2: Looking east across the northern portion of the project site located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 3: Looking northwest across the northern portion of the survey area located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 4: Looking northwest across the eastern portion of the survey area. The tamarisk (*Tamarix* sp.) windrow in the distance is located south of the railroad tracks.



Photograph 5: Looking southeast across the central portion of the survey area. The tamarisk windrow in the distance runs along the eastern boundary of the project site.



Photograph 6: Looking south across the central portion of the survey area.



Photograph 7: Standing along the eastern boundary of the 500 foot survey buffer looking south.



Photograph 8: Photo of three (3) of the six (6) burrowing owls located approximately 230 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 9: Photo of one (1) of the six burrowing owls located approximately 150 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 10: Photo of one of the three (3) occupied burrows located approximately 240 feet east of the eastern boundary of the 500 foot survey buffer.



Photograph 11: Looking northeast across the eastern portion of the survey area.



Photograph 12: Looking north across the southern portion of the survey area.

Appendix B Fauna Compendium

Table B – 1: Wildlife Species

Scientific Name	Common Name
Aves	Birds
<i>Accipiter cooperii</i>	Copper's hawk
<i>Athene cunicularia</i>	burrowing owl
<i>Auriparus flaviceps</i>	verdin
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Calypte anna</i>	Anna's hummingbird
<i>Calypte costae</i>	Costa's hummingbird
<i>Columba livia</i>	rock pigeon
<i>Corvus corax</i>	common raven
<i>Falco sparverius</i>	American kestrel
<i>Geococcyx californianus</i>	greater roadrunner
<i>Haemorhous mexicanus</i>	house finch
<i>Icterus cucullatus</i>	hooded oriole
<i>Lanius ludovicianus</i>	loggerhead shrike
<i>Mimus polyglottos</i>	northern mockingbird
<i>Passer domesticus</i>	house sparrow
<i>Sayornis saya</i>	Say's phoebe
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Zenaida macroura</i>	mourning dove
Mammalia	Mammals
<i>Lepus californicus</i>	black-tailed jackrabbit
<i>Sylvilagus audubonii</i>	Audubon's cottontail
Reptilia	Reptiles
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard
<i>Coluber flagellum piceus</i>	red racer
<i>Dipsosaurus dorsalis</i>	desert iguana
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard

Appendix D Sensitive Plant Survey (2016)

August 31, 2016

JN 144905

MESSENGER INVESTMENT COMPANY

Attn: *William S. Messenger, Jr.*

270 Newport Center Drive, Suite 100

Newport Beach, California 92805

SUBJECT: Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California

Michael Baker International (Michael Baker) is pleased to submit this report to document the results of a sensitive plant survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California (project site or site). Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted four sensitive plant surveys to coincide with the flowering periods of sensitive plant species known to occur in the vicinity of the project site in accordance with the CDFW *Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFW 2009) as well as the United States Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). The project footprint and areas within 200 feet (survey area) that provide suitable habitat for sensitive plant species known to occur within the vicinity of the project site were surveyed.

Specifically, the surveys focused on the presence/absence of chaparral sand-verbena (*Abronia villosa* var. *aurita*) (CNPS Rare Plant Rank 1B.1), pygmy lotus (*Acmispon haydonii*) (CNPS Rare Plant Rank 1B.3), Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (CNPS Rare Plant Rank 1B.2 and federally endangered), triple-ribbed milk-vetch (*Astragalus tricarinatus*) (CNPS Rare Plant Rank 1B.2 and federally endangered), Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (CNPS Rare Plant Rank 1B.1), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) (CNPS Rare Plant Rank 1B.2), flat-seeded spruce (*Euphorbia platysperma*) (CNPS Rare Plant Rank 1B.2), Little San Bernardino Mtns. Linanthus (*Linanthus maculatus*) (CNPS Rare Plant Rank 1B.2), Latimer's woodland-gilia (*Saltugilia latimeri*) (CNPS Rare Plant Rank 1B.2), and Mecca-aster (*Xylorhiza cognata*) (CNPS Rare Plant Rank 1B.2). The findings of the surveys will be used to establish constraints, if any, to development including measures to avoid impacts to any federally and state listed plant species and California Native Plant Society (CNPS) *California Rare Plant Rank* listed plant species.

Project Location

The project site is generally located south of Interstate 10, on the western boundary of the City of Cathedral City, Riverside County, California. The project site is depicted on the Cathedral City quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east. Specifically, the project site is located north of Verona

Road, west and south of Interstate 10, and east of Gene Autry Trail. Refer to Attachment A, *Project Exhibits*.

Project Purpose and Need

The Coachella Valley Water District (CVWD) proposes regional stormwater improvements that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) tracks in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). Currently, there is a UPRR bridge crossing at the project site; the bridge was constructed and backfilled to allow for future construction of the North Cathedral City Stormwater Master Plan under the railroad to provide a connection to the WWRSC. Flows under the UPRR bridge have been precluded until the channel improvements and slope lining (east overbank) downstream of the bridge were ready to be constructed. As such, the project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts for tributary areas to the project site, including the North City Extended Specific Plan.

The primary components of the proposed project include the placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection. Additional detail is provided below:

- **Concrete Channel Lining:** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- **Bridge Improvements:** The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR's clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- **Earthen Channel Grading:** The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- **Slope Protection:** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately 9 months. Site access would be provided via Vista Chino, located approximately 0.5-mile south of the project site. All staging activities would occur within the proposed grading footprint for the drainage facility, or within the footprint of the proposed temporary access road.

Methodology

Michael Baker field staff conducted a thorough review of relevant literature and records to determine which sensitive plants have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, focused surveys were conducted to coincide with the flowering periods of chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, Mecca-aster, and other sensitive plant species that are known to occur within the general vicinity.

Literature Review

Prior to conducting the focused surveys, a literature review and records search was conducted for chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, and Mecca-aster. Previously recorded occurrences of this species and its proximity to the project site was determined through a query of the Consortium of California Herbaria (CCH), the California Department of Fish and Wildlife's (CDFW) *California Natural Diversity Database (CNDDDB) Rarefind 5* and *BIOS*, the CNPS's *Electronic Inventory of Rare and Endangered Vascular Plants of California*, Calflora Database, as well as the following resources:

- CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009);
- CNPS *Botanical Survey Guidelines* (2001);
- U.S. Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey; and
- USFWS Critical Habitat designations for Threatened and Endangered Plant Species.

Field Investigation

Based on the plant species known to occur within the general vicinity and the suitability of the on-site habitat to support those plant species, four (4) surveys were conducted. Michael Baker biologist Dan J. Rosie and Travis

J. McGill conducted the four surveys on April 14, April 19, May 4, and June 15, 2016. Suitable habitat occurring within the project site footprint and within 200 feet was extensively surveyed on foot. Linear transects were walked throughout suitable habitat from west to east and spaced at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting sensitive plant species known to occur within the general vicinity of the project site. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed on-site and identified in the laboratory using taxonomical guides. Scientific names are provided immediately following common names of plant species (first reference only). A handheld geographic positioning systems (GPS) device and standard field data sheets were used to record all populations of chaparral sand-verbena, pygmy lotus, Coachella Valley milk-vetch, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, and Mecca-aster, if found.

Sensitive Plant Species

Chaparral sand-verbena

Chaparral sand-verbena is an annual in the *Nyctaginaceae* family that can be found in Riverside, San Diego, Imperial, and Orange counties within southern California. It requires sandy soils on sandy desert slopes, in sandy alluvial sediments near streams and rivers, on roadsides in sandy soil, and in loose soil in open pine forests. Most occurrences of this species are found on gentle or flat terrain and are associated with chaparral and coastal scrub plant communities. This species can be found at elevations ranging from 246 to 5,249 feet above mean sea level (msl). This species has a blooming period that ranges from January to September. Chaparral sand-verbena was previously identified as occurring approximately 1.67 miles east of the project site, 5 miles north of Cathedral City (CNDDDB, 1955). This species was found within a disturbed, sandy field. No subsequent observations within the general vicinity of the project site have been made since then.

Pygmy Lotus

Pygmy lotus occurs in rocky soils within Sonoran desert scrub and pinyon and juniper woodland habitats. This species can be found at elevations ranging from 1,706 to 3,937 feet above msl. This species has a blooming period that ranges from January to June. Pygmy lotus was identified as occurring approximately 3.50 southwest of the project site in Palm Springs on a rocky slope (CNDDDB, 2011). No subsequent observations around the western segment of the project site have been made since then.

Coachella Valley milk-vetch

Coachella Valley milk-vetch is endemic to the dune systems of the Coachella Valley area of Riverside County, California. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is a winter annual or short-lived perennial herb from the legume family (Fabaceae). Coachella Valley milk-vetch grows on sandy flats, outwash fans, loose

wind-blown sand dunes and partially stabilized and stabilized dunes and sand fields in Sonoran desert scrub, creosote bush scrub, or sagebrush dominated communities. This species can be found at elevations ranging from 131 to 2,149 feet above msl. This species has a blooming period that ranges from February to May. The primary threat to Coachella Valley milk-vetch is urban development which effects habitat conservation.

The project site is immediately adjacent to designated Critical Habitat for this species (78 Federal Register [FR] 10449 10497). Nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species. The closest recorded occurrence of Coachella Valley milk-vetch is approximately 0.80 miles west of the project site along Gene Autry Trail (CNDDC, 2008). Further, this species was also observed within the boundaries of the project site and survey area during the 2016 blooming season.

Triple-ribbed milk-vetch

Triple-ribbed milk-vetch is endemic to southern California where it is restricted to dry slopes and canyons around the head of the Coachella Valley in Riverside and San Bernardino counties. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. This species is a short-lived perennial in the legume family that grows to 10 inches tall. It grow in weathered granite or gravelly soils in Joshua tree woodland and Sonoran desert scrub. Plants can mostly be found along washes in canyon bottoms and on the alluvial fans below. They can also be found as small populations or solitary individuals on weathered granite slopes in canyons. This species can be found at elevations ranging from 1,476 to 3,904 feet above msl. Triple-ribbed milk-vetch has a blooming period that ranges from February to May. Per CNDDDB records, triple-ribbed milk-vetch has not been identified as occurring within the general vicinity of the of the project site.

Parry's spineflower

Parry's spineflower occurs on alluvial fans and terraces in San Bernardino, Riverside, Los Angeles, and Orange counties. It is an annual herb in the buckwheat family (*Polygonaceae*) that occurs in the valley-floor and foothill habitats. Perry's spineflower is found in dry, sandy or gravelly soils in washes, alluvial benches, and in foothill microhabitats with unconsolidated soils and low vegetation cover. It most commonly occurs in openings in coastal sage scrub, chaparral, alluvial fan scrub, and the ecotone between chaparral and oak woodland. This species can be found at elevations ranging from 902 to 4,003 feet above msl. Parry's spineflower has a blooming period that ranges from April to June. Parry's spineflower was previously identified as occurring approximately 3.50 miles southwest of the project site (CNDDDB, 2008). No subsequent observations around the western segment of the project site have been made since then.

White-bracted spineflower

White-bracted spineflower is known from one occurrence on the San Bernardino National Forest with the rest of the occurrences are in downstream alluvial habitats. This species is in the buckwheat family and is found in

sandy to gravelly places in desert scrub communities, including Mojavean Desert scrub and pinyon-juniper woodlands. This species can be found at elevations ranging from 984 to 3,937 feet above msl. White-bracted spineflower has a blooming period that ranges from April to June. Per CNDDDB records, white-bracted spineflower has not been identified as occurring within the general vicinity of the of the project site.

Flat-seeded spurge

Flat-seeded spurge is an annual plant found on shifting dunes of low and medium height, and present on higher dunes near the Gulf of California. This species can be found at elevations ranging from 213 to 328 feet above msl. Flat-seeded spurge has a blooming period that ranges from February to September. Flat-seeded spurge was previously identified as occurring 6.50 miles southeast of the project site near Edom (CNDDDB, 1926). No subsequent observations around the western segment of the project site have been made since then.

Little San Bernardino Mountains linanthus

Little San Bernardino Mountains linanthus is an annual herb in the phlox family (Polemoniaceae) that is endemic to southern California and can be found in San Bernardino, Riverside, and Imperial counties. This species can be found on loose, well-aerated, open sandy benches and flats on the margins of desert washes. Little San Bernardino Mountains linanthus is always found in open areas that receive no shade from nearby shrubs and is associated with other small annual species. Little San Bernardino Mountains linanthus was recorded as occurring 3.60 miles southwest of the project site at the intersection of Tahquitz Canyon Way and Indian Canyon Drive in Palm Springs (CNDDDB, 1889). No subsequent observations around the western segment of the project site have been made since then.

Latimer's woodland-gilia

Latimer's woodland-gilia grows in rocky or sandy, often granitic, soils in chaparral, Mojavean desert scrub, and pinyon and juniper woodland habitats. This species can be found at elevations ranging from 1,312 to 6,234 feet above msl. Latimer's woodland-gilia has a blooming period that ranges from March to June. Latimer's woodland-gilia was recorded as occurring approximately 3.50 miles southeast of the project site within desert sand habitat in Palm Springs (CNDDDB, 1920). No subsequent observations around the western segment of the project site have been made since then.

Mecca-aster

Mecca-aster is a flowering plant in the aster family and is endemic to Riverside County, California. It is known only from the Mecca Hills and Indio Hills of the Sonoran Desert. It grows in scrubby habitat in dry desert canyons. This species can be found at elevations ranging from 66 to 1,312 feet above msl. Mecca-aster has a blooming period that ranges from January to June. Mecca-aster was observed approximately 3.56 miles southwest of the project site in Palm Springs (CNDDDB, 2010). No subsequent observations around the western segment of the project site have been made since then.

Site Conditions

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site and survey area occurs in an area that is mostly undisturbed. On-site habitats exhibit minimal disturbance and generally consists of a naturally occurring desert scrub habitat. Railroad tracks bordered by two parallel tamarisk (*Tamarix ramosissima*) windrows running in a northwest to southeast orientation can be found within the project site's northern portion, south of Interstate 10 freeway. Another tamarisk windrow sits on a berm within the eastern portion of the project site and runs north to south. This portion of the project site has been subject to a high degree of human disturbance, primarily through illegal trash dumping. The Morongo Wash passes through the northern portion of the survey area. Residential development can be found to the south and east of the survey area. An abandoned residential development with graded roads and building pads sits within the southeast portion of the survey area; native vegetation is slowly recovering in this area.

Vegetation Communities

One (1) plant community was observed within the survey area: Sonoran creosote bush scrub. Plant species that have been observed within the boundaries of the project site include creosote bush (*Larrea tridentata*), cheesebush (*Ambrosia salsola*), croton (*Croton californicus*), indigo bush (*Amorpha fruticosa*), and Mediterranean grass (*Schismus* sp.). In addition, two parallel tamarisk windrows cross through the project site in a northwest to southeast orientation south of I-10, and a third windrow runs roughly north to south along the eastern edge of the site. Railroad tracks lay in between the two parallel windrows. These vegetation communities are described in further detail below. Refer to Attachment D, *Floral Compendium* for a list of plant species observed during the surveys.

Results

One sensitive plant species, Coachella Valley milk-vetch (CNPS Rare Plant Rank 1B.2 and Federally Endangered) was observed during the four focused surveys conducted on April 14, April 19, May 4, and June 15, 2016 (refer to Attachment A, Exhibit 4, *Survey Results*). Approximately 266 individuals were observed throughout the survey area.

Chaparral sand-verbena, pygmy lotus, triple-ribbed milk-vetch, Parry's spineflower, white-bracted spineflower, flat-seeded spurge, Little San Bernardino Mtns. Linanthus, Latimer's woodland-gilia, Mecca-aster and other sensitive plant species known to occur within the general vicinity of the project site were not detected during the on April 14, April 19, May 4, and June 15, 2016 surveys. Based on the habitat requirements of these sensitive plant species and the availability and quality of habitats needed by each species, these species are presumed absent from the project site.

Conclusion and Recommendations

The sensitive plant surveys conducted on April 14, April 19, May 4, and June 15, 2016 covered all areas of

suitable habitat located within the survey area and project site. Only one sensitive plant species, Coachella Valley milk-vetch, was observed within the survey area and project site. No other sensitive plant species were observed during the surveys.

Please do not hesitate to contact me at (909) 974-4907 or tmcgill@mbakerintl.com or Travis J. McGill at (909) 974-4958 or travismcgill@mbakerintl.com should you have any questions or require further information.

Sincerely,



Thomas J. McGill, Ph.D.
Vice President
Natural Resources



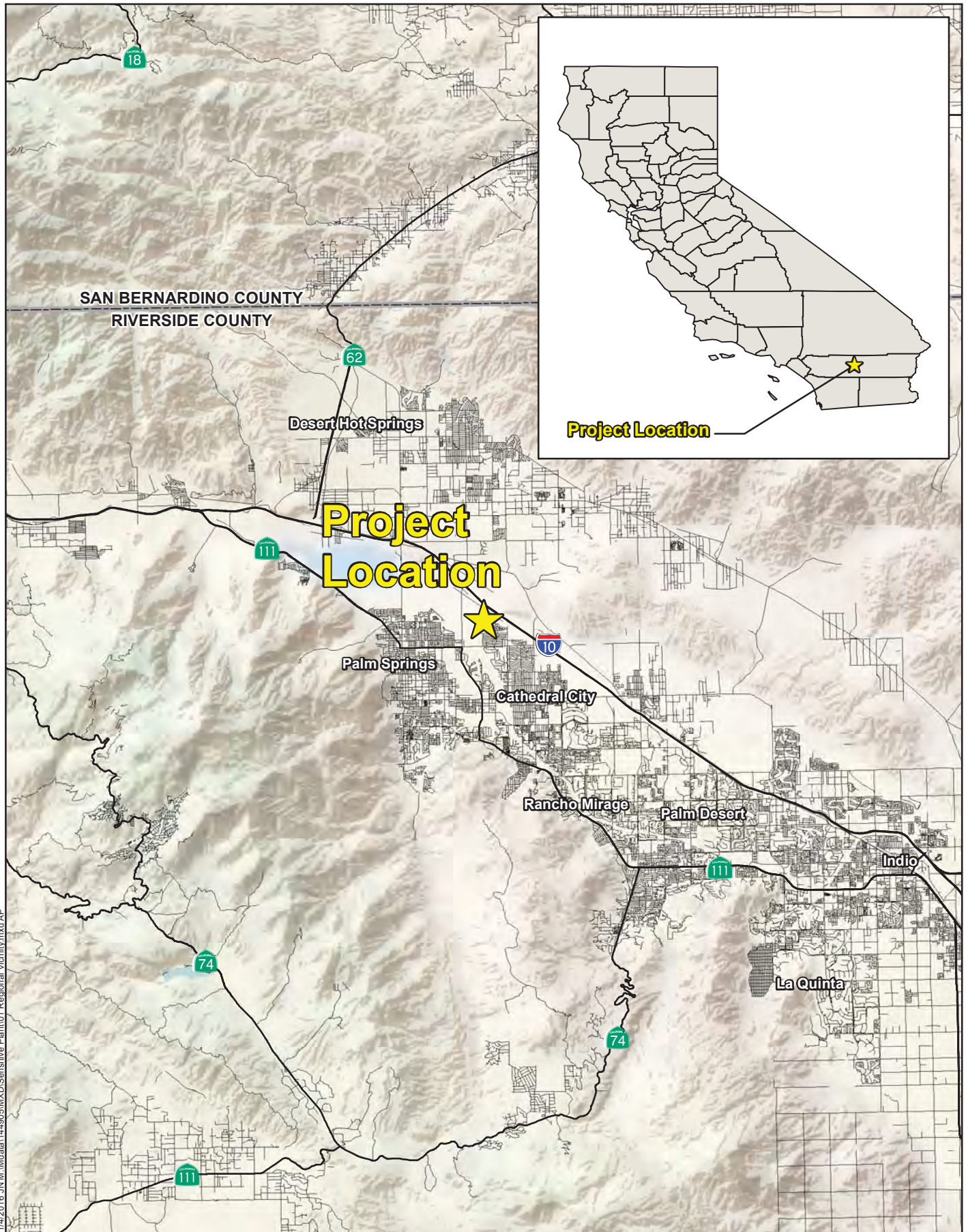
Travis J McGill
Biologist
Natural Resources

Attachments:

- A. Project Exhibits
- B. Site Photographs
- C. Target Special-Status Plant Species
- D. Flora Compendium

Attachment A

Project Exhibits



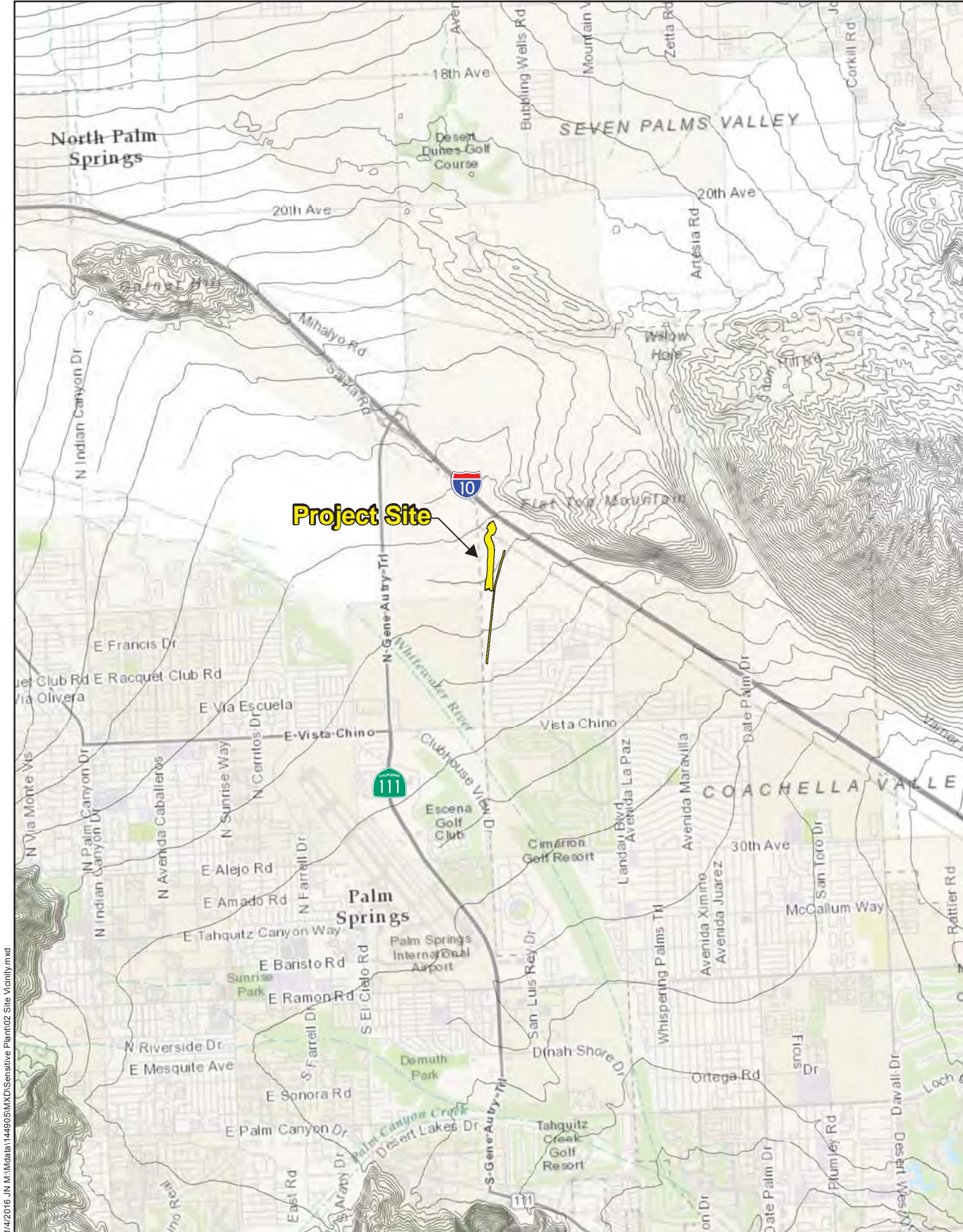
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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
SENSITIVE PLANT SURVEY

