

# **APPENDIX E – BIOLOGICAL RESOURCES**

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## **E.1. Biological Resources Report for the Westside Canal Battery Storage Project**



**Biological Resources Report  
for the Westside Canal Battery Storage  
Project  
Imperial County, California**

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A handwritten signature in black ink, appearing to read "Wendy Loeffler".

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# Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
ABPP	Avian and Bat Protection Plan
APN	Assessor Parcel Number
BLM	Bureau of Land Management
Caltrans	California Department of Transportation
CBP	Customs and Border Protection
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Imperial County
CWA	Clean Water Act
ESA	Endangered Species Act
GPS	Global Positioning System
HVAC	heating, ventilation, and air conditioning
ICC	Flat-tailed Horned Lizard Interagency Coordinating Committee
IID	Imperial Irrigation District
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MW	megawatt(s)
MWh	megawatts per hour
NCDC	National Climate Data Center
NWS	National Weather Service
O&M	Operations and Maintenance
Project	Westside Canal Battery Storage Project
PV	photovoltaic
RECON	RECON Environmental, Inc.
RWQCB	Regional Water Quality Control Board
SDNHM	San Diego Natural History Museum
S-Line	S-Transmission line
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

## Management Summary

This report provides the results of the Biological Resources Report for the Westside Canal Battery Storage Project (Project) in Imperial County, California. The total footprint encompassing permanent and temporary impacts consists of 163.32 acres of agriculturally-zoned land located in the unincorporated Mount Signal area of the County, approximately 8.0 miles southwest of the city of El Centro. The Project site is comprised of two parcels owned by Westside Canal Battery Storage, LLC (Project Proponent), a subsidiary of Con Edison Clean Energy Businesses, Assessor Parcel Numbers (APNs) 051-350-010 and 051-350-011, totaling approximately 148 acres. The two parcels are proposed for development as a utility-scale energy storage complex. The Project would also utilize portions of two parcels located north of the Westside Main Canal (APN 051-350-019 owned by the Imperial Irrigation District's (IID) and APN 051-350-018 owned by a private land owner) for site access and as a temporary construction staging area. The Project would also access a small portion of APN 051-350-009 within an IID easement for connection to the existing IID Campo Verde Imperial Valley 230 kilovolt radial gen-tie line during the construction of a substation on the Project site.

The Project site is located approximately one-third mile north of the Imperial Valley Substation (IV Substation) and directly south of the intersection of Liebert Road and the IID Westside Main Canal. The Project site is bounded by the Westside Main Canal to the north, Bureau of Land Management (BLM) lands to the south and west, and vacant private land to the east. The Campo Verde solar generation facility is located north of the Project site, across the Westside Main Canal.

The following vegetation communities or land cover types were mapped within the 163.32-acre Project site and surrounding 100-foot radius: upland mustards, fourwing saltbush scrub, creosote bush scrub, quailbush scrub, arrow weed thickets, tamarisk thickets, common reed marshes, eucalyptus groves, cattail marshes, disturbed habitat, fallow agriculture, open water, and developed land. The Project would result in impacts to 9.76 acres of five sensitive vegetation communities, comprising 6.92 acres of permanent and 2.84 acres of temporary impacts. Direct impacts comprise 6.87 acres of arrow weed thicket, 0.56 acre of tamarisk scrub, 2.15 acres of quailbush scrub, 0.14 acre of cattail marsh, and 0.04 acre of common reed marsh. Mitigation for permanent impacts could potentially be conducted on-site through restoration of the fallow agriculture and disturbed lands that occur within the temporary impact footprint. If those lands are not suitable, off-site mitigation may be required. Temporary impacts would be mitigated *in situ* either through preservation or enhancement of any impacts that were incurred during Project construction.

No sensitive plant species were observed or have a moderate or high potential to occur within the Project site; thus, there were no identified or proposed impacts or associated mitigation.

The following nine sensitive wildlife species were detected during the general and focused biological surveys conducted in 2018 and 2019 for this Project: flat-tailed horned lizard (*Phrynosoma mcalli*), ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicanus*),

burrowing owl, loggerhead shrike (*Lanius ludovicianus*), black-tailed gnatcatcher (*Polioptila melanura*), LeConte's thrasher (*Toxostoma lecontei*), Abert's towhee (*Melospiza aberti*), and American badger (*Taxidea taxus*).

An additional 13 sensitive wildlife species were detected during surveys but are not expected to breed on or adjacent to the Project site: American white pelican (*Pelecanus erythrorhynchos*), double-crested cormorant (*Phalacrocorax auritus albociliatus*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula thula*), black-crowned night heron (*Nycticorax nycticorax*), Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus hudsonius*), long-billed curlew (*Numenius americanus*), Vaux's swift (*Chaetura vauxi*), Brewer's sparrow (*Spizella breweri*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), and yellow warbler (*Setophaga petechia*).

In addition to those species recorded on site, five sensitive wildlife species were identified as having a high or moderate potential to occur within the Project site: Colorado Desert fringe-toed lizard (*Uma notata*), southwestern willow flycatcher (*Empidonax traillii extimus*), vermilion flycatcher (*Pyrocephalus rubinus*), pallid bat (*Antrozous pallidus*), and Yuma hispid cotton rat (*Sigmodon hispidus eremicus*).

The Project could result in direct impacts to individuals of and/or occupied habitat for flat-tailed horned lizard, Colorado Desert fringe-toed lizard, burrowing owl, and American badger. Direct impacts to nesting birds would be avoided by conducting pre-construction surveys. Direct impacts to flat-tailed horned lizard and Colorado fringe-toed lizard would be mitigated through pre-construction surveys, translocation, and construction monitoring. Direct impacts to burrowing owl and its habitat would be mitigated through preparation and/or implementation of the following: a habitat mitigation plan, a burrow exclusion plan, pre-construction surveys, grading restrictions, and construction monitoring. Direct impacts to American badger and its habitat would be mitigated through pre-construction surveys, den monitoring, exclusion, and construction monitoring. The remaining potential impacts are considered less than significant and would, therefore, require no species-specific mitigation measures.

Within the Project parcels, jurisdictional wetlands and waters were delineated along Westside Main Canal and associated irrigation ditches and riparian and marsh vegetation. These include 0.21 acre of U.S. Army Corps of Engineers (USACE) non-wetland waters of the U.S./California Department of Fish and Wildlife (CDFW) streambed/Regional Water Quality Control Board (RWQCB) unvegetated streambed and 9.22 acres of CDFW/RWQCB wetland waters of the state. The Project proposes permanent impacts to 0.04 acre and temporary impacts to 0.16 acre of USACE non-wetland water/CDFW streambed/RWQCB unvegetated streambed. The Project would result in permanent impacts to 6.71 acres and temporary impacts to 2.51 acres of CDFW/RWQCB wetland waters of the state. Mitigation for permanent impacts could potentially be conducted on-site through restoration of the fallow agriculture and disturbed lands that occur within the temporary impact footprint. If those lands are not suitable, off-site mitigation may be required. Temporary impacts would be mitigated in situ either through preservation or enhancement of any impacts that were incurred during Project construction.



Impacts to jurisdictional waters on-site would require a permit under Section 404 Clean Water Act from USACE and a Section 401 state water quality certification from RWQCB. In addition, a Section 1600 Streambed Alteration Agreement would also need to be authorized for impacts to CDFW resources. Mitigation ratios would be confirmed at that time.

# 1.0 Introduction

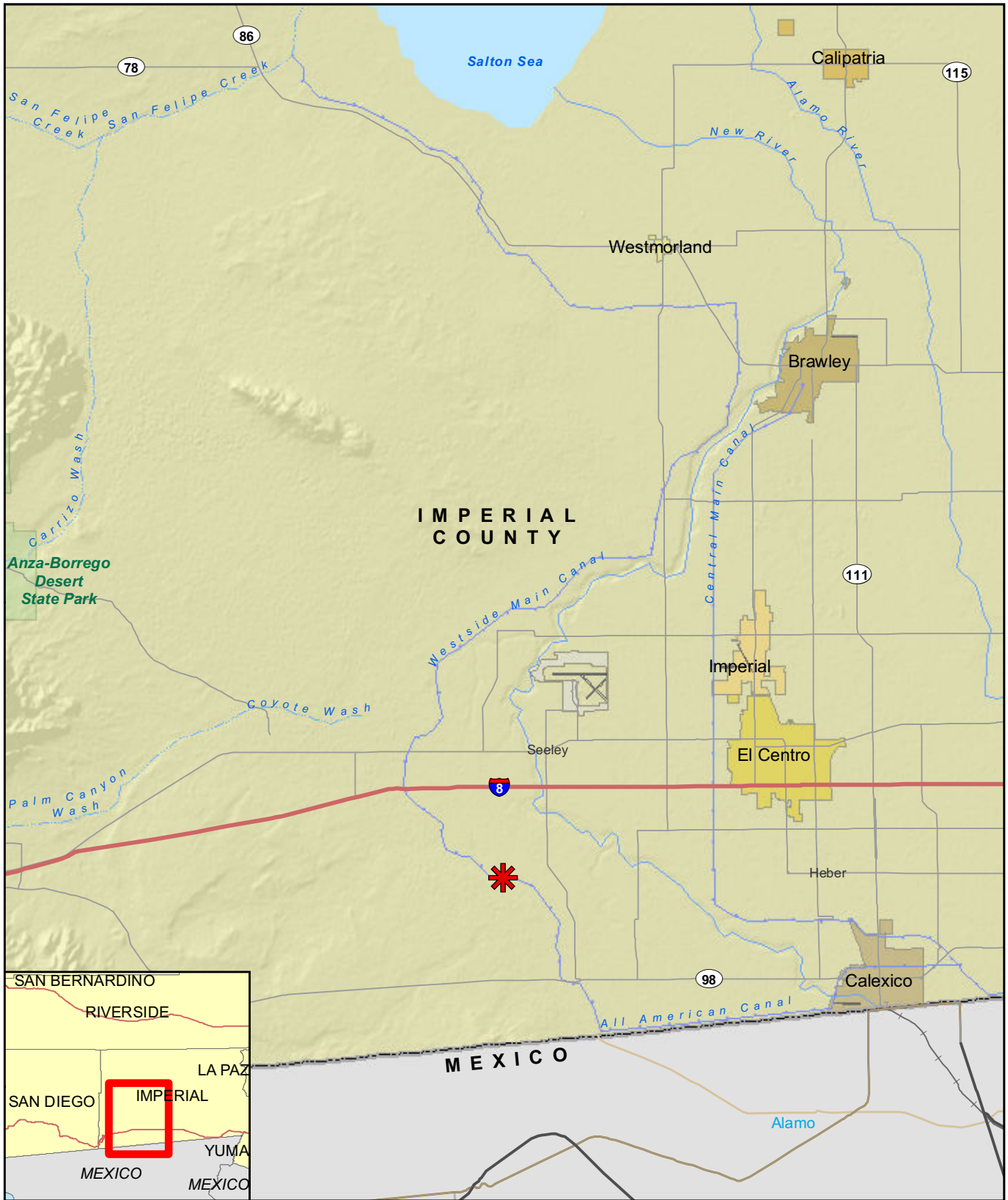
This biological resources report was prepared by RECON Environmental, Inc. (RECON) for the Westside Canal Battery Storage Project (Project) proposed by Westside Canal Battery Storage, LLC (Project Proponent), a subsidiary of Con Edison Clean Energy Businesses. The purpose of this biological resources report is to (1) document the existing biological conditions within the Project survey area; (2) evaluate the survey area and the vicinity for the potential to support sensitive biological resources; (3) provide an analysis of potential impacts associated with the proposed Project; and (4) provide a discussion of potential avoidance, minimization, and mitigation measures that may be required to reduce potential impacts to sensitive biological resources to below a level of significance.

## 1.1 Project Location

The Project would be located in the unincorporated Mount Signal area of the County, approximately 8.0 miles southwest of the city of El Centro and approximately 5.3 miles north of the U.S.-Mexico border. Figure 1 shows the regional location of the Project. The Project site is comprised of two parcels, owned by the Project Proponent, Assessor Parcel Number (APN) 051-350-010 and APN 051-350-011, totaling approximately 148 acres. These parcels have limited access corridors for vehicular traffic and are considered less desirable for agricultural production, as reflected by the last 15 years during which no farming activity has occurred.

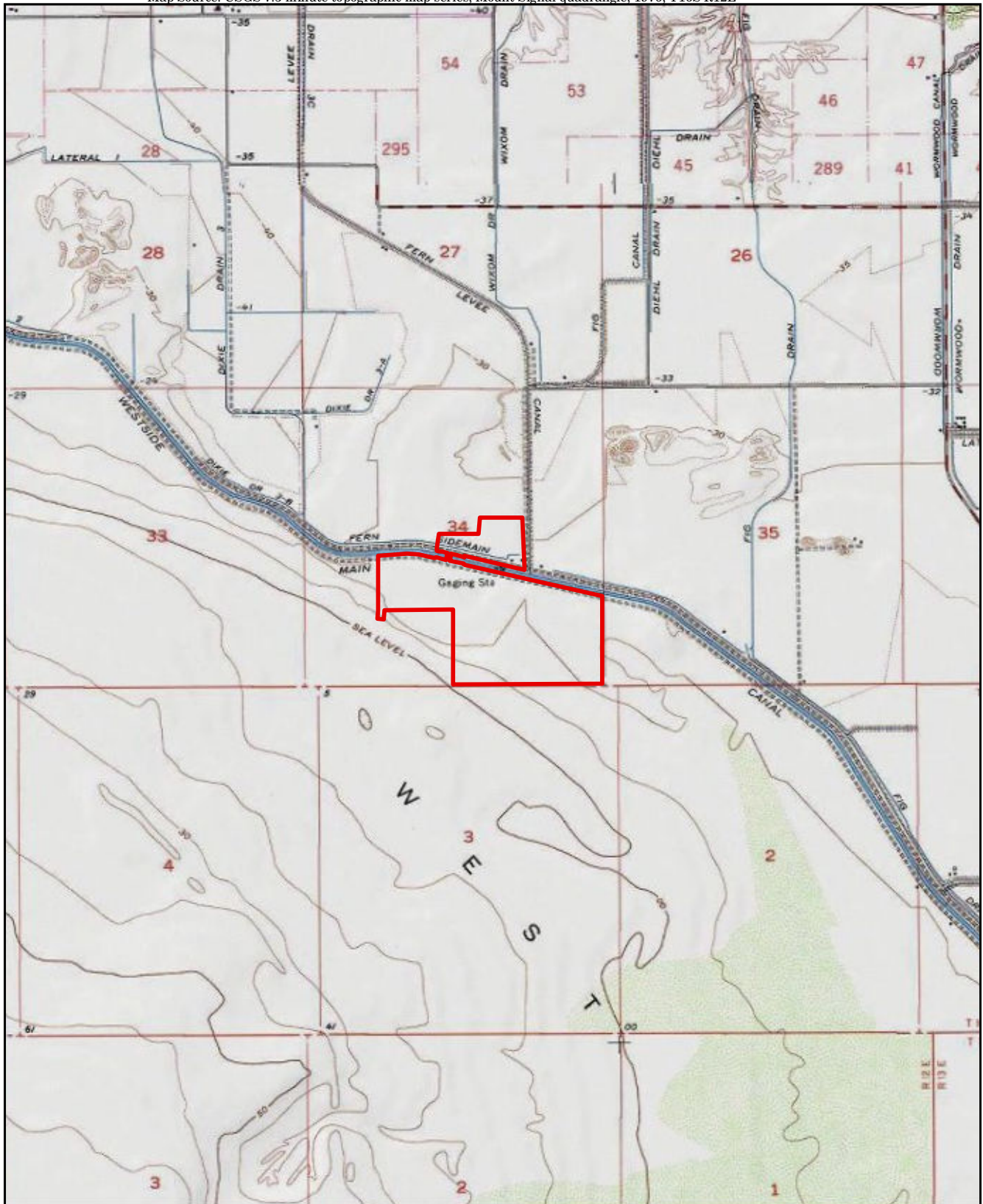
The Project site is approximately one-third mile north of the Imperial Valley Substation (IV Substation) and directly south of the intersection of Liebert Road and the Imperial Irrigation District's (IID) Westside Main Canal. The Project site is bounded by the Westside Main Canal to the north, Bureau of Land Management (BLM) lands to the south and west, and vacant private land to the east. The Campo Verde solar generation facility is located north of the Project site, across the Westside Main Canal. The entire Project site is located in the southern half of Section 34, Township 16 South, Range 12 East, on the U.S. Geological Survey (USGS) Mount Signal, California quadrangle (USGS 1976; Figure 2). An aerial photograph of the survey area is shown on Figure 3a.

The two Project parcels are proposed for development as a utility-scale energy storage complex. The Project would also utilize portions of two parcels located north of the Westside Main Canal (APN 051-350-019 owned by IID and APN 051-350-018 owned by a private land owner) for site access and as a temporary construction staging area. The Project would also access a small portion of APN 051-350-009 within an IID easement for connection to the existing IID Campo Verde Imperial Valley 230 kilovolt (kV) radial gen-tie line during the construction of a substation on the Project site. The total proposed Project development footprint, encompassing both temporary and permanent impacts, would be approximately 163 acres.



 Project Location

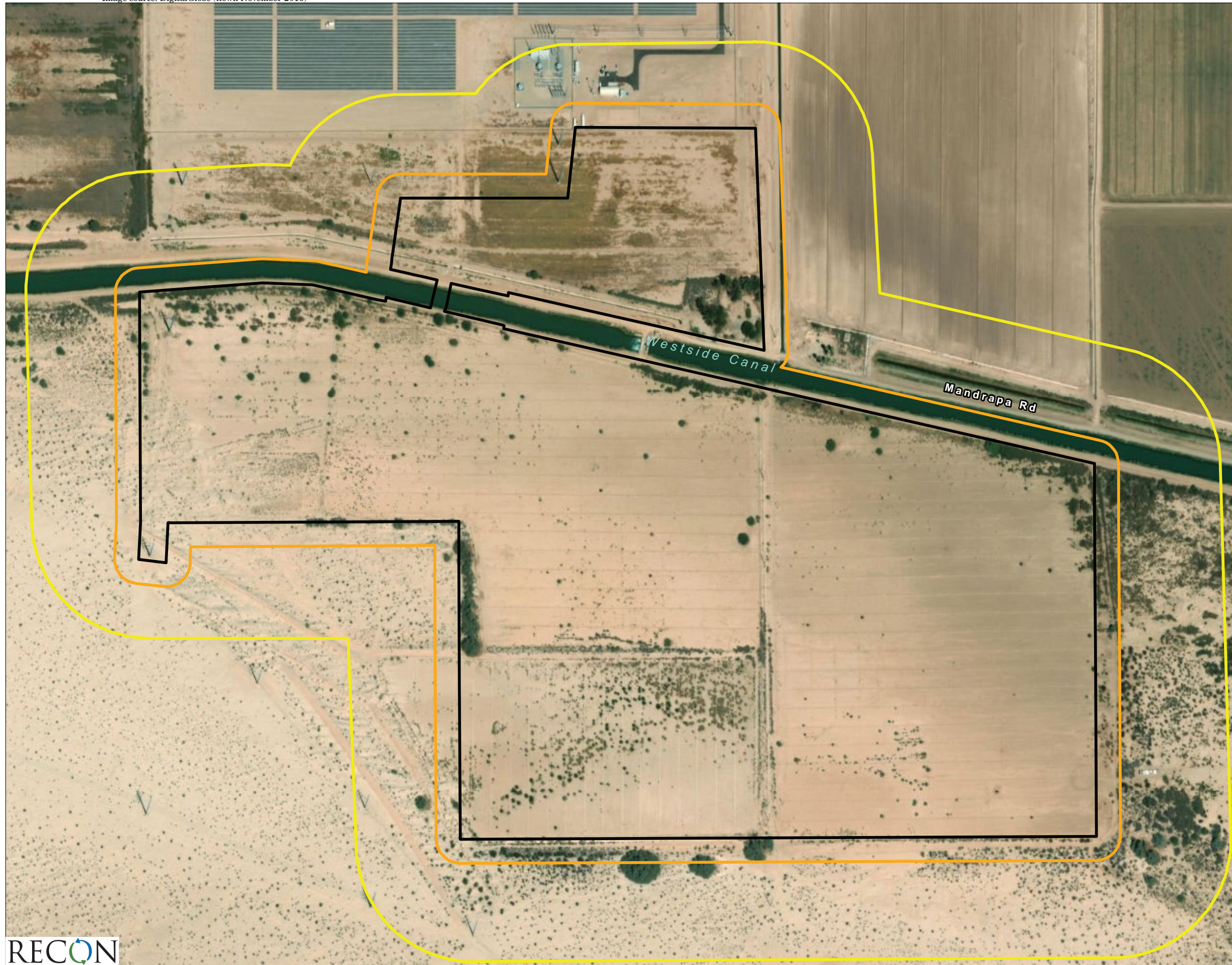
**FIGURE 1**  
Regional Location






 Project Boundary

FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  General Survey and Wetland Delineation (100-foot Buffer)
-  Burrowing Owl Survey Area (150-m Buffer)

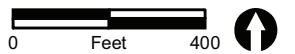


FIGURE 3a  
Project Location on  
Aerial Photograph

## 1.2 Project Description

The Project Proponent is proposing to develop, design, construct, own, operate, and maintain the Project, a utility-scale energy storage complex with a capacity of up to 2,000 megawatts (MW). The Project would store energy generation from the electrical grid, and optimally discharge that energy back into the grid as firm, reliable generation and/or grid services.

The Project would be comprised of lithium-ion battery and/or flow battery energy storage facilities, a behind-the-meter solar energy facility, a new on-site 230 kV loop-in switching station, a 34.5 kV to 230 kV substation, underground electrical cables, and permanent vehicular access to and from the site over a proposed bridge spanning IID's Westside Main Canal. The proposed loop-in switching station would connect the Project to the existing IID Campo Verde-Imperial Valley 230 kV radial gen-tie line, which connects to the IV Substation and the California Independent System Operator (CAISO), approximately one-third mile south of the Project site. The Project Proponent has submitted the necessary Interconnection Request Applications to the CAISO and IID.

The Project would complement both the existing operational renewable energy facilities, as well as those planned for future development in the County, and would support the broader southern California bulk electric transmission system by serving as a firm, dispatchable resource.

The Project is pursuing the following objectives:

- To receive grid energy during beneficial market and operational periods and store that energy for future dispatch when the customer (i.e., a load-serving entity) deems it to be more valuable.
- To be a valuable resource in allowing the customer and system operators to manage the effect of intermittent renewable generation on the grid and create reliable, dispatchable generation upon demand.
- To utilize available land that has not been used for agricultural production for more than 15 years and enhance the site location by providing for permanent vehicular access.

### 1.2.1 Project Components

The Project would be constructed in three to five phases over a 10-year period, with each phase ranging from approximately 25 MW up to 400 MW per phase. Depending on the size of the battery system for a given phase, construction and commissioning (approval to operate) is anticipated to take approximately 6 to 12 months. For the purposes of this analysis, the applicant has assumed that construction activities would last for approximately 32 months to complete the full Project build-out.

Construction of the 100 MW to 200 MW first phase would include roads, a permanent clear-span bridge across the Westside Main Canal, Operations and Maintenance (O&M) facilities, water connections and water-mains, storm water retention, switching station and Project substation, legal permanent vehicle access, as well as the first energy storage facility. To access the Project site, construction workers would travel along Interstate 8 and head 4.6 miles south to the Project site, and would utilize the IID Fern Check Bridge as a temporary pedestrian bridge until the permanent bridge is constructed. During peak construction activities, approximately 200 workers and approximately 30 daily deliveries would be required. It is anticipated that construction of the first phase would begin in 2021.

It is anticipated that each subsequent phase would be constructed within one to two years of each other, with the timing and size of each phase dependent on market conditions and the applicant's ability to secure commercial contracts with prospective customers. With the Project being built in phases, the necessary infrastructure, such as water mains, retention ponds, and access roads, would be built out to serve the Project phases from west to east and expanded over time to serve each phase. These subsequent phases would require improvements such as additional substation equipment, water main and site road extension, but would not require construction of additional common facilities which would be completed during the first phase. The total nameplate (or rated capacity) capacity of the Project at full build-out (all phases completed) would be approximately 2,000 MW. On-site photovoltaic (PV) solar generation would serve as station auxiliary power and be deployed throughout the Project site, constructed during each phase.

Construction activities during all Project phases would only occur Monday through Friday, between the hours of 7:00 a.m. and 7:00 p.m. or Saturday between the hours of 9:00 a.m. and 5:00 p.m., excluding holidays, per County Ordinance.

Due to the Project site having no direct vehicular access routes, the applicant is proposing to construct roads on both the north and south sides of the Westside Main Canal on private land, and a new clear-span Imperial County-specified bridge over the Westside Main Canal. The permanent new clear-span County-specified bridge would span the Westside Main Canal to connect to a proposed access road easement on the north side of the Westside Main Canal. The north side proposed access road would ultimately connect the Project to county road (CR) Liebert Road.

Construction of the permanent clear-span bridge spanning the IID's Westside Main Canal requires the Project Proponent to have access to both the north side and the south of the canal to perform the necessary construction activities. In addition to being necessary to facilitate construction of the new permanent clear-span bridge, access from the south side of the canal would allow the Project Proponent to commence construction on the first phase of the Project simultaneously, thereby shortening the duration of construction and potentially minimizing the associated impacts. The Project Proponent is evaluating various options for temporary construction access, including accessing the Project site from the south side of the Westside Main Canal off State Route 98, as well as options involving access from the north side of the Westside Main Canal from Interstate 8.

Option 1 would use the existing SDG&E maintenance road off Highway 98, which extends approximately 4.4 miles to the IV Substation. Option 1 would then continue along an existing 1.2-mile-long dirt access road that leads north, then east, outside the western and northern boundaries of the substation. Option 1 then continues northwest along an existing dirt access road that parallels two power lines until the access road connects with the western edge of the Project. The existing dirt road was constructed for the construction and maintenance of the existing Centinela gen-tie line. Option 2 would use the existing IID Westside Mail Canal access road. The selected temporary access option would be used until construction of the permanent bridge is completed. Both temporary construction access routes are presented in Figure 3b.

The 4.4-mile segment of Option 1 consisting of the SDG&E maintenance road off Highway 98 is a graded and improved dirt road. Therefore, use of this roadway segment would impact any biological resources. Potential impacts on biological resources associated with use of the 1.2-mile-long dirt access road segment of Option 1 have been analyzed in the Addendum to the Biological Resources Report for the Westside Canal Battery Storage Project, Imperial County, California (Attachment 1). The IID Westside Mail Canal access road that would be used under Option 2 is a graded and improved dirt road. Therefore, use of this roadway segment would not impact any biological resources.

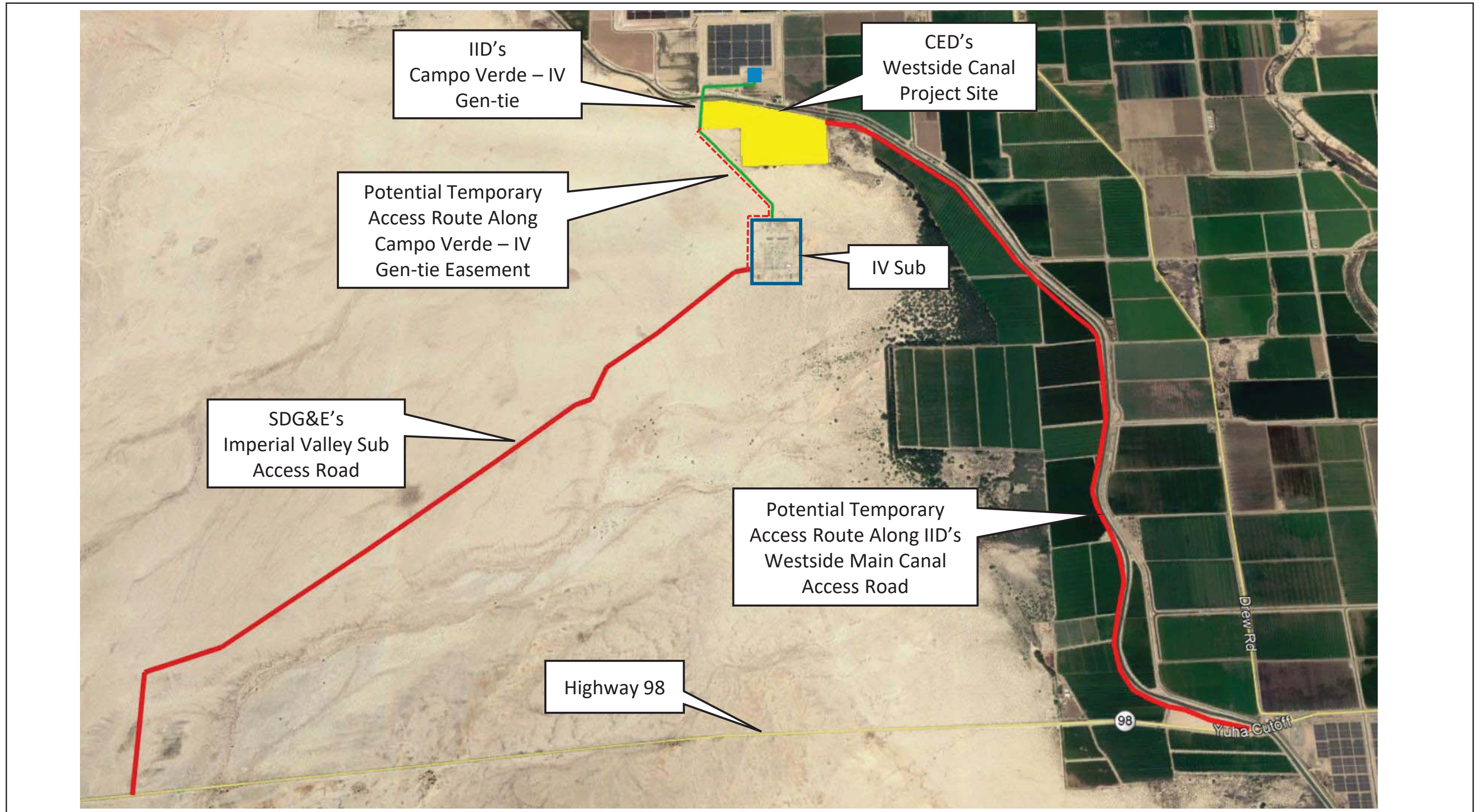
## 1.2.2 Common Facilities

The northwest area of the Project serves as the location for the common facilities, which include switching station and substation and the O&M facilities. With the Project being built in phases, the necessary infrastructure, such as water mains, retention ponds, and access roads, would be built out to serve the Project phases from west to east and expanded over time to serve each phase.

A summary of the common facilities is presented below:

- 230 kV loop-in switching station
  - Connection to Campo Verde Imperial Valley 230 kV radial transmission line
  - Located on applicant property
- Project substation
- O&M facilities
- Project parking
- Storm water detention basins
- Fencing and gates
- Interior access roads





Industrial buildings, warehouses, engineered containers, and/or electrolyte storage tanks would be the primary structures needed to house the main Project components. Other components to be located on the Project site and adjacent to the proposed buildings, warehouses, containers, and tanks include the following:

- Inverters, transformers, power distribution panels
- Underground water-main loop for Project operation and fire prevention
- Underground cable to connect to Project substation
- Project site access roads (unpaved/crushed rock)
- Fire water storage tanks
- Above ground water storage tanks
- Heating, ventilation, and air conditioning (HVAC) units
- Ground-mounted or roof-mounted PV arrays
- Emergency backup generator(s)

The O&M facilities are expected to be the only manned facility on the site. It would include up to approximately 20 full-time employees depending upon the number of phases and type of energy storage facility constructed. O&M employees would work typical weekday hours but may work extended hours, including weekends and 24 hours a day, depending upon the operations and maintenance needs. No offices or staffed control centers would be located within the storage-specific warehouses/buildings. For sanitary waste, the Project would include a septic leach field to be located near the O&M facilities. The proposed O&M facilities would also require an HVAC unit.

## 2.0 Methods and Survey Limitations

Biological resource data for the Project was obtained from a combination of literature review, general biological survey, and focused biological surveys. Focused surveys were conducted for the following resources/species: burrowing owl (*Athene cunicularia*), jurisdictional wetland/waters, and rare plants (Table 1). The literature review and survey methods are discussed below.

Focused burrowing owl and rare plant surveys were conducted at appropriate times of year to detect presence/absence of target species, and the combined biological surveys covered all four seasons. Therefore, the likelihood of detection of migrants and seasonal visitors was high. Surveys were limited by temporal factors, as all surveys were conducted during the day or dusk. As a result, some nocturnal animals were observed directly as dusk turned to night following burrowing owl surveys, and others were detected by sign such as tracks, scat, and/or burrows; however, a full suite of nocturnal animals may have required full night-time surveys or trapping.

<b>Table 1</b>				
<b>Biological Survey Schedule Summary</b>				
<b>Date</b>	<b>Survey Type and Number</b>	<b>Surveyor(s)</b>	<b>Beginning Conditions</b>	<b>Ending Conditions</b>
4/5/2018	BUOW Habitat Assessment	B. Ogg, B. Rigley, A. Fromer, B. Parker	09:25; 82°F; 2–4 mph wind; sunny	14:00; 94°F; 2–5 mph wind; 50% high, thin cloud cover
4/13/2018	BUOW Breeding Season Survey 1	B. Ogg, B. Rigley, A. Fromer, S. Vargas	17:20; 81°F; 2–9 mph wind; clear sky	19:36; 70 °F; calm wind; clear sky
4/14/2018			06:00; 55°F; 0–2 mph wind; clear sky	09:55; 78°F; 1–3 mph wind; clear sky
5/7/2018	BUOW Breeding Season Survey 2	B. Ogg, B. Rigley, S. Vargas, K. Israel	17:45; 95°F; 1–4 mph wind; 0% cloud cover, slight haze	19:55; 92 °F; 2–9 mph wind; 0% cloud cover, slight haze
5/8/2018			05:25; 67°F; 2–4 mph wind; 0% cloud cover, slight haze	09:20; 88°F; 2–6 mph wind; 75% high, thin cloud cover
5/29/2018	BUOW Breeding Season Survey 3	B. Ogg, B. Rigley, A. Smisek, K. Valenti	17:45; 99°F; 1–3 mph wind; 30% cloud cover	20:11; 94°F; 4–11 mph wind; 20% cloud cover
5/30/2018			05:20; 68°F; 2–4 mph wind; 2% cloud cover	09:45; 93°F; 2–6 mph wind; 1% cloud cover with haze
7/5/2018	BUOW Breeding Season Survey 4	B. Ogg, A. Fromer, K. Valenti, V. Novik	17:55; 108°F; 1–5 mph wind; 15% high, thin cloud cover	20:22; 100°F; calm wind; 5% high, thin cloud cover
7/6/2018			05:15; 83°F; 2–4 mph wind; 25% cloud cover	09:35; 103°F; 1–3 mph wind; 40% cloud cover
10/4/2018	BUOW Non-breeding Season Survey 1	B. Ogg, B. Parker, E. Procsal, M. Weston, V. Novik	16:22; 89°F; 5–10 mph wind; 5% cloud cover	19:36; 84 °F; 5–10 mph wind; 5% cloud cover
10/5/2018			06:14; 69°F; 3–6 mph wind; clear sky	09:55; 82°F; 5–12 mph wind; <1% cloud cover
11/8/2018	BUOW Non-breeding Season Survey 2	B. Ogg, B. Parker, E. Procsal, M. Weston, J. Sundberg	14:45; 82°F; 6–12 mph wind; 0% cloud cover	19:11; 74 °F; 2–7 mph wind; 0% cloud cover
11/9/2018			05:41; 51°F; 0–2 mph wind; 0% cloud cover	10:00; 78°F; 0–7 mph wind; 0% cloud cover
12/6/2018	BUOW Non-breeding Season Survey 3	B. Ogg, B. Parker, E. Procsal, M. Weston, K. Valenti	14:38; 70°F; 0–1 mph wind; 0% cloud cover	17:05; 59°F; 0–1 mph wind; 0% cloud cover
12/7/2018			06:11; 45°F; 0 mph wind; 15% cloud cover	10:00; 59°F; 0–2 mph wind; 90% cloud cover
1/24/2019	BUOW Non-breeding Season Survey 4	B. Ogg, B. Parker, E. Procsal, M. Weston, K. Valenti	15:07; 71°F; 3–6 mph wind; 85% cloud cover	17:33; 61°F; 0–2 mph wind 10% cloud cover
1/25/2019			06:15; 46°F; 0–2 mph wind; 5% cloud cover	10:00; 69°F; 0–2 wind; <1% cloud cover
2/5/2019	General Biological Survey	B. Ogg, K. Valenti, J. Sundberg	--	--
	Wetland/Waters Delineation	A. Smisek	--	--
4/23/2019	Rare Plants Survey	J. Sundberg	--	--

BUOW = burrowing owl; °F = degrees Fahrenheit; mph = miles per hour; % = percent.

According to precipitation data for the closest available location, Imperial, California, observed precipitation was below normal for the 2017-2018 wet season (National Climate Data Center [NCDC] 2019a, National Weather Service [NWS] 2019), which likely resulted in low germination rates for annual plant species in winter and spring 2018 within the Project vicinity at the time the Project survey effort commenced. However, observed precipitation was approximately at normal for the 2018-2019 wet season. Specifically, the normal (1981-2010) precipitation recorded for Imperial, California, for September through March is

2.47 inches, and the observed precipitation for Imperial, California, for September 2018 through March 2019 was 2.48 inches (NCDC 2019b, NWS 2019). Therefore, sensitive annual plant species would have likely been detected if present during the general biological and focused rare plant surveys conducted in winter and spring 2019.

Zoological nomenclature is in accordance with the Checklist of North and Middle American Birds (Chesser et al. 2018); Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico (Crother et al. 2012); the Revised Checklist of North American Mammals North of Mexico (Baker et al. 2003); Page et al. (2013) for fish; and Evans (2008), Wheeler and Wheeler (1973), San Diego Natural History Museum (SDNHM; 2002), and AntWeb (2018) for insects and spiders. Floral nomenclature for common plants follows Baldwin (2012) as updated by the Jepson Online Interchange (University of California 2019) and for sensitive plants the California Native Plant Society online database (CNPS; 2019). If a plant's common name was not provided in these resources, common names were obtained from Rebman and Simpson (2014), or the U.S. Department of Agriculture (USDA) maintained database (USDA 2013) or the Sunset Western Garden Book (Brenzel 2001) for ornamental/horticultural plants.

## 2.1 Literature Review

RECON conducted an analysis of existing sensitive species data recorded within two miles of the Project site. This analysis included searches of the California Natural Diversity Database (CNDDDB; California Department of Fish and Wildlife [CDFW] 2019a), the All Species Occurrences Database (U.S. Fish and Wildlife Service [USFWS] 2019), and a search of the CNPS online rare plants database within nine USGS quadrangles surrounding the site (CNPS 2020). Additional maps, imagery, and databases reviewed included USGS topographic maps (1976), soils survey maps (USDA 1981, 2017), online aerial satellite imagery (Google Earth 2018), the Consortium of California Herbaria (2019), and the Amphibian and Reptile Atlas of Peninsular California (SDNHM 2019). RECON also conducted a review of existing literature relevant to the biological resources known from the vicinity of the Project site, including but not limited to the following:

- Final Biological Technical Report for the Campo Verde Solar Project (Heritage Environmental Consultants 2012a);
- Campo Verde Solar Energy Project Protocol Burrowing Owl Survey Report, Phase I, II and III Survey Report (2011 Breeding and 2011/2012 Winter Resident) (Heritage Environmental Consultants 2012b);
- Campo Verde Solar Project Jurisdictional Waters Report (Heritage Environmental Consultants 2012c);
- Campo Verde Solar Avian Survey Report 2011-2012 (Heritage Environmental Consultants 2012d);
- Campo Verde Solar Energy Project Protocol Burrowing Owl Survey Report, Phase I, II and III Survey Report (2012 Breeding Season) (Heritage Environmental Consultants 2012e);

- Post Survey Notification of Focused Survey Results for the Mountain Plover on the Campo Verde Solar Energy Project (Heritage Environmental Consultants 2012f); and
- Imperial County Conservation and Open Space Element (County of Imperial 2016).

Additional species not found during the records search were assessed if the range for that species extended into the Project site and habitat conditions within the Project site were potentially suitable for that species. Determination of the potential occurrence for sensitive species was based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; Unitt 2004; CDFW 2019a; Baldwin et al 2012; Jepson Flora Project (eds.) 2019, CNPS 2019; Reiser 2001; Tremor et al. 2017; Western Bat Working Group 2017; Harvey et al. 2011).

## 2.2 General Biological Survey

RECON biologists Brenna Ogg, Bernadette Rigley, Alex Fromer, and Brian Parker conducted initial vegetation mapping as part of the burrowing owl habitat assessment on April 5, 2018, and refined the vegetation mapping during the burrowing owl non-breeding season surveys conducted between October 4, 2018, and January 25, 2019 (see Section 2.3). Vegetation community classifications followed Sawyer et al. (2009). For areas that did not fall into one of the vegetation classifications defined by Sawyer et al. (2009), one of the following land cover types were used: developed, active agriculture, fallow agriculture, open water, and disturbed habitat. Dominant plant species, average height, and density were noted for each vegetation community. Digital photographs of representative areas were taken during the reconnaissance survey.

RECON biologists Ms. Ogg, JR Sundberg, and Kayo Valenti conducted a general biological survey of the Project site and surrounding 100-foot buffer (survey area) on February 5, 2019, between 11:00 a.m. and 3:00 p.m. The survey area totaled 163.3 acres (see Figure 3a). At the time of this survey, full access had been granted to areas within the Project boundary; however, direct access to the majority of the 100-foot buffer was unavailable. Therefore, areas within the Project boundary were accessed directly on foot, and most areas within the surrounding 100-foot buffer were surveyed from the edge of the Project boundary, using binoculars when necessary. Weather conditions during the survey consisted of 40 to 50 percent cloud cover, 5- to 16-mile-per-hour winds averaging 8 to 13 miles per hour, and air temperatures between 63 and 65 degrees Fahrenheit. The biologists inventoried plant and wildlife species, conducted a search for sensitive species, and assessed the suitability of habitat for sensitive species identified as having potential to occur based on the literature review discussed above.

## 2.3 Burrowing Owl Surveys

RECON conducted a burrowing owl habitat assessment, breeding season surveys, and non-breeding season surveys between April 2018 and January 2019 (see Table 1). The survey area used for the burrowing owl habitat assessment and surveys includes the Project site and the surrounding 150 meters (492 feet) (see Figure 3a). Methods used for the burrowing owl habitat assessment, breeding season surveys, and non-breeding season surveys followed the

guidelines set forth by CDFW (2012) and are summarized below. Complete survey methods are provided in the focused survey reports prepared by RECON (2018, 2019a).

Direct access was consistently available to the Project Proponent-owned parcels south of Westside Main Canal, the canal roads (including Mandrapa Road), and Liebert Road. However, access to the parcels north of Westside Main Canal and the parcels adjacent to the Project Proponent-owned parcels was limited to varying degrees throughout the survey periods. Therefore, the Project site south of Westside Main Canal, was consistently surveyed using line transects, while the majority of the survey area north of Westside Main Canal and the entirety of the 150-meter buffer south of Westside Main Canal were surveyed by using binoculars or scopes.

The habitat assessment began with a review of relevant biological information to provide local and regional context, document known occurrences of the species within the Project vicinity, and identify potentially suitable burrowing owl habitat within and adjacent to the Project site. Following the desktop review, RECON biologists Ms. Ogg, Bernadette Rigley, Alex Fromer, and Brian Parker conducted the habitat assessment on April 5, 2018 (see Table 1). The biologists assessed vegetation types, height, and density; land use; presence or absence of friable soils, burrows; topography; hydrological features; and presence or absence of burrowing owl sign.

Burrowing owl breeding season surveys included four visits between April 13 and July 6, 2018, during the burrowing owl's breeding season (see Table 1). Each survey was conducted by four biologists over a two-day period, between two hours before sunset and civil dusk on the first day and between civil dawn and 10:00 a.m. on the second day. Surveys were spaced at least three weeks apart. All wildlife species observed during the surveys were noted, and all suitable burrows were recorded using a handheld global positioning system (GPS) device.

Similarly, non-breeding season surveys included four visits between October 4, 2018, and January 25, 2019, outside the burrowing owl's breeding season. Each survey was conducted by five biologists over a two-day period, between two hours before sunset and civil evening twilight on the first day and between morning civil twilight and 10:00 on the second day. Surveys were spaced at least four weeks apart. All wildlife species observed during the surveys were noted. All suitable burrows were recorded using a handheld GPS device, and presence or absence of burrowing owl sign (e.g., pellets, whitewash, prey remains, feathers, or decoration) was documented.

## 2.4 Jurisdictional Waters/Wetland Delineation

On February 5, 2019, Mr. Smisek conducted a routine jurisdictional waters/wetland delineation, following the guidelines set forth by the U.S. Army Corps of Engineers (USACE; 1987 and 2008), to gather field data at locations with potential jurisdictional waters in the Project site and surrounding 100-foot radius. Prior to conducting the delineation, aerial photographs, USGS topographic maps of the site, USDA soil maps of the site, and the USFWS National Wetland Inventory were examined. Once on-site, potential federal and state jurisdictional areas were examined to determine the presence and extent of any jurisdictional

waters. Complete survey methods are provided in the Jurisdictional Waters/Wetland Delineation Report for the Westside Canal Battery Storage Complex Project, Imperial County, California (RECON 2019b).

## 2.5 Rare Plants Surveys

RECON staff conducted an initial search for rare plant species as part of the general biological survey discussed above (see Section 2.2). Mr. Sundberg conducted a second focused survey for rare plants within the Project site on April 23, 2019, between 10:15 a.m. and 2:10 p.m. (see Table 1). The survey was conducted in spring, during the typical blooming period for most potentially occurring species so that the detectability of these species was maximized.

The Project site was traversed on foot with a focus on the fallow agriculture areas in the Project site north of Westside Main Canal, and the western and southwestern portions of the Project site, where native habitat has re-established within the abandoned agricultural fields south of Westside Main Canal as these are areas with a higher expectation of supporting rare plants. As with the general biological survey, a species list of all plants observed was compiled during the course of the survey.

## 3.0 Survey Results/Existing Conditions

This section describes the existing physical and biological conditions of the Project site and surrounding area. This includes a summary of land use, topographical features, soils, and hydrological features observed during biological surveys conducted between April 5, 2018, and February 5, 2019.

### 3.1 Physical Characteristics

#### 3.1.1 Existing Land Use

The main Project site south of Westside Main Canal (i.e., the Project Proponent-owned parcels) consists of agriculturally-zoned land that was previously used for agriculture but has remained inactive since at least 2003. The portion of the Project area that lies north of Westside Main Canal includes parcels owned by the IID and a private land owner, that were also previously used for agriculture and has remained inactive since at least 2013. This inactivity has resulted in the natural, wind-driven deposition of sand and/or re-establishment of native and non-native vegetation within large portions of the old agricultural fields.

The Project site is surrounded by undeveloped BLM land to the south and west and privately-owned land to the north and east.

Infrastructure that occurs within the Project site includes the Westside Main Canal; a concrete-lined irrigation channel; a 230 kV single-circuit IID distribution line and the Campo Verde 230 kV radial transmission line along with their associated easements and

maintenance roads; and Liebert Road, which is a County road. Within the Project site, all infrastructure associated with the previous agriculture operations south of Westside Main Canal has been removed or is deteriorated and non-functional.

Current activities on site are minimal and largely limited to the land the north of Westside Main Canal. These activities comprise IID, Customs and Border Protection (CBP), agricultural operations, and occasional fishing activity along the Westside Main Canal. IID activity includes vehicle travel along the Westside Main Canal roads (including Mandrapa Road) and Liebert Road. Due to the site's proximity to the U.S.-Mexico border, CBP likely travels through the Project site, although no CBP activities were observed on-site during any of the biological surveys. Infrequent vehicle activity associated with the active agriculture was observed on Liebert Road and Mandrapa Road, north of Westside Main Canal.

### 3.1.2 Topography and Soils

The Project site is located in the Yuha Basin of the Colorado Desert.

Elevation ranges from sea level in the far southwestern corner to -24 feet in the northeastern corner. Topography within the Project site is generally level, with the exception of human-made berms along the boundaries of the inactive and active agricultural areas and small dunes and sandy hummocks that occur west and south of the Project site, as well as within the western and southwestern portions of the Project area, where the native desert habitat is re-establishing.

The following 10 soil types are mapped within the Project site and surrounding 100-foot radius and are listed in the approximate order of prevalence: Vint loamy very fine sand, wet; Vint and Indio very fine sandy loams, wet; Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes; Meloland very fine sandy loam, wet; Rositas fine sand, wet, 0 to 2 percent slopes; Meloland fine sand; Glenbar complex; Indio-Vint complex; Rositas fine sand, 0 to 2 percent slopes; and Holtville silty clay, wet (USDA 1981). The soil series to which these soil types belong are very deep, range from moderately-well-drained to somewhat excessively-drained, and formed in alluvial and/or eolian materials on flood plains and alluvial basins, terraces, and/or sandhills (USDA 1981).

### 3.1.3 Hydrology

The Project site is within the Salton Sea Transboundary Watershed in the Colorado River Basin Region (State of California Water Boards 2018). Westside Main Canal is a human-made, natural-bottomed canal conveying water from the All-American Canal to the Imperial Valley area for irrigation use. It crosses through the northern portion of the Project site, flowing east to west. Within the survey area, a drop structure, known as the Fern Check structure, occurs within the canal and regulates water levels. During the February 2019 survey, water levels were regulated at approximately 18 inches below the top of the bank east of the drop structure, and approximately 5 feet below the top of the bank west of the drop structure. In addition to the Westside Main Canal, the east-west concrete-lined channel



mentioned above and a concrete-lined channel extending north-south in the northeast portion of the survey area contained flowing water at the time of the survey.

Manufactured drainage ditches, both concrete-lined and natural-bottomed, occur along berms that define the boundaries of abandoned agricultural fields throughout the Project site, south of Westside Main Canal. However, these drainage ditches are non-functional. No other portions of the Project site or surrounding 100-foot radius contain topographic bottomlands where a substantial amount of water could concentrate and/or flow. No hydrology indicators were observed aside from the surface water within the Westside Main Canal and the two continuously active concrete-lined irrigation channels.

### 3.2 Biological Resources

#### 3.2.1 Botanical Resources

The following vegetation communities and land cover types were mapped within the Project site and surrounding 100-foot radius: upland mustards (*Brassica* spp. and Other Mustards Semi-Natural Herbaceous Stands), fourwing saltbush scrub (*Atriplex canescens* Shrubland Alliance), creosote bush scrub (*Larrea tridentata* Shrubland Alliance), quailbush scrub (*Atriplex lentiformis* Shrubland Alliance), arrow weed thickets (*Pluchea sericea* Shrubland Alliance), tamarisk thickets (*Tamarix* spp. Semi-Natural Shrubland Stands), common reed marshes (*Phragmites australis* Herbaceous Alliance and Semi-Natural Stands), eucalyptus groves (*Eucalyptus* spp. Semi-Natural Woodland Stands), cattail marshes (*Typha* sp. Herbaceous Alliance), disturbed habitat, fallow agriculture, open water, and developed land (Table 2). A brief description of each community or land cover type is also provided below in order of prevalence within the Project site and surrounding 100-foot radius.

Community or Type	Project Area	100-foot Buffer
upland mustards	74.70	0.97
fourwing saltbush scrub	47.74	2.52
fallow agriculture	13.56	1.40
arrow weed thickets	6.87	2.01
creosote bush scrub	6.43	10.47
disturbed habitat	5.77	7.36
tamarisk thickets	5.26	1.34
quailbush scrub	2.15	1.33
eucalyptus groves	0.58	--
cattail marshes	0.14	--
open water	0.10	5.75
common reed marshes	0.04	2.42
developed land	0.00	1.63
<b>Total</b>	<b>163.32*</b>	<b>37.20</b>
*Total acreage varies from sum of cells due to rounding.		

A minimum of 46 plant species was observed within the Project site and surrounding 100-foot radius, with 28 species (61 percent) considered native and the remaining 18 species

(39 percent) considered non-native and/or naturalized into the area. Dominant plant species are discussed by vegetation community below, and a complete list of plant species detected is included as Attachment 2. Figure 4 illustrates the vegetation mapped within the 100-foot radius. Active agriculture is present beyond the 100-foot radius but within the larger 150-meter buffer that was surveyed as part of the burrowing owl surveys. These are not accounted for in Table 2 or Figure 4, but can be seen in the aerial in the northwestern corner.

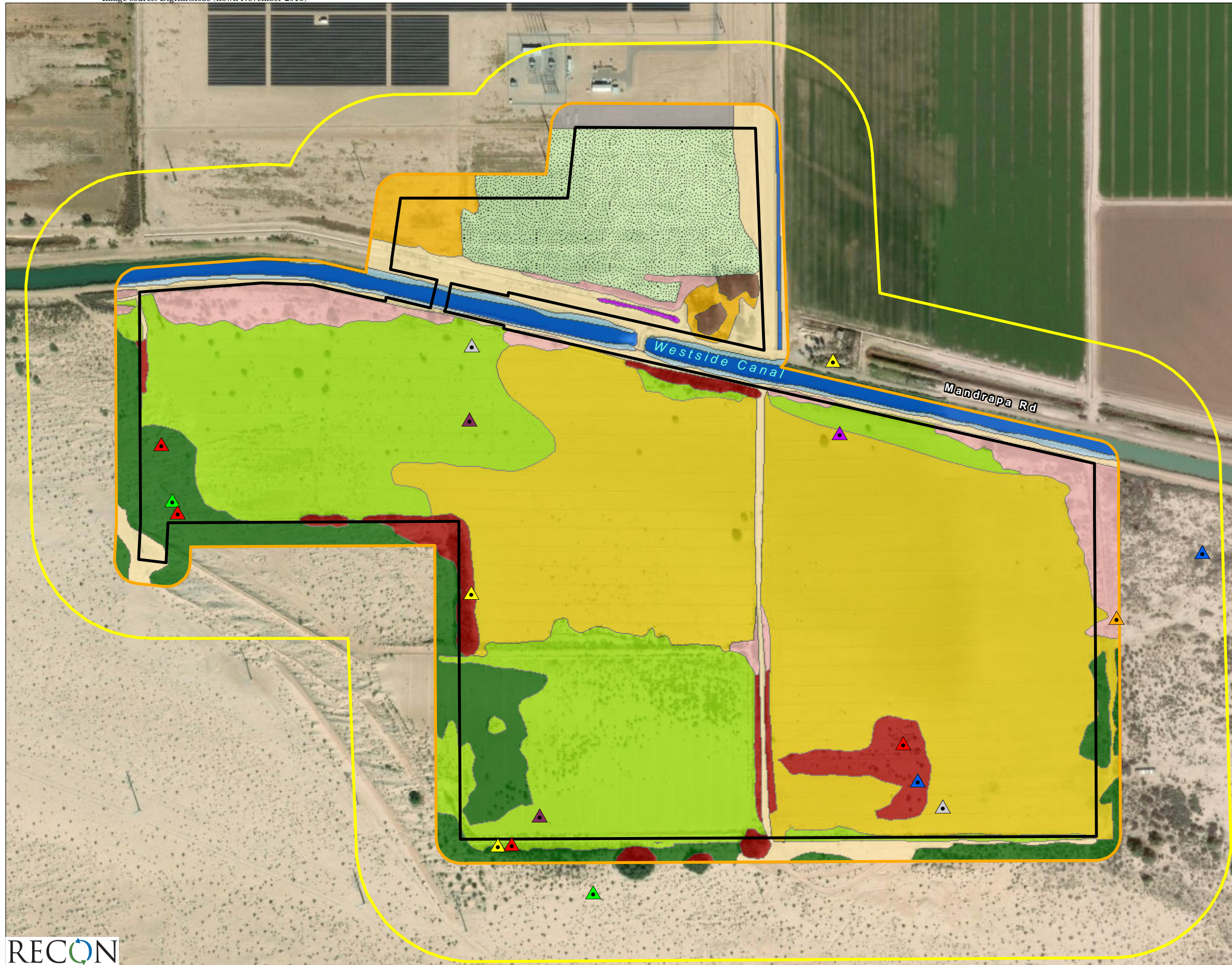
### 3.2.1.1 Upland Mustards

Upland mustards is the predominant vegetation community within the Project site and is primarily found south of Westside Main Canal. The vegetation is open and low-growing, and comprises a mix of non-native and native annual plant species. Total vegetative cover ranges between 10 and 40 percent, with London rocket (*Sisymbrium irio*) as the dominant species. Other common plants include the native narrow-leaf cryptantha (*Cryptantha angustifolia*) and non-native Mediterranean schismus (*Schismus barbatus*). Native annuals such as yellow cups (*Chylismia brevipes*) and brown-eye primrose (*Chylismia claviformis*) are scattered in low numbers.