Regional Vicinity



Source: ESRI Relief Map, National Highway Planning Network

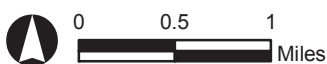


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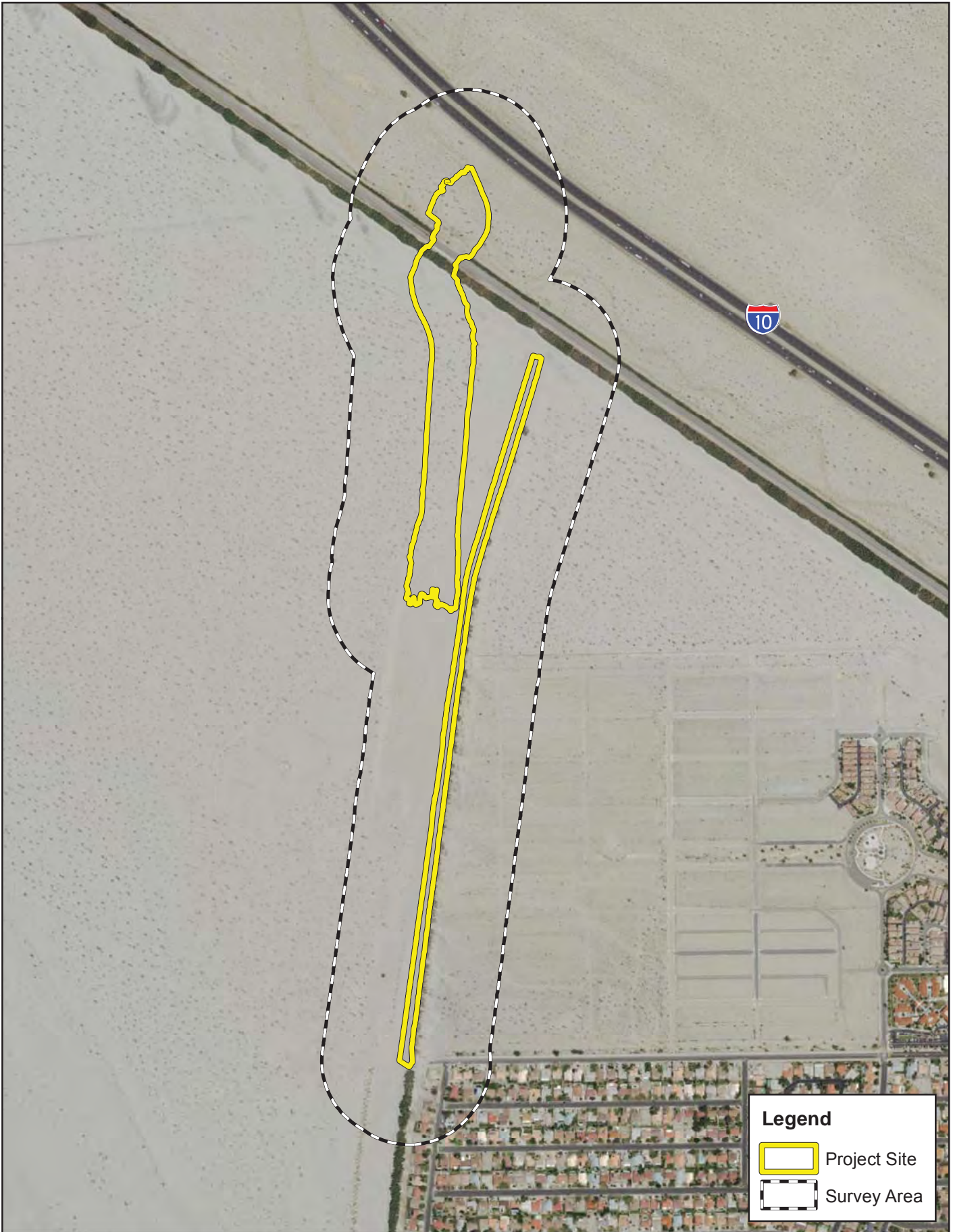
SENSITIVE PLANT SURVEY

Site Vicinity





Source: Riverside County, ESRI World Topographic Basemap

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Legend

-  Project Site
-  Survey Area

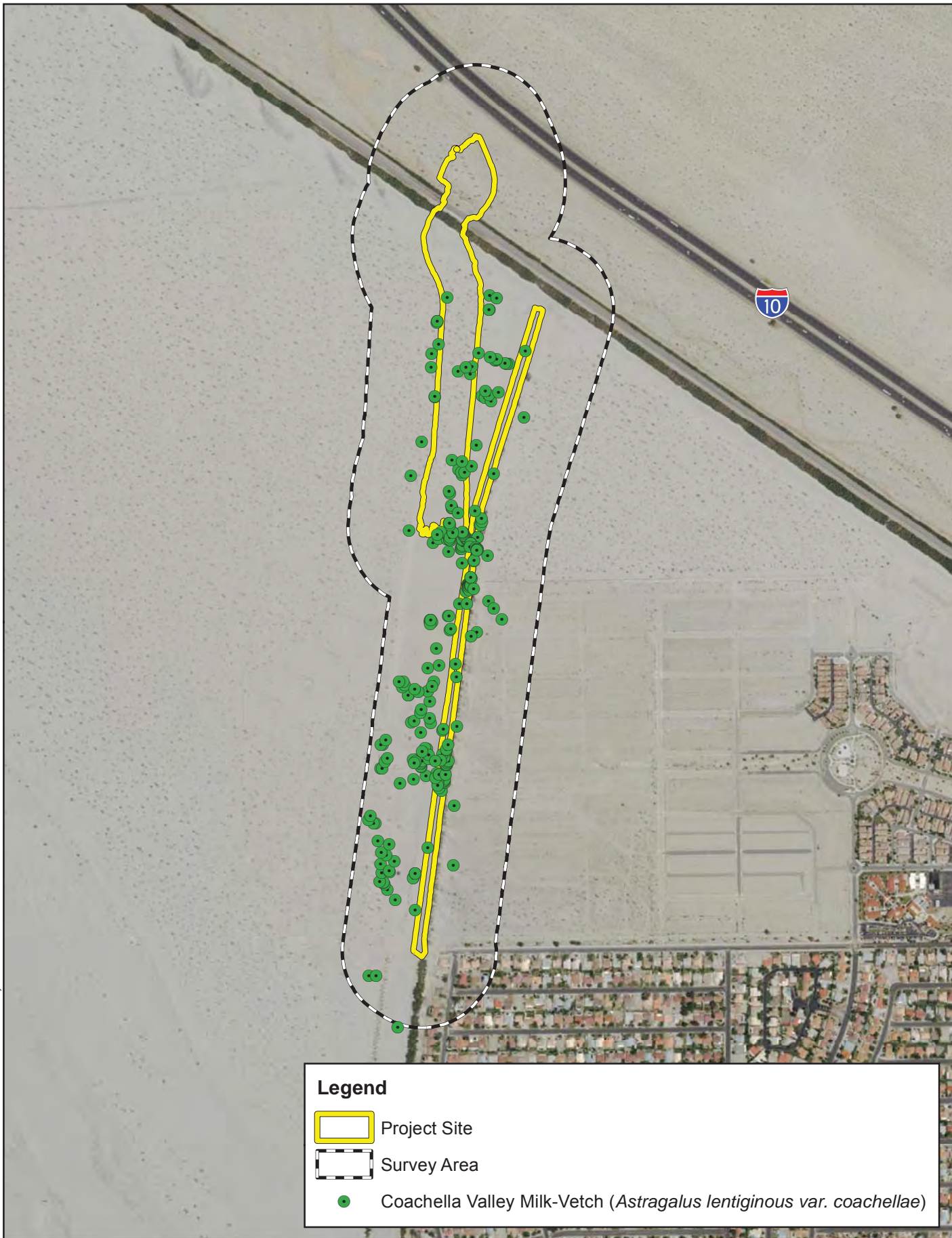
NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
SENSITIVE PLANT SURVEY

Survey Area






Source: ESRI USA Topographic Basemap

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Legend

-  Project Site
-  Survey Area
-  Coachella Valley Milk-Vetch (*Astragalus lentiginous var. coachellae*)

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

SENSITIVE PLANT SURVEY
Survey Results

Exhibit 4

Attachment B

Site Photographs



Photograph 1: Standing within the southeast portion of the survey area looking north.



Photograph 2: Looking southwest across the central portion of the survey area. The project site can be seen in the distance.



Photograph 3: Standing within the northeastern portion of the survey area looking south.



Photograph 4: Looking west across the northern portion of the project site located south of Interstate 10 freeway and north of the railroad tracks.



Photograph 5: Looking west across the northern portion of the survey area located south of the railroad tracks.



Photograph 6: Looking southeast at the northern portion of the project site.



Photograph 7: Photo of a Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) found within the survey area.



Photograph 8: Standing within the southwest portion of the survey area looking north.

Attachment C

Target Special-Status Plant Species

Table C-1: Target Special-Status Plant Species

Scientific Name Common Name	Status	Habitat	Blooming Period
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	Fed: None CA: None CNPS: 1B.1	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet.	January to September
<i>Acmispon haydonii</i> pygmy lotus	Fed: None CA: None CNPS: 1B.3	Grows in rocky soil within Sonoran desert scrub, pinyon and juniper woodland. Found at elevations ranging from 1,706 to 3,937 feet.	January to June
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	Fed: END CA: None CNPS: 1B.2	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation.	February to May
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	Fed: END CA: None CNPS: 1B.2	Found in sandy or gravelly soils within Joshua tree woodland and Sonoran desert scrub habitats. Found at elevations ranging from 1,476 to 3,904 feet.	February to May
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet.	April to June
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Grows on sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet.	April to June
<i>Euphorbia platysperma</i> flat-seeded spurge	Fed: None CA: None CNPS: 1B.2	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet.	February to September
<i>Linanthus maculatus</i> Little San Bernardino Mtns. linanthus	Fed: None CA: None CNPS: 1B.2	Preferred habitats include desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub in sandy soils. Found at elevations ranging from 640 to 6,808 feet.	March to May
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Mojavean desert scrub, pinyon and juniper woodland. Prefers rocky or sandy, often granitic, soils. Found at elevations ranging from 1,312 to 6,234 feet.	March to June
<i>Xylorhiza cognata</i> Mecca-aster	Fed: None CA: None CNPS: 1B.2	Occurs in Sonoran desert scrub habitat. Found at elevations ranging from 66 to 1,312 feet.	January to June

Attachment D

Flora Compendium

Table D-1: Plant Species

PLANT SPECIES	
Scientific Name	Common Name
<i>Abronia villosa</i>	desert sand verbena
<i>Ambrisia dumosa</i>	burrobush
<i>Ambrosia acanthicarpa</i>	annual bursage
<i>Ambrosia salsola</i>	cheesebush
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch
<i>Atriplex lentiformis</i>	big saltbush
<i>Brassica tournefortii</i>	Sahara mustard
<i>Camissonia californica</i>	false mustard
<i>Camissoniopsis pallida</i>	pale yellow sun cup
<i>Chorizanthe brevicornu</i>	brittle spineflower
<i>Chorizanthe rigida</i>	rigid spiny herb
<i>Chylismia calviformis</i>	brown-eyed primrose
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple godetia
<i>Croton californicus</i>	desert croton
<i>Cryptantha circumscissa</i>	cushion cryptantha
<i>Cylindropuntia echinocrpa</i>	golden cholla
<i>Dicoria canescens</i>	desert twinbugs
<i>Dithyrea californica</i>	spectacle pod
<i>Encelia farinosa</i>	brittlebush
<i>Encelia frutescens</i>	button brittlebush
<i>Eriastrum eremicum</i>	desert woollystar
<i>Ericameria nauseosa</i>	rubber rabbitbush
<i>Eriogonum thomasii</i>	Thomas' buckwheat
<i>Erodium cicutarium</i>	red stemmed filaree
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Larrea tridentata</i>	creosote bush
<i>Lupinus shockleyi</i>	Shockley lupine
<i>Oenothera californica</i>	California primrose
<i>Palafoxia arida</i>	Spanish needle
<i>Pectocarya recurvata</i>	Curvenut combseed
<i>Peritoma arborea</i>	bladderpod
<i>Petalonyx thurberi</i>	sandpaper plant
<i>Plantago ovata</i>	desert plantain
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psathyrotes ramosissima</i>	velvet turtleback
<i>Psorothamnus emoryi</i>	dyebush
<i>Psorothamnus schottii</i>	indigo bush
<i>Psorothamnus spinosus</i>	smoke tree
<i>Salsola paulsenii</i>	barbwire Russian thistle
<i>Salsola tragus</i>	Russian thistle
<i>Salvia columbariae</i>	chia sage
<i>Schismus arabicus</i>	Arabian schismus

Table D-1: Plant Species

PLANT SPECIES	
<i>Scientific Name</i>	Common Name
<i>Stephanomeria pauciflora</i>	wire lettuce
<i>Stillingia spinulosa</i>	annual stillingia
<i>Tamarix aphila</i>	tamarisk
<i>Tiquilia plicata</i>	coldenia

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Resources Technical Report

Prepared For:

COACHELLA VALLEY WATER DISTRICT

75-515 Hovley Lane East
Palm Desert, California 92211
Contact: *Scott Strosnider P.E., CFM*
760.398.2661, ext. 2737

Prepared By:

MICHAEL BAKER INTERNATIONAL

5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: *Ryan Winkleman*
949.533.0918

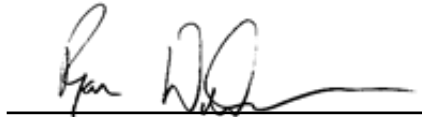
March 2022
JN 179420

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

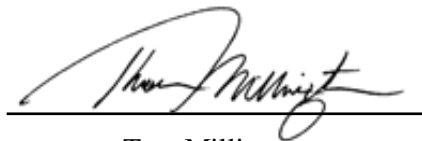
CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Resources Technical Report

The undersigned certify that the statements furnished in this report and figures present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and experience.



Ryan Winkleman
Senior Biologist
Natural Resources and Regulatory Permitting



Tom Millington
Senior Biologist
Natural Resources and Regulatory Permitting

March 2022
JN 179420

Executive Summary

This report contains the findings of Michael Baker International’s (Michael Baker) biological resource surveys for the proposed North Cathedral City Improvements Project, Phase 1 (project or project site) located in the City of Cathedral City, County of Riverside, California. Michael Baker biologists conducted a series of habitat assessments and focused surveys between August 2015 and October 2020. The field surveys were conducted to characterize existing site conditions and assess the potential for special-status¹ biological resources to occur within the project site that could pose a constraint to implementation of the proposed project. This report focuses particularly on those resources that the Bureau of Land Management (BLM) will consider during National Environmental Policy Act reviews and approvals, and is only intended to discuss surveys that have been conducted and their results.

Four (4) natural vegetation communities were observed and mapped within the boundaries of the survey area, defined as the project site and a 500-foot survey buffer: Sonoran creosote bush scrub within land not managed by the BLM or included within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), and active sand fields; stabilized, shielded sand fields; and Sonoran mixed woody and succulent scrub within BLM/CVMSHCP lands. In addition, the survey area contains two (2) land cover types classified as tamarisk windrow and developed.

Michael Baker biologists observed one (1) federally-listed special-status plant species on-site during the 2016 focused surveys, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*; federally listed as endangered, California Rare Plant Rank (CRPR) 1B.2, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP). No other special-status plant species were observed during any of the biological surveys, including rare plant focused surveys, conducted between 2015 and 2020. Based on the results of comprehensive records searches and literature reviews repeated over the course of the site investigations (between 2015 and 2020), a review of existing site conditions during previous field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status plant species, Michael Baker determined that the overall survey area has a moderate potential to support Borrego milk-vetch (*Astragalus lentiginosus* var. *borreanus*; CRPR 4.3) and a low potential to support Little San Bernardino Mountains linanthus (*Linanthus maculatus* ssp. *maculatus*; CRPR 1B.2 and BLM sensitive species). All remaining special-status plant species identified by the records searches and literature reviews are not expected to occur within the survey area.

Michael Baker biologists observed one (1) federally-listed special-status wildlife species, Coachella Valley fringe-toed lizard (*Uma inornata*; federally listed as threatened, State listed as endangered, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP), on-site

¹ As used in this report, “special-status” refers to species that are either Federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; species designated as sensitive or target sensitive species by the Bureau of Land Management; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan.

during 2016 focused surveys for burrowing owl (*Athene cunicularia*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC), and a covered species under the CVMSHCP). Other special-status wildlife species that were observed within the survey area between 2015 and 2020 included Cooper's hawk (*Accipiter cooperii*; CDFW Watch List (WL)), sharp-shinned hawk (*Accipiter striatus*; CDFW WL), burrowing owl, horned lark (*Eremophila alpestris*; CDFW WL if the *actia* subspecies), and loggerhead shrike (*Lanius ludovicianus*; CDFW SSC). Based on the specific results of the records searches and literature reviews, a review of existing site conditions during the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status wildlife species, Michael Baker determined that the overall project site has a high potential to support prairie falcon (*Falco mexicanus*; CDFW WL), American peregrine falcon (*Falco peregrinus anatum*; BLM sensitive species and CDFW fully protected (FP) species), Coachella giant sand treader cricket (*Macrobaenetes valgum*; BLM target sensitive species within sand dunes and sand fields and a covered species under the CVMSHCP), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP) and a moderate potential to support pocketed free-tailed bat (*Nyctinomops femorosaccus*; CDFW SSC), flat-tailed horned lizard (*Phrynosoma mcallii*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*; BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). In addition, the project site has a low potential to support Crotch bumble bee (*Bombus crotchii*; CDFW candidate for State listing as endangered), Swainson's hawk (*Buteo swainsoni*; State listed as threatened), desert tortoise (*Gopherus agassizii*; State and federally listed as threatened, and a covered species under the CVMSHCP), golden eagle (*Aquila chrysaetos*; BLM sensitive species, CDFW FP, CDFW WL), Lucy's warbler (*Oreothlypis luciae*; BLM sensitive and CDFW SSC), and Le Conte's thrasher (*Toxostoma lecontei*; BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). All remaining special-status wildlife species identified by the records searches and literature reviews are not expected to occur within the survey area.

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
CDCA	California Desert Conservation Act of 1980
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CMA	Conservation and Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CRPR	California Rare Plant Rank
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVWD	Coachella Valley Water District
CWA	Federal Clean Water Act
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FP	Fully Protected
GIS	Geographic Information System
GPS	Geographic Positioning Systems
I	Interstate
IPaC	Information for Planning and Consultation
IS	Initial Study
JPR	Joint Project Review
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
Michael Baker	Michael Baker International
NEPA	National Environmental Policy Act
Procedures project	Procedures for Discharges of Dredged or Fill Material to Waters of the State North Cathedral City Improvements Project, Phase 1
Regional Board	Regional Water Quality Control Board
SSC	Species of Special Concern

TNW	Traditionally Navigable Water
UPRR	Union Pacific Railroad
USC	United States Government Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WHMA	Wildlife Habitat Management Area
WL	Watch List
WoS	Waters of the State
WoUS	Waters of the U.S.
WWRSC	Whitewater River Stormwater Channel

Section 1 Introduction

This report contains the findings of Michael Baker International’s (Michael Baker) habitat assessments and focused surveys for the proposed North Cathedral City Improvements Project, Phase 1 (project or project site). The proposed project involves the restoration and re-establishment of a historic flow channel in the Whitewater River. Michael Baker biologists conducted a series of field surveys between 2015 and 2020 in support of the proposed project. The habitat assessment surveys were conducted to characterize existing site conditions and assess the potential for special-status² biological resources to occur within the survey area, defined as the project site and a 500-foot buffer, that could pose a constraint to implementation of the proposed project as a whole or implementation of maintenance activities at specific locations within the project site. Special attention was given to the suitability of the habitat within the survey area and its potential to support special-status biological resources that were identified during a record search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CNDDDB; CDFW 2021a), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (Online Inventory; CNPS 2021), the Calflora Database (Calflora 2021), and the United States Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IPaC) database (USFWS 2021a) as potentially occurring in the vicinity of the project site. Additional focused surveys were conducted to identify the presence or absence of special-status species.

1.1 PROJECT LOCATION

The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (refer to Figure 1, *Regional Vicinity*, in Appendix A). The project site is depicted on the Cathedral City quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (refer to Figure 2, *Site Vicinity*, in Appendix A). Specifically, the project site is located north of Ontina Road, west and south of I-10, and east of Gene Autry Trail (refer to Figure 3, *Project Site*, in Appendix A). The project site and survey area are both variably located within lands managed by the Bureau of Land Management (BLM) and lands located within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Plan Area (refer to Figure 4, *Land Ownership*, in Appendix A).

1.2 PROJECT DESCRIPTION

The Coachella Valley Water District (CVWD) proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific railroad (UPRR) bridge, and under the bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of CVWD’s stormwater infrastructure. This proposed project (also

² As used in this report, “special-status” refers to species that are either Federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; species designated as sensitive or target sensitive species by the Bureau of Land Management; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan.

referred to as the “proposed action”) would provide a reliable and engineered channel under the bridge to provide a long-term solution for conveying flows downstream to the WWRSC. As such, the proposed project would include improvements to safely and reliably convey flows beneath the bridge, reducing floodplain impacts to downstream areas, including the Thousand Palms planning unit.

1.2.1 ALTERNATIVE 1 – PROPOSED ACTION

The primary components of the project include the placement of concrete channel protection upstream and downstream of the UPRR bridge, bridge improvements, channel grading, and levee slope protection. Additional detail is provided below:

- ***Concrete Channel Lining:*** The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- ***Bridge Improvements:*** The project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g., bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR’s clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- ***Earthen Channel Grading:*** The project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.
- ***Concrete Levee Slope Protection:*** Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge and is currently delineated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Map No. 06065C1576G as a levee. This levee, however, is only a sand berm and, under a future 100-year storm event, would likely fail. Thus, the project proposes to install a concrete slope at this location, consistent with current levee design criteria identified in 44 CFR 65.10, in order to reinforce the levee and better protect residents downstream during a 100-year storm event. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet.

The proposed project has been sized to convey flows associated with the 100-year storm event, both alone and in conjunction with future Phase 2 improvements that would enhance stormwater conveyance beneath I-10. No future modifications at the project site would be required to achieve 100-year storm capacity.

The proposed drainage improvements would extend from approximately 500 feet north of the UPRR alignment to approximately 6,300 feet south of the UPRR alignment, for a total length of approximately 6,800 linear feet. Construction would occur as a single phase and is anticipated to last approximately nine months. Nighttime construction may be required. Temporary construction access would be provided via Vista Chino, located approximately 0.5 mile south of the project site. A temporary construction access road would be extended from Vista Chino, extending north to the project site. All staging activities would occur within the proposed grading footprint for the drainage facility or within the footprint of the proposed temporary access road.

Operations and Maintenance

Maintenance activities would also include emergency maintenance to clear sediment deposits threatening infrastructure integrity and flow conveyance following a large storm event and invasive species control measures to protect native habitat within the project area. It is anticipated an invasive species control program would be implemented as part of the Habitat Mitigation and Monitoring Plan required under the Section 1602 Streambed Alteration Agreement anticipated for the project. The program would include measures such as a five-year period where non-native species are controlled/removed, photo documentation, a project completion report, and annual reporting to ensure compliance with the plan.

Whitewater Floodplain Conservation Area

In addition to improved conditions related to regional stormwater flows and flood protection, the project would also provide biological benefits within the site vicinity. Currently, wildlife cannot cross the UPRR at the project site, given the existing sediment that has built up at the bridge undercrossing. The creation of a permanent, unimpeded channel crossing beneath the UPRR bridge would re-establish wildlife movement between the northern and southern sides of the UPRR tracks. The project would not include any fencing, structures, or other facilities that would impede wildlife movement under the UPRR bridge. By providing a connection to the WWRSC, the project would allow for stormwater flows and associated sand transport, resulting in an increase in sand habitat within the project area.

The project site is located within a conservation area associated with the CVMSHCP, and the project underwent review by the Coachella Valley Conservation Commission (CVCC) under the Joint Project Review (JPR) process. Through the JPR review process, CVWD consulted extensively with CVCC to review the project's potential impacts to sensitive biological resources and consistency with the existing CVMSHCP. The JPR review resulted in a "Like Exchange" under the CVMSHCP, where land would be acquired by CVWD and deeded to CVCC or placed under a conservation easement in order to compensate for lands improved under the proposed project. Through CVCC, USFWS and CDFW concurred with the Equivalency Analysis prepared for the Like Exchange in a letter dated March 15, 2017.

1.2.2 ALTERNATIVE 2 – NO ACTION ALTERNATIVE

Currently, sediment build-up under the UPRR bridge is causing existing flows to become trapped between the UPRR and I-10, resulting in flow downstream to the southeast, into the Thousand Palms planning unit. With the No Action Alternative, the stormwater improvements, including placement of concrete channel protection on both sides of the UPRR bridge, bridge improvements, channel grading, and slope protection,

would not be constructed. Thus, stormwater flows would not be conveyed beneath the bridge and floodplain impacts would not be reduced for tributary areas to the project site, including existing and planned future development. With the No Action Alternative, implementation of the Thousand Palms Flood Control Project, situated downstream of the existing flows, would only achieve flood control for approximately 3 to 4 square miles of flows and 100-year flood flows would continue to impact existing development and impede future planned development within the Thousand Palms planning unit.

Section 2 Methodology

For the purposes of this report, the term “project site” refers to the project’s grading footprint, while the term “survey area” refers to the project site and an additional 500-foot survey buffer. Michael Baker conducted thorough literature reviews and record searches to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site prior to conducting the general habitat assessments. The surveys were conducted in order to document existing biological conditions and determine the potential for special-status plant and wildlife species to occur within the survey area.

2.1 LITERATURE REVIEW

Prior to conducting the field surveys, literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previous special-status plant and wildlife species occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* 7.5-minute quadrangles were obtained through a query of the CNDDDB (CDFW 2021a), the CNPS Online Inventory (CNPS 2021), the Calflora Database (Calflora 2021), and the IPaC database (USFWS 2021a). Species conservation statuses were verified through the *Special Animals List* (CDFW 2021b) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021c).

In addition to the databases referenced above, Michael Baker reviewed publicly available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site to understand existing site conditions, previous species observations, and the extent of any disturbances that have occurred in the project site that would otherwise limit the distribution of special-status biological resources. On-site and adjoining soils were researched prior to conducting the habitat assessment using the United States Department of Agriculture, Natural Resource Conservation Service (USDA) *Custom Soil Resource Report for Riverside County, Coachella Valley Area, California* (USDA 2021). In addition, reviews of the local geological conditions and historical aerial photographs were conducted to assess the ecological changes and disturbances that may have occurred within the survey area over time.

Standard field guides and texts were reviewed for specific habitat requirements of special-status biological resources. Other resources reviewed include the following:

- USFWS Critical Habitat for Threatened & Endangered Species Mapper (USFWS 2021b);
- Recent and historical aerial photography (Google, Inc. 2021);
- USFWS National Wetland Inventory (USFWS 2021c);
- FEMA 100 Year Flood Zones (FEMA 2021);

- *Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan – Final Major Amendment to the CVMSHCP* (Coachella Valley Association of Governments (CVAG) 2016);
- *North Cathedral City Improvements Project, Phase 1 Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2016a);
- *North Cathedral City Improvements Project, Phase 1 Burrowing Owl Focused Survey Report* (Michael Baker 2016b);
- *Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California* (Michael Baker 2016c);
- *North Cathedral City Improvements Project, Phase 1 Equivalency Analysis* (Michael Baker 2016d);
- BLM Palm Springs-South Coast Field Office Special-Status Plants List (BLM 2020a); and
- BLM Palm Springs-South Coast Field Office Special-Status Animals List (BLM 2020b).

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the survey area. Additional occurrence records of those species that have been documented on or near the overall project site were derived from database queries. The CNDDDB was used, in conjunction with Geographic Information System (GIS) ArcView software, to identify and map reported special-status species occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley California* 7.5-minute quadrangles.