### 3.2.1.2 Fourwing Saltbush Scrub

Fourwing saltbush scrub is the predominant vegetation community within the western and southwestern portions of the Project site south of Westside Main Canal. An additional linear stand of this community parallels the south side of the Westside Main Canal access road in the eastern half of the Project site. Total shrub cover ranges between 10 and 40 percent, and shrub height averages three to four feet. The dominant shrub species is fourwing saltbush with scattered creosote occurring within the southernmost stand in the Project site.

Herbaceous cover is approximately 15 percent and comprises low-growing native and non-native annuals, including narrow-leaf cryptantha, London rocket, and Mediterranean schismus with the addition of desert indianwheat (*Plantago ovata*) in the southwestern stand.



- Project Boundary
- General Survey and Wetland Delineation (100-foot Buffer)
- Burrowing Owl Survey Area (150-m Buffer)
- Vegetation Communities**
  - Arrow Weed Thickets
  - Common Reed Marshes
  - Cattail Marshes
  - Creosote Bush Scrub
  - Eucalyptus Groves
  - Fourwing Saltbush Scrub
  - Quailbush Scrub
  - Tamarisk Thickets
  - Upland Mustards
- Land Cover Types**
  - Disturbed Habitat
  - Fallow Agriculture
  - Open Water
  - Developed
- Wildlife Observations**
  - American Badger
  - Black-tailed Jackrabbit
  - Cooper's hawk
  - LeConte's Thrasher
  - Loggerhead Shrike
  - Northern Harrier
  - Turkey Vulture
  - Burrowing Owl



FIGURE 4

Existing Biological Resources

### 3.2.1.3 Creosote Bush Scrub

Creosote bush scrub largely occurs in the areas along the west, south, and southeast boundaries of the Project site, south of Westside Main Canal. This community occurs in the desert areas that have been subjected to minimal historical disturbance and has begun to re-establish along the edges of the Project site since abandonment of the agricultural fields. Outside the Project site, total shrub cover averages between 20 and 30 percent, and shrub height averages five to six feet. Within the Project site, shrub density is lower and height is shorter at approximately 10 percent and three feet, respectively. Creosote is the dominant shrub species throughout this community. Alkali goldenbush (*Isocoma acradenia* var. *eremophila*) occurs as a subdominant shrub species in the southeastern stand, where lateral seepage from Westside Main Canal has resulted in a higher water table.

Fourwing saltbush is scattered throughout the majority of this community in the drier western and southern stands. Herbaceous cover is low, reaching 20 percent cover in some areas, and includes low-growing native annuals and bulbs such as yellow cups, brown-eye primrose, narrow-leaf cryptantha, and desert lily (*Hesperocallis undulata*).

### 3.2.1.4 Fallow Agriculture

Fallow agriculture is the predominant land type cover in the portion of the Project site north of Westside Main Canal, where the land previously was used for agriculture but has remained inactive since at least 2013. These areas support 10 to 80 percent cover of herbaceous vegetation, heavily dominated by non-native Bermuda grass (*Cynodon dactylon*) and averaging one foot high. Scattered non-native annuals Mediterranean schismus and prickly lettuce (*Lactuca serriola*) occur throughout, and native alkali goldenbush shrubs occur in low numbers in the western portion of this cover type.

### 3.2.1.5 Disturbed Habitat

Disturbed habitat consists of bare ground and dirt roads (i.e., canal roads, Liebert Road) that are subjected to continued disturbance, preventing establishment of substantial vegetation cover. The few plants that occur within or along the edges of these areas include alkali heliotrope (*Heliotropium curassavicum*) along the canal roads, London rocket, and nettle-leaf goosefoot (*Chenopodium murale*).

### 3.2.1.6 Arrow Weed Thickets

Arrow weed thickets occur in five different patches, the majority of which occur as linear stands paralleling Westside Main Canal and an active concrete-lined irrigation channel in the northern portion of the Project site (see Figure 4). The largest stand occurs at the eastern edge of the Project site, continues off site to the east and south, and may have developed as a result of lateral seepage of water from Westside Main Canal. Arrow weed dominates this vegetation community at approximately 50 percent cover. Occasional saltcedar (*Tamarix ramosissima*) shrubs or trees occur within this vegetation community, and the understory

consists of a sparse cover of non-native mustards and narrow-leaf cryptantha in openings between shrubs.

### 3.2.1.7 Tamarisk Thickets

Tamarisk thickets occur several distinct stands, including linear patches along a network of berms and irrigation ditches that likely were manufactured for agriculture use but have since been abandoned, as well as clusters of trees along the southern boundary of the Project site. These patches of tamarisk thickets are dominated by either saltcedar with an approximate cover of 30 percent, or athel (*Tamarix aphylla*) with an approximate cover of 80 percent. The patches of athel were likely planted as a wind screen when the site was used for agriculture.

One patch of tamarisk thicket occurs within an abandoned agriculture field in the southeast portion of the survey area and contains sparse, shrub-sized saltcedar at approximately 10 percent cover. These individuals likely established naturally but currently appear to be stressed with substantially diminished canopies.

One additional stand parallels the access road along the south side of Westside Main Canal; this patch is dominated by saltcedar at approximately 50 percent cover. The saltcedar individuals in this northern patch appear mature and robust.

### 3.2.1.8 Open Water

Areas of open water occur within the Westside Main Canal and one concrete-lined irrigation channels. Although most portions of the open water do not contain any plants, the east-west concrete-lined channel north of the Westside Main Canal contains portions with a moderate accumulation of coontail (*Ceratophyllum demersum*) and long filamentous algae. Cover of aquatic plants within this channel is less than 5 percent; therefore, the channel is considered unvegetated.

### 3.2.1.9 Quailbush Scrub

Quailbush scrub occurs in two stands north of Westside Main Canal and west of Liebert Road. At approximately 50 percent cover, quailbush dominates this vegetation community. The understory is mostly bare, with sparse cover of upland herbaceous species such as Bermuda grass and London rocket. The eastern patch of quailbush scrub is small and surrounded by arrow weed thickets and disturbed habitat, and occurs with a small patch of eucalyptus groves. The western patch of this vegetation community is larger, extending north and west beyond the 100-foot radius of the Project site. Both patches occur within areas that appear to have been used historically for agriculture but have since remained fallow. Manufactured berms and ditches occur along much of the perimeters of the patches.

### 3.2.1.10 Common Reed Marshes

Common reed marshes occur as linear stands averaging between 5 and 10 feet in width along the banks of Westside Main Canal. This vegetation community is dominated by common reed, which comprises approximately 35 percent cover. Arrow weed occurs in most portions of this

vegetation community as a subdominant species at approximately 5 percent cover. The banks of the canal are steep and contain a substantial proportion of large rock and pieces of concrete. Although common reed growth occurs both along the slope and on top of the banks, no growth occurs from portions of the bank at or below the water level.

### 3.2.1.11 Developed Land

Developed land is mapped within the 100-foot radius immediately north of the Project site and comprises solar PV development.

### 3.2.1.12 Eucalyptus Groves

The on-site eucalyptus grove comprises one small cluster of eucalyptus trees in the northern portion of the Project site, adjacent to the intersection of Liebert Road and Mandrapa Road, north of Westside Main Canal. The trees are mature, 30 to 50 feet tall, and include coolibah (*Eucalyptus microtheca*).

### 3.2.1.13 Cattail Marshes

Cattail marshes occur only within the small, concrete-lined irrigation channel extending east-west north of Westside Main Canal. This vegetation community is dominated by southern cattail (*Typha domingensis*). However, it appears this vegetation was dug out of the irrigation channel prior to the February 2019 survey, as the removed cattails were observed piled nearby.

## 3.2.2 Zoological Resources

A total of 127 animal species were detected within the Project site and surrounding areas (within 150-meter [500-foot] radius) during the 2018 and 2019 biological surveys. These comprise 25 invertebrates, 1 amphibian, 7 reptiles, 84 birds, and 10 mammals typical of Colorado Desert communities and agricultural areas, and are summarized below. A complete list of animal species detected during the 2018 and 2019 surveys is included as Attachment 3. Sensitive animal species observed are discussed in Section 3.3.4.

### 3.2.2.1 Invertebrates

Invertebrates detected during the 2018 and 2019 surveys include common insects such as mosquito (*Culex* sp.), darkling beetle (not identified to species), tarantula hawk (*Pepsis* sp.), honey bee (*Apis* sp.), and cicada (not identified to species); scorpion (not identified to species; detected by tracks); three ant species including California harvester ant (*Veromessor stoddardi*) and black harvester ant (*Veromessor pergandei*); eight butterfly or skipper species including painted lady (*Vanessa cardui*), western pygmy-blue (*Brephidium exile*), orange sulphur (*Colias eurytheme*), and fiery skipper (*Hylephila phyleus muertovalle*); and two dragonflies, roseate skimmer (*Orthemis ferruginea*) and Mexican amberwing (*Perithemis intense*).

### 3.2.2.2 Amphibians and Reptiles

One invasive amphibian species, American bullfrog (*Lithobates catesbeiana*), was detected during the 2018 and 2019 biological surveys.

The following five reptile species were observed: western banded gecko (*Coleonyx variegatus variegatus*), western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), long-tailed brush lizard (*Urosaurus graciosus*), Great Basin tiger whiptail (*Aspidoscelis tigris tigris*), and Colorado Desert sidewinder (*Crotalus cerastes laterorepens*). In addition, turtle tracks were observed near Westside Main Canal and likely belong to spiny softshell turtle (*Apalone spinifera*), which is an introduced species known to occur in the area (Daniel and Morningstar 2019). Flat-tailed horned lizard (*Phrynosoma mcallii*) is also assumed present within the Project site based the observation of horned lizard tracks and the known occurrence of the species in the immediate vicinity of the Project site. As flat-tailed horned lizard is a sensitive species, it is discussed further in Section 3.3.4 below.

### 3.2.2.3 Birds

Avian species commonly observed within or adjacent to the Project site include Abert's towhee (*Melospiza aberti*), Gambel's quail (*Callipepla gambelii gambelii*), rock dove (*Columba livia*), blue-gray gnatcatcher (*Poliophtila caerulea*), black-tailed gnatcatcher (*P. melanura*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus frontalis*), Say's phoebe (*Sayornis saya*), verdin (*Auriparus flaviceps acaciarum*), western meadowlark (*Sturnella neglecta*), and lesser goldfinch (*Spinus psaltria hesperophilus*). Sensitive species are discussed in Section 3.3.4 below.

### 3.2.2.4 Mammals

The following 10 mammal species were detected during the 2018 and 2019 biological surveys: desert black-tailed jackrabbit (*Lepus californicus deserticola*), desert cottontail (*Sylvilagus audubonii*), round-tailed ground squirrel (*Spermophilus tereticaudus*), Botta's pocket gopher (*Thomomys bottae*), kangaroo rat (*Dipodomys* sp.), coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), northern raccoon (*Procyon lotor*), American badger (*Taxidea taxus*), and bobcat (*Lynx rufus*). As American badger is a sensitive species, it is discussed further in Section 3.3.4 below.

## 3.3 Sensitive Biological Resources

### 3.3.1 Regulatory Setting

#### 3.3.1.1 Regulatory Framework

Various federal and state regulations or policies apply to biological resources on or adjacent to the Project parcels and are summarized below.

## **a. Federal Regulations**

The federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered ‘take’ under the ESA. Section 9(a) of the ESA defines ‘take’ as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” The ESA is administered by the USFWS.

The Migratory Bird Treaty Act (MBTA; 16 United States Code 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is listed at 50 Code of Federal Regulations (CFR) 10.13. The regulatory definition of “migratory bird” is broad and includes any mutation or hybrid of a listed species and any part, egg, or nest of such birds (50 CFR 10.12). The MBTA, which is enforced by USFWS, makes it unlawful “by any means or in any manner, to pursue, hunt, take, capture, [or] kill” any migratory bird, or attempt such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11). Pursuant to U.S. Department of the Interior Memorandum M-37050, the federal MBTA is no longer interpreted to cover incidental take of migratory birds (U.S. Department of the Interior 2017). Therefore, impacts that are incidental to implementation of an otherwise lawful project would not be considered significant.

The Rivers and Harbors Act of 1899 and the Clean Water Act (CWA) regulate project activities within non-marine navigable waters and/or waters of the U.S. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under the CWA’s provisions is acquired. Permitting for projects that include both permanent and temporary dredging and filling in wetlands and waters of the U.S. is overseen by the USACE under Section 404 of the CWA. Projects can be permitted on an individual basis or be covered by one of several approved nationwide or regional general permits.

## **b. State Regulations**

The California Environmental Quality Act (CEQA) requires an environmental review for projects with potentially adverse impacts on the environment. Adverse environmental impacts are typically mitigated in accordance with state laws and regulations.

The California ESA is similar to the federal ESA in that it provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction.

Section 3503 of the California Fish and Game Code states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto,” and Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird” unless authorized (State of California 1991).



The California Fish and Game Code (Sections 1600 through 1603) regulates project activities within wetlands and riparian habitats. The CDFW can issue a Streambed Alteration Agreement for projects affecting riparian and wetland habitats.

Project activities that fill or dredge within wetland waters of the U.S. and waters of the U.S. as well as wetland waters of the state and waters of the state, including isolated waters such as vernal pools and other waters showing lack of connectivity to a Traditional Navigable Waters, require a Water Quality Certification by the California Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Section 13000 et seq. of the California Water Code under the Porter-Cologne Water Quality Control Act.

### **3.3.1.2 Sensitivity Criteria**

Vegetation communities are considered sensitive natural communities if they are of limited distribution; have federal, state, or local laws regulating their development; and/or support concentrations of sensitive plant or wildlife species. For purposes of this report, the following natural communities are considered sensitive: (1) communities with state rarity ranks of S1-S3, as reviewed by the Vegetation Classification and Mapping Program (VegCAMP) and CNPS, and recognized by CDFW (2018a); and (2) wetlands and waters under the jurisdiction of federal and state agencies.

For purposes of this report, plant and wildlife species would be considered sensitive if they are: (1) listed by state or federal agencies as rare, threatened, or endangered or are proposed for listing; (2) given a California Rare Plant Rank 1B (considered endangered throughout its range), 2 (considered endangered in California but more common elsewhere), 3 (more information about the plant's distribution and rarity needed), or 4 (plants of limited distribution) in the CNPS Inventory of Rare and Endangered Vascular Plants of California (2019); (3) considered rare, endangered, or threatened by CDFW (2018b-d, 2019b); or (4) identified by another recognized conservation or scientific group as being depleted, potentially depleted, declining, rare, critical, endemic, endangered, or threatened.

### **3.3.2 Sensitive Vegetation Communities**

The following vegetation communities mapped within the Project site and surrounding 100-foot radius are considered sensitive: arrow weed thickets (state rarity rank of S3), quailbush scrub (wetland waters of the state; see Section 3.3.6), common reed marshes (wetland waters of the state; see Section 3.3.6), cattail marsh (see Section 3.3.6), and one stand of tamarisk thickets (wetland waters of the state; see Section 3.3.6).

### **3.3.3 Sensitive Plant Species**

No sensitive plant species were observed during the focused rare plant surveys or other biological surveys conducted in 2018 and 2019 for this Project, and no sensitive plant species were determined to have a moderate or high potential to occur within or adjacent to the Project site. Attachment 4 summarizes the potential occurrence of sensitive plant species

that were assessed based on species locations records, habitat suitability, and soil preferences.

### 3.3.4 Sensitive Wildlife Species

The following nine sensitive wildlife species were detected during the general and focused biological surveys conducted in 2018 and 2019 for this Project: flat-tailed horned lizard, ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicanus*), burrowing owl, loggerhead shrike (*Lanius ludovicianus*), black-tailed gnatcatcher, LeConte's thrasher (*Toxostoma lecontei*), Abert's towhee, and American badger (see Figure 4). Descriptions of these observed sensitive wildlife species are provided in the following sections and summarized in Attachment 5.

Based on an assessment of species location records and habitat suitability, the following five additional sensitive wildlife species were identified as having a high or moderate potential to occur within the Project site: Colorado Desert fringe-toed lizard (*Uma notata*), southwestern willow flycatcher (*Empidonax traillii extimus*), vermilion flycatcher (*Pyrocephalus rubinus*), pallid bat (*Antrozous pallidus*), and Yuma hispid cotton rat (*Sigmodon hispidus eremicus*). Descriptions of these potentially occurring sensitive wildlife species are provided in Section 3.3.4.2 below and summarized in Attachment 5. However, vermilion flycatcher is only addressed in Attachment 5, as the sensitivity status of this species only applies to nesting individuals, which are not expected to occur on site.

The following additional 13 sensitive wildlife species were detected during surveys but are only addressed in Attachment 5, as none of these species is expected to breed on or adjacent to the Project site: American white pelican (*Pelecanus erythrorhynchos*), double-crested cormorant (*Phalacrocorax auritus albociliatus*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula thula*), black-crowned night heron (*Nycticorax nycticorax*), Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus hudsonius*), long-billed curlew (*Numenius americanus*), Vaux's swift (*Chaetura vauxi*), Brewer's sparrow (*Spizella breweri*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), and yellow warbler (*Setophaga petechia*). Each of these species' sensitivity status is only applied to nesting individuals or nesting colonies.

#### 3.3.4.1 Sensitive Wildlife Species Detected

##### a. Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

Flat-tailed horned lizard is a CDFW species of special concern and BLM sensitive species. Flat-tailed horned lizard is found in the low deserts of southwestern Arizona, southeastern California, and adjacent portions of northwestern Sonora and northern Baja California, Mexico. In California, flat-tailed horned lizard is restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial counties. The majority of the habitat for the species is in Imperial County (CDFW 2018c; Turner et al. 1980 as cited in Flat-tailed Horned Lizard Interagency Coordinating Committee [ICC] 2003). This species is known to inhabit sand dunes, sheets, and hummocks, as well as gravelly washes. It is thought to be

most abundant in creosote bush scrub. However, this species may be found in a variety of desert scrub communities, desert wash, succulent shrub, alkali scrub, sparsely vegetated sandy flats, desert pavement, and rocky slopes. It is typically found in dry, hot areas of low elevation (less than 800 feet; ICC 2003). Flat-tailed horned lizards escape extreme temperatures by digging shallow burrows in the loose sand. Adults are primarily active from mid-February to mid-November. Breeding activity takes place in the spring with young hatching in late July and September. The diet of horned lizards typically consists of greater than 95 percent native ant species, mostly large harvester ants (including *Pogonomyrmex* spp. and *Veromessor* spp.). Human activities have resulted in the loss of approximately 49 percent of the historic habitat of flat-tailed horned lizard (ICC 2003). The decline in this species' population is primarily due to impacts from utility lines, roads, geothermal development, sand and gravel mining, off-highway vehicle recreation, waste disposal sites, military activities, pesticide use, and U.S. Border Patrol activities (ICC 2003).

Many occurrences of flat-tailed horned lizard have been reported in the undeveloped desert areas immediately west and south of the Project site (CDFW 2019a), and horned lizard tracks were observed during 2018 surveys in the western portion of the Project site, south of Westside Main Canal. Given the cryptic nature and resulting difficulty of detection without focused surveys, these historical records are sufficient to assume this species is present in the creosote bush scrub and fourwing saltbush scrub within and adjacent to the Project site. Within the Project site, these communities provide high-quality habitat for this species, with sandy hummocks having re-established in the old agricultural fields, a good diversity of native plant species, and harvester ants present. The remainder of the Project site south of Westside Main Canal provides marginally suitable habitat, and flat-tailed horned lizard has a high potential to occur due only to the adjacency of high-quality habitat. North of Westside Main Canal, this species has a low potential to occur due to the prevalence of active agriculture and solar development.

### **b. Ferruginous Hawk (*Buteo regalis*)**

Ferruginous hawk (wintering) is a CDFW watch list species (CDFW 2018c). This species is a fairly common winter visitor to southern California from mid-September to late April (Small 1994). The ferruginous hawk's winter range includes open terrain such as grassland, open shrub lands, desert edges, and agricultural lands (Bechard and Schmutz 1995; Small 1994). Its diet is predominantly rabbits and ground squirrels, which are captured by hunting from perches and by aerial hunting (Bechard and Schmutz 1995). Population declines are believed to be due to a general loss of grassland habitat as a result of urban development and overgrazing (Unitt 2004).

Ferruginous hawk was observed flying overhead during the December 2018 and January 2019 surveys. This species is likely to forage within the open vegetation of the Project site and adjacent agricultural fields during winter due to the presence of common prey items such as cottontail rabbits, jackrabbits, and ground squirrels. The eucalyptus trees within the northern Project site and utility towers within and adjacent to the Project site may provide suitable nest sites. However, the Project site is outside this species' known breeding range, and this species was not observed on site during its typical breeding season. Therefore,

ferruginous hawk is only expected to occur as a winter visitor and is not expected to nest within or adjacent to the Project site.

### **c. Prairie Falcon (*Falco mexicanus*)**

Prairie falcon (nesting) is a CDFW watch list species (CDFW 2018c). The prairie falcon is a permanent resident within the arid open lands of interior California, including the Colorado Desert (Small 1994). This species' primary foraging habitat includes open perennial and annual grasslands, savannahs, rangeland, agricultural fields, and desert scrub areas (Unitt 2004). Ground squirrels (*Spermophilus* spp.) make up the bulk of the prairie falcon's diet, but they will also prey on small birds such as horned lark (*Eremophila alpestris*) and western meadowlark, especially during the winter (Steenhof 2013). This species nests directly on cliff ledges or bluffs, without building a nest, and occasionally in rock crevices that are near suitable foraging habitat. However, they are also known to reuse old raven or eagle nests. The prairie falcon will forage as far away as 20 to 25 miles from their nesting site where the density of prey is low (Unitt 2004). Current threats to prairie falcon populations include human disturbance near nest sites and the loss of foraging habitat (Unitt 2004). Urbanization of foraging habitats within the desert badlands has resulted from agricultural encroachment, livestock-grazing, energy development activities, off-road vehicle use, and military training (Steenhof 2013).

Prairie falcon was observed flying overhead and foraging in the active agricultural fields adjacent to the northern portion of the Project site in the early July, early October, and mid-December 2018. The Project site and surrounding areas provide suitable open desert habitat and agricultural fields for foraging. The Project site and surrounding areas lack suitable cliff faces or bluffs preferred for nesting. However, the utility towers that occur within and adjacent to the west side of the Project site may provide nesting opportunities, as this species is known to reuse old raven nests. Therefore, this species is expected to occur as a winter visitor and has a low potential to nest on or adjacent to the Project site due to the presence of lattice utility towers.

### **d. Burrowing Owl (*Athene cunicularia*)**

Burrowing owl (burrow sites and some wintering sites) is a CDFW species of special concern and BLM sensitive species (CDFW 2018c). This species occurs as a year-round resident and winter visitor in Imperial County. Habitat for the burrowing owl includes dry, open, short-grass areas with level to gentle topography and well-drained soils, as well as agricultural areas (CDFW 2012; Small 1994). These areas are also often associated with burrowing mammals (Haug et al. 1993). The burrowing owl is diurnal and perches during daylight at the entrance to its burrow or on low posts. Nesting occurs from March through August. Burrowing owls form pair-bonds for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow and is fed by the male during most of the egg laying and incubation period. Burrowing owls are opportunistic feeders, consuming a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for this species (Lincer and Bloom 2007). Other

contributions to the decline of this species include the poisoning of squirrels and prairie dogs, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

As described in the burrowing owl survey reports (RECON 2018, 2019a), no burrowing owls were observed on the Project site during the 2018 breeding season surveys, but four burrowing owl observations were recorded within the Project site during the 2018-2019 non-breeding season surveys (see Figure 4). These observations indicate that at least two, but likely three, individuals, appear to use the Project site and surrounding areas as a wintering site or for migration and dispersal, but is not currently using the site as breeding habitat. The creosote bush scrub, fourwing saltbush scrub, upland mustards, fallow agriculture, and disturbed habitat within and adjacent to the Project site provide suitable habitat for this species for breeding and wintering due to the open structure of the vegetation, presence of prey items, and abundance of potentially suitable burrows. As the more dense stands of arrow weed thickets and tamarisk thickets occur as small or linear patches within larger expanses of open vegetation, these typically unsuitable communities may also contribute suitable perch sites.

#### **e. Loggerhead Shrike (*Lanius ludovicianus*)**

Loggerhead shrike (nesting) is a CDFW species of special concern (CDFW 2018c). This species inhabits most of the continental United States and Mexico and is an uncommon year-round resident of southern California. It prefers washes with scattered trees or shrubs, or valley floors with scattered thickets of mesquite (*Prosopis* spp.) or saltbush (*Atriplex* spp.). Outside the desert this species inhabits grasslands, agricultural fields, open sage scrub, and chaparral (Unitt 2004). The loggerhead shrike requires open habitat with tall shrubs or trees to use as perches for hunting and fairly dense shrubs for nesting. It may also use fences or power lines for hunting perches (Shuford and Gardali 2008; Yosef 1996). Loggerhead shrikes are highly territorial and usually live in pairs in permanent territories (Yosef 1996). This species feeds on small reptiles, mammals, smaller birds, amphibians, and insects that they often impale on sticks or thorns before eating (CDFW 2014a). This bird may also be associated with freshly plowed or mowed fields, as these activities create foraging opportunities for this species (Yosef 1996). Loggerhead shrike populations are declining, likely due to urbanization and loss of habitat and, to a lesser degree, pesticide use (Yosef 1996). This species has also shown a decline in undeveloped areas, which suggests that it is susceptible to habitat fragmentation (Unitt 2004). Non-native grasses and forbs introduced by livestock grazing pose the greatest threat to shrikes in sagebrush–steppe habitats (Shuford and Gardali 2008).

Loggerhead shrike was observed in tamarisk thickets on the Project site and in common reed marsh and creosote bush scrub immediately adjacent to the Project site on multiple survey visits: May 30, July 6, October 4, November 8, and December 16 and 17, 2018, and January 24, 2019. With the combination of dense patches of shrubs or trees and adjacent open areas, the Project site and surrounding areas provide suitable breeding and foraging habitat for this species. Therefore, this species is likely a resident and has a high potential to nest within the Project site.

**f. Black-tailed Gnatcatcher (*Polioptila melanura*)**

Black-tailed gnatcatcher is a CDFW watch list species (CDFW 2018c). This species is a fairly common resident in the lower Colorado River Valley (Small 1994). It is found in desert scrub, with a preference for well-vegetated desert washes, desert oases, and willow thickets along watercourses, but able to live far away from water sources (Unitt 2004; Small 1994). This species primarily eats insects, ranging from insect eggs and caterpillars to grasshoppers, and occasionally takes in fruit or seeds (Farquhar et al. 2002). Black-tailed gnatcatchers often pair bond for life and defend permanent territories. Breeding generally occurs from March to June, although timing is heavily dependent on weather conditions and abundance of food (Unitt 2004). A pair will build their nest in dense shrubs to provide protection from direct sun and show a preference for spiny shrubs or trees (Unitt 2004; Small 1994). This species has a low tolerance for disturbance, typically avoiding urban areas and areas with non-native vegetation; is susceptible to brown-headed cowbird (*Molothrus ater*) nest parasitism; and is threatened by habitat loss due to over-pumping of groundwater (Unitt 2004; Small 1994).

Black-tailed gnatcatcher was detected during nearly every survey visit conducted in 2018 and 2019 and was typically observed in the creosote bush scrub and arrow weed thickets along the boundaries of the Project site south of Westside Main Canal, but occasionally in the western portion of the survey buffer north of Westside Main Canal. The arrow weed thickets, fourwing saltbush scrub, tamarisk thickets, and creosote bush scrub within and adjacent to the Project site provide suitable breeding and foraging habitat for this species. Based on the frequency of detection this species was not mapped. Based on this frequency and presence of suitable habitat, this species has a high potential to nest within or adjacent to the Project site.