2.2 HABITAT ASSESSMENTS

Two habitat assessment surveys were conducted within the survey area aside from the focused surveys that were conducted. Michael Baker biologists Ashley Barton, Ryan Winkleman, Tom Millington, and Travis McGill conducted an initial field survey on August 5, 2015 to document the extent and conditions of the vegetation communities occurring within the boundaries of the survey area and to assess the potential for special-status species to occur the survey area. Vegetation communities preliminarily identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the vegetation communities and along boundaries between vegetation communities.

During the field survey, Michael Baker extensively surveyed all naturally vegetated areas where accessible. Naturally vegetated areas typically have a higher potential to support special-status plant and wildlife species than areas that are highly disturbed or developed, which usually have lower quality and/or reduced amounts of habitat for wildlife. All plant and wildlife species observed during the habitat assessment, as well as dominant plant species within each vegetation community, were recorded in a field notebook, as described below. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and the overall condition of on-site vegetation communities were recorded.

Following extensive discussions with BLM staff including BLM biologist Kayla Brown in September 2020, Michael Baker biologists Jeremy Rosenthal and Ryan Winkleman conducted a second habitat assessment survey on October 20, 2020. The goal of the second survey was to determine if site conditions had changed since the last time the survey area was visited in 2016, to provide a fresh perspective on the environmental conditions, and to assess the survey area for its potential to support BLM sensitive species as noted in BLM 2020a and BLM 2020b. BLM sensitive species are species listed or proposed for listing under the Federal Endangered Species Act (FESA), or species that require special management consideration to promote their conservation and reduce the likelihood and need for future listing under the FESA. As was done previously, Michael Baker biologists recorded all plant and wildlife species observed and assessed current on-site vegetation and soil conditions.

2.3 VEGETATION COMMUNITIES

Vegetation communities within the survey area were classified in accordance with multiple vegetation mapping systems. On land that is not part of the CVMSHCP and is not managed by the BLM, vegetation was classified according to vegetation descriptions provided in the *Manual of California Vegetation* (MCV; Sawyer et al. 2009) and cross referenced with the vegetation communities described in the CNDDDB, which generally follow Holland (1986), to determine if any special-status vegetation communities recognized by CDFW and the CNDDDB were present. However, on land either falling within the CVMSHCP boundaries and/or managed by the BLM, vegetation was classified according to the eight (8) vegetation community types described by the BLM (BLM 2002) and the CVMSHCP (CVAG 2016). These community types include sand dunes and sand fields, desert scrub communities, chaparral communities, desert alkali scrub communities, marsh communities, dry wash woodland and mesquite communities, riparian communities, and woodland and forest communities.

2.4 PLANTS

Plant species observed during the habitat assessment were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and identified later using plant taxonomic guides such as *The Jepson Desert Manual: Vascular Plants of Southeastern California* (Baldwin et al. 2002). Plant nomenclature used in this report follows the Jepson Flora Project (2021). In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.5 WILDLIFE

Wildlife species detected during the habitat assessment by sight, calls, tracks, scat, burrows, nests, or other types of sign were recorded in a field notebook. Field guides used to assist with identification of species during the habitat assessment included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid 2006) for mammals. Although common names of wildlife species are generally well

standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union’s *Checklist of North American Birds* (Chesser et al. 2020), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature for mammals follows the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

2.6 OTHER FIELD STUDIES

Focused surveys were conducted for a limited number of species within the survey area in 2016, including both rare plants and wildlife. The extent of focused surveys was based on the potential for special-status species to occur in the survey area, as well as which species are required to be surveyed for under the CVMSHCP. Under the CVMSHCP, focused surveys are required for triple-ribbed milk-vetch (*Astragalus tricarinatus*), desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), Le Conte’s thrasher (*Toxostoma lecontei*), and Palm Springs pocket mouse (*Perognathus longimembris bangsi*). However, the project site was excluded from the requirement for triple-ribbed milk-vetch and desert tortoise surveys because it is not within modeled habitat for these species. Le Conte’s thrasher surveys would occur jointly as part of general pre-construction nesting bird clearance surveys and would not require a separate focused survey effort. The project site is not within a stated survey area for Palm Springs pocket mouse. Burrowing owl surveys were required to be conducted for the proposed project and are described below. In addition, general rare plant surveys targeting a variety of species were also conducted and are described below.

During a review of the project’s Initial Study/Environmental Assessment (IS/EA), BLM biologist Danielle Ortiz identified the need to evaluate BLM sensitive species and conduct focused surveys for all BLM sensitive species that could occur within the project site. Follow-up communication and coordination with the BLM, including BLM biologist Kayla Brown, on September 14, 2020 confirmed that no additional focused surveys would be necessary if CVWD elected to assume presence of all special-status species that could occur on-site. Following CVWD’s decision to assume presence of all remaining special-status species that could feasibly occur on-site, no additional focused surveys for BLM sensitive species were performed in 2020 or 2021.

2.6.1 RARE PLANT FOCUSED SURVEYS

Based on the special-status plant species known to occur within the general vicinity and the suitability of the on-site habitat to support those plant species, four (4) surveys were conducted. Michael Baker biologists Dan J. Rosie and Travis J. McGill conducted the four surveys on April 14, April 19, May 4, and June 15, 2016. Suitable habitat occurring within the project site footprint and within 200 feet was extensively surveyed on foot. Linear transects were walked throughout suitable habitat from west to east and spaced at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting sensitive plant species known to occur within the general vicinity of the project site. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and

recorded in a field notebook. Unusual and less familiar plants were photographed on-site and identified later using taxonomical guides. A handheld geographic positioning systems (GPS) device and standard field data sheets were used to record all populations of chaparral sand-verbena (*Abronia villosa* var. *aurita*), pygmy lotus (*Acmispon haydonii*), Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), triple-ribbed milk-vetch, Parry’s spineflower (*Chorizanthe parryi* var. *parryi*), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), flat-seeded spurge (*Euphorbia platysperma*), Little San Bernardino Mountains Linanthus (*Linanthus maculatus*), Latimer’s woodland-gilia (*Saltugilia latimeri*), and Mecca-aster (*Xylorhiza cognata*), if found.

2.6.2 BURROWING OWL FOCUSED SURVEYS

The burrowing owl is a California species of special concern and BLM sensitive species (CDFW 2021b, BLM 2020b). It is also a covered species under the CVMSHCP (CVAG 2016). For focused surveys, the CDFW, BLM, and CVMSHCP all follow the *Staff Report on Burrowing Owl Mitigation*, published by the then-California Department of Fish and Game (now CDFW) in 2012. The 2012 protocol requires the following:

- Habitat assessment: at least one site visit covering the entire potential project area and areas of direct/indirect effect, as well a minimum 150-meter buffer, to identify vegetation and habitat types potentially supporting burrowing owls in the project area or its vicinity.
- Breeding season surveys: surveyors must conduct four (4) survey visits, with at least one site visit between 15 February and 15 April, and a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Surveys must be conducted in all portions of the project site that were identified in the Habitat Assessment, and surveyors should walk straight-line transects spaced 7 to 20 meters (23 to 66 feet) apart, adjusting for vegetation height and density. All potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration should be recorded. Surveys are discouraged when wind speed is greater than 20 kilometers (12 miles) per hour and there is precipitation or dense fog. Surveys have a greater chance of detecting owls if conducted when ambient temperatures are between 20 degrees Celsius (68 degrees Fahrenheit) and 26 degrees Celsius (79 degrees Fahrenheit), less than 12 kilometers per hour (7 miles per hour) winds, and cloud cover is less than 75 percent (Conway et al. 2008, CDFW 2012). Surveys are encouraged to occur between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight.
- Non-breeding season surveys: for non-breeding season surveys, the protocol is the same as breeding season surveys, but a total of four (4) surveys should be conducted at roughly equal spacing between September 1 and January 31.

Michael Baker’s August 5, 2015 field survey served as the habitat assessment for burrowing owl. While the vegetation within the project site is generally open and provides clear line-of-site opportunities favored by burrowing owls, the project site is located within a sand transport corridor and on-site soils are dominated

by loose, friable sandy material that does not provide favorable conditions for burrow construction. During a focused burrow survey conducted on April 19, 2016 by Michael Baker biologists within the project site and a 500-foot survey buffer, it was determined this burrowing owl survey area provided a limited amount of suitable burrows for burrowing owls. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provided a favorable substrate for burrow construction. The burrow survey doubled as the first of four (4) focused owl surveys. An additional three (3) focused owl surveys were conducted on May 12, June 8, and July 7, 2016. Areas providing potential habitat for burrowing owls were surveyed for suitable burrows consisting of natural and non-natural substrates in areas with low, open vegetation. All burrows encountered were examined for shape, scat, pellets, white-wash, feathers, tracks, and prey remains. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, with a hand-held GPS unit. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (e.g., pellets, whitewash, feathers, or prey remains). Suitable burrows/cavities, including rock piles and non-natural substrates, were thoroughly examined for signs of presence.

Discussions with BLM biologist Kayla Brown in September 2020 determined that a second round of focused owl surveys in 2020 or 2021 would not be required. Under Measure LUPA-BIO-IFS-13 of the BLM's *Land Use Plan Amendment [LUPA] to the Desert Renewable Energy Conservation Plan (DRECP; BLM 2016)*, the proposed project could instead elect to only require pre-construction surveys and implement passive burrow exclusion should owls be present on-site outside of the nesting season. As a result, additional focused burrowing owl surveys were not conducted under the assumption that the proposed project will require pre-construction burrowing owl surveys and a relocation and/or monitoring plan for any owls that are found on-site.

2.7 REGULATORY SETTING

The following regulations, ordinances, and policies are relevant to this project and its biological analysis and implementation.

2.7.1 FEDERAL

National Environmental Policy Act

The National Environmental Policy Act (NEPA) directs a “systematic, interdisciplinary approach” to planning and decision making and requires environmental statements for “major Federal actions significantly affecting the quality of the human environment”. Implementing regulations by the Council of Environmental Quality (40 Code of Federal Regulations [CFR], Parts 1500–1508) require Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts.

Federal Endangered Species Act of 1973

As defined within the FESA of 1973, an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the “take” of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The term “harm” has been clarified to include “any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” Enforcement of FESA is administered by the USFWS.

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Federal Clean Water Act (CWA) Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

Whenever Federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the FESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses Federal funds, or requires Federal authorization or permits (i.e., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) of 1918, as amended in 1972, Federal law prohibits the taking of migratory birds or their nests or eggs (16 USC 703; 50 CFR 10, 21). The statute states:

“Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill,

attempt to take, capture, or kill...any migratory bird, any part, nest, or egg of any such bird...included in the terms of the [Migratory Bird] conventions...”

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered a “take.” This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

Clean Water Act

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) jointly regulate discharges of dredged or fill material into “waters of the U.S.” (WoUS), including wetland and non-wetland aquatic features, pursuant to Section 404 of the CWA. Section 404 is founded on the findings of a significant nexus (or connection) between the aquatic or other hydrological feature in question and interstate commerce via Relatively Permanent Waters (RPW), and ultimately Traditional Navigable Waters (TNW), through direct or indirect connection as defined by Corps regulations. However, the limits to which this is applied have changed over time as discussed below.

SWANCC and Rapanos

In 1984, the Migratory Bird Rule enabled the Corps to expand jurisdiction over isolated waters, and in 1985, the U.S. Supreme Court upheld the inclusion of adjacent wetlands in the regulatory definition of WoUS. However, in 2001, the Corps’ jurisdiction was narrowly limited following the *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) in which the U.S. Supreme Court held that the use of “isolated” non-navigable intrastate ponds by migratory birds was not, by itself, sufficient basis for the exercise of Federal regulatory authority under the CWA. In 2006, a majority of the U.S. Supreme Court overturned two Sixth Circuit Court of Appeals decisions in the consolidated cases of *Rapanos v. United States* and *Carabell v. United States* (collectively referred to as Rapanos), concluding that wetlands isolated by surface connection are WoUS nonetheless if they significantly affect the chemical, physical, and biological integrity of other covered waters (significant nexus). The Navigable Waters Protection Rule eliminated the case specific application of the significant nexus test articulated in the Rapanos decision³.

³ Federal Register, Vol. 85, No. 77, Tuesday, April 21, 2020, Department of the Army, Corps of Engineers, 33 CFR Part 328, *The Navigable Waters Protection Rule: Definition of “Waters of the United States”* (22325).

2015 Clean Water Rule

In 2015, the Corps and EPA published the “Clean Water Rule” clarifying the scope of coverage of the CWA. Upon issuance however, numerous lawsuits were filed and consolidated in the Sixth Circuit, immediately putting a “stay” on its implementation. In January 2018, the U.S. Supreme Court ruled that the Sixth Circuit did not have jurisdiction over the case, and in February 2018, dismissed it and dissolved the stay. In August 2018, a Federal judge found that the suspension failed to give an adequate public notice and therefore violated the Administrative Procedure Act. The 2015 Clean Water Rule remained in effect in 22 states, including California, the District of Columbia, and the U.S. territories until the December 23, 2019.

Repeal of 2015 Clean Water Rule

On October 22, 2019, the EPA and the Corps published a final rule to repeal the 2015 Clean Water Rule and restore the regulatory methodology that existed prior to the 2015 Rule. Under this rule, which became effective on December 23, 2019, jurisdictional WoUS were defined by the 1986/1988 regulatory definition of WoUS under CWA regulations 40 CFR 230.3(s).

Navigable Waters Protection Rule

On January 23, 2020, the EPA and the Corps finalized the Navigable Waters Protection Rule to define WoUS. On April 21, 2020, the EPA and the Corps published the Navigable Waters Protection Rule in the Federal Register. On June 22, 2020, 60 days after publication in the Federal Register, the Navigable Waters Protection Rule became effective across the nation including the state of California.

Remand and Vacatur of the Navigable Waters Protection Rule

- On August 30, 2021, the Navigable Water Protection Rule was remanded and immediately vacated by the United States District Court For The District Of Arizona. In light of this order, the Environmental Protection Agency and the Department of the Army halted implementation of the Navigable Waters Protection Rule nationwide and reinstated the pre-2015 definition of waters of the United States. Under the pre-2015 definition of the waters of the United States, the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency require the case specific application of the significant nexus test, as articulated in the Rapanos decision, to determine waters of the U.S.

Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring Federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California

Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project. Under the Executive Order, Federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

California Desert Conservation Act Plan Amendment for the Coachella Valley

The 2002 California Desert Conservation Act Plan Amendment for the Coachella Valley is an update to the BLM California Desert Conservation Act of 1980. From this point forward in this report, the acronym CDCA will refer to the plan amendment specifically, i.e. the updated version of the 1980 act that applies to the project site. The CDCA was developed in tandem with the CVMSHCP and was subject to high levels of involvement and coordination with local jurisdictions, interest groups, private citizens, researchers, and wildlife agencies.

The entire Coachella Valley planning area is 1,195,057 acres, of which the BLM manages 330,516 acres. Habitat conservation on BLM lands is outlined for each of eight (8) mapped, broadly categorized, vegetation community types that are present. These vegetation community types are consistent with those identified in the CVMSHCP and include the following: Sand Dunes and Sand Fields, Desert Scrub Communities, Chaparral Communities, Desert Alkali Scrub Communities, Marsh Communities, Dry Wash Woodland and Mesquite Communities, Riparian Communities, and Woodland and Forest Communities. Each of these broader communities includes more specific vegetation communities within it and are mapped in the Natural Communities maps of the CVMSHCP. Under the CDCA, proposed activities that cannot meet the habitat conservation objectives for any given vegetation community, either through avoidance measures or mitigation measures, would not be approved on BLM lands. The CDCA also created the Coachella Valley Wildlife Habitat Management Area (WHMA), specifically designed to include BLM-managed lands within CVMSHCP conservation areas that are outside of existing BLM conservation areas; a key conservation target within the WHMA is flat-tailed horned lizard (*Phrynosoma mcallii*). In addition, the CDCA implements recovery goals and objectives that are consistent with the *Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California* (USFWS 2000).

Desert Renewable Energy Conservation Plan Land Use Plan Amendment

The Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan (DRECP LUPA) is the BLM's component of the Interagency DRECP that was developed by the BLM, USFWS, California Energy Commission, and CDFW (BLM 2016). The entire DRECP Plan Area is 22,585,000 acres, approximately 10,818,000 acres of which are managed by the BLM. The purpose of the DRECP LUPA is to help integrate renewable energy and resource conservation with other existing uses on BLM-managed land. Although the project is not within the DRECP Plan Area, certain "LUPA-wide" Conservation and Management Actions (CMAs) apply to activities within the entire LUPA Decision Area. The LUPA Decision Area includes not only the LUPA Plan Area, but also lands outside of the Plan Area

but within the CDCA, including the Coachella Valley where the project is located. Because of this, the project is subject to these LUPA-wide CMAs, which are similar to avoidance and minimization measures.

2.7.2 STATE

California Endangered Species Act

In addition to Federal laws, the State of California has its own California Endangered Species Act (CESA), enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in “take” of individuals (defined in CESA as; “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) are regulated by CDFW. Habitat degradation or modification is not included in the definition of “take” under CESA. Nonetheless, CDFW has interpreted “take” to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern (SSC) list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. As the SSC designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species. Species designated by CDFW as watch list (WL) species are those that are not yet of such immediate threat as to warrant being designated as SSC, but that still may become SSC or higher in the future if a negative trend continues.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an IS; if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a

Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy, while “rare” species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Fish and Game Code

Sections 3503, 3503.5, 3511, and 3513

The CDFW administers the California Fish and Game Code (CFGC). There are particular sections of the CFGC that are applicable to natural resource management. For example, Section 3503 makes it unlawful to destroy any birds’ nest or any birds’ eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey), such as hawks, eagles, and owls, are protected under Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur in the project site. Section 3511 lists fully protected (FP) bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are CDFW FP include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). In addition, Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Sections 1600

Sections 1600 *et seq.* of the CFGC establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely affect fish and wildlife resources, or when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Section 1602 of the CFGC requires any person, State, or local governmental agency or public utility to notify CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;
or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, including the maintenance of existing drain culverts, outfalls, and other structures. To avoid the need for a Lake or Streambed Alteration Agreement from CDFW, all proposed impacts should remain outside of the top of active banks and the canopy/dripline of any associated riparian vegetation, whichever is greater.

California Desert Native Plants Act

Division 23 of the California Food and Agriculture Code consists of the California Desert Native Plants Act (CDNPA). The CDNPA was developed to protect certain species of California desert native plants from unlawful harvesting on both public and privately-owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals. The appropriate permits, tags and seals must be obtained from the sheriff or commissioner of the county where collecting will occur, and the county will charge a fee.

Native Plant Protection Act

Sections 1900–1913 of the CFGC were developed to preserve, protect, and enhance Rare and Endangered plants in the State of California. The act requires all State agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

Porter-Cologne Act

Applicants for a Federal license or permit for activities that may discharge to WoUS must seek a Water Quality Certification from the State or Indian tribe with jurisdiction⁴. In California, there are nine (9) Regional Water Quality Control Boards (Regional Boards) that issue or deny Certification for discharges within their geographical jurisdiction. Such Certification is based on a finding that the discharge will meet water quality standards, which are defined as numeric and narrative objectives in each Regional Board's Basin Plan, and other applicable requirements. The State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board's jurisdiction extends to all WoUS, including wetlands, and to waters of the State (described below).

The Porter-Cologne Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool for the regulatory environment following the SWANCC⁵ and Rapanos⁶ court cases as well as with the implementation of the Federal Navigable Waters Protection Rule, with respect to the state's authority over isolated, ephemeral and otherwise insignificant waters. Generally, in the event that a feature does not meet the definition of a WoUS as defined by the Navigable Waters Protection Rule, any person proposing to discharge waste into waters of the State that could affect its water quality must file a Report

⁴ Title 33, United States Code, Section 1341; Clean Water Act Section.

⁵ *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001).

⁶ *Rapanos v. United States*, 547 U.S. 715 (2006).

of Waste Discharge. Although “waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

On April 2, 2019 the State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures were approved by the Office of Administrative Law on August 28, 2019 and became effective on May 28, 2020.

2.7.3 LOCAL

Coachella Valley Multiple Species Habitat Conservation Plan

The CVMSHCP was developed by the CVAG for the purposes of addressing current and potential future FESA/CESA issues in the Plan Area. The CVMSHCP was developed to comply with the FESA, the CESA, and the Natural Community Conservation Planning Act. The CVMSHCP is intended to allow economic growth goals and needs within the Coachella Valley to progress while also protecting the environment and the unique environmental resources of the Plan Area. In total the Plan Area encompasses approximately 245,000 acres, of which 16% lie within the cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage and the remainder are unincorporated. A total of 27 Covered Species are included in the CVMSHCP, with 27 natural communities identified that provide habitat for the Covered Species and make up the 21 Conservation Areas in the CVMSHCP Reserve System.

Section 3 Results and Discussion

This section describes the results of the 2015 and 2020 habitat assessment surveys, as well as of the focused surveys that were conducted for the proposed project in 2016. Refer to Appendix B for representative photographs taken within the survey area.

3.1 EXISTING CONDITIONS

3.1.1 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 478 to 509 feet above mean sea level and generally slopes from north to south. The project site is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). Based on the USDA Web Soil Survey (USDA 2021), the project site is underlain by the following soil units: Carsitas gravelly sand (0 to 9 percent slopes), Carsitas cobbly sand (2 to 9 percent slopes), Carsitas fine sand (0 to 5 percent slopes), Myoma fine sand (0 to 5 percent slopes), Myoma fine sand (5 to 15 percent slopes), and Riverwash (refer to Figure 5, *Soils*, in Appendix A).

3.1.2 SURROUNDING LAND USES

Land uses in the vicinity of the project site include residential development to the south and west as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex sits immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly recovering. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the southwest, south, and southeast. The Morongo Wash passes through the survey area, and the Whitewater River crosses south of the survey area. Land managed by the BLM is present within the survey area both south of I-10 and south of the UPRR tracks.

3.2 VEGETATION COMMUNITIES AND LAND COVER TYPES

The survey area is a combination of different communities and land uses. Outside of the boundaries of the CVMSHCP and BLM lands, on-site vegetation can be characterized as Sonoran creosote bush scrub (refer to Figure 6, *Vegetation*, in Appendix A). However, within the CVMSHCP boundaries and on BLM lands, CVMSHCP community types are required to be mapped. Therefore, on CVMSHCP and BLM lands, three (3) additional vegetation communities were mapped. The vegetation on-site in these areas can be characterized as sand dunes and sand fields within the CVMSHCP Whitewater Floodplain Conservation Area, which makes up the survey area south of I-10, more specifically active sand fields south of the UPRR tracks and stabilized, shielded sand fields north of the tracks and south of I-10; north of I-10 the vegetation within the survey area falls into the CVMSHCP Willow Hole Conservation Area and is characterized as Sonoran mixed woody and succulent scrub. These sand fields are vegetated by species consistent with

Sonoran creosote bush scrub. In addition, the survey area contains two (2) land cover types that are not natural vegetation communities: tamarisk windrow and developed. Refer to Appendix C for a complete list of plant species that were observed within the survey area during all field surveys. Table 1 below provides the acreages of each vegetation community/land cover type within the survey area, followed by each area discussed in more detail.

Table 1: Vegetation Communities and Land Uses within the Survey Area

Vegetation Communities and Land Uses	Acreage*	
	Project Site	Survey Area
Active Sand Fields	17.31	64.39
Stabilized, Shielded Sand Fields	4.80	29.00
Sonoran Mixed Woody and Succulent Scrub	0.00	0.69
Sonoran Creosote Bush Scrub	3.10	87.70
Tamarisk Windrow	1.23	5.63
Developed	0.00	9.13
TOTAL ACREAGE	26.44	196.54

*Due to rounding, actual acreages may be slightly different.

3.2.1 ACTIVE SAND FIELDS

Approximately 64.39 acres of active sand fields are located within the survey area on BLM and CVMSHCP lands. Active sand fields are defined in the CVMSHCP, which the BLM follows via the CDCA, as areas of active sand movement with little or no vegetation. Accumulated sand is generally not of sufficient depth to form classic dune formations, but sand hummocks may form on the leeward side of shrubs or clusters of vegetation. Vegetation itself may range from scarce to dense shrubs or may be composed of smaller vegetation such as wildflowers. Within the survey area, the CVMSHCP has mapped the area south of the UPRR tracks and east of the north-south tamarisk windrow, which includes BLM lands, as active sand fields. Vegetation within the active sand fields in the survey area is dominated by Sonoran creosote bush scrub as described below.

3.2.2 STABILIZED, SHIELDED SAND FIELDS

Approximately 29.00 acres of stabilized, shielded sand fields are located within the survey area on BLM and CVMSHCP lands. These sand fields are defined in the CVMSHCP as areas that are stabilized by evergreen and/or deciduous shrubs, scattered low annuals, and perennial grasses, with interrupted or shielded sand source and sand transport systems. Vegetation is typically characterized by creosote bush scrub or a creosote bush scrub matrix including primarily creosote bush, fourwing saltbush (*Atriplex canescens*), California croton (*Croton californicus*), and indigo bush (*Amorpha fruticosa*). Within the survey area, the CVMSHCP has mapped the area north of the UPRR tracks, which includes BLM lands, as

stabilized, shielded sand fields. Vegetation within the stabilized, shielded sand fields in the survey area is dominated by Sonoran creosote bush scrub as described below.

3.2.3 SONORAN MIXED WOODY AND SUCCULENT SCRUB

Approximately 0.69 acre of Sonoran mixed woody and succulent scrub is located within the survey area on BLM and CVMSHCP lands. This community is defined in the CVMSHCP as having substantial dominance of cacti and other stem succulents, similar to creosote bush scrub but with more variance and usually higher plant density. Vegetation is typically characterized by creosote bush (*Larrea tridentata*) and other associated perennial shrubs, as well as golden cholla (*Opuntia echinocarpa*), buckhorn cholla (*Opuntia acanthocarpa*), pencil cholla (*Opuntia ramosissima*), prickly pear (*Opuntia engelmannii*), and others. This community is mapped north of I-10 at the northern edge of the survey area but is outside of the project site.

3.2.4 SONORAN CREOSOTE BUSH SCRUB

Approximately 87.70 acres of Sonoran creosote bush scrub are located within the survey area on non-BLM and non-CVMSHCP lands. Plant species observed within this community include creosote bush, cheesebush (*Ambrosia salsola*), California croton, indigo bush, and Mediterranean grass (*Schismus* sp.). These are the dominant species observed throughout most of the entire survey area, including in the vegetation communities mapped on CVMSHCP and BLM lands.

3.2.5 TAMARISK WINDROW

Approximately 5.63 of tamarisk windrow is present within the survey area. This land cover type is entirely composed of athel tamarisk (*Tamarix aphylla*) that has been planted as a windrow. It is present running north-south along the eastern edge of the primary project impact area, as well as east-west running parallel both north and south of the UPRR tracks.

3.2.6 DEVELOPED

Approximately 9.13 acres of developed land are within the survey area. This land cover type consists of housing and development associated with the adjacent residential neighborhood. Ornamental vegetation is present as part of the landscaping for the residential houses.

3.3 CRITICAL HABITAT

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result

in take or adverse modification to a species' designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., CWA Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

The project site is not located within any designated Critical Habitat. However, it is located within 100 feet to the west of Coachella Valley milk-vetch Critical Habitat Unit 3 (USFWS 2013) (refer to Figure 7, *Critical Habitat*, in Appendix A). This area is still within the 500-foot survey buffer of the project site but is east of the north-south tamarisk windrow and would not be directly impacted by the proposed project.

3.4 FOCUSED SURVEY RESULTS AND SPECIES OBSERVATIONS

Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a general discussion of special-status plant and wildlife species that were detected during the field surveys or that are expected to occur based on existing site conditions. The discussion is to be used as a general reference and is limited by the season, time of day, and weather conditions in which the field surveys were conducted. Refer to Appendix C for a complete list of wildlife species observed during the 2015, 2016, and 2020 field surveys.

3.4.1 SPECIAL-STATUS PLANTS AND VEGETATION

Michael Baker biologists observed one (1) federally listed special-status plant species, Coachella Valley milk-vetch, on-site during the 2016 focused surveys (refer to Figure 8, *Special-Status Plant Observations*, in Appendix A). Non-listed CNPS-ranked special-status plant species and BLM sensitive plant species were not observed during any of the surveys, including rare plant focused surveys.

Listed Plant Species

Coachella Valley Milk-vetch

Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) is federally listed as endangered and is designated by the CNPS with the California Rare Plant Rank (CRPR) 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is a covered species under the CVMSHCP and is a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is endemic to California and is only known from Riverside County. Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet above mean sea level. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley, and the project site is immediately adjacent to designated Critical Habitat for this species (USFWS

2013). Under the CVMSHCP, nearly all of the Whitewater Floodplain Conservation Area has been designated as core habitat for this species.

Coachella Valley milk-vetch was observed during the four focused surveys conducted on April 14, April 19, May 4, and June 15, 2016. In total, 266 individuals were observed throughout the survey area (Michael Baker 2016c).

Non-Listed Special-Status Plant Species and CDNPA Species

Non-listed CNPS-ranked and BLM sensitive plant species known to occur within the general vicinity of the project site were not detected during any project-related surveys, including the 2016 rare plant focused surveys. A single CDNPA species, golden cholla, was found on-site but its location was not mapped.

Sensitive Plant Communities

The CNDDDB lists three (3) sensitive habitats as being identified within the *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* quadrangles: Desert Fan Palm Oasis Woodland, Mesquite Bosque, and Southern Riparian Forest (CDFW 2021a). Neither these nor any other sensitive plant communities are present on-site.

Non-Native Plants

On-site vegetation in the survey area was generally dominated by native desert plants. Michael Baker biologists detected five (5) non-native plant species on-site during all field surveys: Saharan mustard (*Brassica tournefortii*), red-stemmed filaree (*Erodium cicutarium*), barbwire Russian thistle (*Salsola paulsenii*), Arabian schismus (*Schismus arabicus*), and athel tamarisk (*Tamarix aphylla*). One of the ways of determining the threat level of non-native plants on a project site is to refer to the California Invasive Plant Council's (Cal-IPC) Inventory, which rates non-native plants in California by different threat levels. Saharan mustard has a Cal-IPC rating of High, which indicates those species that have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Most species with a High rating are widely distributed ecologically. Saharan mustard is abundant in deserts, desert dunes, and coastal scrub, including the San Joaquin Valley, Sonoran and Mojave Deserts, and a majority of the southwestern region of California. The rest of the non-native species that were detected have a Cal-IPC rating of Limited, which indicates minor state-wide ecological impacts.

3.4.2 SPECIAL-STATUS WILDLIFE

Michael Baker biologists observed one (1) federally listed special-status wildlife species, Coachella Valley fringe-toed lizard (*Uma inornata*), within the survey area during 2016 surveys (refer to Figure 9, *Special-Status Wildlife Observations*, in Appendix A). Additional non-listed special-status wildlife species observed during project surveys included Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), burrowing owl (*Athene cunicularia*), horned lark (*Eremophila alpestris*), and loggerhead shrike (*Lanius ludovicianus*).

Listed Wildlife Species

Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizard is designated by the USFWS as threatened under the FESA and by the CDFW as endangered under the CESA. It is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite (*Prosopis glandulosa*), and four-winged saltbush (*Atriplex canescens*), with four-winged saltbush often associated with high use areas (USFWS 2010a, CVAG 2016). This species is typically active from spring through fall, especially between April and October (CVAG 2016). Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Nearly all of the suitable habitat within the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which is abundant to the west of the project site on the Whitewater Floodplain Preserve. Coachella Valley fringe-toed lizard has a moderate potential to occur within the project site, which generally has suitable windblown sand habitat.

Focused surveys for Coachella Valley fringe-toed lizard were not conducted for this project. However, one lizard was incidentally observed during the July 7, 2016 burrowing owl focused survey. The lizard was found within the 500-foot survey buffer of the project site, east of the north-south tamarisk windrow along the edge of the abandoned housing pads. Although it wasn't observed anywhere else in the 500-foot survey area of the project during any of the other general or focused biological surveys that have been conducted, because of the availability of suitable habitat throughout and the number of CNDDDB records of this species in the immediate vicinity, this species should be assumed present throughout the survey area.

Non-Listed Special-Status Wildlife Species

Cooper's Hawk

Cooper's hawk is a California WL species that is adapted to urban environments and commonly occurs in the region. This species typically forages along broken woodlands and habitat edges and usually nests in deciduous trees in dense woodland and riparian areas, usually near streams (Rosenfield et al. 2020). The breeding season for Cooper's hawk generally extends from late March through mid- to late July but can vary slightly from year to year based upon seasonal weather conditions. This species typically nests later than other common raptor species such as red-tailed hawk (*Buteo jamaicensis*). This species was observed flying over the survey area during burrowing owl focused surveys in 2016 and should be considered present year-round in the surrounding project vicinity, if not also on-site, particularly due to the immediate adjacency of a residential neighborhood where songbirds (i.e., prey) are likely to congregate in yards.

Sharp-Shinned Hawk

Sharp-shinned hawk is a California WL species. Although this species is a year-round resident of the northern California coast and the Central Valley, it is strictly a winter resident in southern California (Dunn and Alderfer 2011). Sharp-shinned hawks are typically present in southern California from approximately mid-September to mid-April. In its winter range locally, it shares many of the same habitat preferences as the concomitant Cooper's hawk, frequenting a combination of woodland habitats, rural areas, and suburban homes where it can prey on other birds (Bildstein et al. 2020). The chief prey item is other birds, especially sparrows, warblers, and thrushes, but sharp-shinned hawks will also take small mammals (mice, voles, pocket gophers) and insects.

A single sharp-shinned hawk was seen perched in the north-south tamarisk windrow during the October 2020 habitat assessment. The bird was located immediately off of Verona Road, on the edge of the adjacent neighborhood, and it's likely that it is roosting in the trees and then frequenting backyard feeders and/or landscaped areas in the neighborhood for prey. Although observed on-site and therefore considered present, this species is unlikely to occur in multiples on-site and if present in any given winter is most likely to be in this area in close proximity to or inside of the residential neighborhood.

Burrowing Owl

Burrowing owl is currently designated as a BLM sensitive species and a CDFW SSC. It is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of burrowing mammals (e.g., California ground squirrels (*Otospermophilus beecheyi*), coyotes (*Canis latrans*), American badger (*Taxidea taxus*)) whose burrows are used for roosting and nesting. The presence or absence of mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drainpipes, standpipes, and dry culverts. Burrowing owls may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. They also require open vegetation allowing clear line-of-sight of the surrounding habitat to forage as well as watch for predators.

The habitat assessment conducted in August 2015 identified suitable burrowing owl habitat throughout the project site and within a 500-foot buffer. Michael Baker biologists conducted a focused burrow survey in April 2016, doubling as an owl survey, and three (3) additional focused surveys between May and July 2016. The few suitable burrows that were found within the survey area mainly consisted of rock and debris piles and substrates made up of a mixture of loose sand and compacted fill material that provide a favorable substrate for burrow construction. Despite systematic searches of all suitable burrows, no burrowing owls or burrowing owl sign (i.e., scat, pellets, feathers, tracks, and prey remains) was observed during the four

focused surveys. However, six (6) burrowing owls were observed outside of the survey area to the east. These burrowing owls occupied three (3) burrows outside the limits of the survey area and were found on the slopes of several remnant building pads. The closest occupied burrow was located approximately 580 feet east of the project site, outside of the 500-foot survey buffer considered for this species by CDFW (CDFW 2012). However, the BLM LUPA Measure LUPA-BIO-IFS-12 requires a 656-foot (200-meter) avoidance buffer and a biological monitor during the nesting season on all activity sites, when practical (BLM 2016).

No burrowing owls were observed during the October 2020 habitat assessment. Because the proposed project will rely on pre-construction surveys rather than additional focused burrowing owl surveys, no effort was made to intentionally conduct a focused burrow search in 2020, although burrows or rock piles that were incidentally observed and that were deemed suitable for this species were recorded with a GPS unit during the October 2020 field survey.

California Horned Lark

California horned lark is a California WL species that typically forages in groups in shortgrass prairies, grasslands, disturbed fields, or similar habitat types (Beason 2020). It typically nests on the open ground, often next to grass clumps or other objects. Areas that are suitable for breeding earlier in the spring may become unsuitable later as vegetation grows higher and obscures the openness of the territory. The breeding season for California horned lark generally extends from mid-March through late August but can vary slightly from year to year based upon seasonal weather conditions. Horned larks were heard flying overhead during the October 2020 habitat assessment and, although not detected during any previous surveys in 2015 and 2016, based on the availability of suitable habitat in and around the project site as well as records shown in the eBird database (eBird 2021), horned larks are probably present in the project site and surrounding area regularly and may nest or forage on-site. However, without more observational data and additional sightings, it is impossible to say from the October 2020 detection which horned lark subspecies was flying over and/or may occur on the project site.

Loggerhead Shrike

The loggerhead shrike is a year-round resident of the Mojave Desert and is designated as a CDFW SSC. This species typically occurs in open and semi-open habitats with scattered shrubs, bare ground, and low or sparse herbaceous cover but may also occur along the edges of denser habitats (Yosef 2020). The loggerhead shrike inhabits a wide variety of habitats including grasslands, agricultural fields, pastures, desert washes, Joshua tree woodland, and creosote bush scrub. These areas provide suitable hunting habitat and often contain an assortment of perches including trees, fences, posts, and utility lines required for spotting prey. Nearby impaling sites for prey manipulation and storage are also required and typically include sharp, thorny, or multi-stemmed plants and/or barbed wire fences (Shuford and Gardali 2008). This species typically breeds from March to May and builds its nest 2.5 to 4 feet above ground in thorny shrubs and trees that provide concealment and protection from predators (Yosef 2020).

Loggerhead shrikes have been observed multiple times within the project’s survey area, including during both the August 2015 and October 2020 habitat assessments. This species is probably a year-round resident on-site. Although nesting has not been documented on-site by Michael Baker staff, based on the repeated presence of the species it likely nests on-site or in the immediate vicinity.

3.5 ADDITIONAL SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR

The following section describes additional special-status species, including those protected by the USFWS, BLM, and/or CDFW, that have potential to occur within the project site or within the 500-foot survey buffer that was used for analysis, but that were not detected during any previous project-related surveys. This section includes those species that are state or federally listed or candidate species that have a low or higher potential to occur, BLM sensitive species that have a low or higher potential to occur, BLM species that are identified as target sensitive species within the Sand Dunes and Sand Fields community type (even if not expected to occur), and other special-status species that have a moderate or high potential to occur. Those species that are not listed, not BLM sensitive or target species, or that otherwise have a low potential to occur or are not expected to occur are not included in this section and are not analyzed in this report. Although they were part of IPaC search results (USFWS 2021a), southwestern willow flycatcher (*Empidonax traillii extimus*; FESA and CESA endangered), peninsular bighorn sheep (*Ovis canadensis nelsoni* pop. 2; FESA endangered, CESA threatened, CDFW FP), and least Bell’s vireo (*Vireo bellii pusillus*; FESA and CESA endangered) are not included in the analysis below because they are not expected to occur on-site due to lack of suitable habitat and they do not meet any other qualifiers as listed above. These species and their specific determinations regarding their potential to occur on-site can be reviewed in Table D-1 in Appendix D.

In general, the potentials for special-status species to occur within the project site were determined based on the reported locations in the CNDDDB (CDFW 2021a), CNPS Online Inventory (CNPS 2021), species records in the Calflora Database (Calflora 2021), eBird (eBird 2021), and the following criteria. The criteria below were generally followed but were occasionally deviated from where known data indicated that there may still be extant records in the project vicinity.

- **Present:** the species was observed or detected within the project site during the field survey.
- **High:** Occurrence records (within 20 years) indicate that the species has been known to occur on or within one mile of the project site and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the project site and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate:** Occurrence records (within 20 years) indicate that the species has been known to occur within one mile of the project site and the site is within the normal expected range of this species. There is suitable habitat within the project site but the site is ecologically isolated from any local known extant populations or sightings.

- **Low:** Occurrence records (within 20 years) indicate that the species has been known to occur within five miles of the project site, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the project site.
- **Not Expected:** There are no occurrence records of the species occurring within five miles of the project site, there is no suitable habitat within the project site, and/or the project site is outside of the normal expected range for the species.

3.5.1 SPECIAL-STATUS PLANTS

Listed Plant Species

Coachella Valley milk-vetch, previously discussed in Section 3.4.1, was the only federally listed and/or candidate species identified with the potential to occur within the project site or within the 500-foot survey buffer. No additional federally listed or candidate species were identified with the potential to occur within the survey area.

Non-Listed Special-Status Plant Species

Borrego Milk-vetch

Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*) is an annual herb that blooms between February and May. It is not state or federally listed. However, it is designated by the CNPS with the CRPR 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is not endemic to California, but in California it is known to occur in Imperial, Inyo, Riverside, San Bernardino, and San Diego Counties, where it can be found in sandy soils in Mojavean and Sonoran desert scrub between 98 and 1,050 feet above mean sea level (CNPS 2021). According to records in Calflora (2021), there are numerous historical occurrences of this species within 5 miles of the project site, all pre-1940s. While many of these are in developed Palm Springs and are likely extirpated, several are close to the project site (within 1.5-2 miles) and are in areas that are still undeveloped. Although this species was not observed during the 2015 or 2020 habitat assessments or the 2016 focused rare plants surveys, Borrego milk-vetch has a moderate potential to occur within the project site.

Little San Bernardino Mountains Linanthus

Little San Bernardino Mountains linanthus (*Linanthus maculatus* ssp. *maculatus*) is an annual herb that blooms between February and May. It is not state or federally listed but is currently designated as a BLM sensitive species. In addition, it is designated by the CNPS with the CRPR 1B.2, indicating that it is rare, threatened and endangered in California and elsewhere, with 20 to 80% of known occurrences threatened. Endemic to California, it is only known to occur in Riverside and San Bernardino Counties where it can be found in sandy soils within Joshua tree woodlands, Mojavean desert scrub, and Sonoran desert scrub at elevations ranging from 640 to 6,808 feet above mean sea level (CNPS 2021). According to records in Calflora (2021), there are two historic (pre-1950s) records within 5 miles of the project site. Based on the

locations of these records, it is likely that both are now extirpated. Although this species was not observed during the 2015 or 2020 habitat assessments or the 2016 focused rare plants surveys, Little San Bernardino Mountains linanthus has a low potential to occur within the project site.

3.5.2 SPECIAL-STATUS WILDLIFE

Listed Wildlife Species

Crotch Bumble Bee

The Crotch bumble bee (*Bombus crotchii*) is designated by as a candidate for listing as endangered under the CESA. However, although Crotch bumble bee is not yet listed, under the CESA candidate species are afforded the same protections as those that are already listed. This species occurs primarily in California, as well as in Mexico and along the Nevada border, although both historically and currently it appears to be rarer in the southeast portion of California along the desert slope (Xerces et al. 2018). This species generally inhabits open grassland and scrub and typically nests underground. It most frequently utilizes plants in the families Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae for foraging. This species is active from late February to late October (queens) and late March through September (worker bees and males). Crotch bumble bee has one record in the CNDDDB within 5 miles of the project site, from 1958 (CDFW 2021a). There is marginal habitat on the project site and it has a low potential to occur.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is designated by as a threatened species under the CESA. It is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert (primarily the Antelope Valley). This species often nests adjacent to riparian habitats and will also use lone trees in agricultural fields or pastures and roadside trees when available and adjacent to suitable foraging habitat. In the Great Basin, this species also occupies juniper/sagebrush communities. Swainson's hawks will typically nest in Joshua trees, in roadside trees, or in windrows adjacent to agricultural fields (California Energy Commission and CDFW 2010). Swainson's hawks forage in adjacent grasslands, suitable grain or alfalfa (i.e., agricultural) fields, livestock pastures, desert scrub, and occasionally in Joshua tree woodlands, where they predominantly hunt small mammals. The project site and this general region are outside of the nesting range of Swainson's hawks, but Borrego Springs to the south is a major overnight stopover location for migrating hawks, and it is possible that some hawks may roost in the tamarisk trees of the project site. There is a low potential for Swainson's hawk to occur on-site, although primarily as a potential overnight roosting bird in the local tamarisk windrows both on- and offsite, not as a nesting bird and likely not as a foraging bird due to the general lack of suitable foraging habitat.

Casey's June Beetle

Casey's June beetle (*Dinacoma caseyi*) is designated as endangered under the FESA. It is also considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is currently

only known to occur in two locations, both in Palm Springs: at the junction of South Palm Canyon Drive and Bogert Trail, and south of Highway 111 and east of Sunrise Road on the Smoke Tree Ranch development (BLM 2002). It is associated with alluvial fans, especially on Carsitas gravelly sand at 0 to 9 percent slopes. Cheesebush (*Hymenoclea salsola*) is thought to be a key larval food plant. This species is not known to occur on BLM land in the Coachella Valley and is not expected to occur.

Desert Tortoise

The desert tortoise is designated as threatened under both the FESA and CESA. The Mojave population of the desert tortoise inhabits areas north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California. Throughout the majority of the Mojave Desert, desert tortoises occur most commonly on gentle sloping soils characterized by an even mix of sand and gravel and sparsely vegetated low-growing vegetation where there is abundant inter-shrub space (USFWS 2008). Typical habitat for the Mojave Desert tortoise has been characterized as creosote bush scrub below 5,500 feet above mean sea level (USFWS 2008, USFWS 2010b). Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by desert tortoise include desert dandelion (*Malacothrix glabrata*), primrose (*Camissonia* spp. and *Oenothera* spp.) desert plantain (*Plantago ovata*), milk-vetches (*Astragalus* spp.), gilia (*Gilia* spp.), desert marigold (*Baileya multiradiata*), Mojave lupine (*Lupinus odoratus*), phacelia (*Phacelia* spp.), desert wishbone-bush (*Mirabilis laevis*), forget-me-nots (*Cryptantha* spp.), goldfields (*Lasthenia californica*), California coreopsis (*Leptosyne californica*), white-margin sandmat (*Euphorbia albomarginata*), and the non-native red-stemmed filaree. The desert tortoise spends 95 percent of its life underground and will opportunistically utilize burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover. Therefore, a moderately friable soil is required to allow for burrow construction and ensure that burrows do not collapse.

While the entire project site presents suitable desert tortoise habitat, no suitable tortoise burrows and very few burrows at all were observed during the habitat assessment, and the nearest known record of this species (via the CNDDDB (CDFW 2021a)) is located over eight miles to the north of the project site. A single suitable burrow was found on-site during the October 2020 habitat assessment, but no desert tortoise sign was seen in or around it and no sign was observed elsewhere. Desert tortoise has a low potential to occur within the project site.

Non-Listed Special-Status Wildlife Species

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is designated as a BLM sensitive species, a CDFW FP species, and a CDFW WL species. It is a year-round resident of much of southern California, where it typically nests in tall trees or structures (e.g., transmission towers) or particularly on cliffs in high mountains. It shows strong nest fidelity and will reuse the same nest from year to year or rebuild when necessary (Pagel 2010). It is estimated that upwards of 80 percent of the golden eagle's diet is made up of mammals, particularly rabbits

and squirrels, followed by birds (Katzner et al. 2020). Hunting is initiated either from flight or from prominent perching points allowing clear fields of view. The typical nesting season is from late January to the end of August, but courtship and nesting may begin as early as mid-December, and pairs will often maintain territories year-round. Young typically fledge between 45 and 81 days old and will spend months after fledging in their natal territories before dispersing off on their own. Golden eagles generally avoid nesting near urban areas and would not be expected to nest in or anywhere near the project site. It is possible that eagles may forage from overhead, but due to the immediate proximity of urban development to the project site (e.g., residential neighborhood, I-10), it is unlikely that the site would have much value for foraging because of human disturbance. The golden eagle has a low potential to occur on-site.

Prairie Falcon

The prairie falcon (*Falco mexicanus*) is designated as a CDFW WL species. It is a year-round resident of southern California. This species is typically found in shrub-steppe desert, grasslands, mixed shrub and grassland ecotones, agricultural fields, and alpine tundra, but particularly in open, expansive habitats (Steenhof 2020). This species primarily nests on cliffs but will also nest opportunistically if necessary on trees, utility towers, buildings, or even inside caves. The general nesting season extends from the beginning of March through the end of July. Prairie falcon is commonly sighted in the Coachella Valley in the general vicinity of the project (eBird 2021) and has a high potential to occur as a foraging bird but would not be expected to nest on-site.

American Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) is designated as a BLM sensitive species and a CDFW FP species. It was formerly listed under both the FESA and the CESA but has been delisted from both. This subspecies is a year-round resident in southern California, although other subspecies also occur during winter. Peregrine falcons are widespread and use a variety of habitat types, although they prefer cliffs or other tall areas for nesting and open landscapes for foraging (White et al. 2020). Nests are not built but are typically scraped into the surface of the nesting substrate that will be used. Eggs are laid beginning in mid-February, with young typically fledging between 35 and 42 days old and, in non-migratory populations (such as southern California), may remain dependent on parents for an additional nine to ten weeks. There is no nesting habitat within the project site or its vicinity, but there is foraging habitat and this species is known to occur in the general vicinity. The American peregrine falcon has a high potential to occur as a foraging bird but would not be expected to nest on-site.

Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket (*Macrobaenetes valgum*) has no state or federal designation, but is a covered species under the CVMSHCP and it is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. Its known range extends through the western Coachella Valley to approximately two miles west of the City of Indio (CVAG 2016). This species is dependent on active dunes and ephemeral sand fields in the western Coachella Valley. It is strongly correlated with

windblown habitats dominated by creosote bush, burrobush (*Ambrosia dumosa*), honey mesquite, Mormon tea (*Ephedra* spp.), desert willow (*Chilopsis linearis*), and sandpaper bush (*Mortonia scabrella*). Stabilized sandy environments are avoided. Adults are active in early spring and burrow underground again by mid- to late spring, and juveniles emerge in late fall. Nearly all of the suitable habitat within the Whitewater Floodplain Conservation Area has been designated as core habitat for this species, which has been extensively trapped west of Gene Autry Trail (though not east, where the project site is located). Coachella giant sand treader cricket has a moderate to high potential to occur within the project site.

Pocketed Free-Tailed Bat

The pocketed free-tailed bat (*Nyctinomops femorosaccus*) is designated as a CDFW SSC. It is found in Riverside, San Diego, and Imperial Counties, where it occurs in pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis habitats (CDFW 2000). This species roosts and establishes colonies in rock crevices, caverns, and buildings. Pups are born in June and July, with lactation of maternal bats to their young continuing into August. Pocketed free-tailed bat has a moderate potential to forage within the project site but is not expected to roost on-site. Because this species is completely insectivorous (CDFW 2000), it will not be directly dependent on any on-site flora for foraging.

Lucy's Warbler

The Lucy's warbler (*Oreothlypis luciae*) is designated as a BLM sensitive species and a CDFW SSC. In North America it is typically found in the Desert Southwest, particularly the area from the Colorado River to southwest New Mexico. West of the Colorado River, and particularly west of the Salton Sea, this species is considered a rare but regular vagrant (eBird 2021). During migration and on wintering grounds, this species may use a variety of arboreal habitats including riparian, tamarisk, and ornamental trees (Johnson et al. 2020). The project site and surrounding survey area has an abundance of tamarisks planted as windrows, but because this species is rare in California except for the far southeastern edge, Lucy's warbler is considered to have a low potential to occur in the project site.