**g. LeConte's Thrasher (*Toxostoma lecontei*)**

LeConte's thrasher is a CDFW species of special concern (CDFW 2018c). It is a permanent, but uncommon, resident in the San Joaquin Valley, Mojave and Colorado Deserts of California, the Sonoran Desert in Arizona, as well as Utah, Nevada, and Baja California, Mexico (Sheppard 1996). This sensitive bird requires undisturbed substrate for foraging under desert shrubs (Sheppard 1996). Ideal habitat throughout this species' range consists of sparsely vegetated desert flats, dunes, sandy alluvial fans below desert mountains, alkaline dry lakes, or gently rolling hills (Sheppard 1970). Dominant shrub species are saltbush (*Atriplex* spp.) not exceeding eight feet high and cholla (*Opuntia* spp.) ranging three to six feet high (Sheppard 1996). Creosote (*Larrea* sp.) may also be present, but the thrasher does not typically utilize this shrub species for shelter or nesting (Sheppard 1970, 1996). This bird also uses vegetated margins of large, rolling sand dunes, i.e., Algodones Dunes in Imperial County, California, and Scammon Lagoon, Baja California (Sheppard 1996). LeConte's thrasher feeds almost completely on arthropods and digs into the ground two to three inches with its bill. This insectivorous diet provides the only source of water for the thrasher. Generally, this species can be found mostly on the ground, running from shrub to shrub with its tail held high (Sheppard 1970). Destruction of substrate and shrubs, and extensive and repeated off-road use in the deserts are the primary threats to this species. Habitat conversion to agriculture is another major factor in reducing the amount of habitat available to this species and in isolating currently occupied area (Laudenslayer et al. 1992 as

cited in Shuford and Gardali 2008). This species also suffers from shootings and livestock grazing, which denudes and decimates the vegetation (Sheppard 1996).

LeConte's thrasher was observed during the November and December 2018 survey visits in arrow weed thickets and fourwing saltbush scrub on the Project site. Although this species is likely resident in the native desert scrub communities within and adjacent to the Project site, it is unlikely to nest on the Project site due to the lack of cactus and low number of thorny shrubs.

#### **h. Abert's Towhee (*Melospiza aberti*)**

Abert's towhee lacks a state or federal listing or sensitivity status but is tracked by CDFW (i.e., is included in the Special Animal List), as it meets one or more of CDFW's conditions to be considered a species at risk (CDFW 2018c). This is a characteristic, resident, and territorial species of the Sonoran and Colorado deserts (Small 1994). Abert's towhee utilizes a variety of desert scrub communities but is often associated with streamside cottonwood-willow riparian forest and mesquite woodlands. However, this species has also shown an ability to acclimate to mixed native and non-native vegetation, as long as a sufficiently dense understory is present for nest placement (Tweit and Finch 1994). Abert's towhee primarily feeds on insects on the ground and occasionally consumes seeds. Habitat conversion to agriculture and urbanization has reduced the amount of habitat available to this species (Small 1994).

Abert's towhee was observed as a common species during the 2018 and 2019 surveys in the arrow weed thickets, fourwing saltbush scrub, and creosote bush scrub within and adjacent to the Project site. Based on the frequency of detection this species was not mapped. This species has a high potential to nest in the dense patches or stands of the communities listed above.

#### **i. American Badger (*Taxidea taxus*)**

American badger is a CDFW species of special concern (CDFW 2018c). American badgers are widespread, ranging from the Great Lakes to the Pacific Coast, and from the Canadian Prairie provinces to the Mexican Plateau. This species can be found in a variety of habitats, which include shrub steppes, agricultural fields, open woodland forests, and large grass and sagebrush meadows and valleys (Streubel 2000). Its breeding season occurs from mid- to late summer, after which egg implantation is delayed until December to February. A litter of two to five young are born between March and early April (Streubel 2000). American badger's diet consists of a variety of rodents, scorpions, insects, snakes, lizards, birds, and carrion. Declines in American badger populations and distribution have resulted from habitat fragmentation from urbanization and development of roads (Tremor et al. 2017).

One American badger was observed immediately south of the Project site on July 6, 2019. American badger tracks were observed in the southwestern corner and western edge of the Project site, south of Westside Main Canal, during the same visit (see Figure 4). At least one burrow, just outside the southwestern corner of the Project site was of appropriate size to support this species. Although this species may avoid the more open upland mustard areas

in the old agricultural fields, the Project site and surrounding areas south of Westside Main Canal provide suitable habitat for this species. South of Westside Main Canal, the Project site provides suitable open scrub vegetation, potential prey (e.g., ground squirrels, pocket gophers, lizards), and numerous existing burrows and soils capable of supporting new burrows. As individuals of this species maintain large home ranges, this species would require more land than is present on-site and potentially only forages on-site. However, the presence of existing burrows does indicate the potential for the site to support breeding individuals.

### **3.3.4.2 Sensitive Wildlife Species with Moderate to High Potential to Occur**

#### **a. Colorado Desert Fringe-toed Lizard (*Uma notata*)**

Colorado Desert fringe-toed lizard is a CDFW species of special concern and a BLM sensitive species (CDFW 2018c). This species occurs from below sea level to 590 feet above sea level from the Salton Sea east into southwestern Arizona, and south into Baja California and Sonora, Mexico (Jennings and Hayes 1994; CDFW 2014b). It is primarily insectivorous, eating mostly ants, beetles, antlion larvae, hemipterans, grasshoppers, and caterpillars, but will also eat flowers, leaves, and seeds (CDFW 2014b). Fringe-toed lizards usually seek refuge from enemies by burrowing in the sand 5 to 6 centimeters (2 to 2.4 inches) deep. They also use rodent burrows and the bases of shrubs for cover and thermoregulation. Lizards usually hibernate in sand 30 centimeters (12 inches) deep, but juveniles and subadults may be found closer to the surface (CDFW 2014b).

This species has been reported within two miles of the Project site (CDFW 2019a) and has a moderate potential to occur within the Project site south of Westside Main Canal. The creosote bush scrub and fourwing saltbush scrub adjacent to and in the western and southwestern portions of the Project site, south of Westside Main Canal, provide suitable habitat for this species due to the presence of small dunes and sandy hummocks.

#### **b. Southwestern Willow Flycatcher (*Empidonax trailii extimus*)**

The southwestern willow flycatcher is federally and state listed as endangered. This migratory bird breeds in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico (USFWS 2011).

The southwestern willow flycatcher's breeding season is from late mid-May to mid-July. For breeding and nesting activities this species requires mature, multi-tiered riparian woodland habitat with a high percentage of canopy cover where surface water is present or soil moisture is high enough to support suitable tree species (Sogge et al. 2010). Nests are typically placed in trees where plant growth is most dense, where trees and shrubs have vegetation near ground level, and where there is a low-density native canopy. Although there are exceptions, generally flycatchers are found nesting in areas with willows, tamarisk, or both (USFWS 2011).



Southwestern willow flycatchers are extremely sensitive to human activity in riparian areas. Threats to this species include loss of riparian habitat due to urbanization, flood control, water diversion, grazing, and invasion of non-native species (Unitt 2004). Parasitism by brown-headed cowbirds (*Molothrus ater*) has been a significant factor in the decline of this species in California and Arizona and elsewhere (Sedgwick 2000). It should be noted that low cowbird parasitism rates, multi-tiered riparian woodland, and surface water are all important factors for the recovery of this species to be successful (Unitt 2004).

The arrow weed and tamarisk thickets within and adjacent to the Project site are suitable as foraging habitat, so the site has moderate potential to support foraging flycatchers during migration. However, the Project site and surrounding areas lack suitable mature riparian habitat for breeding, thus this species is not expected to breed on-site.

### **c. Pallid Bat (*Antrozous pallidus*)**

Pallid bat is a CDFW species of concern and BLM sensitive species (CDFW 2018c). It is a locally common yearlong resident throughout most of California, except for high elevations in the Sierra Nevada. This bat occupies a variety of habitats including grasslands, shrublands, woodlands, and mixed conifer forests, and roosts in caves, crevices, or mines, which must be sufficiently large to provide refuge from high daytime temperatures (CDFW 2014c). Pallid bats may also roost in tree hollows and bark, and sometimes rodent burrows or dried mud (Tremor et al. 2017). This species feeds on large prey items such as beetles, grasshoppers, cicadas, spiders, scorpions, and Jerusalem crickets, as well as occasional small rodents and lizards, which it captures on the ground or on vegetation (Bat Conservation International 2011, Tremor et al. 2017). Pallid bats are very sensitive to disturbance of the roosting sites, as these roosts are crucial for metabolic economy and juvenile development. Population declines are generally attributable to loss of roost sites resulting from human intrusion and physical alteration (CDFW 2014c).

Pallid bat has a moderate potential to forage within the Project site, as the creosote bush scrub, fourwing saltbush scrub, and active agricultural fields within and adjacent to the Project site provide suitable foraging habitat. The tall eucalyptus, tamarisk, and palm trees within and adjacent to the Project site may be only marginally suitable as roost sites. However, the patchy nature of the mature trees that occur on and adjacent to the Project site likely makes these trees less suitable as roost sites. Therefore, pallid bat has a low potential to roost on-site.

### **d. Yuma Hispid Cotton Rat (*Sigmodon hispidus eremicus*)**

Yuma hispid cotton rat is a CDFW species of special concern (CDFW 2018c). Yuma hispid cotton rat occurs along the Colorado River and its range extends into agricultural areas of Imperial Valley as a result of irrigation infrastructure. This species occupies moist grassland, croplands, grass- or forb-dominated communities or understories, and brushy areas along the borders of fields. It has also been reported from areas dominated by marsh plants, such as cattails, arrowweed, and common reed. Its diet consists primarily of grasses, taking occasional insects and crops. Yuma hispid cotton rats are solitary, nocturnal and diurnal, active year-round, and build nests of woven grass in burrows or on the ground (CDFW 2014d).

This species has been reported along the Westside Main Canal within two miles of the Project site (CDFW 2019a) and has a moderate potential to occur within and adjacent to the Project site. The combination of wetland communities along Westside Main Canal, dense herbaceous cover within the fallow agriculture areas, and active agriculture within and adjacent to the Project site may provide suitable habitat conditions for this species. This species would likely avoid the open areas of upland mustards and the drier scrub habitats in the majority of the Project site, south of Westside Main Canal, as they tend to prefer tall, dense grasses located closer to water sources.

### 3.3.5 Wildlife Movement Corridors

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. The Project site lies adjacent to a large expanse of undeveloped desert in the Imperial Valley, which provides unconstrained habitat connectivity between the Salton Sea and the Gulf of California. While the site functions as part of general habitat that provides for local movement of terrestrial wildlife, it does not serve as a corridor.

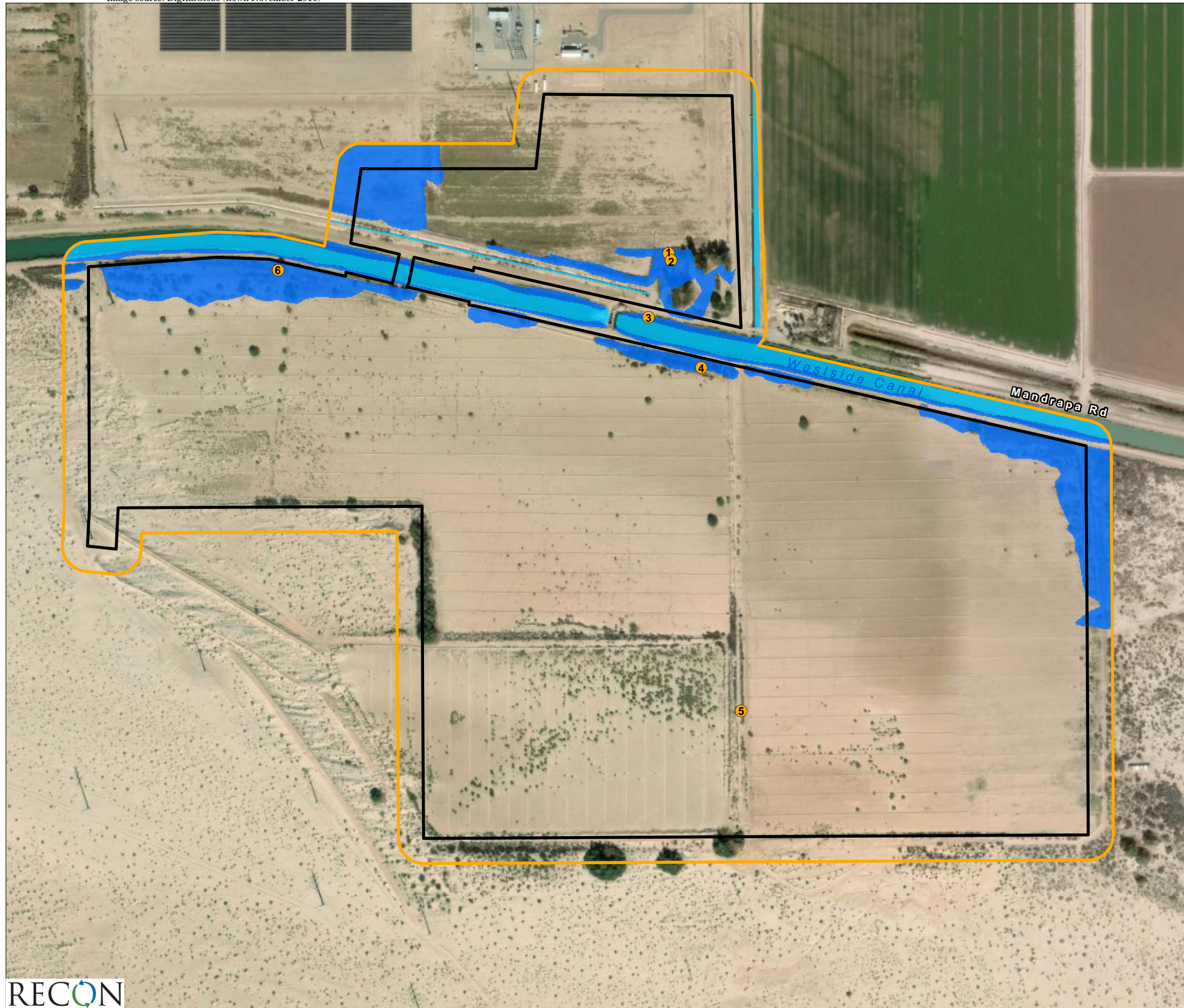
### 3.3.6 Jurisdictional Wetlands and Waters






As discussed in the jurisdictional waters/wetland delineation report (RECON 2019b), jurisdictional wetlands and waters within the Project site and surrounding 100-foot radius are mostly associated with Westside Main Canal and other agriculture-related irrigation infrastructure.

As shown in Table 3 below and on Figure 5, a total of 9.63 acres of jurisdictional waters were delineated within the Project site and 11.52 acres were delineated in the surrounding 100-foot radius. This comprises the Westside Main Canal, an east-west concrete-lined irrigation channel, and a north-south concrete-lined irrigation channel.

Jurisdictional Waters	Project	100-foot Buffer
<b>USACE Total Jurisdictional Waters (404)</b>	<b>0.21</b>	<b>5.76</b>
Non-wetland Waters of the U.S.	0.21	5.76
<b>CDFW and RWQCB Total Jurisdictional Waters (1602/401)<sup>1</sup></b>	<b>9.43</b>	<b>11.52</b>
Wetland Waters of the State	9.22	5.76
Streambed	0.21	5.76

<sup>1</sup>CDFW/RWQCB area of jurisdiction includes all USACE jurisdictional waters.



-  Project Boundary
-  Survey Area
-  Sample Points
- Jurisdictional Waters**
-  CDFW/RWQCB Wetland Waters of the State
-  USACE Non-wetland Waters of the U.S., CDFW Streambed, RWQCB Waters of the State



**FIGURE 5**  
Existing Jurisdictional Waters

A total of 0.21 acre of USACE jurisdictional non-wetland waters of the U.S. was delineated within the Project site, with an additional 5.76 acres delineated within the surrounding 100-foot buffer. No USACE jurisdictional wetlands were delineated. Although it is possible that the area of cattail marshes within the Project site would have met all three wetland parameters, this wetland habitat was removed prior to the jurisdictional delineation and, therefore, was not delineated as a wetland for this report.

As shown in Table 3 and on Figure 5, a total of 9.43 acres of wetland waters of the state under the jurisdiction of CDFW and RWQCB were delineated within the Project site and 11.52 acres were delineated within the surrounding 100-foot radius. This includes all portions of the common reed marshes along the Westside Main Canal and the patches of quailbush scrub, arrow weed thickets, and tamarisk thickets in the northern portion of the Project (see Figure 4). These patches of hydrophytic vegetation primarily occur within 25 feet of an actively used, concrete-lined irrigation channel and/or the Westside Main Canal and appear to be associated with these channels as riparian habitat. Although the quailbush scrub in the northwestern portion of the survey area and the arrow weed thickets in the eastern portion of the survey area continue north and south, respectively, for many hundreds of feet from the waterways, their persistence is likely due to lateral water seepage. Therefore, these stands of vegetation would likely be considered an extension of these CDFW and RWQCB jurisdictional wetland habitats.

The tamarisk thickets in the eastern and southern portions of the Project site and surrounding 100-foot radius occur along ditches associated with the abandoned agriculture fields. These habitats are likely a relic of when these ditches regularly conveyed irrigation water and do not appear to be associated with the active water channels and canal in the northern portion of the survey area. Therefore, these stands are not considered wetlands under the jurisdiction of CDFW or RWQCB.

## 4.0 Project Impact Analysis

The Project would result in direct impacts to 163.3 acres within the Project site, comprising both permanent and temporary impacts. The following sections analyze the direct, indirect, and cumulative impacts to sensitive biological resources that may result from this Project. Table 4 provides the breakdown of permanent and temporary impacts within the Project site.

<b>Table 4                      Project Impacts to Vegetation Communities/Land Cover Types                      (acres)</b>			
Community or Type	Permanent Impacts	Temporary Impacts	Total Impacts
upland mustard	73.45	1.24	74.70
fourwing saltbush scrub	47.72	0.01	47.74
fallow agriculture	4.02	9.54	13.56
<b>arrow weed thickets</b>	<b>6.02</b>	<b>0.85</b>	<b>6.87</b>
creosote bush scrub	6.24	0.19	6.43
disturbed habitat	1.81	3.96	5.77
<b>tamarisk thickets</b>	<b>4.73</b>	<b>0.53</b>	<b>5.26</b>
<b>quailbush scrub</b>	<b>0.34</b>	<b>1.81</b>	<b>2.15</b>
eucalyptus groves	0.04	0.54	0.58
<b>cattail marshes</b>	<b>0.00</b>	<b>0.14</b>	<b>0.14</b>
<b>open water</b>	<b>0.00</b>	<b>0.10</b>	<b>0.10</b>
<b>common reed marshes</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>
developed land	0.00	0.00	0.00
<b>Total</b>	<b>144.51*</b>	<b>18.81*</b>	<b>163.32*</b>
*Total acreage varies from sum of cells due to rounding. <b>Bold</b> entries denote sensitive communities/land cover types (see Sections 4.1 and 4.5)			

In accordance with Appendix G of the CEQA Guidelines, the Project would have a significant impact if it would:

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS;
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFW or USFWS;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

## 4.1 Impacts to Sensitive Vegetation Communities

The Project would result in impacts to 14.46 acres of sensitive vegetation communities (Table 5), comprising 11.13 acres of permanent and 3.33 acres of temporary impacts. Table 5 provides the breakdown of impacts to each sensitive vegetation community and Figure 6 illustrates the extent of impacts on-site.

Community or Type	Permanent Impacts	Temporary Impacts	Total Impacts
arrow weed thickets	6.02	0.85	6.87
tamarisk thickets	4.73	0.53	5.26
quailbush scrub	0.34	1.81	2.15
cattail marshes	0.00	0.14	0.14
common reed marshes	0.04	0.00	0.04
<b>Total</b>	<b>11.13</b>	<b>3.33</b>	<b>14.46</b>

Impacts to these sensitive communities would be considered significant and require mitigation. Impacts to the other vegetation communities and land cover types would not be considered significant and would not require mitigation.

## 4.2 Impacts to Sensitive Plant Species

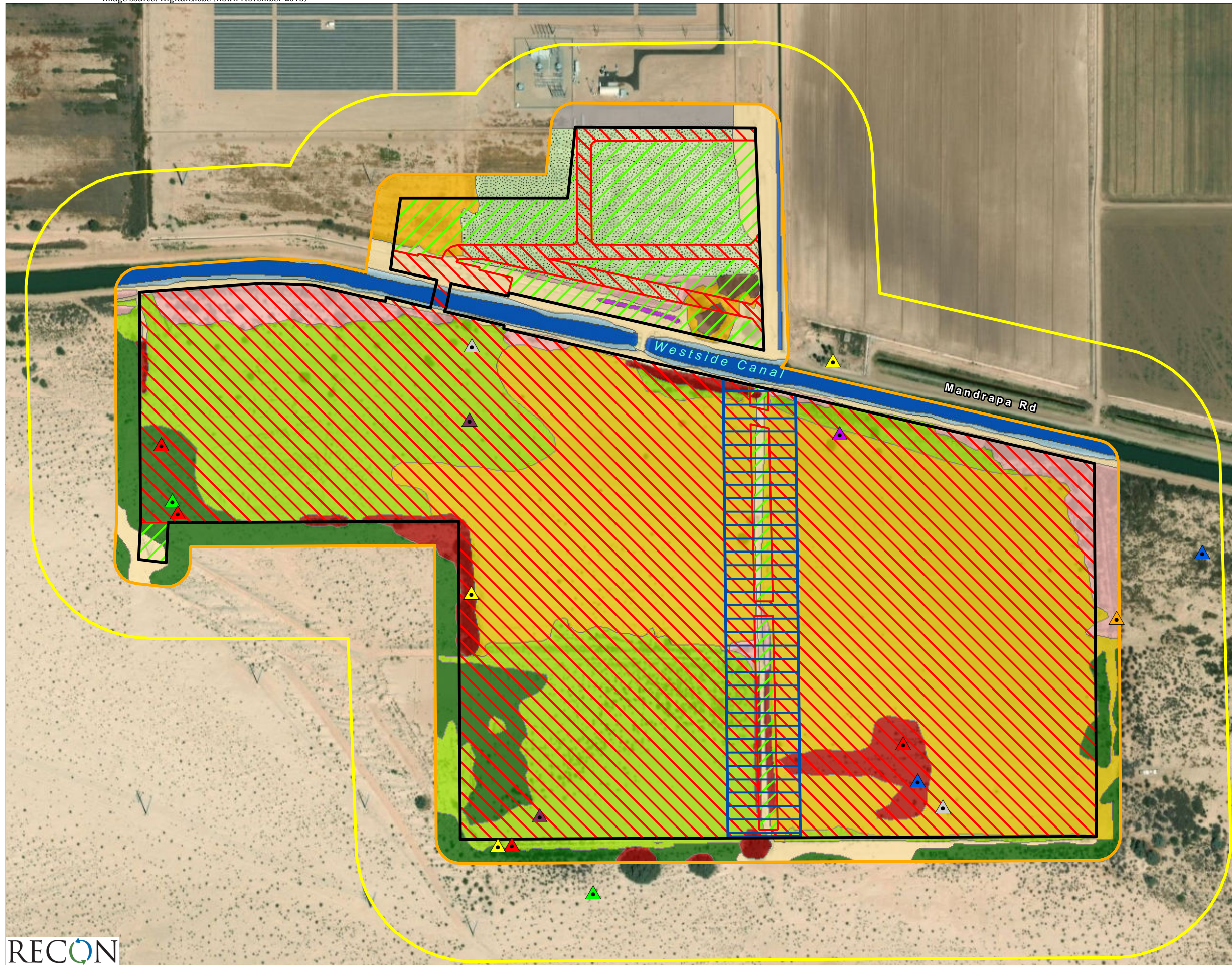
The Project is not expected to impact any sensitive plant species as no sensitive plant species were observed during surveys conducted in 2018 and 2019, and no sensitive plant species were determined to have a moderate or high potential to occur.

## 4.3 Impacts to Sensitive Wildlife Species

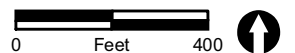
The Project has potential to impact to 14 sensitive wildlife species that occur or have a moderate to high potential to occur within the Project impact area. Direct impacts would result from incidental mortality and habitat removal within the Project construction footprint. The Project impact area in relation to the observed sensitive wildlife species locations is shown on Figure 6.

### 4.3.1 Reptiles

Two sensitive reptiles were identified as having potential to occur on-site: flat-tailed horned lizard and Colorado Desert fringe-toed lizard. Both of these species are CDFW Species of Special Concern and BLM Sensitive Species.



- Project Boundary
  - General Survey and Wetland Delineation (100-foot Buffer)
  - Burrowing Owl Survey Area (150-m Buffer)
  - Permanent Impacts
  - Temporary Impacts
  - Potential Location of Future Easement Corridor
- Vegetation Communities**
- Arrow Weed Thickets
  - Common Reed Marshes
  - Cattail Marshes
  - Creosote Bush Scrub
  - Eucalyptus Groves
  - Fourwing Saltbush Scrub
  - Quailbush Scrub
  - Tamarisk Thickets
  - Upland Mustards
- Land Cover Types**
- Disturbed Habitat
  - Fallow Agriculture
  - Open Water
  - Developed
- Wildlife Observations**
- American Badger
  - Black-tailed Jackrabbit
  - Cooper's hawk
  - LeConte's Thrasher
  - Loggerhead Shrike
  - Northern Harrier
  - Turkey Vulture
  - Burrowing Owl



**FIGURE 6**  
Impacts to Biological Resources

The Project has the potential to directly impact approximately 54 acres of suitable and assumed-occupied habitat for the flat-tailed horned lizard through habitat loss. Direct impacts to individual lizards, if present on-site, would be considered significant and require mitigation.

The Project has the potential to directly impact approximately 56 acres of suitable habitat for the Colorado Desert fringe-toed lizard through habitat loss. Direct impacts to individual lizards, if present on-site, would be considered significant and require mitigation.

Ongoing O&M could result in impacts through the introduction of trash and litter, attracting greater numbers of predators, such as ravens, which could in turn prey upon sensitive lizard species. There is a potential for impacts from vehicular traffic on-site post-construction. These would be considered significant and require mitigation.

### 4.3.2 Birds

Seven sensitive bird species were identified as having potential to occur on-site: ferruginous hawk, prairie falcon, burrowing owl, southwestern willow flycatcher, loggerhead shrike, black-tailed gnatcatcher, LeConte's thrasher, and Abert's towhee.

There is a potential for direct impacts to the burrowing owl from construction. Currently, the impacts would only be to wintering individuals; however, suitable breeding habitat is present and impacts to breeding individuals could occur if the species begins to use the site during the breeding season. Approximately 155 acres of suitable habitat are present within the Project site and would be subject to impact. Impacts to wintering and breeding individuals and their habitat would be considered significant and require mitigation.

Given that there is no suitable nesting habitat for the southwestern willow flycatcher on-site, there would be no impacts expected to occur to this species either from construction or ongoing O&M.

Direct impacts to the ferruginous hawk, prairie falcon, loggerhead shrike, LeConte's thrasher, Abert's towhee, and black-tailed gnatcatcher from construction activities would be considered less than significant for the following reasons: the site is surrounded by the larger BLM desert to the south and west that provides foraging habitat for all of these species and nesting habitat for the gnatcatcher, shrike, thrasher, and towhee; the population of any of these species on-site would not represent a substantial component of the region's population and impacts to individuals would not preclude the ability for the species to be self-sustaining. No mitigation beyond what would be required for nesting birds would be required.

Nesting birds including raptors covered under the California Fish and Game Code 3503 and 3503.5 have potential to be directly impacted by the Project if construction activities (i.e., clearing, grubbing, grading) occur during the general nesting season of February 1 to September 15. Direct impacts to nesting birds and raptors would be considered significant and require avoidance measures.



Ongoing O&M is not expected to significantly impact any of these species as the site would be maintained in the converted state and not expected to attract the species post-construction. In addition, the level of night lighting should be minimal and directed down and to the interior of the site and noise generated should be minimal, so as to minimize any indirect impacts to the species on adjacent habitat.

Ongoing O&M could result in impacts through the introduction of trash and litter, attracting greater numbers of predators, such as ravens and large mammals, which could in turn prey upon sensitive bird species. These would be considered significant and require mitigation.

### 4.3.3 Mammals

Three sensitive mammals were either observed or identified as having moderate to high potential to occur on-site: American badger, pallid bat, and Yuma hispid cotton rat.

Direct impacts to American badger during construction, if active dens are found on-site, may be considered significant and require mitigation.