Palm Springs Pocket Mouse

The Palm Springs pocket mouse is designated as a BLM sensitive species and a CDFW SSC. It is also a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is endemic to the Coachella Valley, and while its current distribution is not well known, it was historically present from the San Gorgonio Pass to Joshua Tree National Park and south to Borrego Springs. This species generally occurs in creosote scrub, desert scrub, and grasslands with loose and/or sandy soils and sparse to moderate vegetative cover, particularly in areas dominated by creosote bush, brittlebush (*Encelia farinosa*), burrobush, and ephedra (*Ephedra californica*) (CVAG 2016). They are likely dormant generally between October and March but may emerge periodically to feed on seed caches. Breeding occurs from January to August, peaking between March and May. Nearly all of the Whitewater Floodplain Conservation Area has been designated by the CVMSHCP as a core habitat

area and previous trapping in 2000 found the species east of Gene Autry Trail between the UPRR tracks and I-10, although it is unknown exactly where the occurrences were in relation to the survey area (CVAG 2016). Palm Springs pocket mouse has a moderate to high potential to occur within the project site.

Flat-Tailed Horned Lizard

The flat-tailed horned lizard is designated as a BLM sensitive species and a CDFW SSC. It was previously designated as a candidate for endangered status under the CESA in 2015 but was rejected for full CESA listing in 2016. It is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is typically found in open, sandy habitats, usually sparsely vegetated with creosote bush and burrobush. While fine, windblown sands are preferred, excessively loose and unstable sand may also discourage this species from occurring in an area (CVAG 2016). Adults are typically active anywhere from mid-February to mid-November but are most active between April and September. Mating occurs in May and June, with eggs hatching between July and October. Nearly half of the Whitewater Floodplain Conservation Area has been designated as predicted and potential conserved habitat for this species based on known records. There are numerous CNDDDB records of this species occurring within five (5) miles of the project site prior to the year 2000, but as of 2016 the last confirmed record of this species in the Whitewater Floodplain Conservation Area was in 1994 (CVAG 2016). Flat-tailed horned lizard has a moderate potential to occur within the project site.

During Michael Baker's August 2015 survey, a single piece of horned lizard scat was found on-site. No other horned lizard scat was found during the survey, and no tracks or other horned lizard sign were found in the vicinity of the scat. Horned lizard tracks were found in other various locations throughout the site, but despite efforts to track the lizards, no horned lizards were found. Flat-tailed horned lizard overlaps in range in this area with the southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and without observing any individuals, it was unable to be conclusively determined which species of horned lizard may be present on-site.

Coachella Valley Grasshopper

The Coachella Valley grasshopper (*Spaniacris deserticola*) has no state or federal designation, but is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is strongly associated with Palmer's crinklemat (*Tiquilia palmeri*) and is most often found along the lower fringes of rocky bajadas where the soil is a combination of rock, sand, and clay; along low sandy ridges; and along sandy alluvial fans, as long as the host plant is present (BLM 2002). Other than Palmer's crinklemat, this species may on occasion also use fanleaf crinklemat (*Tiquilia plicata*), which was documented on-site during project surveys. Adults are active from late June through August and can tolerate soil temperatures of at least 140 degrees Fahrenheit, while nymphs are active in the spring. This species is known to occur in the Thousand Palms Preserve, at the east end of the Indio Hills, and in the Willow Hole Conservation Area of the CVMSHCP (BLM 2002). Because its primary host species is not present on-site and this species is not known to occur in the area around the project site, Coachella Valley grasshopper is not expected to occur.

Coachella Valley Jerusalem Cricket

The Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*) has no state or federal designation, but is a covered species under the CVMSHCP and is considered a target sensitive species within the Sand Dunes and Sand Fields community type. This species is most often found in the western Coachella Valley where temperature and moisture gradients are within its tolerance levels (CVAG 2016). It occurs in sandy to somewhat gravelly sandy soils and is typically found in loose windblown drift sands and especially in dunes. It appears to favor areas dominated by members of the sunflower family, particularly *Ambrosia* spp. and *Encelia* spp. According to the CVMSHCP, while nearly all of the Whitewater Floodplain Conservation Area is still conserved as modeled habitat for this species, actual suitable habitat may not exist within the entire conservation area, where this species has never been found (CVAG 2016). Coachella Valley Jerusalem cricket is not expected to occur within the project site.

Le Conte's Thrasher

The Le Conte's thrasher is designated as a CDFW SSC, is a covered species under the CVMSHCP, and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. It is a year-round resident of southern California. This species is typically found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills with a high proportion of saltbush (*Atriplex* spp.) or cholla (*Cylindropuntia* spp.) but may still utilize areas without these plants (Sheppard 2020). Water is rarely present, and leaf litter under shrubs is required for insect buildup. This species primarily nests in thorny shrubs and cholla. The general nesting season extends from mid-February to late June. Nearly all of the Whitewater Floodplain Conservation Area has been modeled as conserved habitat for this species. However, local records from the CNDDDB (CDFW 2021a) and eBird (eBird 2021) suggest that this species is rare in this area, with few recent records. Le Conte's thrasher has a low potential to occur within the project site.

Coachella Valley Round-Tailed Ground Squirrel

The Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*, also known as Palm Springs round-tailed ground squirrel) is designated as a BLM sensitive species and a CDFW SSC. It is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is typically found in scrub and wash habitats including mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde scrub, and saltbush/alkali scrub, particularly in sandy floodplains (CVAG 2016). Ideal habitat seems to be areas where hummocks of sand accumulate at the base of large shrubs, and according to current data as described in the CVMSHCP, this species seems to particularly favor hummocks that form around mesquite. The breeding period is generally from early spring through June, and it is inactive in its burrows from August until January. Coachella Valley round-tailed ground squirrel is known to occur in the Whitewater Floodplain Preserve to the west of Gene Autry Trail, and nearly the entire Whitewater Floodplain Conservation Area has been designated by the CVMSHCP as core habitat. Habitat within the project site is heavily dominated by creosote bush, with few, if any, mesquite. This species has a moderate potential to occur within the project site.

Section 4 Conclusion and Recommendations

Michael Baker biologists conducted a series of habitat assessments and focused surveys within the project site and its 500-foot buffer, or survey area, between August 2015 and October 2020. These field surveys helped Michael Baker to identify the current or possible future presence of presence of several special-status biological resources that are of interest to the BLM and its compliance with the CDCA (BLM 2002), DRECP LUPA (BLM 2016), CVMSHCP (CVAG 2016), and various State and federal regulations. The survey area was found to contain four (4) natural vegetation communities including Sonoran creosote bush scrub on lands not managed by the BLM or included within the CVMSHCP, and active sand fields; stabilized, shielded sand fields; and Sonoran mixed woody and succulent scrub within BLM/CVMSHCP lands. In addition, the survey area contains two (2) land cover types classified as tamarisk windrow and developed.

Michael Baker biologists observed one (1) federally listed special-status plant species, Coachella Valley milk-vetch (federally listed as endangered, CRPR 1B.2, BLM target sensitive species within sand dunes and sand fields, and a covered species the CVMSHCP), on-site during the 2016 focused surveys. No other special-status plant species were observed during any of the surveys between 2015 and 2020. Based on the results of comprehensive records searches and literature reviews repeated over the course of the site investigations (between 2015 and 2020), a review of existing site conditions during previous field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status plant species, Michael Baker determined that the overall survey area has a moderate potential to support Borrego milk-vetch (CRPR 4.3) and a low potential to support Little San Bernardino Mountains linanthus (CRPR 1B.2 and BLM sensitive species). All remaining special-status plant species identified by the records searches and literature reviews are not expected to occur within the survey area.

Michael Baker biologists observed one (1) federally-listed special-status wildlife species, Coachella Valley fringe-toed lizard (federally listed as threatened, State listed as endangered, BLM target sensitive species within sand dunes and sand fields, and a covered species under the CVMSHCP), on-site during 2016 burrowing owl focused surveys. Other special-status wildlife species that were observed within the survey area between 2015 and 2020 included Cooper's hawk (CDFW WL), sharp-shinned hawk (CDFW WL), burrowing owl (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), horned lark (CDFW WL if the *actia* subspecies), and loggerhead shrike (CDFW SSC). Based on the specific results of the records searches and literature reviews, a review of existing site conditions during the field surveys, and a review of specific habitat requirements, occurrence records, and known distributions for special-status wildlife species, Michael Baker determined that the overall project site has a high potential to support prairie falcon (CDFW WL), American peregrine falcon (BLM sensitive species and CDFW FP), Coachella giant sand treater cricket (BLM target sensitive species within sand dunes and sand fields and a covered species under the CVMSHCP), and Palm Springs pocket mouse (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and a moderate

potential to support pocketed free-tailed bat (CDFW SSC), flat-tailed horned lizard (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP), and Coachella Valley round-tailed ground squirrel (BLM sensitive species, BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). In addition, the project site has a low potential to support Crotch bumble bee (CDFW candidate for State listing as endangered), Swainson’s hawk (State listed as threatened), desert tortoise (State and federally listed as threatened and a covered species under the CVMSHCP), golden eagle (BLM sensitive species, CDFW FP, CDFW WL), Lucy’s warbler (BLM sensitive and CDFW SSC), and Le Conte’s thrasher (BLM target sensitive species within sand dunes and sand fields, CDFW SSC, and a covered species under the CVMSHCP). All remaining special-status wildlife species identified by the records searches and literature reviews are not expected to occur within the survey area.

A variety of avoidance and minimization measures and conservation measures will apply to the project to ensure compliance with the CDCA (BLM 2002), DRECP LUPA (BLM 2016), CVMSHCP (CVAG 2016), and various State and federal regulations. Those that are applicable to this project are listed below.

Applicable LUPA Conservation and Management Actions

LUPA-wide Measures

LUPA-BIO-1 Conduct a habitat assessment of Focus and BLM Special Status Species’ suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Focus and BLM Special Status Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat. No Route disturbance is already existing disturbance.

BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season.

Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.

LUPA-BIO-2 Designated biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during preconstruction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

LUPA-BIO-3 Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

- The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).
- The edge of the vegetation extent for specified Focus and BLM sensitive plant species.
- The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.

LUPA-BIO-4 For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities. No species-specific seasonal restriction dates are described in the applicable CMAs.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.

LUPA-BIO-5 All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program

will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

LUPA-BIO-6 Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:

- Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.
- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
- Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native

habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.

All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

- In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.

LUPA-BIO-9 Implement the following general LUPA CMA for water and wetland dependent resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
 - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
 - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
 - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific

stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:

- Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
- Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
- Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.

LUPA-BIO-10 Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.
- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.

LUPA-BIO-11 Implement the following CMAs for controlling nuisance animals and invasive species:

- No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.
- Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100- year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.
- Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.

- Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.
- When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

LUPA-BIO-12 For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise:

- To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.
- Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.
- Use noise controls on standard construction equipment including mufflers to reduce noise.

LUPA-BIO-13 Implement the following CMA for project siting and design:

- To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species.
- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.
- To the maximum extent practicable, restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.
- To the maximum extent practicable, confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.

- To the maximum extent practicable, any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.
- Use nontoxic road sealants and soil stabilizing agents.

LUPA-BIO-14 Implement the following general standard practices to protect Focus and BLM Special Status Species:

- Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.
- Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.
- Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.
- All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.
- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.
- Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

LUPA-BIO-15 Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

Plant Species

LUPA-BIO-PLANT-1 Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.

General Vegetation Management

LUPA-BIO-VEG-1 Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.

LUPA-BIO-VEG-2 Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

LUPA-BIO-VEG-3 Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

LUPA-BIO-VEG-5 All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.

Burrowing Owl

LUPA-BIO-IFS-12 If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

LUPA-BIO-IFS-13 If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

LUPA-BIO-IFS-14 Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

Applicable Conservation Measures for Sensitive Species in the Sand Dunes and Sand Fields Community

The following measures are taken from the Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement (BLM 2002) and apply specifically to species occurring in the Sand Dunes and Sand Fields Community type.

- Dune 2** Avoid stabilization of sand dunes due to adjacent development and spread of invasive species.
- Dune 3** Maintain, and enhance where feasible, aeolian and fluvial sand transport systems.
- Dune 4** Minimize sand compaction to protect Jerusalem cricket and giant sand treader cricket habitat and to minimize crushing of Coachella Valley fringe-toed lizards.
- Dune 5** Minimize roads within flat-tailed horned lizard habitat which are prone to crushing by vehicles.
- Dune 6** Avoid crushing of burrows, especially for burrowing owl, giant sand treader cricket, Jerusalem cricket, and round-tailed ground squirrel.
- Dune 7** Avoid disturbance and compaction of sandy habitats associated with Coachella Valley milk-vetch and avoid crushing Coachella Valley milk-vetch plants.
- Dunes 10** Minimize loss of native vegetation, minimize habitat fragmentation and maintain habitat patch connectivity.

Project Avoidance and Minimization Measures

The following measures are proposed by CVWD and are intended as avoidance, minimization, or mitigation to offset or reduce the potential impacts to the Coachella Valley milk-vetch, burrowing owl, and other special status species with potential to occur in the vicinity. The CVWD Project Engineer, Contractor, CVWD Environmental Specialist and/or Biological Monitor, and CVWD Inspector shall ensure implementation of all biological mitigation measures.

- BIO-1** Habitat Preservation. Following project completion, CVWD shall inspect the site for invasive weed species within the project site to help prevent habitat degradation and spread of invasive plants.
- BIO-2** Conservation Easement. CVWD shall place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing Whitewater Floodplain Conservation Area (WFCA) of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and adjacent to the project site. Twenty-three of the 42 acres shall be used to offset the 23 acres of impacts to land

within City of Cathedral City’s portion of the WFCA from implementation of the project, resulting in a net increase of 19 acres of land being added to the conservation area.

BIO-3 Nesting Birds. Pursuant to the MBTA and California Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat shall be conducted outside the avian nesting season. The nesting season generally extends from January 15 through August 31 but can vary slightly from year to year based on seasonal weather conditions. A pre-construction clearance survey for nesting birds shall be conducted within three days of the start of any ground-disturbing activities to ensure no nesting birds will be disturbed during construction. The biologist conducting the clearance survey shall document a negative survey with a brief letter report indicating no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. The Biological Monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

BIO-4 Burrowing Owl Survey. A pre-construction clearance survey for burrowing owl(s) shall be conducted within 30 days of the start of any ground-disturbing activities to ensure burrowing owls remain absent from the survey area. Should burrowing owl(s) be found within the project footprint during the pre-construction clearance survey, CDFW shall be contacted for consultation prior to clearing and grubbing.

If burrowing owl(s) are found to occupy the project site at the time of the pre-construction clearance survey, a relocation plan shall be written, consistent with LUPA-BIO-IFS-12, -13, and -14, approved by BLM and CDFW, and implemented prior to site development. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with BLM and CDFW. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with BLM/CDFW.

Additional Avoidance and Minimization Measures

The following avoidance and minimization measures were provided by the BLM as part of the FESA Section 7 informal consultation process and are required to be implemented on BLM administered lands

within the project area. These apply specifically to Coachella Valley fringe-toed lizard and Coachella Valley milk-vetch.

Coachella Valley Fringe-toed Lizard

- CVFTL-1** Prior to the initiation of ground-disturbing activities, the Applicant will designate an Authorized Biologist who will be responsible for overseeing compliance with the conservation measures outlined in this biological opinion. The authorized biologist will retain a copy of all conservation measures readily available while conducting work on site and oversee coordination between workers. The authorized biologist will be on site for all work-related activities and would have the authority to halt work activities that are not in compliance with the conservation measures.
- CVFTL-2** Prior to the start of construction, exclusion fencing will be installed along the perimeter of the work area and access route and maintained to keep fringe-toed lizards from entering work areas. Exclusion fencing will consist of a material suitable to withstand high winds, sun, and heat. The fence will be buried 12 inches below the sand surface and extend above ground a minimum of 24 inches. Fencing will be installed per manufacturer specifications. If the authorized biologist observes a Coachella Valley fringe-toed lizard within the Project area during fence installation, the lizard will be allowed to voluntarily exit the Project area. If a lizard is found within the fenced Project area during construction, the authorized biologist will ensure that construction equipment and personnel avoid the lizard. All workers will strictly limit activities and vehicles to the designated work areas within the project footprint. Once project activities have concluded, the fencing will be removed.
- CVFTL-3** If any fringe-toed lizards are captured within the Project footprint, they will be released immediately outside the Project footprint. Lizards will be released in the shade of a shrub. No lizards will be held in captivity or in transport for longer than 10 minutes after their initial capture within an enclosed construction area. If necessary, lizards will be transported in clean, white, plastic 5-gallon buckets.
- CVFTL-4** All work area boundaries associated with temporary and permanent disturbances will be conspicuously staked, flagged, or marked to minimize surface disturbance activities. All workers shall strictly limit activities and vehicles to the designated work areas.
- CVFTL-5** Should any fringe-toed lizards be injured or killed, all activities in the immediate area would be halted, and the authorized biologist would be contacted immediately to investigate the incident. The authorized biologist would be responsible for reporting the incident (via fax or email) to the Service and California Department of Fish and Wildlife within 24 hours of the incident.

- CVFTL-6** During project activities, motor vehicles would be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint.
- CVFTL-7** Perennial vegetation such as creosote bush will be avoided to the extent feasible.
- CVFTL-8** Staging areas will be located outside of fringe-toed lizard habitat (modeled, critical, or occupied habitat).
- CVFTL-9** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to fringe-toed lizards would be securely fenced or covered when unattended to prevent accidental death or injury. At the start and end of each workday, and just before backfilling, all excavations would be inspected for trapped animals. If found, trapped animals would be removed by the authorized biologist and relocated to outside the Project footprint, as appropriate.
- CVFTL-10** Anti-perching devices will be placed on the new poles. Substitute measures of equal or greater ecological value to likely affected listed species, pursuant to review and approval of the BLM and Service, can be implemented in lieu of installing/maintaining pole anti-perching devices.

Coachella Valley Milk-vetch

- CVMV-1** A Qualified Biologist would conduct pre-construction focused surveys for Coachella Valley milk-vetch within the Project footprint during the blooming season (generally February through May) prior to initiation of ground-disturbing activities. Areas where the plant is found will be marked for avoidance as Environmentally Sensitive Areas and Qualified Biologists would be present throughout construction and decommission activities. The name and qualifications of the Qualified Biologist(s) would be submitted to the BLM and Service for approval at least 30 days prior to Project activities in Coachella Valley milk-vetch designated critical habitat.
- CVMV-2** Coachella Valley milk-vetch locations identified during the pre-construction surveys would be delineated on the ground and on aerial photographs, incorporated into the construction management plans, and avoided to the maximum extent possible. Where avoidance is not possible, the Applicant would follow methods described in the Plant Salvage and Restoration Plan to ensure seeds are salvaged appropriately and re-distributed within the action area.
- CVMV-3** A Plant Salvage and Restoration Plan (Restoration Plan) will be submitted to the BLM and Service for approval in the areas of Coachella Valley milk-vetch critical habitat and Coachella Valley milk-vetch modeled habitat within the action area. The Restoration Plan will describe topsoil salvage, recontouring and topsoil placement, and

weeding maintenance for 5 years, or another period of time approved by the BLM and Service to ensure approximately 60 percent replacement of the affected Coachella Valley milk-vetch critical habitat and Coachella Valley milk-vetch modeled habitat. The Restoration Plan will include seed collection and storage at an appropriate facility (e.g., Rancho Santa Ana Botanic Garden), reseeding in appropriate existing or restored habitat, stockpile and reapplication of topsoil, or other similar activities. The Restoration Plan will be submitted to the BLM and Service for approval 30 days prior.

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Appendix B Site Photographs

Appendix C Plant and Wildlife Species Observed List

Appendix D Potentially Occurring Special-Status Biological Resources

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Assessment

Prepared For:

COACHELLA VALLEY WATER DISTRICT

75-515 Hovley Lane East
Palm Desert, California 92211
Contact: *Scott Strosnider P.E., CFM*
760.398.2661, ext. 2737

Prepared By:

MICHAEL BAKER INTERNATIONAL

5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: *Ryan Winkleman*
949.533.0918

August 2022
JN 179420

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1

CITY OF CATHEDRAL CITY, COUNTY OF RIVERSIDE, CALIFORNIA

Biological Assessment

The undersigned certify that the statements furnished in this report and figures present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ryan Winkleman
Senior Biologist
Natural Resources and Regulatory Permitting

August 2022
JN 179420

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
BRTR	Biological Resources Technical Report
CDCA	California Desert Conservation Act
CDFW	California Department of Fish and Wildlife
CMA	Conservation and Management Action
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVFTL	Coachella Valley fringe-toed lizard
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVMV	Coachella Valley milk-vetch
CVWD	Coachella Valley Water District
CWA	federal Clean Water Act
CY	cubic yards
EA/FONSI	Environmental Assessment/Finding of No Significant Impact
FESA	Federal Endangered Species Act
HUC	Hydrologic Unit Code
I	Interstate
IPaC	Information for Planning and Consultation
IS/MND	Initial Study/Mitigated Negative Declaration
JPR	Joint Project Review
LUPA	Land Use Plan Amendment
Michael Baker	Michael Baker International
NEPA	National Environmental Policy Act
OHV	off-highway vehicle
project	North Cathedral City Improvements Project, Phase 1
Restoration Plan	Plant Salvage and Restoration Plan
UPRR	Union Pacific Railroad
USDA	United States Department of Agriculture, Natural Resource Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WFCA	Whitewater Floodplain Conservation Area

Section 1 Introduction

The purpose of this biological assessment is to review the proposed North Cathedral City Improvements Project, Phase 1 (project) in sufficient detail to determine whether the proposed action may affect any of the federally listed species known to occur in and around the action area, defined as all areas that may be directly or indirectly impacted by the project. This biological assessment is prepared in accordance with legal requirements set forth under Section 7 of the Federal Endangered Species Act (FESA; 16 U.S.C. 1536(c)).

1.1 PROJECT LOCATION

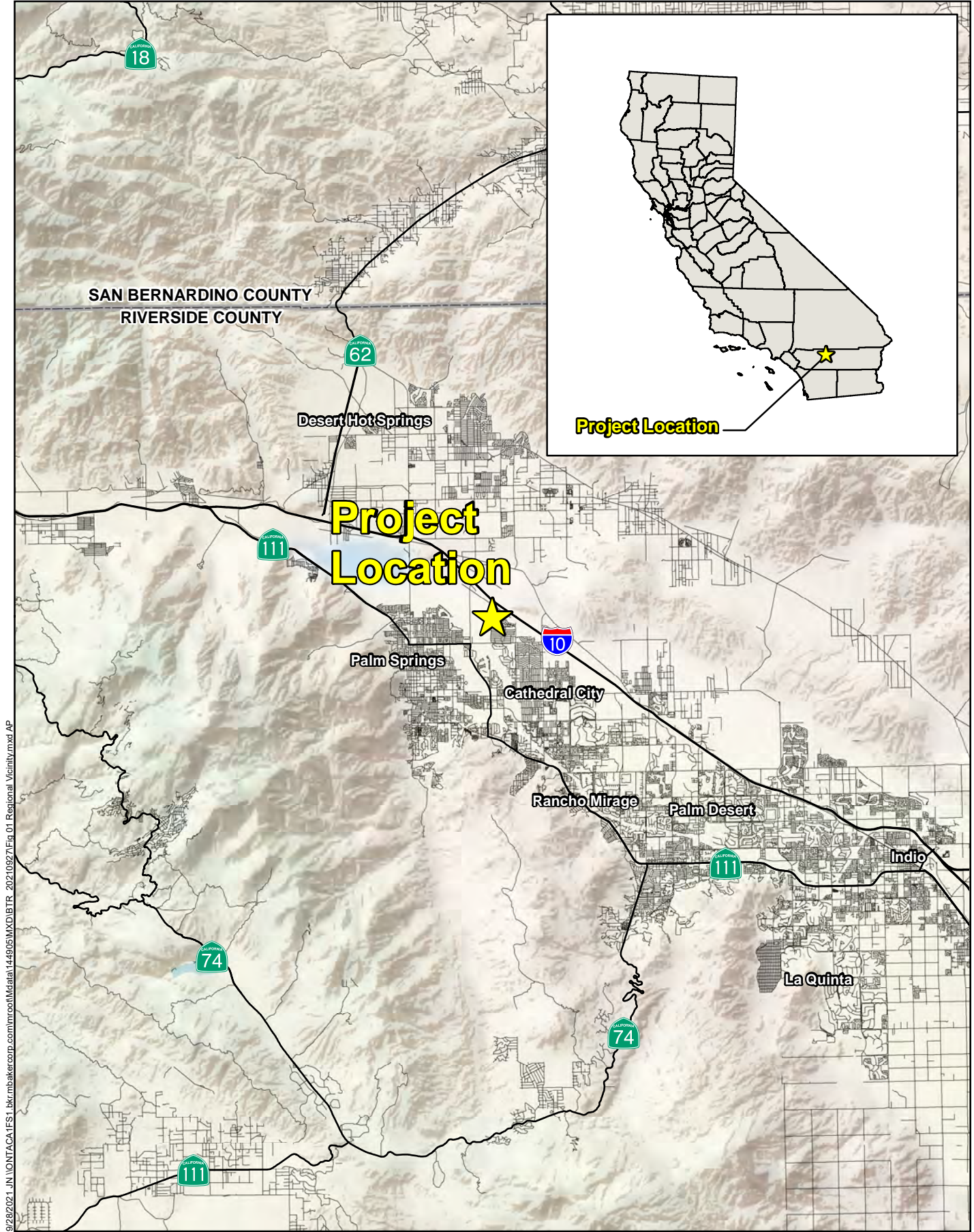
The project site is located south of Interstate 10 (I-10) on the western boundary of the City of Cathedral City, Riverside County, California (refer to Figure 1, *Regional Vicinity*). The project site is depicted on the United States Geological Survey (USGS) *Cathedral City, California 7.5-minute* topographic map in Section 32 of Township 3 south, Range 5 east and Section 5 of Township 4 south, Range 5 east (refer to Figure 2, *Site Vicinity*). Specifically, the project site is located north of Ontina Road, west and south of I-10, and east of Gene Autry Trail, with the action area extending 500 feet outwards (refer to Figure 3, *Action Area*). The project site and action area are both variably located within lands managed by the Bureau of Land Management (BLM) and lands occurring within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Plan Area (refer to Figure 4, *Land Ownership*).