Direct impacts to the pallid bat during construction would result from loss of suitable foraging habitat. These impacts would be considered less than significant for the following reasons: this species is mobile and foraging individuals are expected to avoid and move out of harm's way; given the lack of highly suitable roosting habitat, the population of this species on-site, if present, would not represent a substantial component of the region's population and impacts to individuals would not preclude the ability for the species to be self-sustaining.

The potential for direct impacts to the Yuma hispid cotton rat, if present, is considered to be low based on the following reasons: the Westside Main Canal and associated common reed marsh along the edge would not be impacted beyond a small bridge span to connect the northern and southern parts of the Project; the grassy, fallow parcel along the north would only be temporarily impacted, rather than fully converted; this northern fallow parcel is adjacent to active agriculture, which provides more highly suitable habitat for the species; and the population of this species on-site, if present, would not likely represent a substantial component of the region's population and impacts to individuals would not preclude the ability for the species to be self-sustaining. Based on these reasons, direct impacts, if the species were to be present, would be considered adverse but less than significant.

Ongoing O&M is not expected to significantly impact any of these mammal species. Suitable habitat for the American badgers would not be present post-development. The Westside Main Canal would remain in essentially the same as the pre-construction state and thus O&M activities would not affect the Yuma hispid cotton rat or pallid bat. In addition, the level of night lighting should be minimal and directed down and to the interior of the site and noise generated should be minimal, so as to minimize any indirect impacts to the species on adjacent habitat.

## 4.4 Impacts to Wildlife Corridors

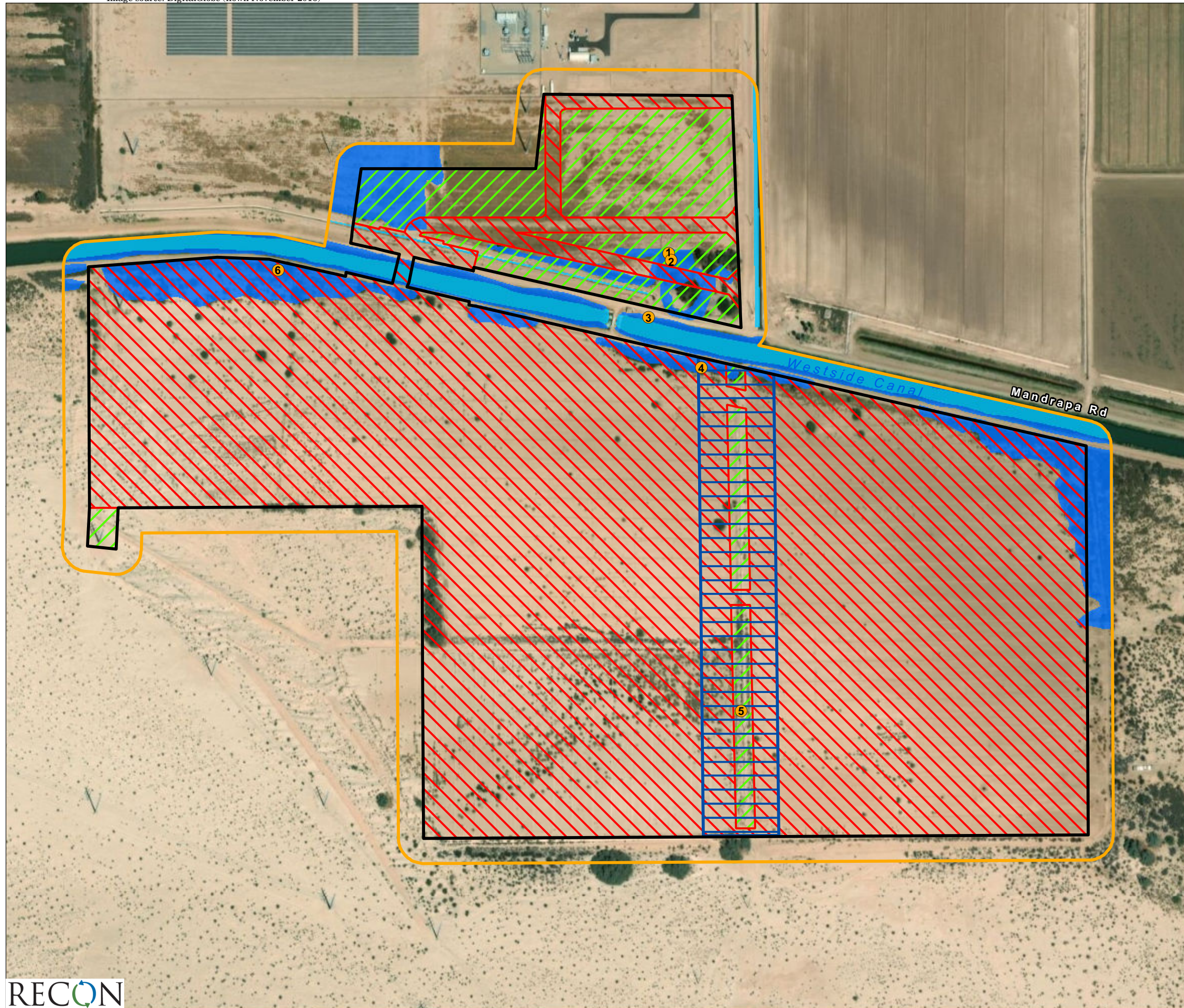
No significant direct or indirect impacts to wildlife movement are expected to occur from implementation of the Project, as the Project parcels do not function as a true wildlife movement corridor.

## 4.5 Impacts to Jurisdictional Wetlands and Waters

As shown in Table 6 and on Figure 7, the Project would impact all delineated jurisdictional waters on-site. A total of 6.75 acres would be permanently impacted and 2.68 acres would be temporarily impacted. This comprises 9.22 acres of CDFW/RWQCB wetland waters of the state and 0.21 acre of USACE jurisdictional non-wetland water and CDFW streambed/RWQCB waters of the state. Approximately 0.10 acre of open water within the Westside Main Canal would be spanned with a bridge. This is illustrated on Figure 7 as a permanent impact because it is a hardscaped component of the Project; however, given the fact that there would be no direct impact to the canal, this has been calculated as a temporary impact. The impacts to the vegetation along the banks of the canal associated with construction of the bridge are shown as permanent impacts in the event the construction of the footings could require clearing of the vegetation. The total extent of impacts would be refined once final designs are completed.

Jurisdictional Waters	Permanent Impacts	Temporary Impacts	Total Impacts
<b>USACE Total Jurisdictional Waters (404)</b>			
Non-wetland Waters of the U.S.	0.04	0.16 <sup>1</sup>	0.21 <sup>2</sup>
<b>CDFW and RWQCB Total Jurisdictional Waters (1602/401)<sup>3</sup></b>			
Wetland Waters of the State	6.71	2.51	9.22
Streambed	0.04	0.16 <sup>1</sup>	0.21 <sup>2</sup>
<sup>1</sup> Approximately 0.10 acre of open water within the Westside Main Canal would be spanned with a bridge. This is illustrated as a permanent impact, but given the fact that there would be no direct impact to the canal, this is included within the temporary impacts. <sup>2</sup> Total acreage varies from sum of cells due to rounding. <sup>3</sup> CDFW/RWQCB area of jurisdiction includes all USACE jurisdictional waters.			

These impacts would be significant and would require mitigation. In addition, a USACE 404 Clean Water Permit, CDFW Streambed Alteration Agreement, and RWQCB 401 Water Quality Certification would be required.



- Project Boundary
- Survey Area
- Permanent Impacts
- Temporary Impacts
- Potential Location of Future Easement Corridor
- Sample Points
- Jurisdictional Waters**
  - CDFW/RWQCB Wetland Waters of the State
  - USACE Non-wetland Waters of the U.S., CDFW Streambed, RWQCB Waters of the State



**FIGURE 7**  
Impacts to Jurisdictional Waters

## 4.6 Cumulative Impacts

The proposed Project is not expected to result in cumulative impacts to sensitive resource within the region because all potential impacts would be mitigated to a level of less than significant.

## 5.0 Mitigation and Monitoring Recommendations

### 5.1 Mitigation and Monitoring Recommendations for General Biological Resources

As currently designed, the Project has the potential to result in significant direct and indirect impacts to sensitive biological resources. The following general mitigation for biological resource protection during construction would be included in the environmental document:

#### **BIO-1. General Measures Prior to Construction**

1. The owner/permittee would engage a qualified biological monitor to implement the Project's biological monitoring program.
2. The following measures should be implemented in order to reduce potential impacts to bird and bat populations. These measures incorporate the Avian Power Line Interaction Committee design guidelines for overhead utilities by incorporating recommended or other methods that enhance the visibility of the lines to avian species. These would include, at a minimum, the following measures:
  - Minimize noise and nighttime outdoor lighting.
  - Establish and implement measures for storage and disposal of all litter and trash produced during construction and O&M. This is designed to discourage scavengers, such as ravens that may also prey on wildlife in the vicinity.
  - To avoid direct impacts to avian species, removal of habitat that supports active nests in the proposed area of disturbance should occur outside the breeding season for these species (February 1 to September 15).
  - If removal of habitat in the proposed area of disturbance must occur during the breeding season, the qualified biological monitor would conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey would be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant would submit the results of the pre-construction survey for review and approval prior to initiating any construction activities.

- If nesting birds are detected, a letter report or mitigation plan in conformance with applicable state and federal law (i.e., appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) would be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan would be submitted for review and approval.
3. The qualified biological monitor would attend the pre-construction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.
  4. A Worker Education Training Program should be established by the qualified biological monitor for all employees and any subcontractors to provide instruction on sensitive species identification; measures to avoid contact, disturbance, and injury; and reporting procedures in the case of dead and/or injured wildlife species.
  5. Prior to commencement of construction activities, the qualified biological monitor would meet with the owner/permittee or designee and the construction crew and implement the Worker Education Training Program. This would be repeated as necessary, when new crew members begin work on the Project.
  6. Prior to construction activities, the qualified biological monitor would supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other Project conditions. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

## **BIO-2. General Measures During Construction**

1. Speed limits along all access roads and within the Project site should not exceed 15 miles per hour. This is designed to prevent flat-tailed horned lizard mortality.
2. All construction (including access/staging areas) would be restricted to areas previously identified, proposed for development/staging, or previously disturbed. The qualified biological monitor would monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys.
3. The qualified biological monitor would note/act to prevent any new disturbances to habitat, flora, and/or fauna onsite (e.g., flag plant specimens for avoidance during access). If active nests or other previously unknown sensitive resources are detected, all Project activities that directly impact the resource would be delayed until species specific local, state or federal regulations have been determined and applied by the Qualified Biologist.

**BIO-3. General Measures Post-Construction**

1. A Monitoring Report would be submitted to the relevant resource agencies documenting the implementation of the general measures during construction as well as any resource-specific measures such as habitat restoration, compensation, and species-specific avoidance and minimization measures.

**BIO-4. General Measures During O&M**

1. Speed limits along all access roads and within the Project site should not exceed 15 miles per hour. Access for O&M activities would be kept to the minimum necessary for operations. This limited access is designed to prevent flat-tailed horned lizard mortality.
2. A worker education program should be presented to all employees conducting O&M to inform staff of resource protection measures in place. This should be presented to any new employees.

## **5.2 Mitigation and Monitoring Recommendations for Sensitive Vegetation Communities**

The following measures are proposed to fulfill habitat-based mitigation requirements for impacts to sensitive vegetation communities:

**BIO-5. Habitat-based Mitigation**

1. Mitigation for permanent and temporary impacts to sensitive vegetation communities and land cover types is provided in Table 7. Mitigation for permanent impacts could potentially be conducted on-site through restoration of the fallow agriculture and disturbed lands that occur within the temporary impact footprint. If those lands are not suitable, off-site mitigation may be required. Temporary impacts would be mitigated on site through replacement or enhancement of the impacted area.
2. A Habitat Restoration and Mitigation Plan would be prepared to detail the proposed mitigation program. This plan should also include mitigation required for jurisdictional waters as noted in Section 5.4.

**Table 7**  
**Project Impacts to Sensitive Vegetation Communities/Land Cover Types**

Community or Type	Permanent			Temporary		
	Impacts (acres)	Mitigation Ratio	Mitigation (acres)	Impacts (acres)	Mitigation Ratio	Mitigation (acres)*
arrow weed thickets	6.02	2:1	12.04	0.85	1:1	0.85
tamarisk thickets	4.73	2:1	9.46	0.53	1:1	0.53
quailbush scrub	0.34	2:1	0.68	1.81	1:1	1.81
cattail marshes	0	--	--	0.14	1:1	0.14
common reed marshes	0.04	2:1	0.08	--	--	--
<b>Total</b>	<b>11.13</b>		<b>22.26</b>	<b>3.33</b>		<b>3.33</b>

\*Temporary impacts would be mitigated on site through replacement or enhancement of the impacted area.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to sensitive vegetation communities to a level of less than significant.

### 5.3 Mitigation and Monitoring Recommendations for Sensitive Wildlife Species

Additional species-specific recommended measures to avoid, minimize, and/or mitigate significant Project impacts to sensitive wildlife species are provided in this section.

#### 5.3.1 Mitigation and Monitoring Recommendations for Flat-tailed Horned Lizard

The following measures are recommended to mitigate for direct and indirect impacts to flat-tailed horned lizard and its habitat. Implementation of mitigation measure BIO-4, including enforcement of speed limits and implementing the worker education program, would minimize impacts during O&M activities.

##### BIO-6. Flat-tailed horned lizard Measures Prior to Construction

In accordance with the Flat-tailed Horned Lizard Rangewide Management Strategy (ICC 2003), the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects construction may have on flat-tailed horned lizard. The following Construction Measures would be implemented, when conducting construction activities within the creosote bush scrub and fourwing saltbush scrub vegetation:

1. Prior to ground-disturbing activities, an individual would be designated and approved by the wildlife regulatory agencies (e.g., CDFW, BLM) as a qualified biological monitor (i.e., field contact representative). Only persons authorized by CDFW (in California) shall conduct surveys and handle flat-tailed horned lizards. Investigators shall have experience in surveying for flat-tailed horned lizards, including ability to recognize and follow flat-tailed horned lizard tracks, or shall obtain training from an experienced investigator. Prior to any survey or monitoring effort, a proposal shall be

developed and approved by CDFW (in California), and/or by the state or federal agency that manages the lands to be surveyed. The qualified biological monitor would be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive qualified biological monitor would be approved by the wildlife regulatory agencies. The qualified biological monitor would have the authority to ensure compliance with the conservation measures for the flat-tailed horned lizard and would be the primary agency contact for the implementation of these measures. The qualified biological monitor would have the authority and responsibility to halt activities that are in violation of the conservation measures. A detailed list of responsibilities for the Designated Biologist is summarized:

2. The qualified biological monitor shall notify the wildlife regulatory agencies at least 14 calendar days before initiating ground-disturbing activities.
3. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) would be delineated with stakes and flagging prior to construction activities. Spoils would be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor. To the extent possible, disturbance of shrubs and surface soils due to stockpiling would be minimized. All disturbances, vehicles, and equipment would be confined to the flagged areas. To the extent possible, surface disturbance would be timed to minimize mortality to flat-tailed horned lizard.
4. Prior to Project initiation, a worker education program would be developed and implemented by the qualified biological monitor, and would be available in both English and Spanish. Wallet-sized cards summarizing this information would be provided to all construction, operation, and maintenance personnel. The education program would include the following aspects:
  - biology and status of the flat-tailed horned lizard,
  - protection measures designed to reduce potential impacts to the species,
  - function of flagging designating authorized work areas,
  - reporting procedures to be used if a flat-tailed horned lizard is encountered in the field, and
  - driving procedures and techniques, for commuting, and driving on, to the Project site, to reduce mortality of flat-tailed horned lizard on roads.

#### **BIO-7. Flat-tailed horned lizard Measures During Construction**

1. The qualified biological monitor would have the authority and responsibility to halt activities that are in violation of the conservation measures. A detailed list of responsibilities for the monitor during construction is summarized:
  - Be present during construction (e.g., grubbing, grading, facility installation) activities that take place in flat-tailed horned lizard habitat to avoid or minimize



- take of flat-tailed horned lizard. Activities include, but are not limited to, ensuring compliance with all impact avoidance and minimization measures, monitoring for flat-tailed horned lizards and removing lizards from harm's way, and checking avoidance areas (e.g., washes) to ensure that signs, and stakes are intact and that human activities are restricted in these avoidance zones.
- At the end of each work day, inspect all potential wildlife pitfalls (trenches, bores and other excavations) for wildlife and then ensure that each feature is either backfilled or completely and securely covered to prevent wildlife access.
  - Immediately notify the wildlife regulatory agencies in writing, if the Project applicant is not in compliance with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the time periods specified.
  - During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29 degrees Celsius (°C; 85 degrees Fahrenheit [°F]) for the presence of flat-tailed horned lizard.
2. Flat-tailed horned lizards would be removed from harm's way during all construction activities. Flat-tailed horned lizard removal would be conducted by two or more Biological Monitors when construction activities are being conducted in suitable habitat. To the extent feasible, methods to find flat-tailed horned lizards would be designed to achieve a maximal capture rate and would include, but not be limited to using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort would be 30 minutes per 0.40 hectare (30 minutes per 1 acre). Persons that handle flat-tailed horned lizards would first obtain all necessary permits and authorization from the CDFG. Flat-tailed horned lizard removal surveys would also include:
- A Horned Lizard Observation Data Sheet and a Project Reporting Form, per Appendix 8 of the Rangewide Management Strategy, would be completed. During construction, quarterly reports describing flat-tailed horned lizards removal activity would be submitted to the wildlife regulatory agencies.
3. The removal of flat-tailed horned lizard out of harm's way would include relocation to nearby suitable habitat in low-impact areas of the Yuha Management Area, which is located to the west and south of the Project site. Relocated flat-tailed horned lizards would be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24°C (75°F) or exceed 38°C (100°F), the Designated Biologist or Biological Monitor, if authorized, would hold the flat-tailed horned lizard for later release. Initially, captured flat-tailed horned lizards would be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards would be held at temperatures between 75°F and 90°F and would not be exposed to direct sunlight. Release would occur as soon as possible after capture and during daylight hours. The Designated Biologist or Biological Monitor would be allowed some judgment and discretion when relocating lizards to maximize survival of flat-tailed horned lizards found in the Project area.

4. To the maximum extent practicable, grading in flat-tailed horned lizard habitat would be conducted during the active season, which is defined as March 1 through September 30, or when ground temperatures are between 24°C (75°F) and 38°C (100°F). If grading cannot be conducted during this time, any flat-tailed horned lizards found would be removed to low-impact areas (see above) where suitable burrowing habitat exists, (e.g., sandy substrates and shrub cover).

#### **BIO-8. Flat-tailed horned lizard Compensation**

Pursuant to Title 43 CFR and the Federal Land Policy and Management Act of 1976, federal land management agencies may permit actions that result in flat-tailed horned lizard habitat loss on their lands; however, for losses both within and outside the Management Areas, compensation is charged if residual effects would occur after all reasonable on-site mitigation has been applied. The goal of compensation is to prevent the net loss of flat-tailed horned lizard habitat and make the net effect of a project neutral or positive to flat-tailed horned lizards by maintaining a habitat base for flat-tailed horned lizards. To achieve this goal, compensation will be based on the acreage of flat-tailed horned lizard habitat lost after all reasonable on-site mitigation has been applied at a 1:1 ratio for habitat lost outside a flat-tailed horned lizard Management Area. For this Project, compensation will be required for a loss of 54 acres of flat-tailed horned lizard habitat.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to flat-tailed horned lizard to a level of less than significant.

### **5.3.2 Mitigation and Monitoring Recommendations for Colorado Desert Fringe-toed Lizard**

The following measures are recommended to mitigate for direct and indirect impacts to Colorado Desert fringe-toed lizard and its habitat. Implementation of mitigation measure BIO-4, including enforcement of speed limits and implementing the worker education program, would minimize impacts during O&M activities.

#### **BIO-9. Colorado Desert Fringe-toed Lizard Measures During Construction**

1. A qualified biological monitor as defined in BIO-1 and BIO-6 would be identified to implement monitoring for this species.
2. Colorado Desert fringe-toed lizard would be removed from harm's way during all construction activities, either through flushing or relocation, if individuals are able to be captured.
3. The removal of Colorado Desert fringe-toed lizard out of harm's way would include relocation to nearby suitable habitat in low-impact areas of the Yuha Management Area located west and south from the Project site. Initially, captured lizards would be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. They would be held at temperatures between 75°F and 90°F and would not be exposed to direct sunlight. Relocated individuals would be placed in the

shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24°C (75°F) or exceed 38°C (100°F), the qualified biological monitor would hold the individuals for later release. Release would occur as soon as possible after capture and during daylight hours.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to Colorado Desert fringe-toed lizard to a level of less than significant.

### **5.3.3 Mitigation and Monitoring Recommendations for Burrowing Owl**

The following measures are recommended to mitigate for direct and indirect impacts to burrowing owl and its habitat. Implementation of mitigation measure BIO-4, including enforcement of speed limits and implementing the worker education program, would minimize impacts during O&M activities.

#### **BIO-10. Recommended Burrowing Owl Measures**

1. As the construction schedule and details are finalized, a Qualified Biologist would prepare a Conceptual Burrowing Owl Mitigation Plan in accordance with the CDFW 2012 Staff Report or the most recent state and/or federal protocols/guidance for approval by the relevant resource agencies. Consultation with CDFW may be necessary during their review of the proposed plan in order to gain their approval. The Conceptual Burrowing Owl Mitigation Plan would include off-site mitigation for the loss of 155 acres of suitable burrowing owl winter foraging habitat at a ratio of 1:1. The quality of preserved suitable occupied burrowing owl habitat must be comparable to or better than the habitat being impacted. The land to be preserved must be occupied by burrowing owl and support fossorial mammals. A conservation easement for the protection of burrowing owl/habitat would be placed over the mitigation land.
2. A Mitigation Land Management Plan for the long-term maintenance and monitoring of the approved mitigation land would be prepared to identify a long-term funding mechanism (e.g., an endowment) for the maintenance of the mitigation lands for burrowing owl.
3. Initial grading should take place between September 1 and January 31 to avoid impact to breeding burrowing owls (CDFW 2012). If construction is to begin during the breeding season, it is recommended that the measures below be implemented prior to February 1 to discourage the nesting of the burrowing owls within the area of impact. As construction continues, any area where owls are sighted should be subject to frequent surveys for burrows before the breeding season begins, so that owls can be relocated before nesting occurs.
4. Pre-construction surveys would be conducted for burrowing owls prior to the commencement of construction activities. The surveys would conform to the survey protocol in the CDFW 2012 Staff Report. No more than 14 days prior to any ground-

disturbing activities, a Qualified Biologist would conduct a take avoidance survey for burrowing owls. If no owls are found during this first survey, a final survey would be conducted 24 hours prior to ground disturbance to confirm that burrowing owls are absent.

5. If burrowing owls are found on the site during the surveys, any potentially impacted burrowing owl individuals must be relocated out of the impact area using passive or active methodologies approved by the resource agencies. A Burrow Exclusion Plan would be prepared according to the 2012 CDFW guidelines and approved by CDFW. The Burrow Exclusion Plan may include the use of artificial burrows as a means of replacing burrows lost to impacts.
6. A biologist familiar with burrowing owl biology would monitor construction activities to make sure that burrowing owls that may move into the area during construction are detected and impacts are avoided.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to burrowing owl to a level of less than significant.

### **5.3.4 Mitigation and Monitoring Recommendations for Nesting Birds**

Implementation of mitigation measures BIO 1-4 is expected to avoid direct impacts to nesting birds. Implementation of these mitigation and monitoring measures and other species-specific measures discussed above would reduce impacts to nesting birds to a level of less than significant.

### **5.3.5 Mitigation and Monitoring Recommendations for American Badger**

The following measures are recommended to mitigate for direct and indirect impacts to American badger. Implementation of mitigation measure BIO-4, including enforcement of speed limits and implementing the worker education program, would minimize impacts during O&M activities.

#### **BIO-11. American Badger Measures During Construction**

1. A qualified biological monitor would conduct a pre-construction survey for American badger concurrent with the pre-construction survey for burrowing owl.
  - a. If badgers are detected between September and January, which is outside of the breeding/denning season, the qualified biological monitor would monitor the den to determine the status, whether active or inactive. Dens determined to be potentially inactive would be passively excluded using one-way doors and excavated/collapsed once it has been established that the den is empty. If an active den is detected within the work area, the Project Proponent would avoid the den,

if feasible, until the qualified biological monitor determines the den is no longer active.

- b. Any badger dens detected during the denning season March through August would be flagged and a 100-foot avoidance buffer established where no ground-disturbing activities may occur until the dens are determined to no longer be in use by the family.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to American badger to a level of less than significant.

## 5.4 Mitigation and Monitoring Recommendations for Jurisdictional Wetlands and Waters

The proposed Project would impact total of 0.21 acres of USACE jurisdictional resources, and 9.43 acres of CDFW jurisdictional resources. A breakdown of permanent and temporary impacts, as well as the proposed mitigation required to offset these impacts is shown on Table 8.

Impact to jurisdictional waters of the U.S. on-site would require a permit under Section 404 CWA from USACE and a Section 401 state water quality certification from RWQCB. In addition, a Section 1600 Streambed Alteration Agreement would also need to be authorized for impact to CDFW resources. Mitigation ratios would be determined at that time.

Implementation of **BIO-5** should include the proposed restoration and mitigation proposed for impacts to jurisdictional waters.

Table 8 Proposed Mitigation for Impacts to Jurisdictional Waters						
	Permanent			Temporary		
	Impacts (acres)	Mitigation Ratio	Mitigation (acres)	Impacts (acres)	Mitigation Ratio	Mitigation (acres)
USACE Total Jurisdictional Waters (404)						
<b>Non-wetland Waters of the U.S.</b>	<b>0.04<sup>1</sup></b>	<b>1:1</b>	<b>0.04</b>	<b>0.16<sup>1</sup></b>	<b>1:1</b>	<b>0.16</b>
CDFW and RWQCB Total Jurisdictional Waters (1602/401) <sup>3</sup>						
Wetland Waters of the State	6.71	2:1	13.42	2.51	1:1	2.51
Streambed	0.04 <sup>1</sup>	1:1	0.04	0.16 <sup>1</sup>	1:1	0.16
<b>Total CDFW/RWQCB</b>	<b>6.75</b>		<b>13.46</b>	<b>2.67</b>		<b>2.67</b>
<sup>1</sup> Approximately 0.10 acre of open water within the Westside Main Canal would be spanned with a bridge. This is illustrated as a permanent impact, but given the fact that there would be no direct impact to the canal, this is included within the temporary impacts.						

Implementation of the mitigation and monitoring measures listed above would reduce impacts to jurisdictional waters to a level of less than significant.