1.2 PROJECT DESCRIPTION

Morongu Wash flows extend from the foothills south towards I-10 where it is obstructed by the I-10 highway. A portion of the flows is conveyed through three (3) existing culverts (Salvia, Edom and Willow Wash culverts) beneath the highway, some flow overtops the highway (conveyed south) and the remaining flows eastwards (as the existing Union Pacific Railroad [UPRR] Bridge blocks the flows being conveyed south).

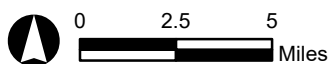
A previous report titled “North Cathedral City and Thousand Palms Stormwater Management Plan, Morongu Wash and Thousand Palms Watershed, Alternatives Analysis Report,” prepared by Northwest Hydraulics for the Coachella Valley Water District (CVWD) dated September 30, 2013 has identified recommended improvements along Morongu Wash to mitigate the identified flood risk east along the I-10 corridor.

This InterimProject is to include the channel grading, concrete slope lining (east overbank) downstream of the UPRR Bridge along the residential development, training walls around UPRR bridge, and concrete lining from I-10 to 400-feet downstream of the UPRR bridge. This Interim Project would incorporate components of the final recommended improvements (NHC 2013). The improvements will be designed and constructed to CVWD standards.



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NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BIOLOGICAL ASSESSMENT

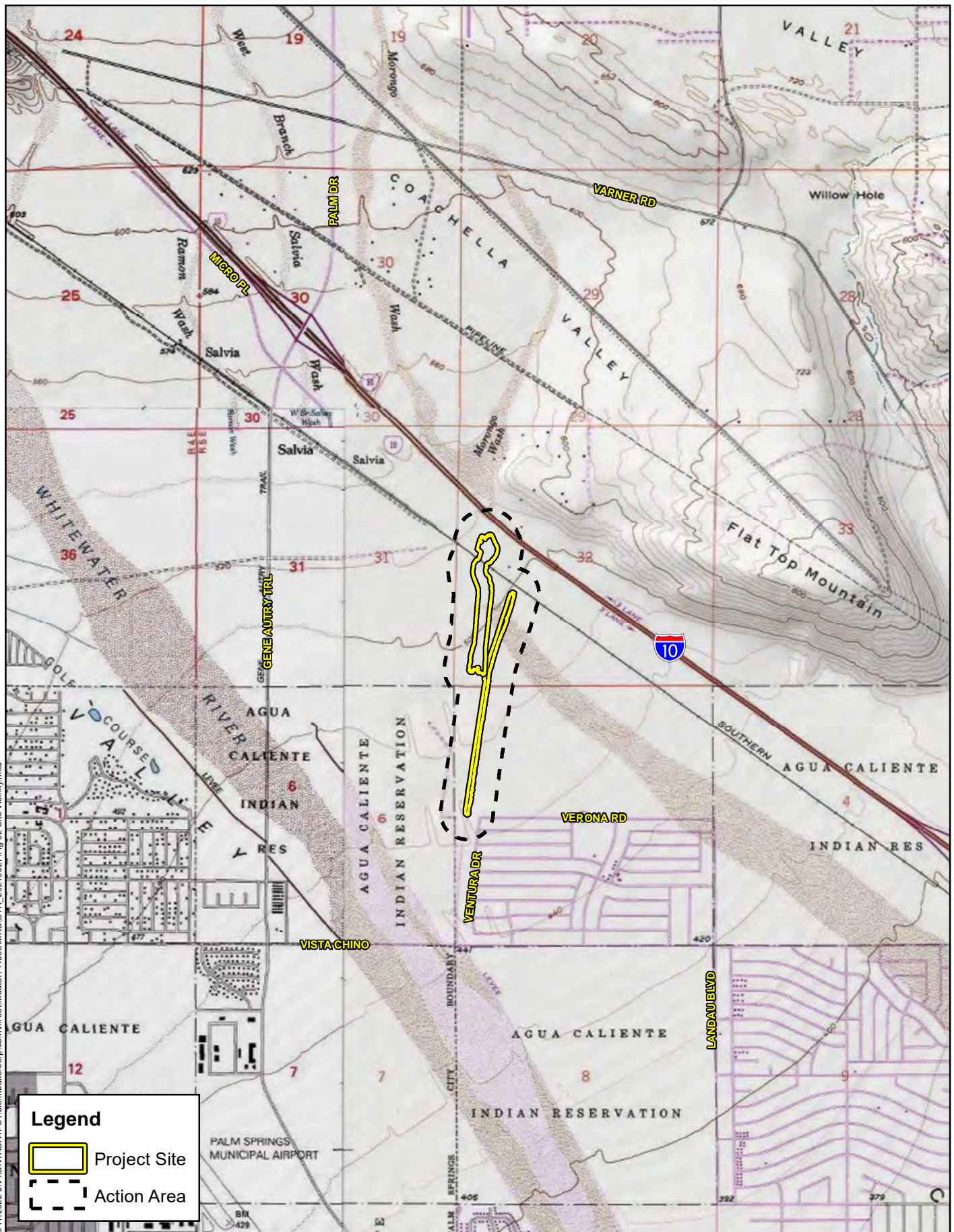


Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

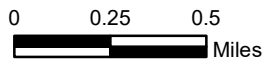
Figure 1

8/17/2022 J:\MONTACA\FS1\bkrcmbakercorp.com\mroon\Mapdata\144905\MXD\BTR_20210927\Fig 02 Site Vicinity.mxd



Legend

-  Project Site
-  Action Area



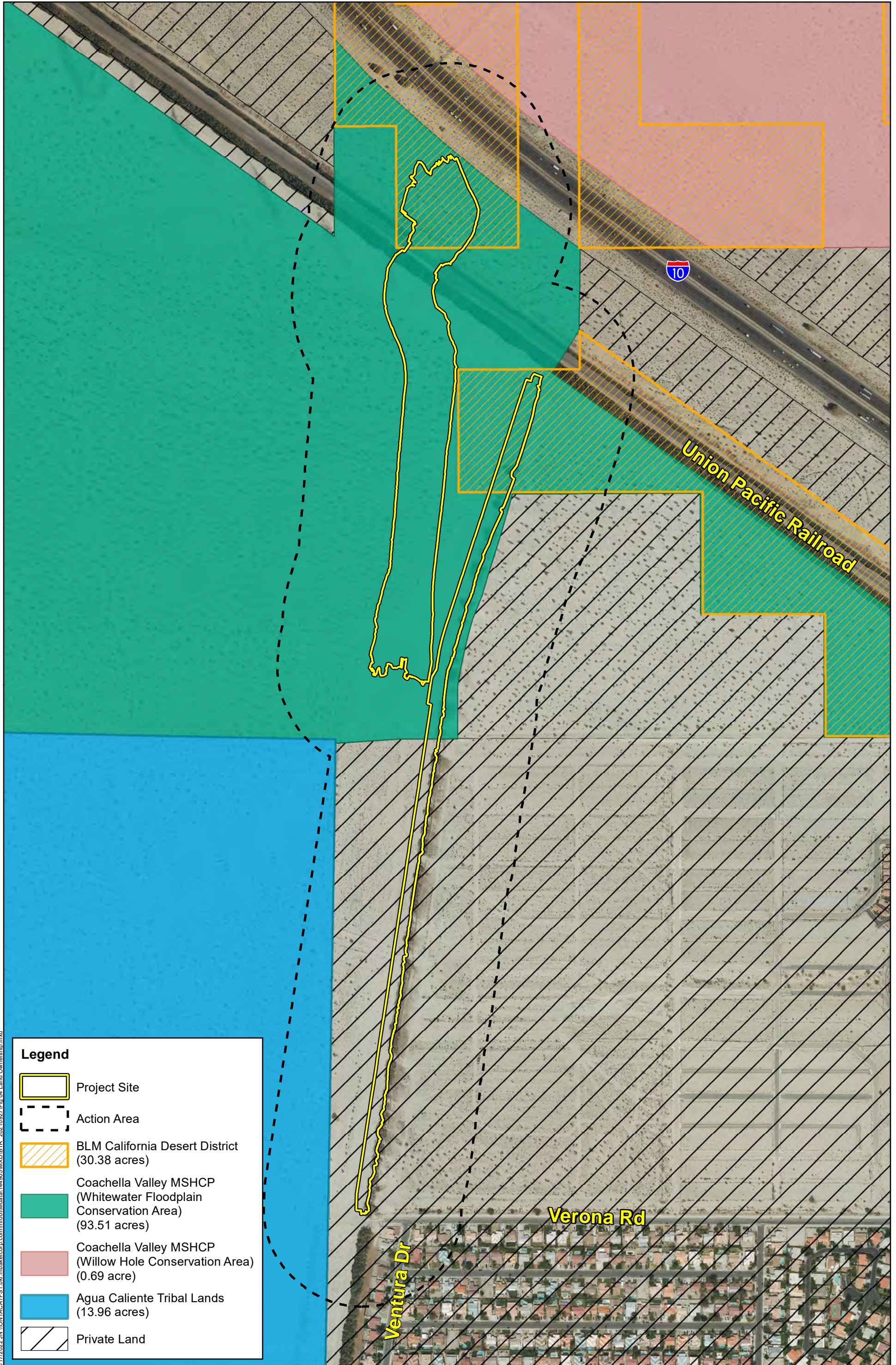
Source: ArcGIS Online, County of Riverside, County of San Bernardino

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
 BIOLOGICAL ASSESSMENT
Site Vicinity

Figure 2



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8/17/2022 J:\MONTACA\FS1\br\mbackcorp.com\mrc\mdata\144905\WMD\BTR_2022\0927\Fig 04_Land_Ownership.mxd

Legend

- Project Site
- Action Area
- BLM California Desert District (30.38 acres)
- Coachella Valley MSHCP (Whitewater Floodplain Conservation Area) (93.51 acres)
- Coachella Valley MSHCP (Willow Hole Conservation Area) (0.69 acre)
- Agua Caliente Tribal Lands (13.96 acres)
- Private Land

Ventura Dr

Verona Rd

Union Pacific Railroad



- *Concrete Channel Lining:* The project would include concrete channel lining both upstream and downstream of the UPRR bridge location. Channel lining would extend approximately 500 feet upstream of the bridge, and a berm would be graded on the east bank to direct flows through the bridge crossing. Downstream of the bridge, channel lining would extend approximately 300 feet. The concrete-lined portion of the channel would be at an approximate three-percent grade.
- *Bridge Improvements:* The proposed project would include excavation, concrete lining of the bridge undercrossing, and other required improvements (e.g. bracing). The project would lower the invert of the bridge approximately 2.5 feet from the flowline, which would meet UPRR’s clearance requirements for bridges. The bottom width of the bridge undercrossing would be approximately 200 feet.
- *Earthen Channel Grading:* The proposed project would grade a new earthen channel south of the bridge and concrete channel lining improvements described above. This channel would be graded at a one-percent slope until it meets existing grade. The earthen channel would be approximately 200 feet wide with 3:1 side slopes.

Table 1: Approximate Earthen Channel Grading Quantities (Cubic Yards)

CHANNEL		
Cut	223,813.66	CY
Fill	2,750.36	CY
Net Adjusted (Cut)	221,063.30	CY

- *Slope Protection:* Concrete slope protection would be placed at the east overbank of the channel. The existing overbank is located approximately 800 feet southeast of the existing UPRR bridge. A row of tamarisk trees exists at the top of the existing slope, and the concrete slope protection improvements would occur immediately west of the trees (i.e., the trees would be protected in place). The slope protection would extend for a length of approximately 4,800 linear feet and will be constructed at a ratio of 1:1.5 (vertical: horizontal). The ultimate grade will be less than 10%. The bottom portion of it may ultimately be covered by blowsand. An access road (currently the only way to access the channel improvements is from Vista Chino which is approximately 1.5 miles south), maintenance ramp to the channel invert and turnaround area (as requested by the operations and maintenance staff) will be part of the slope protection.

Table 2: Approximate Slope Protection Grading Quantities (Cubic Yards)

SLOPE LINING		
Cut	17,932.49	CY
Fill	46,130.50	CY
Net Adjusted(Fill)	28,198.01	CY

Operations and Maintenance

Maintenance activities would also include emergency maintenance following a large storm event to clear sediment and invasive species control measures to protect native habitat within the project area.

Construction Activities

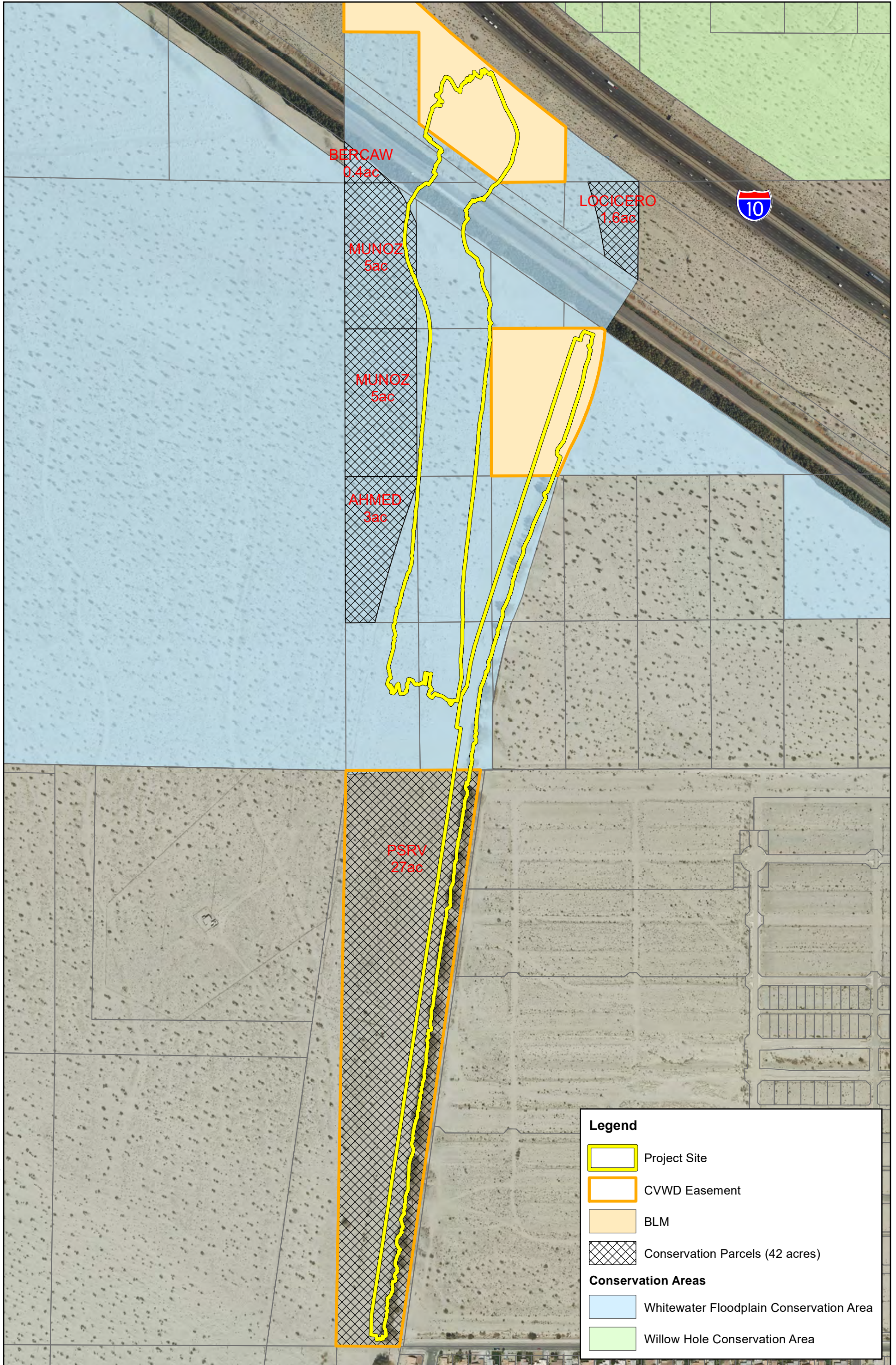
The project would be constructed over approximately 12 months. Construction equipment is expected to include 5 scrapers, one water truck, up to two D9 bulldozers, one compactor, 40 dump trucks, one concrete mixer, one pump truck, two to three skip loaders, up to 20 personnel vehicles, and semi-trucks for materials delivery. It should be noted that not all equipment would be used every day.

1.3 CONSULTATION HISTORY

1.3.1 CVMSHCP JOINT PROJECT REVIEW

The project site is located within a conservation area associated with the CVMSHCP and the project has undergone review by the Coachella Valley Conservation Commission (CVCC) through the Joint Project Review (JPR) process. With submittal of the JPR application package on June 16, 2016, the project entered into a JPR with the CVCC, followed by an in-person presentation to the CVCC at the Coachella Valley Association of Governments (CVAG) on June 22, 2016. During the JPR process, CVWD consulted extensively with CVCC to review the project's potential impacts to sensitive biological resources and consistency with the CVMSHCP. The project as proposed would result in 23 acres of impacts (5.7 acres permanent and 17.3 acres temporary) to habitat within the CVMSHCP Whitewater Floodplain Conservation Area (WFCA). As a result, the CVWD agreed to place a conservation easement on 42 acres of land adjacent to the project and within the WFCA; of these 42 acres, 23 acres would be used to offset the project impacts, with the remaining 19 acres resulting in a net increase of conservation lands to the WFCA such that the proposed project would ultimately increase the acreage of conserved core habitat for species being impacted (refer to Figure 5, *Conservation Parcels*). The conserved lands would be proposed in a Like Exchange at a standard of biologically equivalent or superior conservation value to the lands that would be lost. An equivalency analysis analyzing the comparison of the lands was drafted in September 2016, updated in November 2016, and presented to the CVCC in a meeting on January 26, 2017. Following CVCC review of the equivalency analysis and proposed Like Exchange, the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) approved the Like Exchange on March 15, 2017 via an email to the CVCC, which subsequently provided final approval of the Like Exchange on May 11, 2017, signifying completion of the JPR process.

It should be noted that in September 2021 the project underwent minor changes to the grading boundaries. These changes were needed in order to daylight the grading to the current, existing contours of the surrounding area; implement minor adjustments to the scour depth (due to updated hydraulic calculations using the mixed regime and for the entire channel improvement reach and soil D50 information); and add an access road (currently the only way to access the channel improvements is from Vista Chino which is approximately 1.5 miles south), maintenance ramp to the channel invert, and turnaround area (as requested by the operations and maintenance staff) to the project. This resulted in changes to both the temporary and permanent grading limits for a revised total acreage of 22.22 acres of impacts (8.98 acres permanent and 13.24 acres temporary). The CVWD is currently in negotiations with the CVCC to facilitate



8/17/2022 JUN \Ontaca\1fs\1mrc001\Miaaba\14490\5\WXD\01\Tom\McGill\Report05 Conservation Parcels.mxd -USER NAME>

Legend

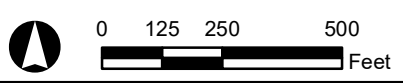
- Project Site
- CVWD Easement
- BLM
- Conservation Parcels (42 acres)

Conservation Areas

- Whitewater Floodplain Conservation Area
- Willow Hole Conservation Area

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT
BIOLOGICAL ASSESSMENT

Conservation Parcels



Source: County of Riverside, Eagle Imagery

an administrative approval process of the acreage change. If approved, there would be a revised net increase of 19.78 acres of conserved lands in the WFCAs.

1.3.2 BUREAU OF LAND MANAGEMENT

The project’s biological documentation has undergone review by several biologists from the BLM as the National Environmental Policy Act (NEPA) Lead Agency, including the following:

- Separate reviews of the project’s Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment/Findings of No Significant Impact (EA/FONSI) by BLM biologists Danielle Ortiz and Kayla Brown.
- Review of the project’s Biological Resources Technical Report (BRTR), written at the specific request of the BLM, by BLM biologist Greg Bjornstrom. Comments from the BLM’s review of the IS/MND and EA/FONSI were incorporated into the BRTR, which was approved and accepted by Mr. Bjornstrom on March 24, 2022.

1.3.3 SECTION 7 ENDANGERED SPECIES ACT CONSULTATION

BLM biologist Mr. Bjornstrom began the process of informal consultation with USFWS biologist Felicia Sirchia under Section 7 of the FESA on January 20, 2022. On January 26, 2022 Mr. Bjornstrom and Ms. Sirchia proposed species-specific avoidance and minimization measures for the project, and following several revisions, the species-specific measures were finalized and incorporated into the BRTR on March 24, 2022 (refer to Section 5.2.3). Mr. Bjornstrom and Michael Baker International (Michael Baker) biologist Mr. Ryan Winkleman held a phone call on April 14, 2022 to discuss project design and potential impacts. Following this call, Mr. Bjornstrom and Mr. Winkleman gathered material for Mr. Bjornstrom to submit a letter to Ms. Sirchia seeking concurrence that the project may affect, but would be unlikely to adversely affect federally-listed species within the action area. To make a final recommendation, an on-site field meeting occurred on May 26, 2022 between Mr. Bjornstrom, Ms. Sirchia, Mr. Winkleman, and CVWD biologist Mr. Solan Watts. Based on the results of this field meeting, the USFWS requested that the project proceed with formal Section 7 consultation with the BLM as the federal lead agency, to which the BLM agreed.

Section 2 Environmental Baseline

The following section provides a discussion of the action area and its physical and biological conditions at the time of this writing.

2.1 ACTION AREA

The action area consists of all areas that may be directly or indirectly affected by the proposed project, and is not necessarily restricted to the project site boundaries. As shown in Figure 3, *Action Area*, the action area identified for this project includes the project footprint and a 500-foot buffer. This 196.78-acre area includes land that is managed by the BLM, land that falls within the CVMSHCP (WFCA and Willow Hole Conservation Area), Agua Caliente Tribal lands, and private land. The area of direct effect is confined to BLM, CVMSHCP (WFCA), and private land. Representative photographs of the action area are provided in Appendix A.

2.2 PHYSICAL AND BIOLOGICAL CONDITIONS

2.2.1 PHYSICAL CONDITIONS

Local Climate

The project region is characterized by year-round desert climate, with warm, sunny, dry summers, and cool, cloudy, mild winters. According to the Western Regional Climate Center, climate measurements obtained from the Palm Springs weather station¹ at the Palm Springs Airport approximately 1.9 miles southwest of the project indicated that for the period covering March 1906 to June 2016 the average maximum temperature in this area of California was 88.6° F annually, and average minimum temperature was 57.2° F annually. The warmest month on average was July at a maximum of 108.2° F, and the coolest months on average were December and January, both at a minimum of 42.3° F. Most precipitation during this time period occurred between November and March in the form of rain, with occasional and steadily increasing precipitation through the fall and winter; the average total precipitation was 5.49 inches annually. Snowfall typically does not occur within the project region. More recent climatological data from this weather station is not available.

Surrounding Land Uses

Land uses in the vicinity of the project site include residential development to the south and west, as well as several golf resorts and the Palm Springs International Airport to the south. An abandoned housing complex is located immediately southeast of the project site; roads and housing pads were graded but the complex has since sat abandoned and vegetation is slowly reestablishing itself. The project site is immediately south of I-10. Land falling under the Agua Caliente Indian Reservation is located to the

¹ <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635>

southwest, south, and southeast. The Morongo Wash passes through the action area, and the Whitewater River crosses south of the action area. Land managed by the BLM is present within the action area both south of I-10 and south of the UPRR tracks.

Topography and Soils

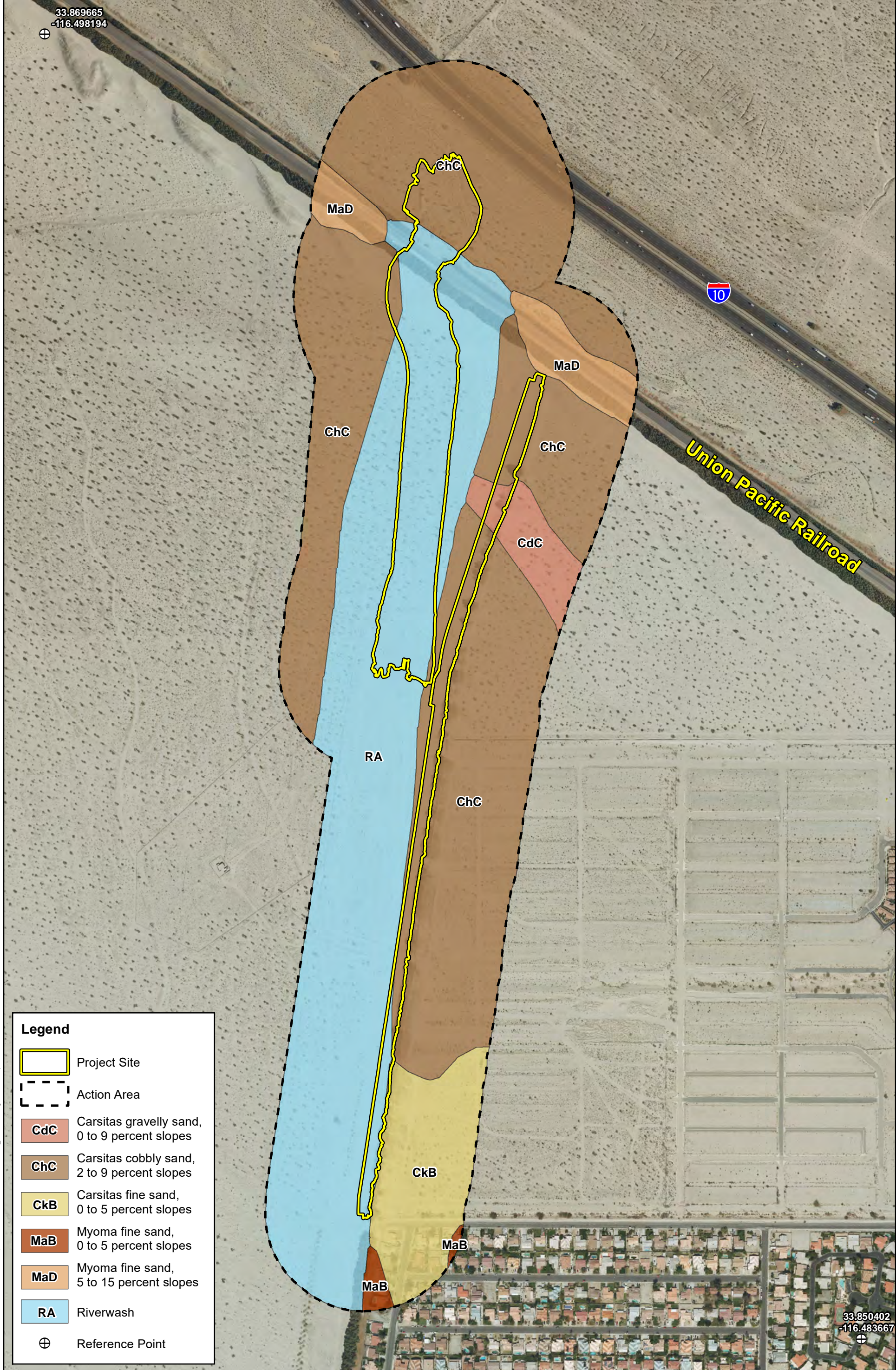
On-site surface elevation ranges from approximately 450 to 520 feet above mean sea level and generally slopes from north to south. The action area is relatively flat with no areas of significant topographic relief, except areas associated with berms (e.g., along the tamarisk (*Tamarix* sp.) windrows). On-site and adjoining soils were identified using the United States Department of Agriculture, Natural Resource Conservation Service (USDA) *Custom Soil Resource Report for Riverside County, Coachella Valley Area, California* (USDA 2022). Based on this report, the action area is underlain by the following soil units, as depicted in Figure 6, *Soils*:

- Carsitas gravelly sand, 0 to 9 percent slopes (CdC);
- Carsitas cobbly sand, 2 to 9 percent slopes (ChC);
- Carsitas fine sand, 0 to 5 percent slopes (CkB);
- Myoma fine sand, 0 to 5 percent slopes (MaB);
- Myoma fine sand, 5 to 15 percent slopes (MaD); and
- Riverwash (RA)

Watershed

The action area is located within the Morongo Wash (Hydrological Unit Code [HUC] 181002010602) sub-watershed of the larger Salton Sea watershed (HUC 18100200). The Morongo Wash has not been assessed as an Impaired Waterbody by the EPA. The Salton Sea watershed is located in the Sonoran desert region in the southeastern corner of California, encompassing one-third of the Colorado River Basin Region (about 8,260 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in southern California, south of Indio and north of El Centro. The basin is more than 200 feet below sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee break along the Colorado River resulted in river flows discharging into the basin for about 18 months. Since 1905, the Salton Sea has fluctuated in size with varying inflow and today has a surface area of about 343 square miles. The action area is approximately 35 miles northwest of the Salton Sea.