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## **ATTACHMENTS**

## **ATTACHMENT 1**

Addendum to the Biological Resources Report for  
the Westside Canal Battery Storage Project  
Imperial County, California



*An Employee-Owned Company*

January 18, 2021

Mr. Curtis Kebler  
Director, Business Development  
Con Edison Clean Energy Businesses  
101 W. Broadway, Suite 1120  
San Diego, CA 92101

Reference: Addendum to the Biological Resources Report for the Westside Canal Battery Storage Project, Imperial County, California (RECON Number 8888-1)

Dear Mr. Kebler:

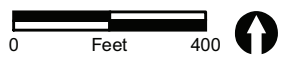
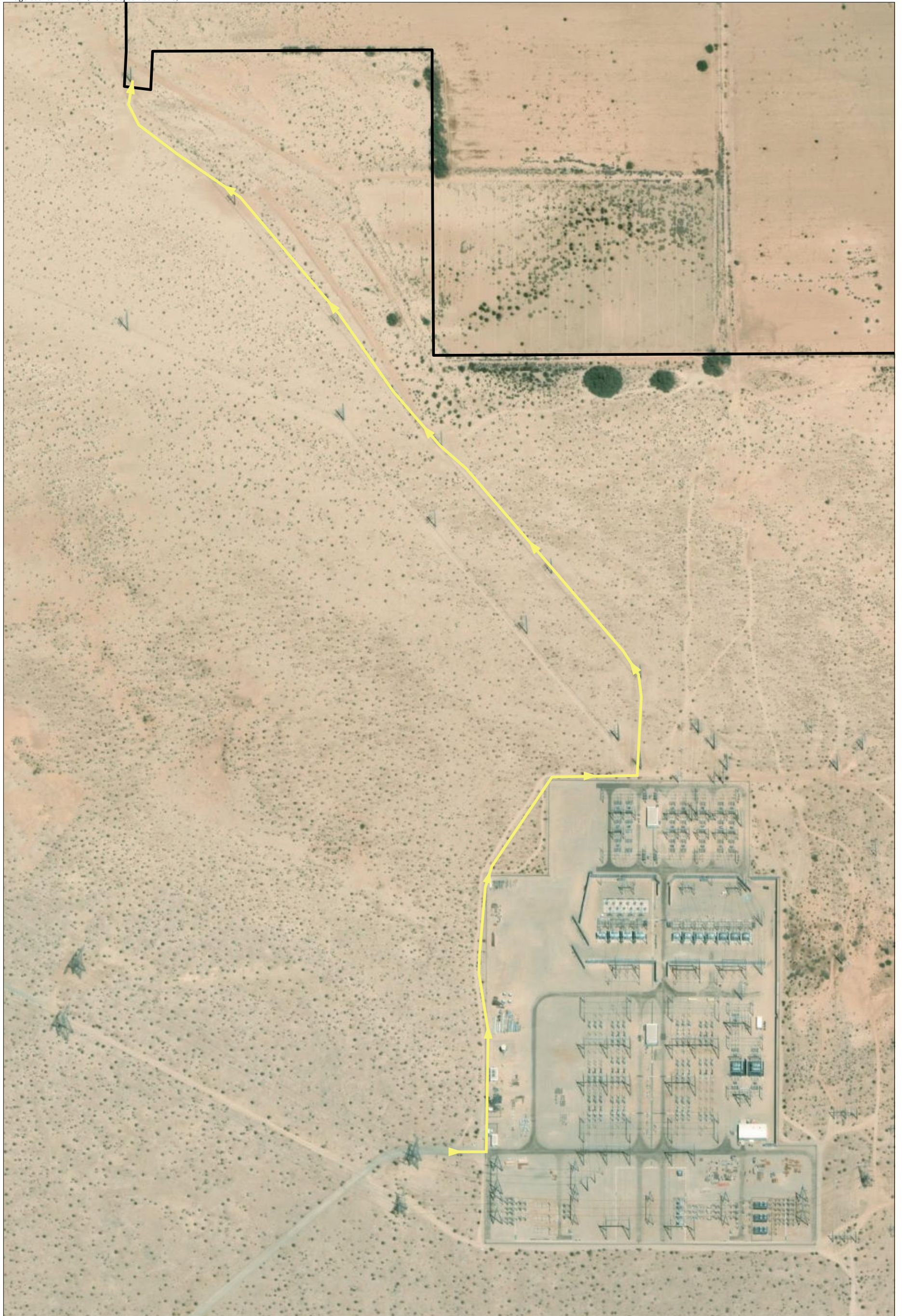
This letter describes the additional biological survey and analysis conducted for the proposed southern access route for the Westside Canal Battery Storage Project (Project) in support of the request for a Right-of-Way grant from the Bureau of Land Management (BLM). The Project is currently proposed by Westside Canal Battery Storage, LLC, a subsidiary of Con Edison Clean Energy Businesses. This letter is being submitted as an addendum to the Biological Resources Report prepared for this Project (RECON 2021). The Biological Resources Report did not include an analysis of this southern access route, which has been proposed as a potential temporary access route to support construction of the proposed bridge spanning IID's Westside Main Canal.


### **Location and Description**

The proposed southern access route begins at the entrance to the San Diego Gas & Electric-owned Imperial Valley Substation and follows an existing dirt access road that leads north, then east, along the western and northern boundaries of the substation (Figure 1). The proposed southern access route then continues northwest along an existing dirt access road that parallels two power lines until the access road connects with the western edge of the Project site. The proposed southern access route is approximately 1.2 miles long.

The Project is surrounded by private landowners to the east, Bureau of Land Management (BLM) land to the south and west, and Imperial Irrigation District (IID) maintenance roads and Westside Main Canal to the north. Due to the need to access the site on both the north and south side of the West Main Canal to initiate construction of the proposed bridge, the applicant is proposing to utilize the access route leading from the Imperial Valley Substation until the permanent bridge is constructed. The applicant is proposing to construct a new clear-span Imperial County-specified bridge to span the Westside Main Canal which would connect to a proposed access road easement on the north side of the Westside Main Canal. The north side proposed access road would ultimately connect the Project to Liebert Road, which is a county road. Once access to the Project site is secured from Liebert Road, the temporary southern access route would no longer be utilized.

Use of the temporary southern access route would consist of driving construction-related trucks and equipment along the existing dirt access road in order to access the south side of the Westside Main Canal. Minor road improvements may be necessary in certain areas where small sand dunes have formed within the roadbed. These small dunes would be graded level using a skid steer or similar piece of equipment. In areas where the existing access road contains loose sand, a matting would be laid down within the existing roadbed to provide stability for construction equipment. The type and total quantity of matting has yet to be determined.



-  Project Boundary
-  Access Route

**FIGURE 1**  
Westside Canal Battery Storage Project  
Proposed Temporary Access Route



## Survey Methods

For the purposes of this addendum letter, the survey area includes a 300-foot corridor centered along the proposed southern access route (see Figure 1). RECON biologist Andrew Smisek conducted a general biological survey within the survey area on March 26, 2020, between 11:00 a.m. and 3:00 p.m. A resume for Mr. Smisek is included as Attachment 1. The survey area totals approximately 42 acres. Weather conditions during the survey consisted of sunny skies, 5- to 10-mile-per-hour winds, and air temperatures between 70 and 75 degrees Fahrenheit. During the survey, Mr. Smisek inventoried plant and wildlife species, conducted a search for sensitive species, and assessed the suitability of habitat for sensitive species identified as having potential to occur based on the previous literature review discussed in the Biological Resources Report (RECON 2019). This included an assessment for potential use by flat-tailed horned lizard (*Phrynosoma mcallii*) and burrowing owl (*Athene cunicularia*). The burrowing owl habitat assessment consisted of an assessment of vegetation types, height, and density; land use; presence or absence of friable soils and/or burrows; topography; hydrological features; and presence or absence of burrowing owl sign.

According to precipitation data for El Centro, California, observed precipitation was above normal for the period of January through March, 2020. A total of approximately 1.75 inches of rain fell during this period, compared to the historical average of 1.07 inches for this period (National Climate Data Center 2020a and 2020b). The above-normal rainfall likely resulted in substantial germination rates for annual plant species within the survey area at the time the survey. Therefore, the majority of sensitive annual plant species would have likely been detected if present during the general biological survey.

Prior to conducting the survey, Mr. Smisek reviewed aerial photographs, U.S. Geological Survey topographic maps of the site, U.S. Department of Agriculture soil maps of the site, and the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory. The survey included a search for potential federal and state jurisdictional areas following the guidelines set forth by U.S. Army Corps of Engineers (1987 and 2008).

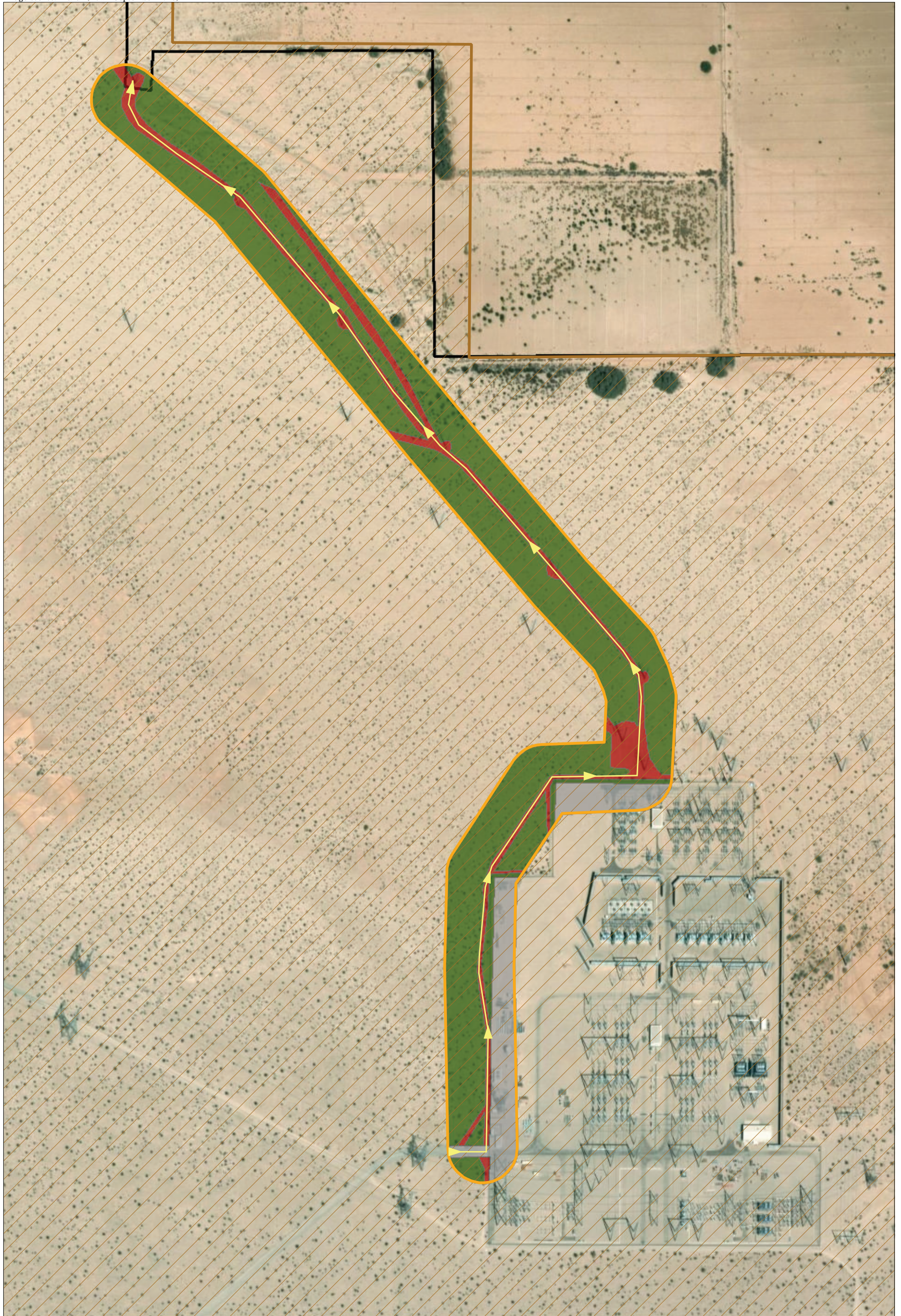
## Survey Results

The following vegetation communities and land cover types were mapped within the survey area: creosote bush scrub (*Larrea tridentata* Shrubland Alliance), disturbed habitat, and developed land (Figure 2). A brief description of each community or land cover type is also provided below.

Creosote bush scrub occurs throughout the survey area as part of a large expanse of this vegetation community and as slivers of habitat occurring between dirt access roads and the substation. On-site areas containing this community appear to be in their natural, intact state, not having been subjected to historical disturbance like those areas of creosote bush scrub within the Project site. Creosote bush (*Larrea tridentata*) is the dominant species, occurring with a vegetation cover of approximately 10 percent and shrub height averaging five to six feet. White bur-sage (*Ambrosia dumosa*) occurs as a sub-dominant species at approximately 2 percent cover. Since the recent rain events in the vicinity of the Project, creosote bush scrub within the survey area also contains a consistent cover of herbaceous annual plant species, including narrow-leaf cryptantha (*Cryptantha angustifolia*), desert indianwheat (*Plantago ovata*), and Mediterranean schismus (*Schismus barbatus*).

Disturbed habitat consists of the dirt access road and other bare areas surrounding the existing power poles that are subjected to continued disturbance, preventing establishment of substantial vegetation cover. The few plants that occur within or along the edges of these areas include Mediterranean schismus and desert indianwheat.

Developed land within the survey area consists of those areas that overlap portions of the Imperial Valley Substation, which occurs as a gravel yard containing a number of various power structures and surrounded by a chain-link fence.



- |                                   |                               |
|-----------------------------------|-------------------------------|
| Project Boundary                  | <b>Vegetation Communities</b> |
| Southern Access Route Survey Area | Creosote Bush Scrub           |
| Yuha Desert Management Area       | Developed                     |
| Access Route                      | Disturbed Habitat             |



FIGURE 2  
Existing Biological Resources

No jurisdictional resources were observed within the survey area. Although some small erosional features were observed along the dirt access road and a small area is topographically situated such that brief periods of ponding may occur during significant rain events, these features did not exhibit sufficient hydrology or hydric soil indicators to be considered potentially jurisdictional. No portions of the survey area contain hydrophytic vegetation.

Wildlife observed during the survey include northern desert iguana (*Dipsosaurus dorsalis dorsalis*), rock dove (*Columba livia*), common raven (*Corvus corax clarionensis*), harvester ant (*Veromessor* sp.), painted lady (*Vanessa cardui*), and duskywing (*Erynnis* sp.).

### **Regulatory Framework**

A number of state and federal regulations or policies apply to the biological resources within and/or adjacent to the survey area. This includes the federal Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the California Environmental Quality Act (CEQA), the California ESA, and Section 3503 of the California Fish and Game Code. More detail regarding these regulations and policies can be found in the Biological Resources Report (RECON 2019).

### **Sensitive Biological Resources**

No sensitive plant species were observed during the survey and none were observed or are expected within the Project site based on the analysis conducted for the Biological Resources Report (RECON 2019). However, the creosote bush scrub in the survey area for the southern access route has potential to support two sensitive rare plant species, Watson's amaranth (*Amaranthus watsonii*; California Rare Plant Rank 4.3) and Abram's spurge (*Euphorbia abramsiana*; California Rare Plant Rank 2B.2). Unlike the creosote bush scrub within the Project site, that along the potential southern access route has not been historically disturbed and, therefore, may provide suitable habitat for these species. These two sensitive annual plant species would not have been apparent at the time of the March 2020 survey because they do not develop into their vegetative or flowering stages until summer and fall. These species are not expected to occur in the disturbed habitat within the dirt access roads proposed to be used as the southern access route.

Flat-tailed horned lizard is a California Department of Fish and Wildlife (CDFW) species of special concern and BLM sensitive species. Many occurrences of flat-tailed horned lizard have been reported in the undeveloped desert areas within the survey area and immediately adjacent to the southern access route (CDFW 2020), and horned lizard tracks were observed during 2018 surveys in the western portion of the Project site. Given the cryptic nature and resulting difficulty of detection without focused surveys, these historical records are sufficient to assume this species is present in the creosote bush scrub and adjacent disturbed habitat within the survey area. The creosote bush scrub provides high-quality habitat for this species, as it contains sandy hummocks, a good diversity of native plant species, and harvester ants.

Colorado Desert fringe-toed lizard (*Uma notata*) is a CDFW species of special concern and BLM sensitive species. Although it has not been detected during previous project surveys, this species has been reported in similar habitat within two miles of the Project site (CDFW 2020) and has a moderate potential to occur. The creosote bush scrub within the survey area provides suitable habitat for this species due to the presence of small dunes and sandy hummocks.

Burrowing owl is a CDFW species of special concern and BLM sensitive species. As reported in the Biological Resources Report (RECON 2019), four burrowing owl observations were recorded within the Project site during the 2018-2019 focused surveys, as well as a number of potentially suitable burrows. Within the survey area, the creosote bush scrub and disturbed habitat may provide suitable habitat for this species to forage due to the open structure of the vegetation and presence of prey items. However, no potentially suitable burrows were observed during the March 2020 survey and habitat assessment, and it is unlikely that burrowing owls are currently breeding within the survey area.

Other sensitive wildlife with potential to utilize the habitats within the survey area include loggerhead shrike (*Lanius ludovicianus*; CDFW species of special concern), black-tailed gnatcatcher (*Poliophtila melanura*; CDFW watch list species), Abert's towhee (*Melospiza aberti*; CDFW Special Animal List), and pallid bat (*Antrozous pallidus*; CDFW species of concern and BLM sensitive species).

### **Impact Analysis**

Because the use of the proposed southern access route would be contained within the existing dirt access road (mapped as disturbed habitat), no impacts are expected to occur to creosote bush scrub or any potentially occurring rare plants, including Watson's amaranth or Abram's spurge, within this vegetation community. No rare plants are expected to occur within the disturbed habitat of the dirt access road. Additionally, although burrowing owl may utilize the survey area for foraging, no burrows occur within the dirt access road. Therefore, this species is not expected to be impacted by the use of the southern access route. Although potentially occurring loggerhead shrike, black-tailed gnatcatcher, Abert's towhee, and/or pallid bat may utilize the creosote bush scrub within the survey area, these species are not expected to utilize the disturbed habitat within the dirt access road or be impacted by the use of the dirt access road.

Flat-tailed horned lizard and Colorado Desert fringe-toed lizard, both of which are CDFW species of special concern and BLM sensitive species, have potential to be directly impacted within the existing access road as a result of vehicle strike. Any impacts to individual flat-tailed horned lizards or Colorado Desert fringe-toed lizards would be considered significant and require mitigation.

### **Recommended Avoidance Measures**

The proposed southern access route occurs entirely within the Yuha Desert Flat-tailed Horned Lizard Management Area (see Figure 2), as designated in the Flat-tailed Horned Lizard Rangeland Management Strategy (RMS; ICC 2003). In accordance with the RMS, the measures proposed below are designed to avoid and/or minimize potential direct impacts to flat-tailed horned lizard throughout the duration of use of the southern access route:

- Use of the southern access route should be scheduled to occur as much as possible during the flat-tailed horned lizard's dormant period, November 15 to February 15, and the schedule for use of this access route should be approved by the BLM before construction begins.
- For any use of the southern access route during the flat-tailed horned lizard's active period, before November 15 or after February 15, a qualified biological monitor (as defined in the Biological Resources Report) that is trained to recognize flat-tailed horned lizard and approved by the BLM should be present onsite to keep the road clear for vehicular use.
- Prior to use, the southern access route will be delineated with stakes and flagging.
- As described in the Biological Resources Report, prior to use of the southern access route, a worker education program should be developed and implemented by the qualified biological monitor, and should be available in both English and Spanish. Wallet-sized cards summarizing this information should be provided to all construction, operation, and maintenance personnel. The education program should include the following aspects:
  - Biology and status of the flat-tailed horned lizard;
  - Protection measures designed to reduce potential impacts to the species;
  - Function of flagging designating authorized work areas;
  - Reporting procedures to be used if a flat-tailed horned lizard is encountered in the field; and
  - Driving procedures and techniques, for commuting, and driving on to the Project site, to reduce mortality of flat-tailed horned lizard on roads.
- Prior to any grading of sand dunes within the access road or installation of matting material, a qualified biological monitor shall notify the wildlife regulatory agencies at least 14 calendar days before initiating these ground-disturbing activities.

Mr. Curtis Kebler  
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- The qualified biological monitor shall be present during ground-disturbing activities to monitor for flat-tailed horned lizards and remove lizards from harm's way. The removal of flat-tailed horned lizard out of harm's way should include relocation according to the standards (e.g., handling techniques, temperature restrictions, notification, etc.) established in the Biological Resources Report and in accordance with the RMS.
- Speed limits along all access roads should not exceed 15 miles per hour (mph). The qualified biologist may reduce this speed limit to 10 mph in areas identified as active wildlife corridors as needed to reduced mortality. All construction-related vehicles must remain on the designated access roads. Cross country vehicles and equipment use outside of designated work areas in suitable flat-tailed horned lizard habitat shall be prohibited.
- During use of the southern access route, the construction contractor should establish and implement measures for storage and disposal of all litter and trash produced during construction and operations & maintenance. This is designed to discourage scavengers, such as ravens, that may prey on potentially occurring flat-tailed horned lizard.

No compensatory mitigation is proposed for impacts to flat-tailed horned lizard from the use of the southern access route because construction access to this area would be temporary and would not result in the loss of any flat-tailed horned lizard habitat. In accordance with the RMS, no compensatory mitigation would be required since the avoidance measures proposed above are expected to eliminate all adverse, on-site effects to flat-tailed horned lizard.

The following measures are recommended to avoid direct impacts to Colorado Desert fringe-toed lizard throughout the duration of use of the southern access route:

- A qualified biological monitor (as defined in the Biological Resources Report) shall be present during ground disturbing activities to monitor for Colorado Desert fringe-toed lizard and remove any individuals from harm's way, either through flushing or relocation, if individuals are able to be captured.
- The removal of Colorado Desert fringe-toed lizard out of harm's way would include relocation to nearby suitable habitat according to the standards established in the Biological Resources Report.

If you have any questions concerning the contents of this letter, please contact me by phone or e-mail at (619) 308-9333 extension 158 or [asmisek@reconenvironmental.com](mailto:asmisek@reconenvironmental.com).

Sincerely,



Andrew Smisek  
Biologist

AKS:sh

Attachment

## References Cited

### California Department of Fish and Wildlife (CDFW)

- 2020 Natural Diversity Data Base. Nongame-Heritage Program, California Department of Fish and Wildlife, Sacramento. Accessed March. RareFind Version 5.2.14.

### Flat-tailed Horned Lizard Interagency Coordinating Committee (ICC)

- 2003 Flat-tailed Horned Lizard Rangewide Management Strategy, 2003 Revision, An Arizona-California Conservation Strategy. May.

### National Climate Data Center (NCDC)

- 2020a Record of Climatological Observations for El Centro, CA US. Accessed on April 1, 2020.  
<https://www.ncdc.noaa.gov/cdo-web/>.
- 2020b 1981-2010 Monthly Normals for El Centro, CA US. Accessed on April 1, 2020.  
<https://www.ncdc.noaa.gov/cdo-web/>.

### RECON Environmental, Inc. (RECON)

- 2021 Biological Resources Report for the Westside Canal Battery Storage Project, Imperial County, California (RECON Number 8888.1). January 18.

### U.S. Army Corps of Engineers (USACE)

- 1987 Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, Department of the Army. January.
- 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. Prepared by U.S. Army Engineer Research and Development Center. December.

# **ATTACHMENT 1**

Resume

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# Andrew Smisek

## Biologist

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### Experience Highlights

- ✓ Wetland delineations, reporting, and permitting
- ✓ CRAM
- ✓ Quino checkerspot butterfly surveys and reporting
- ✓ Construction/environmental compliance monitoring
- ✓ Biological constraints surveys and reporting
- ✓ Rare plant surveys and reporting

### Experience

5 years

### Education/Registrations

B.S. Biology, University of Wisconsin

### Certifications/Permits

CDFW Scientific Collecting Permit for amphibians, birds, invertebrates (California vernal pool branchiopods [fairy shrimp] and terrestrial invertebrates), and reptiles

CDFW California Endangered Species Act Plant Voucher Collecting Permit

CDFW Flat-Tailed Horned Lizard Training and Certification

OSHA 10-Hour Training Course in Construction Safety and Health

USFWS Permit TE-797665 for Quino checkerspot butterfly and vernal pool branchiopods

Mr. Smisek conducts vegetation analyses, habitat assessments, rare plant surveys, bird nest surveys, and environmental compliance monitoring in a variety of habitats in southern California. He is experienced with GPS and GIS systems to map and record vegetation types and sensitive species occurrences.

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### Brand's Phacelia Census Project on Lichty Mesa, San Diego, CA

Mr. Smisek assisted in sensitive plant species surveys on the international border. The project focused on the status of a Brand's phacelia population as required by a Candidate Conservation Agreement. All sensitive plant species in the survey area were mapped and counted with the assistance of sub-meter GPS technology.

### Sierra Alta Way Wastewater Emergency Pipe Replacement Project, San Diego County, CA

Mr. Smisek prepared a post-construction jurisdictional waters/wetland delineation report for an emergency sewer pipe replacement project for the County. The analysis included historical land use issues which created an atypical situation on-site, as well as the project's compliance with the County's Regional General Permit #63.

### North Chollas Community Park Concession Stand and Restrooms Project, San Diego, CA

Mr. Smisek conducted a general biology survey and submitted a biological letter report in accordance with the City's Biology Guidelines for the proposed development within Chollas Park.

### Mission Valley Preserve California Rapid Assessment Method Survey, San Diego, CA

Mr. Smisek assisted in conducting a CRAM survey within a portion of the Mission Valley Preserve along the San Diego River. The CRAM results were uploaded to the eCRAM database.

### Otay Mesa Southwest Village Specific Plan, San Diego, CA

The Southwest Village Specific Plan would allow up to approximately 4,000 residences, a commercial and retail use area, elementary school site, parks, and open space

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**Training**

Wetland Delineation, Wetland Training Institute

California Rapid Assessment Method Certified

Poaceae Workshop, The Jepson Herbarium

Monkeyflowers in the Field, Rancho Santa Ana Botanic Garden

Introductory Bird Course, San Diego Audubon Society

Keying with the Second Edition of The Jepson Manual, The Jepson Herbarium

**Affiliations**

San Diego River Park Foundation

Friends of Mission Valley Preserve

California Native Plant Society

Center for Natural Lands Management

Friends of Maple Canyon

and undeveloped areas. Mr. Smisek conducted focused Quino checkerspot butterfly surveys on this project site within the Otay Mesa area and prepared a report which was submitted to the USFWS.

**Jurisdictional Waters/Wetland Delineation for the Rancho Vistoso Neighborhood 5 Project, Oro Valley, AZ**

Mr. Smisek delineated jurisdictional non-wetland waters within the 190-acre project site and prepared a waters/wetland delineation report.

**El Capitan Dam Spillway Vegetation Removal Project, San Diego County, CA**

Mr. Smisek assisted in conducting both a wetland delineation and a CRAM survey within the project site, and prepared a waters/wetland delineation report for the City of San Diego. Mr. Smisek also conducted focused Quino checkerspot butterfly surveys and led focused rare plant surveys within the 75-acre project survey area. He reported on rare plant results and prepared a Quino checkerspot butterfly survey report which was submitted to the USFWS.

**County of San Diego Department of Public Works Adjunct Staff, CA**

Mr. Smisek provides in-house support to the Environmental Services Unit at the County Department of Public Works. This ongoing support includes pre-construction wetland and biological surveys and analysis, assisting with post-construction mitigation compliance and agency communication, and coordinating compliance with wetland impacts associated with the County's Regional General Permit #53.

**Ashwood Street Corridor Improvement Project, San Diego County, CA**

Mr. Smisek prepared a biological letter report for the proposed Phase 1 project impacts that included an analysis of the potential for impacts to a number of sensitive species, the including coastal California gnatcatcher, glossy snake, and arroyo toad. Mr. Smisek also provided Phase 1 implementation recommendations and coordinated biological monitoring during construction.

**Helix Canyon Estates, San Diego County, CA**

Mr. Smisek conducted a general biology survey and submitted a biological letter report in accordance with

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the County's Report Format and Content Requirements and the Multiple Species Conservation Program for the proposed development of a parcel in western San Diego County.

**Beyer Park Development Project, San Diego, CA**

Mr. Smisek conducted sensitive plant species surveys and vegetation mapping throughout the approximately 60-acre survey area. A total of 13 rare plants were found, including the state and federally listed Otay tarplant. All sensitive plant species in the survey area were mapped and counted with the assistance of sub-meter GPS technology.

**Pacific Beach Drive Crown Point/Olney Sidewalk Project, San Diego, CA**

Mr. Smisek conducted noise monitoring to ensure no impacts occurred to adjacent marsh habitat considered occupied by Belding's savannah sparrow and the federally listed Ridgway's rail within the adjacent Multi-Habitat Planning Area.

**Sheriff's Department Emergency Vehicle Operations Course, San Diego County, CA**

Mr. Smisek conducted a general biological survey and created a biological constraints report which included an assessment of the potential to impact a number of sensitive species and advisement on impacts to critical habitat for coastal California gnatcatcher, Quino checkerspot butterfly, least Bell's vireo, and golden eagle.

**San Diego River Park Foundation Discovery Center, San Diego, CA**

Mr. Smisek conducted a biological resources survey and prepared a biological technical report in accordance with the City's Biology Guidelines. Mr. Smisek worked directly with City staff to update the MHPA Boundary Line Adjustment and Biological Superior Option discussion.

**Temescal Wetland Creation, San Diego, CA**

Mr. Smisek created a restoration plan for wetland creation at an off-site mitigation area following City of San Diego guidelines. The restoration plan describes the activities which will take place over a five-year period involving habitat creation and enhancement and how the project will meet mitigation requirements. The plan includes clearly defined goals and objectives of the restoration project; an implementation plan;

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maintenance tasks; qualitative and quantitative monitoring methods; performance goals; and contingency measures to implement if the project fails to meet final performance goals.

**Alpine Boulevard Streetscaping Project, Alpine, CA**

Mr. Smisek regularly conducted monitoring visits and nesting bird surveys during project construction to ensure construction activities were consistent with avian and wetland mitigation and compliance measures.

**El Cajon Mountain Preserve, San Diego County, CA**

Mr. Smisek was the project manager for this project which included establishing methods for and conducting rare plant census surveys, Quino checkerspot butterfly habitat suitability surveys, focused western spadefoot and general wildlife surveys, and invasive plant species surveys. Data was collected using tablets with a sub-meter accuracy GPS extension. Mr. Smisek prepared a preserve management report and worked closely with GIS staff to compile the data into maps tailored for preserve management purposes.

**Jonas Salk Elementary School Project Vernal Pool Mitigation, San Diego, CA**

Mr. Smisek assisted in wet-season and dry-season San Diego fairy shrimp and other aquatic crustacean surveys as well as water quality measurements within restored and reference pools.

**Murrieta Creek Monitoring Project Phase I and Phase IIa, City of Temecula, Riverside County, CA**

Mr. Smisek conducted construction monitoring to identify potential biological issues within the work area and to ensure environmental compliance. Tasks included occupied burrowing owl and least Bell's vireo habitat monitoring, coordination with construction crews, meeting attendance, and daily reporting.

**Rolling Hills Ranch Preserve, Chula Vista, CA**

Mr. Smisek conducted general biological surveys, including mapping vegetation communities and recording rare plant and wildlife populations.

**Brand's Phacelia Census Project on Lichty Mesa, San Diego, CA**

Mr. Smisek assisted in sensitive plant species surveys on the international border. The project focused on the status of a Brand's phacelia population as required by a Candidate Conservation Agreement. All sensitive plant

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species in the survey area were mapped and counted with the assistance of sub-meter GPS technology.

#### **City Heights Canyons Enhancements and Trails Project, San Diego, CA**

Mr. Smisek created a revegetation plan for four urban canyons within the city of San Diego. The revegetation plan describes the activities which will take place over a five-year period and involve habitat enhancement and restoration, installation of trails, and other project components. The revegetation plan includes clearly defined goals and objectives of the revegetation project; documentation of pre-restoration on-site conditions; an implementation plan; maintenance tasks; qualitative and quantitative monitoring methods; performance goals; and contingency measures to implement if the project fails to meet final performance goals.

#### **SDG&E NCCP Environmental Enhancement, San Diego and Orange Counties, CA**

Mr. Smisek provided restoration consulting services to SDG&E in support of the Natural Community Conservation Plan and the Enhancement and Monitoring Program. He conducted post-construction site assessments and annual monitoring of enhancement sites, prepared implementation plans, and maintained database entries to track progress of various sites throughout San Diego County.

#### **SDG&E Sunrise Powerlink Habitat Restoration AWCS, San Diego and Imperial Counties, CA**

Mr. Smisek coordinated remedial restoration tasks including shrub transplantation and protection. He also coordinated seed collection and application tasks specific to U.S. Forest Service requirements. He assisted in primary restoration tasks including qualitative and quantitative monitoring, seed collection, and coordinating the treatment of invasive plants found in temporary and permanent impact areas. He served as a botanical monitor for this project and assisted in rare plant surveys, including listed species such as San Diego thornmint, and rare plant seed collection. Mr. Smisek also assisted in the project-related plot treatment experiments in Mount Laguna and focused invasive plant surveys.

#### **Otay Ranch Preserve Habitat Management, Chula Vista, CA**

Mr. Smisek conducted focused Quino checkerspot butterfly protocol surveys and rare plant surveys on a

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number of parcels throughout the 11,000-acre Otay Ranch Preserve in an effort to update sensitive species population data and provide preserve management guidance.

**Alta Del Mar, San Diego, CA**

Mr. Smisek conducted construction monitoring to ensure environmental compliance during soil disturbance activities adjacent to vernal pools in the Shaw Lorenz development.

**Pacific Highlands Ranch, San Diego, CA**

Mr. Smisek conducted construction monitoring to ensure environmental compliance during brush clearing and soil disturbance activities as well as noise monitoring next to the occupied coastal California gnatcatcher habitat and suitable habitat for least Bell's vireo in the Pacific Highlands Ranch Development.

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**ATTACHMENT 2**  
Plant Species Observed

**Attachment 2  
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
<b>GNETALES</b>			
<b>EPHEDRACEAE</b>	<b>EPHEDRA FAMILY</b>		
<i>Ephedra trifurca</i> Torr. ex S. Watson	longleaf ephedra	CBS	N
<b>ANGIOSPERMS: MONOCOTS</b>			
<b>AGAVACEAE</b>	<b>AGAVE FAMILY</b>		
<i>Hesperocallis undulata</i> A. Gray	desert lily	CBS	N
<b>ARECACEAE</b>	<b>PALM FAMILY</b>		
<i>Phoenix dactylifera</i> L.	date palm	AWT	I
<i>Washingtonia filifera</i> (Linden ex André) H. Wendl. ex de Bary	California fan palm	CRM, AWT	N
<b>CYPERACEAE</b>	<b>SEDGE FAMILY</b>		
<i>Cyperus odoratus</i> L.	rusty flatsedge	CRM	N
<b>POACEAE (GRAMINEAE)</b>	<b>GRASS FAMILY</b>		
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	DH, AGF, CRM, QS	I
<i>Phragmites australis</i> (Cav.) Steud.	common reed	CRM, AWT	N
<i>Schismus barbatus</i> (L.) Thell.	Mediterranean schismus	AGF, UM	I
<b>TYPHACEAE</b>	<b>CATTAIL FAMILY</b>		
<i>Typha domingensis</i> Pers.	southern cattail	CRM, CTM, OW	N
<b>ANGIOSPERMS: DICOTS</b>			
<b>APOCYNACEAE</b>	<b>DOGBANE FAMILY</b>		
<i>Nerium oleander</i> L.	common oleander	DH	I
<b>ASTERACEAE</b>	<b>SUNFLOWER FAMILY</b>		
<i>Ambrosia dumosa</i> (A. Gray) Payne	white bur-sage, burro-weed	FSS, CBS	N
<i>Encelia frutescens</i> (A. Gray) A. Gray	button brittlebush	AGF, QS	N
<i>Geraea canescens</i> Torr. & A. Gray	desert sunflower	FSS, CBS, DH	N
<i>Isocoma acradenia</i> var. <i>eremophila</i> (Greene) G.L. Nesom	alkali goldenbush	AGF, QS, CBS	N
<i>Lactuca serriola</i> L.	prickly lettuce	AGF, UM	I
<i>Palafoxia arida</i> B.L. Turner & M.I. Morris	Spanish needles	CBS, FSS	N
<i>Pluchea sericea</i> (Nutt.) Coville	arrow weed	AWT, CRM	N
<i>Sonchus oleraceus</i> L.	common sow thistle	AGF	I

**Attachment 2  
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
<b>BORAGINACEAE</b>	<b>BORAGE FAMILY</b>		
<i>Cryptantha</i> sp.	cryptantha	AGF, QS, CBS, AWT	N
<i>Cryptantha angustifolia</i> (Torr.) Greene	narrow-leaf cryptantha	AWT, DH, QS, CBS, FSS, UM	N
<i>Heliotropium curassavicum</i> L. var. <i>oculatum</i> (A. Heller) I. M. Johnst. ex Tidestr.	seaside heliotrope, alkali heliotrope	CRM, DH	N
<i>Pectocarya</i> sp.	pectocarya, comb-bur	FSS	N
<i>Tiquilia palmeri</i>	Palmer's crinklemat	CBS	N
<b>BRASSICACEAE (CRUCIFERAE)</b>	<b>MUSTARD FAMILY</b>		
<i>Brassica tournefortii</i> Gouan	Sahara mustard	UM, CBS	I
<i>Sisymbrium irio</i> L.	London rocket	CBS, DH, FSS, AGF, AWT, QS, UM	I
<b>CHENOPODIACEAE</b>	<b>GOOSEFOOT FAMILY</b>		
<i>Atriplex canescens</i> (Pursh) Nutt.	four-wing saltbush, shad-scale	FSS, QS, AGF, AWT	N
<i>Atriplex lentiformis</i> (Torr.) S. Watson	big saltbush, quailbush	DH, AGF, QS	N
<i>Atriplex polycarpa</i> (Torr.) S. Watson	allscale saltbush	AGF, QS, AWT	N
<i>Chenopodium murale</i> L.	nettle-leaf goosefoot	DH, AGF, UM, TT	I
<i>Salsola paulsenii</i> Litv.	Barbwire Russian thistle	AGF	I
<b>EUPHORBIACEAE</b>	<b>SPURGE FAMILY</b>		
<i>Croton californicus</i> Müll. Arg.	California croton	UM	N
<b>FABACEAE (LEGUMINOSAE)</b>	<b>LEGUME FAMILY</b>		
<i>Melilotus indicus</i> (L.) All.	sourclover	CRM, AGF	I
<i>Prosopis chilensis</i> (Mol.) Stunz.	Chilean mesquite	DH	I
<i>Prosopis glandulosa</i> Torr. var. <i>torreyana</i> (L.D. Benson) M.C. Johnst.	honey mesquite	AGF, AWT, CRM, UM	N
<b>GENTIANACEAE</b>	<b>GENTIAN FAMILY</b>		
<i>Eustoma exaltatum</i> (L.) G. Don	catchfly prairie gentian	CRM	N
<b>MALVACEAE</b>	<b>MALLOW FAMILY</b>		
<i>Malva parviflora</i> L.	cheeseweed, little mallow	UM	I
<i>Sphaeralcea ambigua</i> A. Gray	desert globe-mallow	AGF	N



**Attachment 2  
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
<b>MYRTACEAE</b>	<b>MYRTLE FAMILY</b>		
<i>Eucalyptus</i> sp.	gum tree	EG	I
<i>Eucalyptus microtheca</i> F.Muell.	coolibah	EG	I
<b>NYCTAGINACEAE</b>	<b>FOUR O'CLOCK FAMILY</b>		
<i>Abronia villosa</i> S. Watson var. <i>villosa</i>	sand verbena	CBS, UM, FSS	N
<b>ONAGRACEAE</b>	<b>EVENING-PRIMROSE FAMILY</b>		
<i>Eremothera boothii</i> (Douglas) W.L. Wagner & Hoch	Booth's evening primrose	CBS	N
<i>Chylismia brevipes</i> (A. Gray) Small	yellow cups	AWT, UM	N
<i>Chylismia claviformis</i> (Torr. & Frém.) A. Heller	brown-eye primrose	AWT, UM, CBS, FSS	N
<i>Oenothera deltoides</i>	dune primrose	CBS	N
<b>PLANTAGINACEAE</b>	<b>PLANTAIN FAMILY</b>		
<i>Plantago ovata</i> Forssk.	desert indianwheat	FSS, CBS	I
<b>RESEDACEAE</b>	<b>MIGNONETTE FAMILY</b>		
<i>Oligomeris linifolia</i> (Vahl ex Hornem.) J.F. Macbr.	narrow-leaf oligomeris	CBS	N
<b>TAMARICACEAE</b>	<b>TAMARISK FAMILY</b>		
<i>Tamarix aphylla</i> (L.) H. Karst.	athel	AWT, QS, TT	I
<i>Tamarix ramosissima</i> Ledeb.	saltcedar	TT, AWT	I
<b>ZYGOPHYLLACEAE</b>	<b>CALTROP FAMILY</b>		
<i>Kallstroemia californica</i>	California caltrop	CBS	N
<i>Larrea tridentata</i> (DC.) Coville	creosote bush	CBS, FSS, UM	N
<b>VEGETATION COMMUNITIES</b>	<b>ORIGIN</b>		
AGF = Fallow agriculture	N = Native to locality		
AWT = Arrow weed thickets	I = Introduced species from outside locality		
CBS = Creosote bush scrub			
CRM = Common reed marshes			
CTM = Cattail marshes			
DH = Disturbed habitat			
EG = Eucalyptus groves			
FSS = Fourwing saltbush scrub			
OW = Open water			
QS = Quailbush scrub			
TT = Tamarisk thickets			
UM = Upland mustards			

**ATTACHMENT 3**  
Wildlife Species Observed

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<b>INVERTEBRATES</b> (Nomenclature for spiders and insects from Evans 2008; for butterflies from San Diego Natural History Museum 2002; for ants from Wheeler and Wheeler and Antweb 2018)			
<b>TENEBRIONIDAE</b>	<b>DARKLING BEETLES</b>		
Not identified to species	darkling beetle	UM	O
<b>COCCINELLIDAE</b>	<b>LADY BEETLES</b>		
<i>Hippodamia</i> sp.	lady beetle	UM	O
<b>CURCULIONIDAE</b>	<b>SNOUT AND BARK BEETLES</b>		
Not identified to species	weevil	AWT	O
<b>CICADIDAE</b>	<b>CICADAS</b>		
Not identified to species	cicada	CBS	V
<b>CULICIDAE</b>	<b>MOSQUITOS</b>		
<i>Culex</i> sp.	mosquito	DH, UM, OW	O
<b>SYRPHIDAE</b>	<b>SYRPHID FLIES</b>		
Not identified to species	hover fly	UM	O
<b>LIBELLULIDAE</b>	<b>SKIMMERS</b>		
<i>Orthemis ferruginea</i>	roseate skimmer	DH	O
<i>Perithemis intensa</i>	Mexican amberwing	DH	O
<b>COENAGRIONIDAE</b>	<b>NARROW-WINGED DAMSELFLIES</b>		
<i>Argia</i> sp.	dancer	UM	O
<b>APIDAE</b>	<b>HONEY BEES</b>		
<i>Apis mellifera</i>	honey bee (I)	UM	O
<b>MUTILLIDAE</b>	<b>VELVET ANTS</b>		
<i>Dasymutilla gloriosa</i>	thistle down velvet ant	AWT	O
<b>POMPILIDAE</b>	<b>SPIDER WASPS</b>		
<i>Pepsis</i> sp.	tarantula hawk	UM	O
<b>FORMICIDAE</b>	<b>ANTS</b>		
<i>Myrmecocystus minicus</i>	N/A	UM	O
<i>Veromessor stoddardi</i>	California harvester ant	FSS	O
<i>Veromessor pergandei</i>	black harvester ant	UM	O

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<b>NOT IDENTIFIED TO FAMILY</b>	<b>TERMITES</b>		
<i>Not identified to species</i>	termite	UM	O
<b>SCORPIONES</b>	<b>SCORPIONS</b>		
Not identified to species	scorpion	AWT, CBS, FSS, UM	T
<b>HESPERIIDAE</b>	<b>SKIPPERS</b>		
<i>Hylephila phyleus muertovalle</i>	fiery skipper	CBS	O
<i>Pyrgus communis</i>	common checkered skipper	UM	O
<b>PIERIDAE</b>	<b>WHITES &amp; SULPHURS</b>		
<i>Colias eurhytheme</i>	orange [=alfalfa] sulphur	FSS, UM	O
<b>LYCAENIDAE</b>	<b>BLUES, COPPERS, &amp; HAIRSTREAKS</b>		
<i>Brephidium exile</i>	western pygmy-blue	UM	O
<i>Hemiargus ceraunus gyus</i>	Edward's [=Ceraunus] blue	FSS	O
<b>NYMPHALIDAE</b>	<b>BRUSH-FOOTED BUTTERFLIES</b>		
<i>Danaus gilippus strigosus</i>	striated queen	UM	O
<i>Vanessa annabella</i>	west coast lady	DH	O
<i>Vanessa cardui</i>	painted lady	AWT, DH, FSS, UM	O
<b>AMPHIBIANS</b> (Nomenclature from Crother et al. 2012)			
<b>RANIDAE</b>	<b>TRUE FROGS</b>		
<i>Lithobates catesbeiana</i>	American bullfrog (I)	AWT, CRM, OW	O, V
<b>REPTILES</b> (Nomenclature from Crother et al. 2012)			
<b>EMYDIDAE</b>	<b>BOX &amp; WATER TURTLES</b>		
<i>Apalone spinifera</i> (likely identification based on known range of introduced species)	spiny softshell turtle (I)	AWT, CRM, DH, OW	T
<b>GEKKONIDAE</b>	<b>GECKOS</b>		
<i>Coleonyx variegatus variegatus</i>	western banded gecko	UM	O, T
<b>PHRYNOSOMATIDAE</b>	<b>SPINY LIZARDS</b>		
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard	CBS, UM	O, C
<i>Phrynosoma mcallii</i>	flat-tailed horned lizard	CBS	T
<i>Urosaurus graciosus</i>	long-tailed brush lizard	FSS	O

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<b>TEIIDAE</b>	<b>WHIPTAIL LIZARDS</b>		
<i>Aspidoscelis tigris tigris</i>	Great Basin tiger whiptail	UM	O
<b>CROTALIDAE</b>	<b>RATTLESNAKES</b>		
<i>Crotalus cerastes laterorepens</i>	Colorado Desert sidewinder	CBS, FSS	T
<b>BIRDS (Nomenclature from Chesser et al. 2018)</b>			
<b>ANATIDAE</b>	<b>DUCKS, GEESE, &amp; SWANS</b>		
<i>Anas platyrhynchos platyrhynchos</i>	mallard	OW	O
<i>Branta canadensis</i>	Canada goose	FO	O, V
<i>Anser</i> [= <i>Chen</i> ] <i>caerulescens caerulescens</i>	snow goose	FO	O
<b>ODONTOPHORIDAE</b>	<b>NEW WORLD QUAIL</b>		
<i>Callipepla gambelii gambelii</i>	Gambel's quail	AWT, FSS	O, T, V
<b>PHALACROCORACIDAE</b>	<b>CORMORANTS</b>		
<i>Phalacrocorax auritus albociliatus</i>	double-crested cormorant	FO	O
<b>ARDEIDAE</b>	<b>HERONS &amp; BITTERNs</b>		
<i>Ardea alba</i>	great egret	FO	O
<i>Ardea herodias</i>	great blue heron	FO	O
<i>Butorides virescens</i>	green heron	CRM	O
<i>Egretta thula candidissima</i>	snowy egret	AG, FO	O
<i>Nycticorax nycticorax</i>	black-crowned night heron	CRM	O
<b>CATHARTIDAE</b>	<b>NEW WORLD VULTURES</b>		
<i>Cathartes aura</i>	turkey vulture	FO	O
<b>ACCIPITRIDAE</b>	<b>HAWKS, KITES, &amp; EAGLES</b>		
<i>Accipiter cooperii</i>	Cooper's hawk	AWT, FO	O, V
<i>Buteo jamaicensis</i>	red-tailed hawk	FO	O, V
<i>Buteo regalis</i>	ferruginous hawk	FO	O
<i>Circus hudsonius</i>	northern harrier	AWT, FO, TT	O
<b>FALCONIDAE</b>	<b>FALCONS &amp; CARACARAS</b>		
<i>Falco mexicanus</i>	prairie falcon	AG, FO	O
<i>Falco sparverius sparverius</i>	American kestrel	AWT, UM, CBS, DH, FO	O, V

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<b>RALLIDAE</b>	<b>RAILS, GALLINULES, &amp; COOTS</b>		
<i>Fulica americana americana</i>	American coot	OW	O, V
<i>Gallinula galeata</i>	common gallinule	CTM	O
<b>CHARADRIIDAE</b>	<b>LAPWINGS &amp; PLOVERS</b>		
<i>Charadrius vociferus vociferus</i>	killdeer	AG, UM, FSS, DH	O, V
<b>RECURVIROSTRIDAE</b>	<b>STILTS &amp; AVOCETS</b>		
<i>Himantopus mexicanus</i>	black-necked stilt	FO	O
<b>SCOLOPACIDAE</b>	<b>SANDPIPERS &amp; PHALAROPES</b>		
<i>Actitis macularius</i>	spotted sandpiper	DH	O, V
<i>Gallinago delicata</i>	Wilson's snipe	CRM	O
<i>Numenius americanus</i>	long-billed curlew	FO	O
<b>COLUMBIDAE</b>	<b>PIGEONS &amp; DOVES</b>		
<i>Columba livia</i>	rock dove (I)	DH, FO	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	DH	O, V
<i>Zenaida asiatica mearnsi</i>	white-winged dove	AWT	O, V
<i>Zenaida macroura marginella</i>	mourning dove	AWT, DH	O, V
<b>CUCULIDAE</b>	<b>CUCKOOS &amp; ROADRUNNERS</b>		
<i>Geococcyx californianus</i>	greater roadrunner	CBS, AWT	O, T
<b>STRIGIDAE</b>	<b>TYPICAL OWLS</b>		
<i>Athene cunicularia hypugaea</i>	western burrowing owl	TT, CBS, FSS, UM	O, B, T, V
<i>Bubo virginianus</i>	great horned owl	AWT	O, V
<b>CAPRIMULGIDAE</b>	<b>GOATSUCKERS</b>		
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	CBS, FSS, FO	O, V
<b>APODIDAE</b>	<b>SWIFTS</b>		
<i>Aeronautes saxatalis</i>	white-throated swift	FO	O, V
<i>Chaetura vauxi vauxi</i>	Vaux's swift	FO	O
<b>TROCHILIDAE</b>	<b>HUMMINGBIRDS</b>		
<i>Calypte anna</i>	Anna's hummingbird	AWT	O, V
<b>ALCEDINIDAE</b>	<b>KINGFISHERS</b>		
<i>Megaceryle alcyon</i>	belted kingfisher	CRM, FO, OW	O

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<b>PICIDAE</b>	<b>WOODPECKERS &amp; SAPSUCKERS</b>		
<i>Colaptes auratus</i>	northern flicker	TT	O, V
<i>Dryobates [=Picoides] nuttallii</i>	Nuttall's woodpecker	TT	O
<b>TYRANNIDAE</b>	<b>TYRANT FLYCATCHERS</b>		
<i>Contopus sordidulus</i>	western wood-pewee	TT	O
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	AWT, UM	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	CBS, DH, UM	O, V
<i>Sayornis saya</i>	Say's phoebe	CBS, UM, FSS, TT	O, V
<i>Tyrannus verticalis</i>	western kingbird	UM	O, V
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	DH	O
<b>LANIIDAE</b>	<b>SHRIKES</b>		
<i>Lanius ludovicianus grinnelli</i>	loggerhead shrike	CBS, CRM, TT, DH	O, V
<b>VIREONIDAE</b>	<b>VIREOS</b>		
<i>Vireo gilvus swainsonii</i>	warbling vireo	TT	O
<b>CORVIDAE</b>	<b>CROWS, JAYS, &amp; MAGPIES</b>		
<i>Corvus brachyrhynchos hesperis</i>	American crow	AG, FO	O, V
<i>Corvus corax clarionensis</i>	common raven	CBS, UM, FO	O, V
<b>ALAUDIDAE</b>	<b>LARKS</b>		
<i>Eremophila alpestris</i>	horned lark	UM, FSS	O
<b>HIRUNDINIDAE</b>	<b>SWALLOWS</b>		
<i>Hirundo rustica erythrogaster</i>	barn swallow	FO	O
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	FO	O, V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	FO	V
<b>REMIZIDAE</b>	<b>VERDIN</b>		
<i>Auriparus flaviceps acaciaram</i>	verdin	CBS, TT, FSS	O, V
<b>TROGLODYTIDAE</b>	<b>WRENS</b>		
<i>Thryomanes bewickii</i>	Bewick's wren	AWT, CBS	O, V
<b>REGULIDAE</b>	<b>KINGLETS</b>		
<i>Regulus calendula calendula</i>	ruby-crowned kinglet	CRM	O
<b>SYLVIIDAE</b>	<b>GNATCATCHERS</b>		
<i>Polioptila caerulea</i>	blue-gray gnatcatcher	AWT, CBS, FSS	O, V

**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<i>Polioptila melanura</i>	black-tailed gnatcatcher	AWT, CBS	O, V
<b>MIMIDAE</b>	<b>MOCKINGBIRDS &amp; THRASHERS</b>		
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	AWT, DH	O, V
<i>Toxostoma lecontei lecontei</i>	LeConte's thrasher	AWT, FSS	O, V
<b>STURNIDAE</b>	<b>STARLINGS &amp; MYNAS</b>		
<i>Sturnus vulgaris</i>	European starling (I)	AWT, DH, EG	O, V
<b>MOTACILLIDAE</b>	<b>WAGTAILS &amp; PIPITS</b>		
<i>Anthus rubescens pacificus</i>	American pipit	UM	O
<b>PTILOGONATIDAE</b>	<b>SILKY FLYCATCHERS</b>		
<i>Phainopepla nitens lepida</i>	phainopepla	CBS	V
<b>PARULIDAE</b>	<b>WOOD-WARBLERS</b>		
<i>Setophaga [=Dendroica] coronata</i>	yellow-rumped warbler	AWT, FSS, TT	O, V
<i>Setophaga [=Dendroica] nigrescens</i>	black-throated gray warbler	AWT, TT	O
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	TT	O
<i>Setophaga [=Dendroica] townsendi</i>	Townsend's warbler	AWT, TT	O
<i>Geothlypis trichas</i>	common yellowthroat	AWT, CRM	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	TT	O, V
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	FS, TT	O
<b>PASSERELLIDAE</b>	<b>NEW WORLD SPARROWS</b>		
<i>Artemisiospiza belli</i>	Bell's sparrow	FSS	O
<i>Artemisiospiza nevadensis</i>	sagebrush sparrow	FSS	O, V
<i>Melospiza melodia</i>	song sparrow	AWT	O, V
<i>Passerculus sandwichensis nevadensis</i>	savannah sparrow	UM	O
<i>Melozone [=Pipilo] aberti</i>	Abert's towhee	AWT, FSS, CBS	O
<i>Spizella breweri</i>	Brewer's sparrow	UM	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	AWT, FSS, TT	O, V
<b>ICTERIDAE</b>	<b>BLACKBIRDS &amp; NEW WORLD ORIOLES</b>		
<i>Agelaius phoeniceus</i>	red-winged blackbird	AG	O, V
<i>Icterus bullockii</i>	Bullock's oriole	EG	O
<i>Molothrus ater</i>	brown-headed cowbird	DH	O, V
<i>Quiscalus mexicanus</i>	great-tailed grackle	DH, FO	O
<i>Sturnella neglecta</i>	western meadowlark	AG, FSS	O, V



**Attachment 3  
Wildlife Species Detected**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	CRM	O
<b>FRINGILLIDAE</b>	<b>FINCHES</b>		
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	AWT, TT	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	AWT, DH, TT	O, V
<b>MAMMALS (Nomenclature from Baker et al. 2003)</b>			
<b>LEPORIDAE</b>	<b>RABBITS &amp; HARES</b>		
<i>Lepus californicus deserticola</i>	desert black-tailed jackrabbit	CBS, UM	O, S, T
<i>Sylvilagus audubonii</i>	desert cottontail	DH, FSS, CBS, UM	C, O, S
<b>SCIURIDAE</b>	<b>SQUIRRELS &amp; CHIPMUNKS</b>		
<i>Spermophilus tereticaudus</i>	round-tailed ground squirrel	UM	B, O, V
<b>GEOMYIDAE</b>	<b>POCKET GOPHERS</b>		
<i>Thomomys bottae</i>	Botta's pocket gopher	AWT, FSS, DH	B
<b>HETEROMYIDAE</b>	<b>POCKET MICE &amp; KANGAROO RATS</b>		
<i>Dipodomys</i> sp.	kangaroo rat	CBS, TT	T
<b>CANIDAE</b>	<b>CANIDS</b>		
<i>Canis latrans</i>	coyote	UM, CBS, FSS, TT	O, S, T, V
<i>Vulpes macrotis</i>	kit fox	AWT, CBS, TT	O, T
<b>PROCYONIDAE</b>	<b>PROCYONIDS</b>		
<i>Procyon lotor</i>	northern raccoon	DH	T
<b>MUSTELIDAE</b>	<b>WEASELS, OTTERS, &amp; BADGERS</b>		
<i>Taxidea taxus</i>	American badger	CBS	O, T
<b>FELIDAE</b>	<b>CATS</b>		
<i>Lynx rufus</i>	bobcat	CBS	S

**Attachment 3  
Wildlife Species Detected**

(I) = Introduced species

**HABITATS**

AG = Active agriculture  
AGF = Fallow agriculture  
CBS = Creosote bush scrub  
CRM = Common reed marshes  
CTM = Cattail marshes  
DH = Disturbed habitat  
EG = Eucalyptus groves  
FO = Flying overhead  
FSS = Fourwing saltbush scrub  
OW = Open water  
QS = Quailbush scrub  
TT = Tamarisk thickets  
UM = Upland mustards