The action area occurs immediately northeast of Whitewater River/Coachella Valley Stormwater Channel. The Whitewater River is a tributary to the Salton Sea and is defined in the Basin Plan as the reach from headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near the Indian Avenue crossing in the City of Palm Springs. The reach of the Whitewater River from the Whitewater recharge basins near Indian Avenue to the Coachella Valley Stormwater Channel near Indio is defined as a Wash (Intermittent or Ephemeral Stream) in the Basin Plan. The Whitewater River is not currently listed as an Impaired Waterbody within the Whitewater River Region. Due to the small percentage



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of the Whitewater River Watershed and the Whitewater River Region in urban land uses, urban runoff constitutes a minor percentage of the total flow in the Whitewater River under storm conditions.²

Sand Transport

There are two primary sand transport systems at work in the Coachella Valley and in the action area. “Fluvial sand transport” refers to the process by which sand and sediment particles are pushed downstream along a floodplain by the movement of water. In the Coachella Valley, fluvial sand transport begins in the mountains, where streams and rivers push sediment down into the valley. Occasional water flows on the ephemeral valley floor will maintain downstream fluvial transport. In addition, high winds will also pick up sediment and carry it through the area (“aeolian sand transport”). Aeolian sand transport is likely to carry lighter sediment in constantly shifting dune systems.

2.2.2 BIOLOGICAL CONDITIONS

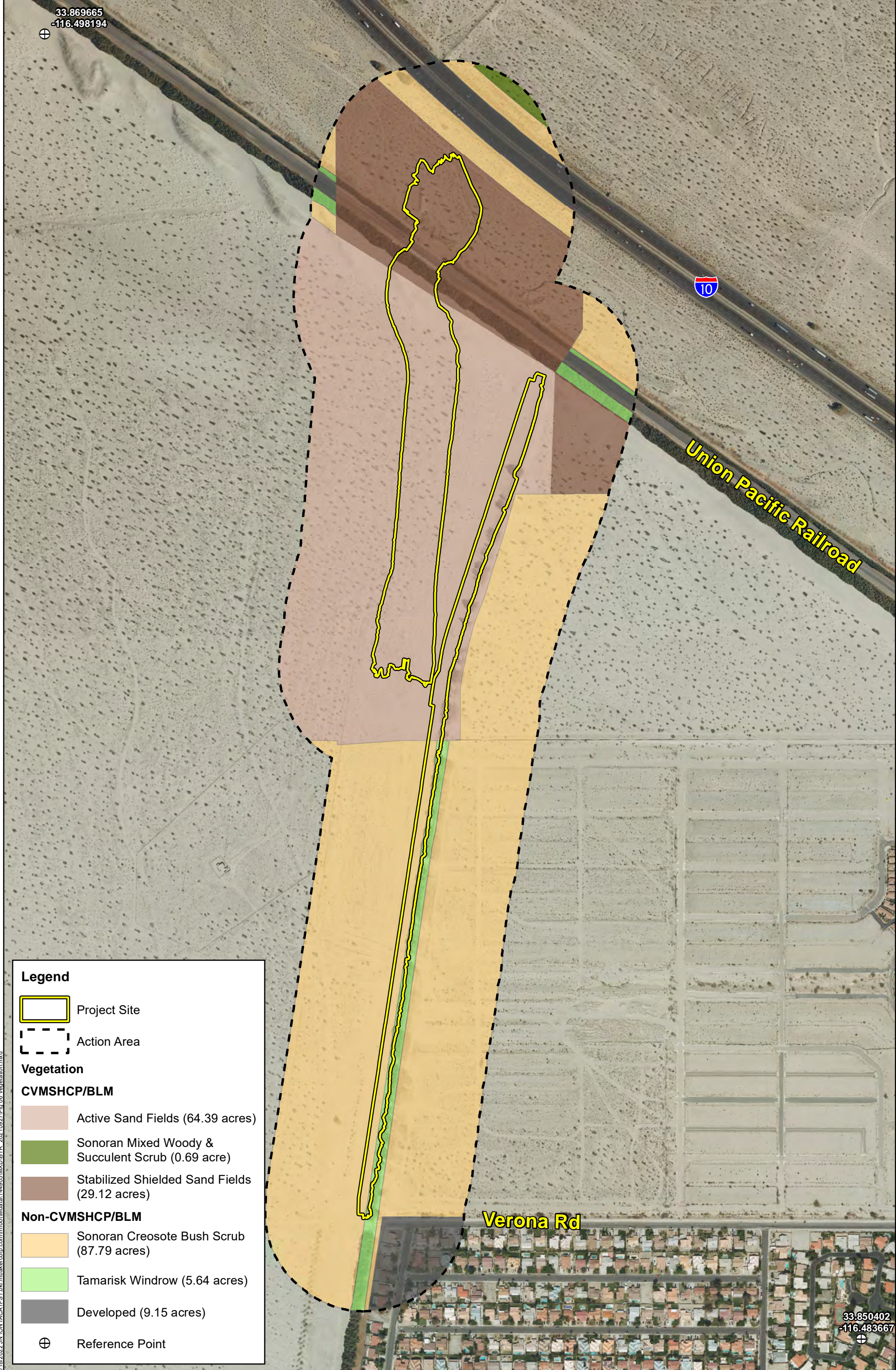
Vegetation

The action area is a combination of different communities and land uses. Outside of the boundaries of the CVMSHCP and BLM lands, vegetation can be characterized as Sonoran creosote bush scrub (refer to Figure 7, *Vegetation*). However, within the CVMSHCP boundaries and on BLM lands, CVMSHCP community types are required to be mapped. Therefore, on CVMSHCP and BLM lands, three (3) additional vegetation communities were mapped. The vegetation on-site in these areas can be characterized as sand dunes and sand fields within the CVMSHCP WFCA, which makes up the action area south of I-10, more specifically active sand fields south of the UPRR tracks and stabilized, shielded sand fields north of the tracks and south of I-10. North of I-10, vegetation within the action area falls into the CVMSHCP Willow Hole Conservation Area and is characterized as Sonoran mixed woody and succulent scrub. These sand fields are vegetated by species consistent with Sonoran creosote bush scrub. In addition, the action area contains two (2) land cover types that are not natural vegetation communities including, tamarisk windrow and developed. The vegetation community descriptions below include the dominant plant species; a full list of plant species that have been observed in the action area over all general and focused surveys is included in Appendix B.

Active Sand Fields

Approximately 64.39 acres of active sand fields are located within the entire action area on BLM and CVMSHCP lands; of these, approximately 17.18 acres are located within the project site. Active sand fields are defined in the CVMSHCP, which the BLM adheres to via the California Desert Conservation Area (CDCA), as areas of active sand movement with little or no vegetation. Accumulated sand is generally not of sufficient depth to form classic dune formations, but sand hummocks may form on the leeward side of shrubs or clusters of vegetation. Vegetation itself may range from scarce to dense shrubs or may be

² <https://mywaterway.epa.gov/community/181002010304/overview>



33.869665
-116.498194



Union Pacific Railroad

Verona Rd

33.850402
-116.483667

Legend

- Project Site
- Action Area

Vegetation

CVMSHCP/BLM

- Active Sand Fields (64.39 acres)
- Sonoran Mixed Woody & Succulent Scrub (0.69 acre)
- Stabilized Shielded Sand Fields (29.12 acres)

Non-CVMSHCP/BLM

- Sonoran Creosote Bush Scrub (87.79 acres)
- Tamarisk Windrow (5.64 acres)
- Developed (9.15 acres)
- Reference Point

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composed of smaller vegetation such as wildflowers. Within the action area, the CVMSHCP has mapped the area south of the UPRR tracks and east of the north-south tamarisk windrow, which includes BLM lands, as active sand fields. Vegetation within the active sand fields in the action area is dominated by Sonoran creosote bush scrub, as described below.

Stabilized, Shielded Sand Fields

Approximately 29.12 acres of stabilized, shielded sand fields are located within the entire action area on BLM and CVMSHCP lands; of these, approximately 4.81 acres are located within the project site. These sand fields are defined in the CVMSHCP as areas that are stabilized by evergreen and/or deciduous shrubs, scattered low annuals, and perennial grasses, with interrupted or shielded sand source and sand transport systems. Vegetation is typically characterized by creosote bush scrub or a creosote bush scrub matrix including primarily creosote bush (*Larrea tridentata*), fourwing saltbush (*Atriplex canescens*), California croton (*Croton californicus*), and indigo bush (*Amorpha fruticosa*). Within the action area, the CVMSHCP has mapped the area north of the UPRR tracks, which includes BLM lands, as stabilized, shielded sand fields. Vegetation within the stabilized, shielded sand fields in the action area is dominated by Sonoran creosote bush scrub, as described below.

Sonoran Mixed Woody and Succulent Scrub

Approximately 0.69 acre of Sonoran mixed woody and succulent scrub is located within the entire action area on BLM and CVMSHCP lands; this community is not located within the project site. This community is defined in the CVMSHCP as having substantial dominance of cacti and other stem succulents and is similar to creosote bush scrub, but with more variance and usually higher plant density. Vegetation is typically characterized by creosote bush (*Larrea tridentata*) and other associated perennial shrubs, as well as golden cholla (*Opuntia echinocarpa*), buckhorn cholla (*Opuntia acanthocarpa*), pencil cholla (*Opuntia ramosissima*), prickly pear (*Opuntia engelmannii*), and others. This community is mapped north of I-10 at the northern edge of the action area, but is outside of the project site.

Sonoran Creosote Bush Scrub

Approximately 87.79 acres of Sonoran creosote bush scrub occur within the entire action area on non-BLM and non-CVMSHCP lands; of these, approximately 2.87 acres are located within the project site. Plant species observed within this community include creosote bush, cheesebush (*Ambrosia salsola*), California croton, indigo bush, and Mediterranean grass (*Schismus* sp.). These species were observed as dominants throughout most of the action area, including in the vegetation communities mapped on CVMSHCP and BLM lands.

Tamarisk Windrow

Approximately 5.64 acres of tamarisk windrow is present within the entire action area on non-BLM and non-CVMSHCP lands; of these, approximately 1.15 acres are located within the project site. This land cover type is entirely composed of athel tamarisk (*Tamarix aphylla*) that has been planted as a windrow. It

runs north-south along the eastern edge of the primary project impact area, as well as east-west running parallel both north and south of the UPRR tracks.

Developed

Approximately 9.15 acres of developed land occur within the entire action area on non-BLM and non-CVMSHCP lands; this land cover type is not located within the project site. This land cover type consists of housing and development associated with the adjacent residential neighborhood. Ornamental vegetation is present in landscaped areas on residential properties.

Common Wildlife

The action area is located within an ephemeral floodplain, and there is no standing or perennial water flow. As a result, fish and amphibians do not occur and were not documented during any of the field surveys that have been conducted for the proposed project. However, a variety of reptiles, birds, and mammals have been observed on-site during both general and focused surveys that have been conducted. The most commonly-detected class of animals in the action area are birds (Aves). Some of the species that have been detected most often in the action area include verdin (*Auriparus flaviceps*), rock pigeon (*Columba livia*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), Eurasian collared-dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), and white-crowned sparrow (*Zonotrichia leucophrys*). The two most common reptile species that have been observed within the action area include desert iguana (*Dipsosaurus dorsalis*) and zebra-tailed lizard (*Callisaurus draconoides*). Mammal species directly observed within the action area include black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*), with coyote (*Canis latrans*) scat and tracks observed as well. A full list of wildlife species that have been observed in the action area during all general and focused surveys is included in Appendix B.

Nesting Birds

No nesting birds or breeding behaviors were observed during any of the field surveys. However, on-site vegetation provides nesting opportunities for avian species, particularly in larger clumps of creosote bushes within the natural vegetation communities, in the tamarisk windrows along the eastern side of the action area, and in ornamental vegetation and structures associated with the nearby residential areas.

Migratory Corridors and Linkages

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal

migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The action area is partially located within a designated corridor related to the Morongo Wash. This corridor passes underneath I-10 along Willow Wash and provides a linkage between the Willow Hole Conservation Area and the WFCA (where the project site is located). The proposed project would ultimately allow movement underneath an existing railroad bridge within the site, enhancing sand transport and wildlife movement between the two conservation areas. No other designated corridors or linkages are present within the action area.

Section 3 Status of Federally-Listed Species

The following section discusses the status of federally-listed species that may occur within the action area and the methodology behind the analysis.

3.1 LITERATURE REVIEW

Literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the action area. Previous federally-listed plant and wildlife species occurrence records within the region were obtained through a search of the USFWS Information for Planning and Consultation (IPaC) database (USFWS 2022a). In addition, occurrence records within the USGS *Cathedral City, Palm Springs, Desert Hot Springs, and Seven Palms Valley, California* 7.5-minute quadrangles were obtained through a query of the California Natural Diversity Database (CNDDDB; CDFW 2022) and the CNPS Online Inventory (CNPS 2022).

In addition to the databases referenced above, Michael Baker reviewed publicly available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the action area to understand existing site conditions, previous species observations, and the extent of any disturbances that have occurred in the action area that would otherwise limit the distribution of special-status biological resources. In addition, reviews of the local geological conditions and historical aerial photographs were conducted to assess the ecological changes and disturbances that may have occurred within the action area over time.

Standard field guides and texts were reviewed for specific habitat requirements of special-status biological resources. Other resources reviewed include the following:

- USFWS Critical Habitat for Threatened & Endangered Species Mapper (USFWS 2022b);
- Recent and historical aerial photography (Google, Inc. 2021);
- *Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan – Final Major Amendment to the CVMSHCP* (CVAG 2016);
- *North Cathedral City Improvements Project, Phase 1 Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2016a);
- *North Cathedral City Improvements Project, Phase 1 Burrowing Owl Focused Survey Report* (Michael Baker 2016b);
- *Results of a Sensitive Plant Survey for the North Cathedral City Improvements Project, Phase 1 located in the City of Cathedral City, Riverside County, California* (Michael Baker 2016c); and
- *North Cathedral City Improvements Project, Phase 1 Equivalency Analysis* (Michael Baker 2016d).
- *North Cathedral City Improvements Project, Phase 1 Biological Resources Technical Report* (Michael Baker 2022)

The literature review provided a baseline from which to inventory and evaluate the federally-listed biological resources potentially occurring within the action area.

3.2 FEDERALLY-LISTED PLANT SPECIES

The records search conducted for this effort indicated a total of three (3) federally-listed plant species have been reported in the general project vicinity, including:

- Coachella Valley milk-vetch (CVMV; *Astragalus lentiginosus* var. *coachellae*) – Endangered
- Triple-ribbed milk-vetch (*Astragalus tricarinatus*) – Endangered
- Slender-horned spineflower (*Dodecahema leptoceras*) – Endangered

The action area does not contain suitable habitat for triple-ribbed milk-vetch, which is typically associated with canyon slopes and rocky washes. Additionally, based on records in the CNDDDB (CDFW 2022) and Calflora (Calflora 2022), the only record of slender-horned spineflower on the desert slope is from 1876 and is listed in the CNDDDB as an uncertain location. As a result, triple-ribbed milk-vetch and slender-horned spineflower are determined to be unlikely to occur and are not analyzed further in this document.

3.2.1 COACHELLA VALLEY MILK-VETCH

Coachella Valley milk-vetch is endemic to the dune systems of the Coachella Valley area of Riverside County. It is federally listed as endangered and has been assigned a California Rare Plant Rank of 1B.2 by the CNPS, indicating that it is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. The WFCAs has a total of 5,635 acres of modeled CVMV habitat, and under the CVMSHCP nearly all of the WFCAs has been designated as core habitat for this species, including all of the action area within the WFCAs' boundaries.

CVMV is a winter annual or short-lived perennial herb in the legume family (Fabaceae). It grows on sandy flats, outwash fans, loose wind-blown sand dunes, and partially stabilized and stabilized dunes and sand fields in Sonoran desert scrub, creosote bush scrub, and sagebrush-dominated communities. In sand dunes and sand fields, it is usually found in coarse sand along the margins, rather than in active blow sand areas with finer sand particles (CVAG 2016). This species can be found at elevations ranging from 131 to 2,149 feet above mean sea level and has a blooming period that ranges from February to May. Urban development is the primary threat to this species' survival, as well as off-highway vehicle (OHV) use, trampling, and the introduction of non-native plants (CVAG 2016). This species is subject to large annual fluctuations in population size and may persist in hundreds or thousands of individuals in one year to tens of individuals in other years.

Survey Results

Based on the known occurrence of special-status plant species within the general vicinity and the suitability of on-site habitat to support such plant species, four (4) focused rare plant surveys were conducted in spring 2016. Suitable habitat occurring within the project site and within 200 feet was extensively surveyed on

foot. Linear transects were walked throughout suitable habitat at 10-meter intervals to ensure maximum visual coverage and increase the likelihood of detecting special-status plant species known to occur within the general vicinity of the project site. CVMV was observed during all four focused surveys and in total, 266 individuals were observed throughout the action area (Michael Baker 2016c; refer to Figure 8, *Coachella Valley Milk-Vetch Habitat and Observations*).

Critical Habitat

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

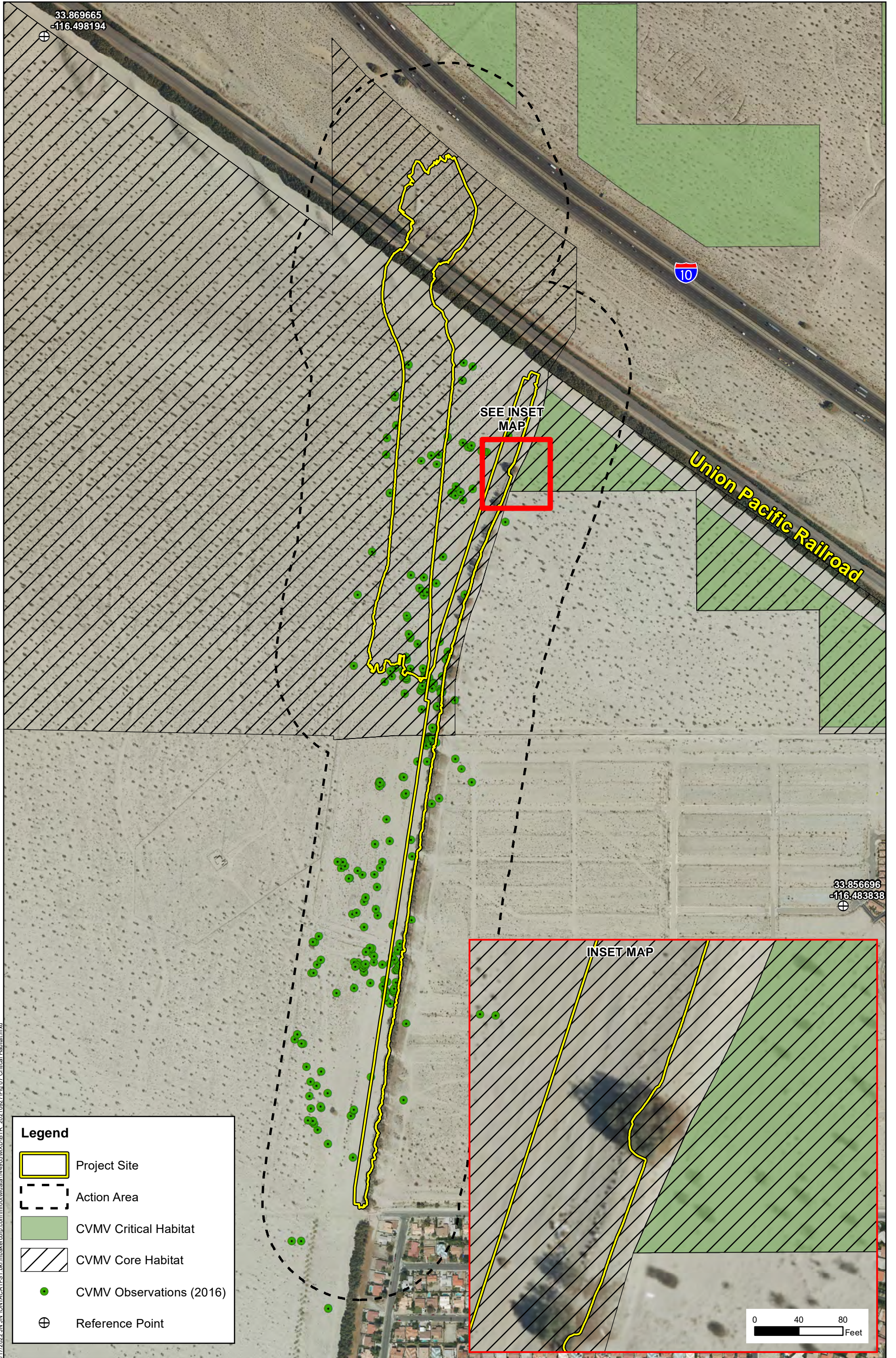
The project site does not coincide with any designated Critical Habitat; however, it is located within 100 feet west of CVMV Critical Habitat Unit 3 (USFWS 2013) (refer to Figure 8, *Coachella Valley Milk-Vetch Habitat and Observations*). This critical habitat unit occurs within the action area but is east of the north-south tamarisk windrow and outside of the project site and would not be directly impacted by the proposed project.

3.3 FEDERALLY-LISTED WILDLIFE SPECIES

The records search conducted for this effort indicated a total of three (3) federally-listed wildlife species have been reported in the general project vicinity, including:

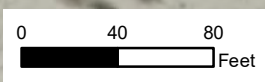
- Casey’s June beetle (*Dinacoma caseyi*) – Endangered
- Southwestern willow flycatcher (*Empidonax traillii extimus*) – Endangered
- Desert tortoise (*Gopherus agassizii*) – Threatened
- Peninsular bighorn sheep (*Ovis canadensis nelsoni*) – Endangered
- Coachella Valley fringe-toed lizard (CVFTL; *Uma inornata*) – Threatened
- Least Bell’s vireo (*Vireo bellii pusillus*) - Endangered

The action area does not occur within the known distribution range of Casey’s June beetle, which is only known to occur in Palm Canyon Wash and Tahquitz Creek, approximately 3 miles south of the action area



Legend

- Project Site
- Action Area
- CVMV Critical Habitat
- CVMV Core Habitat
- CVMV Observations (2016)
- Reference Point



8/17/2022 J:\IN\ONTACA\FS1_bkr\michaelbakercorp.com\mrcat\mdata\144905\MXD\BTR_20210927\Fig 07 Critical Habitat.mxd

(USFWS 2021). The action area also does not contain suitable habitat for southwestern willow flycatcher and least Bell's vireo, which prefer moderate to dense riparian woodlands, often with standing water present, and is outside of the known distribution range of desert tortoise, which is not known to occur on the valley floor, but is instead known to occur in canyons and hillsides along the periphery of the Coachella Valley. Suitable habitat for peninsular bighorn sheep is also absent from the action area, as the project occurs at a lower elevation than is typically utilized by this species and lacks any typical forage or, for most of the year, any standing water required by the species. As a result, these five species are determined to be unlikely to occur and are not analyzed further in this document.

3.3.1 COACHELLA VALLEY FRINGE-TOED LIZARD

Coachella Valley fringe-toed lizard is federally listed as endangered. In addition, it is a covered species under the CVMSHCP and is considered a target sensitive species by the BLM within the Sand Dunes and Sand Fields community type. This species is only found in the Coachella Valley, and occurs on areas containing fine, windblown sands. They are rarely, if ever, found outside of this habitat and do not occur on stabilized sands. Vegetative cover is sparse to moderate and is usually dominated by creosote bush, indigo bush, honey mesquite (*Prosopis glandulosa*), and four-winged saltbush which is often associated with disturbed areas that have experienced high human use (USFWS 2010a, CVAG 2016). This species is typically active from spring through fall, especially between April and October (CVAG 2016). Up to three clutches of eggs are laid between May and September, with juveniles emerging between August and October. Some of the primary stressors affecting this species include habitat loss, OHV use, sand stabilization, predation, and the spread of invasive plant species (Barrows and Heacox 2021). The spread of sahara mustard (*Brassica tournefortii*) has been identified as having a strongly inversed correlation with CVFTL, as it spreads easily and results in dune stabilization, making such areas unsuitable for this species (Barrows and Heacox 2021).

Nearly all of the suitable habitat within the WFCA (5,309 acres of 5,617 total acres) has been designated as core habitat for this species under the CVMSHCP, including all of the action area within the WFCA's boundaries. This species is abundant west of the action area on the Whitewater Floodplain Preserve. Regionally, the CNDDDB contains a total of 135 "presumed extant" records of CVFTL within the Coachella Valley, spread across the entire valley from west of White Water to the north of the project to Mecca to the south. One of the largest single remaining populations of the lizard is at the Coachella Valley National Wildlife Refuge/Coachella Valley Preserve, located approximately nine miles east of the action area (Ortiz 2020). In the more immediate area, the population of this species on the Whitewater Floodplain Preserve, which is located approximately 1.3 miles to the west of the action area, was estimated over the course of a long-term demographic study from 1985-2003 to be, on average, up to 28,684 lizards within the 1,230-acre preserve (CVAG 2016). However, due to various uncontrollable factors including individual movements into and out of the site, a more conservative estimate of the population is provided as half of the study's estimate, or 14,342 individuals (CVAG 2016) within the preserve. In a 20-year study of CVFTL throughout the Coachella Valley, the sampling points located within the WFCA, specifically in a discrete area just west of Gene Autry Trail, were found to have increased in local population size, potentially exceeding 1,000 individuals (Vandergast et al. 2019).

The CVMSHCP indicates an additional 371 acres of suitable habitat occur within the WFCAs, east of Gene Autry Trail. Although this area is not mapped in the CVMSHCP, because the WFCAs' boundary occurs just east of the action area, which is itself less than one mile east of Gene Autry Trail, it is assumed based on observations made that the habitat in and/or surrounding the action area is consistent with that referenced in the CVMSHCP.

Survey Results

Focused surveys for CVFTL were not conducted for this project. However, one lizard was incidentally observed on July 7, 2016 within the action area, east of the tamarisk windrow along the edge of the abandoned housing pads (refer to Figure 9, *Coachella Valley Fringe-Toed Lizard Habitat and Observations*). Although this species was not observed anywhere else in the action area during any of the other general or focused biological surveys that have been conducted, because of the availability of suitable habitat throughout and the number of CNDDDB records of this species in the immediate vicinity, this species is assumed to be present throughout the action area where suitable habitat is present.

Critical Habitat

The action area does not coincide with any designated CVFTL Critical Habitat. The nearest designated Critical Habitat for CVFTL occurs approximately 5.5 miles east of the action area (USFWS 1980).



33.869665
-116.498194


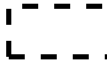
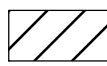




Union Pacific Railroad

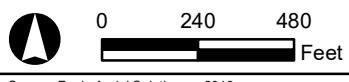
Verona Rd

33.850402
-116.483667

Legend

-  Project Site
-  Action Area
-  CVFTL Core Habitat
-  CVFTL Observation (2016)
-  Reference Point

8/17/2022 - J:\ONT\TACA\F51\br.mbakercorp.com\mroon\Mapa\144905\MXD\BTR_20210927\Fig 09_Special_Status_Wildlife_Observations.mxd



Source: Eagle Aerial Solutions -- 2013

NORTH CATHEDRAL CITY IMPROVEMENTS PROJECT, PHASE 1
BIOLOGICAL ASSESSMENT
Coachella Valley Fringe-toed Lizard Habitat and Observations

Figure 9

Section 4 Project Effects

The following section discusses potential project effects on CVMV and CVFTL, as well as proposed avoidance and minimization measures to be incorporated.

4.1 COACHELLA VALLEY MILK-VETCH

4.1.1 DIRECT EFFECTS

The project will result in the temporary loss of 13.24 acres and the permanent loss of 8.98 acres of CVMV modeled core habitat within the WFCA. Temporary losses are primarily related to earthen grading improvements, but permanent losses are related to placement of concrete and riprap. Depending on the timing of construction in relation to the blooming season, individual plants above the surface may be lost, but much of the local population would remain in the seedbank.

4.1.2 INDIRECT EFFECTS

The use of heavy equipment and construction vehicles within the action area may result in the spread of non-native weed species into and/or throughout the action area, either from areas outside or from one part of the action area to another. If these species become established and proliferate within the action area, they can outcompete CVMV, resulting in long-term loss of the on-site population. The spread of fugitive dust related to ground disturbance can also result in long-term effects to local flora if the amount of dust is sufficient to impair photosynthetic processes. Contrarily, construction of the project will result in increased fluvial sand transport into the action area and into active sand fields in the northern part of Cathedral City. This increased fluvial sand transport will have a greater chance of dispersing CVMV seeds to new areas downstream that currently may primarily receive sand from the action area through aeolian means of sand transport. Ultimately the local distribution of CVMV may increase as a result of project construction and its positive benefits on local fluvial sand transport.

4.1.3 CUMULATIVE EFFECTS

The CVMSHCP and the BLM's Coachella Valley Plan Amendment to the CDCA serve as conservation plans that are intended to minimize cumulative impacts. Because the project would be consistent with both of these plans, cumulative effects to the CVMV are not expected.

4.2 COACHELLA VALLEY FRINGE-TOED LIZARD

4.2.1 DIRECT EFFECTS

The project will result in the temporary loss of 13.24 acres and the permanent loss of 8.98 acres of CVFTL core habitat. Temporary losses are primarily related to earthen grading improvements, but permanent losses are related to placement of concrete and riprap. Construction activity may result in the temporary or

permanent displacement of individual lizards, injury or mortality of lizards that are either above the surface or subsurface or that otherwise are unable to escape, and/or increased stress to individual lizards. Lizards that are displaced from the area may encounter increased stress from being in a new environment, increased competition with other lizards, or increased risk of predation, any of which may result in injury or mortality.

4.2.2 INDIRECT EFFECTS

The use of heavy equipment and construction vehicles within the action area may result in the spread of non-native weed species into and/or throughout the action area, either from areas outside or from one part of the action area to another. If these species become established or spread enough within the action area, they can potentially result in the loss of the active dune habitat if their roots stabilize the soil and prevent natural aeolian processes from occurring. The degradation and eventual loss of the active dune or “blowsand” habitat can result in additional loss of habitat for CVFTL within the action area. Contrarily, construction of the project will result in increased fluvial sand transport into the action area and into active sand fields in the northern part of Cathedral City. The restored flow channel will also re-establish a movement corridor for wildlife under the UPRR tracks, connecting wildlife habitats above and below the UPRR Bridge and I-10. Although the stormwater improvements will result in temporary impacts during construction and minor losses of the natural plant communities in the area, the overall benefits of restoring flows and the fluvial transport of sand in the area will have superior positive impacts to habitat, natural communities, biological corridors, and essential ecological processes (i.e., sand transport). Ultimately the project may result in increased local distribution of CVFTL and increased quality of blowsand habitat as a result of improved fluvial sand transport in the area.

4.2.3 CUMULATIVE EFFECTS

The CVMSHCP and the BLM’s Coachella Valley Plan Amendment to the CDCA serve as conservation plans that are intended to minimize cumulative impacts. Because the project would be consistent with both of these plans, cumulative effects to the CVFTL are not expected.

Section 5 Mitigation and Avoidance

This section discusses basic details of the project’s mitigation program, as well as the avoidance and minimization measures that will be implemented to reduce project effects on CVMV and CVFTL.

5.1 MITIGATION PROGRAM

5.1.1 LIKE EXCHANGE

Under the project’s approved Like Exchange, the CVWD has agreed to place a conservation easement on 42 acres of land adjacent to the project and within the WFCA. Of these 42 acres, the loss of on-site habitat within the project site would be replaced at a 1:1 ratio, with the remainder serving as a net increase of conservation lands to the WFCA. Refer to Section 1.3.1 for more details on the Like Exchange.

5.2 AVOIDANCE AND MINIMIZATION MEASURES

The following section discusses avoidance and minimization measures to be implemented by the project, as agreed to in the project’s Biological Resources Technical Report (Michael Baker 2022). This includes measures required throughout the BLM’s Land Use Plan Amendment (LUPA), measures required by the CDCA, measures discussed as part of the project’s informal Section 7 consultation (refer to Section 1.3.3), and the project’s own avoidance and minimization measures.

5.2.1 LUPA MEASURES

The following measures are required on BLM lands throughout the jurisdiction of the BLM’s LUPA and will reduce project impacts on a general scale:

LUPA-BIO-2 Designated biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during preconstruction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

LUPA-BIO-3 Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable [Conservation and Management Action (CMA)]. Allowable minor incursions as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

- The edge of each of the Desert Renewable Energy Conservation Plan desert vegetation types, including but not limited to those in the riparian or wetland

vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).

- The edge of the vegetation extent for specified Focus and BLM sensitive plant species.
- The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.

LUPA-BIO-4 For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities. No species-specific seasonal restriction dates are described in the applicable CMAs.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.

LUPA-BIO-5 All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.

- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

LUPA-BIO-6 Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:

- Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.
- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
- Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.

All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

- In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.

LUPA-BIO-9 Implement the following general LUPA CMA for water and wetland dependent resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
 - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
 - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
 - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:
 - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
 - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
 - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.

LUPA-BIO-10 Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.
- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.

LUPA-BIO-11 Implement the following CMAs for controlling nuisance animals and invasive species:

- No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.
- Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100- year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.
- Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.
- Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.
- When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

LUPA-BIO-13 Implement the following CMA for project siting and design:

- To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species.
- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.

- To the maximum extent practicable, restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.
- To the maximum extent practicable, confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.
- To the maximum extent practicable, any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages.
- Use nontoxic road sealants and soil stabilizing agents.

LUPA-BIO-14 Implement the following general standard practices to protect Focus and BLM Special Status Species:

- Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.
- Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.
- Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.
- All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.
- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.

- Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

LUPA-BIO-15 Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

5.2.2 CDCA MEASURES

The following measures are taken from the Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement (BLM 2002) and apply specifically to species occurring in the Sand Dunes and Sand Fields Community type as mapped on BLM lands. Implementation of these measures will benefit both CVMV and CVFTL.

Dune 2 Avoid stabilization of sand dunes due to adjacent development and spread of invasive species.

Dune 3 Maintain, and enhance where feasible, aeolian and fluvial sand transport systems.

Dune 4 Minimize sand compaction to protect Jerusalem cricket and giant sand treader cricket habitat and to minimize crushing of Coachella Valley fringe-toed lizards.

Dune 5 Minimize roads within flat-tailed horned lizard habitat which are prone to crushing by vehicles.

Dune 7 Avoid disturbance and compaction of sandy habitats associated with Coachella Valley milk-vetch and avoid crushing Coachella Valley milk-vetch plants.

Dunes 10 Minimize loss of native vegetation, minimize habitat fragmentation and maintain habitat patch connectivity.

5.2.3 SECTION 7 INFORMAL CONSULTATION MEASURES

The following avoidance and minimization measures were provided by the BLM as part of the FESA Section 7 informal consultation process and are required to be implemented on BLM administered lands within the action area. These apply specifically to CVMV and CVFTL.

Coachella Valley Milk-Vetch

CVMV-1 A Qualified Biologist would conduct pre-construction focused surveys for CVMV within the Project footprint during the blooming season (generally February through May) prior to initiation of ground-disturbing activities. Areas where the plant is found will be marked for avoidance as Environmentally Sensitive Areas and Qualified

Biologists would be present throughout construction and decommission activities. The name and qualifications of the Qualified Biologist(s) would be submitted to the BLM and USFWS for approval at least 30 days prior to Project activities in CVMV designated critical habitat.

CVMV-2 CVMV locations identified during the pre-construction surveys would be delineated on the ground and on aerial photographs, incorporated into the construction management plans, and avoided to the maximum extent possible. Where avoidance is not possible, the Applicant would follow methods described in the Plant Salvage and Restoration Plan (Restoration Plan) to ensure seeds are salvaged appropriately and re-distributed within the action area.

CVMV-3 A Restoration Plan will be submitted to the BLM and USFWS for approval in the areas of CVMV modeled habitat within the action area. The Restoration Plan will describe topsoil salvage, recontouring and topsoil placement, and weeding maintenance for 5 years, or another period of time approved by the BLM and USFWS to ensure approximately 60 percent replacement of the affected CVMV modeled habitat. The Restoration Plan will include seed collection and storage at an appropriate facility (e.g., Rancho Santa Ana Botanic Garden), reseeded in appropriate existing or restored habitat, stockpile and reapplication of topsoil, or other similar activities. The Restoration Plan will be submitted to the BLM and USFWS for approval 30 days prior to ground disturbance activity.

Coachella Valley Fringe-Toed Lizard

CVFTL-1 Prior to the initiation of ground-disturbing activities, the Applicant will designate an Authorized Biologist who will be responsible for overseeing compliance with the conservation measures outlined in the project's Biological Opinion. The authorized biologist will retain a copy of all conservation measures readily available while conducting work on site and oversee coordination between workers. The authorized biologist will be on site for all work-related activities and would have the authority to halt work activities that are not in compliance with the conservation measures.

CVFTL-2 Prior to the start of construction, exclusion fencing will be installed along the perimeter of the work area and access route and maintained to keep CVFTL from entering work areas. Exclusion fencing will consist of a material suitable to withstand high winds, sun, and heat. The fence will be buried 12 inches below the sand surface and extend above ground a minimum of 24 inches. Fencing will be installed per manufacturer specifications. If the authorized biologist observes a CVFTL within the Project area during fence installation, the lizard will be allowed to voluntarily exit the Project area. If a lizard is found within the fenced Project area during construction, the authorized biologist will ensure that construction equipment and personnel avoid the lizard. All

workers will strictly limit activities and vehicles to the designated work areas within the project footprint. Once project activities have concluded, the fencing will be removed.

- CVFTL-3** If any CVFTL are captured within the Project footprint, they will be released immediately outside the Project footprint. Lizards will be released in the shade of a shrub. No lizards will be held in captivity or in transport for longer than 10 minutes after their initial capture within an enclosed construction area. If necessary, lizards will be transported in clean, white, plastic 5-gallon buckets.
- CVFTL-4** All work area boundaries associated with temporary and permanent disturbances will be conspicuously staked, flagged, or marked to minimize surface disturbance activities. All workers shall strictly limit activities and vehicles to the designated work areas.
- CVFTL-5** Should any CVFTL be injured or killed, all activities in the immediate area would be halted, and the authorized biologist would be contacted immediately to investigate the incident. The authorized biologist would be responsible for reporting the incident (via fax or email) to the USFWS and CDFW within 24 hours of the incident.
- CVFTL-6** During project activities, motor vehicles would be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint.
- CVFTL-7** Perennial vegetation such as creosote bush will be avoided to the extent feasible.
- CVFTL-8** Staging areas will be located outside of CVFTL habitat (modeled, critical, or occupied habitat).
- CVFTL-9** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to CVFTL would be securely fenced or covered when unattended to prevent accidental death or injury. At the start and end of each workday, and just before backfilling, all excavations would be inspected for trapped animals. If found, trapped animals would be removed by the authorized biologist and relocated to outside the Project footprint, as appropriate.
- CVFTL-10** Anti-perching devices will be placed on the new poles. Substitute measures of equal or greater ecological value to likely affected listed species, pursuant to review and approval of the BLM and USFWS, can be implemented in lieu of installing/maintaining pole anti-perching devices.

5.2.4 PROJECT AVOIDANCE AND MINIMIZATION MEASURES

The following measures are proposed by CVWD and are intended as avoidance, minimization, or mitigation to offset or reduce potential impacts to CVMV and CVFTL. The CVWD Project Engineer, Contractor, CVWD Environmental Specialist and/or Biological Monitor, and CVWD Inspector shall ensure implementation of all biological mitigation measures, including those not included in this list.

- BIO-1** **Habitat Preservation.** Following project completion, CVWD shall inspect the site for invasive weed species within the project site to help prevent habitat degradation and spread of invasive plants.
- BIO-2** **Conservation Easement.** CVWD shall place a conservation easement upon 42 acres of land that are under private ownership to be acquired by CVWD within the existing WFCA of the CVMSHCP and adjacent to the project site. A total of 22.22 of the 42 acres shall be used to offset the impacts to land within City of Cathedral City’s portion of the WFCA from implementation of the project, resulting in a net increase of 19.78 acres of land being added to the conservation area.
- BIO-3** **Continued Participation in the CVMSHCP.** The CVMSHCP includes implementation of avoidance, minimization, and mitigation measures on non-federal lands and management and monitoring programs which will help ensure the persistence of CVMV and CVFTL within areas of suitable habitat. CVWD maintains an Operations and Maintenance Manual for activities occurring in conservation areas. The Manual, which was approved by the CVCC in 2015, will be implemented post construction for the project.

Section 6 Effects Determination

6.1 EFFECTS OF THE ACTION

Revised regulations implementing the FESA (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see § 402.17).

Direct disturbance to Coachella Valley milk-vetch and Coachella Valley fringe-toed lizard from the 22.22-acre project footprint is anticipated only within the project footprint, which is along existing and newly constructed access roads, excavation and grading areas, and staging areas.

The following federally-listed species were considered in the preparation of this report:

Table 3: Federally-listed Species and Effects Determinations

Common Name	Scientific Name	Federal Status	Critical Habitat	Effects Determination
Coachella Valley milk-vetch	<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Endangered	Unit 4 Designated	May Affect
Triple-ribbed milk-vetch	<i>Astragalus tricarinatus</i>	Endangered	None	No Effect
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	Endangered	None	No Effect
Casey’s June beetle	<i>Dinacoma caseyi</i>	Endangered	Designated	No Effect
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Designated	No Effect
Desert tortoise	<i>Gopherus agassizii</i>	Threatened	Designated	No Effect
Peninsular bighorn sheep	<i>Ovis canadensis nelsoni</i>	Endangered	Designated	No Effect
Coachella Valley fringe-toed lizard	<i>Uma inornata</i>	Threatened	Designated	May Affect
Least Bell’s vireo	<i>Vireo bellii pusillus</i>	Endangered	Designated	No Effect

Of these, the only species that were determined to likely occur within the action area are CVMV and CVFTL. Based on the potential impacts and potentials for take, it is Michael Baker's determination in concurrence with BLM and CVWD that the project:

- **May affect Coachella Valley milk-vetch.** Although the potential for take exists, with CVWD's continued participation in the CVMSHCP as a permittee for the protection of this species, and implementation of the various avoidance and minimization measures described above, including placement of the conservation easement over suitable CVMV habitat, all prudent measures will be taken to avoid adverse impacts to CVMV and as a result the project may affect this species.
- **May affect Coachella Valley fringe-toed lizard.** Although the CVWD will continue to participate in the CVMSHCP as a permittee for the protection of this species, and the project will implement a wide-ranging set of avoidance and minimization measures for this species including placement of a conservation easement over suitable CVFTL habitat to mitigate for project-related impacts, the potential will still exist for take of CVFTL. CVFTL that are aboveground can be protected and avoided to the extent possible, but those that are buried in the ground, if any, cannot be fully avoided, and as a result the project may include take of this species and or impact suitable habitat for this species.

Section 7 References

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Appendix A Site Photographs



Photograph 1: Standing in the southwestern portion of the action area, facing north. The north-south tamarisk windrow is visible on the right side of the photograph.



Photograph 2: Standing in the western-central portion of the action area, facing north.



Photograph 3: Standing in the southwestern portion of the action area, facing north.



Photograph 4: Standing in the northwestern portion of the action area within BLM lands, facing west. The east-west tamarisk windrow is visible to the north.



Photograph 5: Standing in the northern-central portion of the action area, facing south.



Photograph 6: A photograph of the east-west tamarisk windrow and railroad tracks located on the northern portion of the action area, facing west.



Photograph 7: A photograph of the railroad bridge located within the northern portion of the action area, facing southwest.



Photograph 8: A photograph of a spoils pile located within BLM lands to the north of the railroad bridge, facing north.



Photograph 9: Standing in the northern portion of the action area within BLM lands to the south of Interstate-10, facing east.



Photograph 10: Standing in the eastern portion of the action area, facing east.

Appendix B Plant and Wildlife Species Observed

Table B-1: Plant Species Observed List

<i>Scientific Name</i>	<i>Common Name</i>	<i>Cal-IPC Rating**</i>	<i>Special-Status Rank***</i>
<i>Abronia villosa</i>	desert sand verbena		
<i>Ambrosia acanthicarpa</i>	annual bursage		
<i>Ambrosia dumosa</i>	burweed / white bursage		
<i>Ambrosia salsola</i>	burrowbrush		
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella valley milk vetch		FE, 1B.2
<i>Atriplex lentiformis</i>	big saltbush		
<i>Brassica tournefortii</i> *	Saharan mustard	High	
<i>Camissonia californica</i>	California primrose		
<i>Camissoniopsis pallida</i>	pale yellow sun cup		
<i>Chorizanthe brevicornu</i>	brittle spine flower		
<i>Chorizanthe rigida</i>	devil's spineflower		
<i>Chylismia claviformis</i>	clavate fruited primrose		
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple clarkia		
<i>Cryptantha circumscissa</i>	cushion cryptantha		
<i>Cylindropuntia echinocarpa</i>	silver cholla		
<i>Dicoria canescens</i>	desert dicoria		
<i>Dithyrea californica</i>	California shieldpod		
<i>Encelia farinosa</i>	brittlebush		
<i>Encelia frutescens</i>	rayless encelia		
<i>Eriastrum eremicum</i>	desert woollystar		
<i>Ericameria nauseosa</i>	rubber rabbitbrush		
<i>Eriogonum thomasi</i>	Thomas eriogonum		
<i>Erodium cicutarium</i> *	red-stemmed filaree	Limited	
<i>Euphorbia micromera</i>	Sonoran sandmat		
<i>Larrea tridentata</i>	creosote bush		
<i>Lupinus shockleyi</i>	purple desert lupine		
<i>Oenothera californica</i>	California evening primrose		
<i>Palafoxia arida</i>	Spanish needle		
<i>Paritoma arborea</i>	bladderpod		
<i>Pectocarya recurvata</i>	arch nuted comb bur		
<i>Petalonyx thurberi</i>	sandpaper plant		
<i>Plantago ovata</i>	desert plantain		
<i>Prosopis glandulosa</i>	honey mesquite		
<i>Psathyrotes ramosissima</i>	velvet turtleback		
<i>Psorothamnus emoryi</i>	dyebush		
<i>Psorothamnus schottii</i>	indigo bush		
<i>Psorothamnus spinosus</i>	smoketree		
<i>Salsola paulsenii</i> *	barbwire Russian thistle	Limited	
<i>Salvia columbariae</i>	chia		
<i>Schismus arabicus</i> *	Arabian schismus	Limited	
<i>Stephanomeria pauciflora</i>	wire lettuce		
<i>Stillingia spinulosa</i>	annual stillingia		
<i>Tamarix aphylla</i> *	athel tamarisk	Limited	
<i>Tiquilia plicata</i>	fanleaf crinklemat		

* **Non-native species**

** **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Limited These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent

*** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

1B Plants rare, threatened, or endangered in California and elsewhere.

Threat Ranks

.2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).

Table B-2: Wildlife Species Observed List

<i>Scientific Name*</i>	<i>Common Name</i>	<i>Special-Status Rank**</i>
Birds		
<i>Accipiter cooperii</i>	Cooper's hawk	WL
<i>Accipiter striatus</i>	sharp-shinned hawk	WL
<i>Anthus rubescens</i>	American pipit	
<i>Ardea alba</i>	great egret	
<i>Athene cunicularia</i>	burrowing owl	BLMS, SSC
<i>Auriparus flaviceps</i>	verdin	
<i>Buteo jamaicensis</i>	red-tailed hawk	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Calypte costae</i>	Costa's hummingbird	
<i>Columba livia*</i>	rock pigeon	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Corvus corax</i>	common raven	
<i>Eremophila alpestris actia</i>	California horned lark	WL
<i>Geococcyx californianus</i>	greater roadrunner	
<i>Haemorhous mexicanus</i>	house finch	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Passer domesticus*</i>	house sparrow	
<i>Quiscalus mexicanus</i>	great-tailed grackle	
<i>Sayornis saya</i>	Say's phoebe	
<i>Setophaga coronata auduboni</i>	Audubon's yellow-rumped warbler	
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Streptopelia decaocto*</i>	Eurasian collared-dove	
<i>Sturnus vulgaris*</i>	European starling	
<i>Tachycineta bicolor</i>	tree swallow	
<i>Zenaida asiatica</i>	white-winged dove	
<i>Zenaida macroura</i>	mourning dove	
<i>Zonotrichia leucophrys gambelii</i>	white-crowned sparrow (Gambel's)	
Reptiles		
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard	
<i>Coluber fragellum piceus</i>	red racer	
<i>Crotalus cerastes laterorepens</i>	Colorado desert sidewinder	
<i>Dipsosaurus dorsalis</i>	desert iguana	
<i>Uma inornata</i>	Coachella valley fringe-toed lizard	FT, SE
Mammals		
<i>Canis latrans</i>	coyote (scat and tracks)	
<i>Lepus californicus</i>	black-tailed jackrabbit	
<i>Sylvilagus audubonii</i>	desert cottontail	

* **Non-native wildlife species**

** **Special-Status Rank**

U.S. Fish and Wildlife Service (USFWS)

FT Federally Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Bureau of Land Management (BLM)

BLMS BLM Sensitive – BLM Manual §6840 states that “BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species.”

California Department of Fish and Wildlife (CDFW)

SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List – taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not meet SSC criteria, but for which there is a concern and a need for additional information to clarify status.