**EVIDENCE OF OCCURRENCE**

B = Burrow  
C = Carcass/remains  
D = Den site  
M = Midden  
N = Nest  
O = Observed  
S = Scat  
T = Track  
V = Vocalization/Audible detection

## **ATTACHMENT 4**

Sensitive Plant Species Observed  
or with the Potential to Occur

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>LYCOPODS</b>					
<b>SELAGINELLACEAE SPIKE-MOSS FAMILY</b>					
<i>Selaginella eremophila</i> desert spike-moss	2B.2	Perennial; creosote bush scrub; shaded crevices and rocky places; elevation less than 2,953 feet.	No	Not expected to occur	The Project site and surrounding areas lack suitable shaded and/or rocky areas to support this species. In addition, this species would have been apparent if present.
<b>ANGIOSPERMS: DICOTS</b>					
<b>AMARANTHACEAE AMARANTH FAMILY</b>					
<i>Amaranthus watsonii</i> Watson's amaranth	4.3	Annual herb; blooms August–September; creosote bush scrub and wetlands.	No	Not expected to occur	Surveys were conducted at the appropriate time of year to detect this species in vegetative state if present.
<b>APIACEAE CARROT FAMILY</b>					
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	FE, CE, 1B.1	Biennial/perennial herb; vernal pools, mesic areas of coastal sage scrub and grasslands, blooms April–June; elevation less than 2,000 feet. Known from San Diego and Riverside counties. Additional populations occur in Baja California, Mexico.	No	Not expected to occur	The Project site and surrounding areas lack suitable vernal pool or open vernal mesic habitat to support this species.
<b>APOCYNACEAE DOGBANE FAMILY</b>					
<i>Funastrum utahense</i> Utah vine milkweed	4.2	Perennial herb; blooms April–June; creosote bush scrub; elevation below 3,281 feet.	No	Not expected to occur	Surveys were conducted at the appropriate time of year to detect this species if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>APODANTHACEAE                      STEMSUCKER FAMILY</b>					
<i>Pilostyles thurberi</i> Thurber's pilostyles	4.3	Perennial herb (parasitic on <i>Psorothamnus</i> ); blooms January; Sonoran desert scrub; sandy alluvial plains; elevation less than 984 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, no <i>Psorothamnus</i> was observed in the Project site or adjacent areas to support this species.
<b>ASTERACEAE                              SUNFLOWER FAMILY</b>					
<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i> <i>Peirson's pincushion</i>	1B.3	Annual herb; blooms March–April; open, rocky or gravelly slopes; creosote bush scrub; elevation less than 1,640 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable rocky or gravelly slopes to support this species. In addition, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Helianthus niveus</i> ssp. <i>tephrodes</i> Algodones Dunes sunflower	CE, 1B.2, BLM	Perennial herb; blooms March–May; dunes; elevation less than 328 feet.	No	Not expected to occur	The sandy soil and small dunes that occur in and adjacent to the western portion of the Project site, south of Westside Main Canal, may provide suitable habitat for this species. However, surveys were conducted during this species typical blooming period; therefore, it would have likely been apparent if present.
<i>Malperia tenuis</i> <i>brown turbans</i>	2B.3	Annual herb; blooms April and Dec; Sonoran desert scrub; sandy areas and rocky slopes; elevation less than 1,640 feet.	No	Low potential to occur	Records of this species within two miles of the Project site are either very old (from 1964), or lack locational precision (CDFW 2019a University of California 2019). The creosote bush scrub in and adjacent to the Project site may be superficially suitable; however historical agriculture on the site make it unlikely for any historical populations on site to persist at present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Palafoxia arida</i> var. <i>gigantea</i> giant Spanish-needle	1B.3, BLM	Dunes; blooms March–May.	No	Not expected to occur	This species is mostly reported from eastern Imperial Valley. Surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<i>Xylorhiza cognata</i> Mecca-aster	1B.2, BLM	Perennial herb; blooms Jan–June; arid canyons and washes; creosote bush scrub; canyons; elevation 65–787 feet.	No	Not expected to occur	No suitable canyons or washes occur within or adjacent to the Project site. Surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<i>Xylorhiza orcuttii</i> Orcutt’s woody-aster	1B.2, BLM	Perennial herb; blooms January–May; creosote bush scrub; barren slopes, canyons; elevation 65–984 feet.	No	Not expected to occur	No suitable canyons or slopes occur in or adjacent to the Project site. Surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<b>BORAGINACEAE                      BORAGE FAMILY</b>					
<i>Johnstonella</i> [= <i>Cryptantha</i> ] <i>costata</i> ribbed cryptantha	4.3	Annual herb; blooms Feb–May; creosote bush scrub, sandy soil; elevation less than 1,640 feet.	No	Low potential to occur	The nearest record of this species is from Pinto Wash, about 4 miles to the southwest of the site. While this species does occur in creosote bush scrub with sandy soils, historical agriculture on site likely extirpated any populations present.
<i>Johnstonella</i> [= <i>Cryptantha</i> ] <i>holoptera</i> winged cryptantha	4.3	Annual herb; blooms March–April; washes, creosote bush scrub, sandy soil; elevation 328–3,937 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable washes, slopes, or ridges to support this species. In addition, surveys were conducted at the appropriate time of year to detect this species if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Nama stenocarpa</i> mud nama	2B.2	Annual/perennial herb; marshes and swamps, lake margins, riverbanks; blooms January–July; elevation less than 1,700 feet.	No	Not expected to occur	One historical occurrence is recorded within two miles of the Project site (CDFW 2019a). However, the Project site and adjacent areas lack suitable intermittently wet areas to support this species. In addition, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Pholisma sonora</i> sand food	1B.2, BLM	Perennial parasitic herb; blooms April–May; dunes; elevation less than 656 feet.	No	Not expected to occur	Two potential host plants of the <i>Ambrosia</i> and <i>Pluchea</i> genera were observed within the Project site. However, surveys were conducted at the appropriate time of year to detect this species if present, and records for this species are restricted to the east side of Imperial Valley.
<b>BRASSICACEAE                      MUSTARD FAMILY</b>					
<i>Lyrocarpa coulteri</i> Coulter's lyrepod	4.3	Perennial herb; blooms April–Dec; creosote bush scrub; dry slopes, gravelly flats, and washes; elevation less than 1,969 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable slopes, gravelly flats, or washes to support this species. In addition, surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<b>BURSERACEAE                      TORCHWOOD FAMILY</b>					
<i>Bursera microphylla</i> Little-leaf elephant tree	2B.3	Tree; rocky desert slopes; blooms May–June; elevation less than 2,300 feet.	No	Not expected to occur	The Project site and surrounding areas lack suitable rocky desert slopes to support this species. In addition, as it is a tree, this species would have been apparent if present.
<b>CACTACEAE                      CACTUS FAMILY</b>					
<i>Opuntia wigginsii</i> [= <i>Cylindropuntia echinocarpa</i> ] Wiggins' cholla [Silver cholla]	3.3	Shrub; creosote bush scrub.	No	Not expected to occur	As a perennial succulent of moderate size, this species would have been apparent if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Cylindropuntia wolffi</i> Wolf's cholla	4.3	Shrub; blooms April–May; Alluvial fans and rocky slope in Sonoran desert scrub.	No	Not expected to occur	The Project site and surrounding areas lack suitable alluvial fan or rocky slope habitat to support this species. In addition, as a perennial, succulent plant, this species would have been apparent if present.
<b>EUPHORBIACEAE                      SPURGE FAMILY</b>					
<i>Croton wigginsii</i> Wiggins' croton	CR, 2B.2, BLM	Shrub; blooms March–April; creosote bush scrub; dunes; elevation less than 328 feet.	No	Not expected to occur	Surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<i>Ditaxis serrata</i> var. <i>californica</i> California ditaxis	3.2	Perennial herb; blooms April–November; washes, canyons; creosote bush scrub; elevation less than 656 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable canyons or washes to support this species. In addition, surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<i>Euphorbia</i> [= <i>Chamaesyce</i> ] <i>abramsiana</i> Abram's spurge	2B.2	Annual herb; blooms September–November; creosote bush scrub; elevation less than 656 feet.	No	Low potential to occur	The nearest likely extant record of this species is in the Jacumba Wilderness Area, 11 miles to the southwest (University of California 2019). Although rare plant surveys were not conducted during a time of year when this species would have been apparent, this species has a low potential to occur on-site. The Project area has historically been used for agriculture for many years based on historical aerial photography. This intensive use of the land would have likely extirpated any previously existing population of Abram's spurge.



**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Euphorbia</i> [=Chamaesyce] <i>arizonica</i> Arizona spurge	2B.3	Perennial herb; blooms March–April; creosote bush scrub; elevation less than 984 feet.	No	Low potential to occur	The nearest likely extant record of this species is from the In-Ko-Pah area, 20 miles to the west (University of California 2019). While this species does occur in creosote bush scrub, historical agriculture on site likely extirpated any populations present.
<b>FABACEAE                      LEGUME FAMILY</b>					
<i>Acmispon haydonii</i> pygmy lotus	1B.3	Perennial herb; blooms March–June; creosote bush scrub; elevation 1,969–3,937 feet.	No	Not expected to occur	The Project site is outside this species’ known elevational range. In addition, surveys were conducted during the typical blooming period for this species; therefore, it likely would have been apparent if present.
<i>Astragalus crotalariae</i> Salton milk-vetch	4.3	Perennial herb; blooms Jan–April; creosote bush scrub; elevation 60–250 feet.	No	Not expected to occur	The creosote bush scrub and sandy soils in and adjacent to the Project site may provide suitable habitat for this species. However, as this is a perennial species and surveys were conducted during the species’ typical blooming period, it likely would have been apparent if present.
<i>Astragalus insularis</i> var. <i>harwoodii</i> Harwood’s milk-vetch	2B.2	Annual herb; blooms Jan–May; desert dunes; open sandy flats or stony desert washes; mostly in creosote bush scrub.	No	Not expected to occur	The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal may provide suitable habitat. However, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	4.3	Annual herb; blooms March–May; creosote bush scrub, sandy areas; elevation 98–820 feet.	No	Not expected to occur	The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal may provide suitable habitat. However, surveys were conducted at the appropriate time of year to detect this species if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Astragalus magdalenae</i> var. <i>peirsonii</i> Peirson's milk-vetch	FT, CE, 1B.2	Perennial herb; blooms Dec–April; dunes; elevation 164–656 feet.	No	Not expected to occur	The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal may provide suitable habitat. However, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Astragalus sabulonum</i> Gravel milk-vetch	2B.2	Annual; sandy or gravelly soils in Mojave and Sonoran deserts; blooms November–April; elevation 160-3,000 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal may provide suitable habitat. However, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Calliandra eriophylla</i> pink fairy-duster	2B.3	Shrub; sandy washes, slopes, and mesas in desert; blooms February–April and/or September–October, following rain; elevation 4,900 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, as this is a perennial shrub species and surveys were conducted during the typical blooming period, it likely would have been detected if present.
<i>Lupinus excubitus</i> [= <i>albifrons</i> ] var. <i>medius</i> Mountin Springs bush lupine	1B.3, BLM	Shrub; blooms March–April; creosote bush scrub; desert washes; elevation less than 3,281 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable washes to support this species. In addition, as this is a perennial shrub species and surveys were conducted during the typical blooming period, it likely would have been detected if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Parkinsonia microphylla</i> little-leaved palo verde	4.3	Tree; blooms April–May; creosote bush scrub.	No	Not expected to occur	The Project site and adjacent areas lack suitable rocky slopes to support this species. In addition, as this is a perennial shrub/tree species and surveys were conducted during the typical blooming period, it likely would have been detected if present.
<b>LAMIACEAE MINT FAMILY</b>					
<i>Teucrium cubense</i> ssp. <i>depressum</i> dwarf germander	2B.2	Annual herb; blooms March–May; creosote bush scrub, sandy areas, alkaline flats; elevation less than 797 feet.	No	Not expected to occur	The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal may provide suitable habitat. However, surveys were conducted at the appropriate time of year to detect this species if present.
<b>LOASACEAE LOASA FAMILY</b>					
<i>Eucnide rupestris</i> annual rock-nettle	2B.2	Crevices, cliffs in desert; blooms December–April; elevation 1,600-2,000 feet.	No	Not expected to occur	The Project site is outside this species' known elevational range and lacks suitable crevices or cliffs. Surveys were conducted at the appropriate time of year to detect this species if present.
<i>Mentzelia hirsutissima</i> hairy stickleaf	2B.3	Annual herb; blooms April–May; creosote bush scrub; washes, fans, and slopes; elevation less than 1,969 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, the Project site and adjacent areas lack suitable washes or slopes to support this species. In addition, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Mentzelia tridentata</i> creamy blazing star	1B.3, BLM	Annual herb; blooms April–May; creosote bush scrub; elevation 2,296–3,280 feet.	No	Not expected to occur	The Project site is outside this species' known elevational range. In addition, surveys were conducted at the appropriate time of year to detect this species if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>MALVACEAE MALLOW FAMILY</b>					
<i>Ayenia compacta</i> California ayenia	2B.3	Perennial herb/shrub; blooms March–April; washes and dry rocky canyons; elevation less than 1,640 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable washes or rocky canyons in the desert slopes to support this species. In addition, surveys were conducted at an appropriate time of year to detect this species if present.
<i>Herissantia crispa</i> curly herissantia	2B.3	Annual or perennial herb; creosote bush scrub; blooms August–September; elevation less than 2,700 feet.	No	Not expected to occur	This species is only known from a few occurrences on the desert slopes in eastern San Diego county and likely would have been apparent in vegetative state if present.
<i>Horsfordia alata</i> pink velvet-mallow	4.3	Shrub; blooms April and Nov–Dec; creosote bush scrub; rocky canyons and washes; elevation 328–1,640 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable washes or rocky canyons in the desert slopes to support this species. In addition, surveys were conducted at an appropriate time of year to detect this species if present.
<i>Horsfordia newberryi</i> Newberry’s velvet-mallow	4.3	Perennial herb; blooms March–April and November–December; creosote bush scrub; elevation 328–2,625 feet.	No	Not expected to occur	This is a perennial species, and surveys were conducted during its typical blooming period. Therefore, it likely would have been detected if present.
<b>MARTYNIACEAE UNICORN-PLANT FAMILY</b>					
<i>Proboscidea althaeifolia</i> desert unicorn-plant	4.3	Perennial herb; blooms in fall; desert washes within creosote bush scrub; elevation less than 3,281 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable desert washes to support this species. In addition, as this is a perennial species, it likely would have been detected if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>NYCTAGINACEAE                      FOUR O’CLOCK FAMILY</b>					
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand verbena	1B.1, BLM	Annual herb; sandy floodplains in inland, arid areas of coastal sage scrub and open chaparral; blooms January–August; elevation 300–5,300 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable sandy floodplain to support this species. In addition, surveys were conducted at the appropriate time of year to detect this species if present.
<i>Mirabilis tenuiloba</i> Slender-lobed four o’clock	4.3	Perennial herb; blooms March–May; creosote bush scrub; rocky slopes; elevation less than 1,640 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable rocky desert slopes to support this species. In addition, surveys were conducted at an appropriate time of year to detect this species if present.
<b>ONAGRACEAE                      EVENING-PRIMROSE FAMILY</b>					
<i>Chylismia arenaria</i> sand evening-primrose	2B.2	Annual or perennial herb; sandy washes, rocky slopes, desert scrub; blooms March–April; elevation less than 1,410 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable sandy washes or rocky slopes to support this species. In addition, surveys were conducted at an appropriate time of year to detect this species if present.
<b>PICRODENDRACEAE                      BITTER-TREE FAMILY</b>					
<i>Tetracoccus hallii</i> Hall’s tetracoccus	4.3	Shrub; blooms March–May; creosote bush scrub; rocky slopes and washes; elevation less than 3,937 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable sandy washes or rocky slopes to support this species. In addition, this is a shrub, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>POLEMONIACEAE PHLOX FAMILY</b>					
<i>Ipomopsis effusa</i> Baja California ipomopsis	2B.1	Annual herb; alluvial fans; blooms April; elevation less than 330 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, the Project site and adjacent areas lack suitable desert washes to support this species. In addition, surveys were conducted at an appropriate time of year to detect this species if present.
<i>Ipomopsis tenuifolia</i> slender-leaved ipomopsis	2B.3	Perennial herb; blooms March–May; creosote bush scrub; gravelly to rocky slopes and canyons; elevation 328–3,937 feet.	No	Not expected to occur	The Project site and adjacent areas lack suitable rocky slopes to support this species. In addition, this is a perennial species, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.
<b>POLYGONACEAE BUCKWHEAT FAMILY</b>					
<i>Nemacaulis denudata</i> var. <i>gracilis</i> slender cotttonheads	2B.2	Annual herb; coastal and desert dunes, Sonoran desert scrub; blooms March–May; elevation 170–1,300 feet.	No	Low potential to occur	The sandy soils in the western portion, along the edges of, and adjacent to the Project area south of Westside Main Canal are superficially suitable, although historical agriculture on site likely extirpated any populations present. The nearest likely extant record of this species is in the Jacumba wilderness Area, 13 miles to the southwest (University of California 2019).
<b>RHAMNACEAE BUCKTHORN FAMILY</b>					
<i>Colubrina californica</i> Las Animas colubrina	2B.3	Shrub; blooms April–May; creosote bush scrub; elevation less than 3,281 feet.	No	Not expected to occur	This is a shrub, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Condalia globosa</i> var. <i>pubescens</i> spiny abrojo	4.2	Shrub; blooms March–April; creosote bush scrub; elevation less than 3,281 feet.	No	Not expected to occur	This is a shrub, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.
<b>SIMAROUBACEAE QUASSIA FAMILY</b>					
<i>Castela emoryi</i> Emory’s crucifixion-thorn	2B.2	Shrub; dry, gravelly washes, slopes, and plains in desert; blooms June–July; elevation 2,150 feet.	No	Not expected to occur	As this is a conspicuous shrub, this species likely would have been detected if present.
<b>SOLANACEAE NIGHTSHADE FAMILY</b>					
<i>Lycium parishii</i> Parish’s desert-thorn	2B.3	Perennial shrub; coastal sage scrub, Sonoran desert scrub; blooms March–April; elevation 1,000–3,300 feet.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, this is a shrub, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.
<b>ANGIOSPERMS: MONOCOTS</b>					
<b>POACEAE GRASS FAMILY</b>					
<i>Imperata brevifolia</i> California satintail	2B.1	Perennial grass; blooms September–May; creosote bush scrub; elevation less than 1,640 feet.	No	Not expected to occur	This is a perennial species, and surveys were conducted during its typical blooming period. Therefore, this species likely would have been detected if present.

**Attachment 4**

**Sensitive Plant Species Observed or with the Potential for Occurrence**

<i>Scientific Name</i> Common Name	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>STATUS CODES</b>					
FE	=	Federally listed endangered			
FT	=	Federally listed threatened			
CE	=	State listed endangered			
CR	=	State listed rare			
BLM	=	Bureau of Land Management sensitive species			
<b>CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)</b>					
1B	=	Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.			
2B	=	Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.			
3	=	Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.			
4	=	A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.			
.1	=	Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat).			
.2	=	Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat).			
.3	=	Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known).			



## **ATTACHMENT 5**

### **Sensitive Wildlife Species Occurring or with the Potential to Occur**

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>FISHES</b> (Nomenclature from Page et al. 2013)					
<b>CYPRINODONTIDAE PUPFISH</b>					
Desert pupfish <i>Cyprinodon macularius</i>	FE, CE	Desert pools and streams.	No	Not expected to occur	The Project site lacks natural desert pools or streams to support the species.
<b>CYPRINIDAE MINNOWS</b>					
Bonytail chub <i>Gila elegans</i>	FE, CE	Swift, muddy rivers.	No	Not expected to occur	The Project site lacks a natural river to support the species.
<b>CATOSTOMIDAE SUCKER</b>					
Humpback (=razorback) sucker <i>Xyrauchen texanus</i>	FE, CE, CFP	Warm tributaries, shallow water, gravelly-bottom rivers.	No	Not expected to occur	The Project site lacks natural streams or rivers to support the species.
<b>REPTILES</b> (Nomenclature from Crother et al. 2012)					
<b>TESTUDINIDAE GOPHER TORTOISES</b>					
Desert tortoise <i>Gopherus agassizii</i>	FT, CT	Mohave and Sonoran desert areas, especially areas of creosote bush scrub.	No	Not expected to occur	The Project site is outside this species' known range (SDNHM 2019). No desert tortoise burrows or other sign was observed.
<b>GEKKONIDAE GECKOS</b>					
Switak's banded gecko <i>Coleonyx switaki</i>	CT, BLM	Rock outcrops on arid hillsides and canyons in desert scrub vegetation types.	No	Low	The Project site and surrounding area lack suitable rock outcrops and/or hillsides.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>IGUANIDAE                      IGUANID LIZARDS</b>					
Flat-tailed horned lizard <i>Phrynosoma mcalli</i>	SSC, BLM	Dunes and sandy flats of low desert.	Horned lizard tracks observed	Assumed present	This species has been reported repeatedly in the undeveloped desert areas immediately west and south of the Project site (CDFW 2019a). Horned lizard tracks were observed in the western portion of the Project site, south of Westside Main Canal, and the western and southwestern portions of the Project site provide suitable habitat.
Colorado Desert fringe-toed lizard <i>Uma notata</i>	SSC, BLM	Loose sand of desert dunes, flats, riverbanks, and washes. Prefers scant vegetation.	No	Moderate	This species has been reported within two miles of the Project site (CDFW 2019a). The desert scrub communities and loose sand in the western portion of the Project site, south of Westside Main Canal, provide suitable habitat.
<b>BIRDS (Nomenclature from Chesser et al. 2018)</b>					
<b>PELECANIDAE                      PELICANS</b>					
American white pelican (nesting colony) <i>Pelecanus erythrorhynchos</i>	SSC	Lagoons, bays, estuaries, freshwater ponds; inland lakes during spring migration. Migrant and winter visitor.	Observed flying overhead	Not expected to forage or nest on site	This species is a winter visitor to southern California. The Project site lacks suitable pond or lake habitat for foraging.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>PHALACROCORACIDAE CORMORANTS</b>					
Double-crested cormorant (nesting colony) <i>Phalacrocorax auritus albociliatus</i>	WL	Bays, lagoons, estuaries. Non-breeding year-round visitor.	Observed flying overhead	Low potential to forage; not expected to nest	The Westside Main Canal may provide foraging opportunities. However, the Project site and surrounding area lack suitable nesting habitat isolated from predators and human disturbance.
<b>ARDEIDAE HERONS &amp; BITTERNS</b>					
Great egret (nesting colony) <i>Ardea alba</i>	*	Lagoons, bays, estuaries. Ponds and lakes in the coastal lowland. Winter visitor, uncommon in summer.	Observed flying overhead	Moderate potential to forage; not expected to nest	The Westside Main Canal and adjacent active and fallow agricultural fields may provide foraging opportunities. However, the Project site and surrounding area lack suitable nesting habitat, i.e., trees adjacent to pond, lake, or lagoon and isolated from human activity.
Great blue heron (nesting colony) <i>Ardea herodias</i>	*	Bays, lagoons, ponds, lakes. Non-breeding year-round visitor, some localized breeding.	Observed flying overhead	Moderate potential to forage; not expected to nest	The Westside Main Canal and adjacent active and fallow agricultural fields may provide foraging opportunities. However, the Project site and surrounding area lack suitable nesting habitat, i.e., trees adjacent to pond, lake, or lagoon and isolated from human activity.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Snowy egret (nesting colony) <i>Egretta thula</i>	*	Coastal waters and freshwater ponds and lakes. Winter visitor, summer resident. Localized breeding colonies.	Observed flying overhead and in adjacent active agricultural fields	High potential to forage; not expected to nest	The Westside Main Canal and adjacent active and fallow agricultural fields provide foraging opportunities. However, the Project site and surrounding area lack suitable nesting habitat, i.e., marsh and/or trees adjacent to pond, lake, or lagoon.
Least bittern (nesting) <i>Ixobrychus exilis</i>	SSC	Brackish and freshwater marshes in the coastal lowland. Rare summer resident, rare in winter.	No	Moderate potential to forage; not expected to nest	The wetland vegetation along the Westside Main Canal and irrigation ditches may provide suitable foraging habitat. However, the Project site and surrounding area lack sufficiently large and/or dense stands of emergent wetland vegetation to provide suitable nesting habitat.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Black-crowned night heron (nesting colony) <i>Nycticorax nycticorax</i>	*	Lagoons, estuaries, bayshores, ponds, and lakes. Often roost in trees. Year-round visitor. Localized breeding.	Observed in common reed marsh	Present; not expected to nest	The wetland vegetation along the Westside Main Canal and irrigation ditches, as well as the active agricultural fields provide suitable foraging habitat. However, the Project site and surrounding area lack suitable nesting habitat, i.e., marsh and/or trees adjacent to pond, lake, or lagoon and isolated from predators and human activity.
<b>ACCIPITRIDAE                      HAWKS, KITES, &amp; EAGLES</b>					
Cooper's hawk (nesting) <i>Accipiter cooperii</i>	WL	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	Observed flying overhead and in arrow weed thickets east of Project site in the months of April, November, December, and January	High potential to forage; not expected to nest	The Project site and surrounding areas provide suitable, open foraging habitat. The eucalyptus trees in the northern portion and tamarisk trees in the southern portion of the Project site provide potentially suitable nest sites. However, the Project site is outside this species' typical breeding range. The dates of observations of this species (i.e., lack of observations throughout the breeding season) on-site suggest the observed individual(s) is/are winter visitor(s).

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Golden eagle (nesting and wintering) <i>Aquila chrysaetos</i>	WL, CFP, BLM	Require vast foraging areas in grassland, broken chaparral, or sage scrub. Nest in cliffs and boulders. Uncommon resident.	No	Low potential to forage; not expected to nest	The Project site and surrounding areas provide suitable, open foraging habitat; however the nearest suitable cliffs are located approximately 15 miles to the west. No suitable habitat for nesting is present.
Ferruginous hawk (wintering) <i>Buteo regalis</i>	WL	Require large foraging areas. Grasslands, agricultural fields. Uncommon winter resident.	Observed flying overhead in the months of December and January	High potential to forage; not expected to nest	The Project site and surrounding areas provide suitable, open foraging habitat with common prey items (e.g., cottontail, jackrabbit, ground squirrel). The eucalyptus trees within the northern Project site and utility towers within and adjacent to the Project site may provide suitable nest sites. However, the Project site is outside this species' known breeding range.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Northern harrier (nesting) <i>Circus hudsonius</i>	SSC	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.	Observed flying overhead and foraging in arrow weed and tamarisk thickets in April, early May, October, and November	High potential to forage; not expected to nest	The Project site and surrounding areas provide suitable, open foraging habitat with common prey items (e.g., small mammals, lizards, birds). However, this species is typically only a winter visitor to the desert; the Project site is outside this species' known breeding range. The dates of observations of this species (i.e., lack of observations throughout the breeding season) on-site also suggest the observed individual(s) is/are winter visitor(s).
Bald eagle (nesting and wintering) <i>Haliaeetus leucocephalus</i>	(Fed. Delisted), CE, CFP, BLM	Rivers, lakes. Rare winter visitor, rare fall migrant. Feed mainly on fish.	No	Not expected to occur	The Project site and surrounding areas lacks suitable nesting and foraging habitat (i.e., large trees or cliff faces adjacent to a large body of water).



**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>FALCONIDAE                      FALCONS &amp; CARACARAS</b>					
Prairie falcon (nesting) <i>Falco mexicanus</i>	WL	Grassland, agricultural fields, desert scrub. Uncommon winter resident. Rare breeding resident.	Observed flying overhead and in adjacent active agricultural field in early July, early October, and mid-December	High potential to forage; low potential to nest	The Project site and surrounding areas provide suitable open desert habitat and agricultural fields for foraging. The Project site and surrounding areas lack suitable cliff faces or bluffs preferred for nesting; however, the utility towers that occur within and adjacent to the west side of the Project site may provide nesting opportunities.
<b>RALLIDAE                      RAILS, GALLINULES, &amp; COOTS</b>					
California black rail <i>Laterallus jamaicensis coturniculus</i>	CT, CFP, BLM	Tidal marshes, grassy marshes. Known occurrences very limited in California, with the closest in the Salton Sea area and lower Colorado River valley.	No	Not expected to occur	The Project site and surrounding areas lack wetland habitat of sufficient size and/or suitable plant species composition to support this species.
Yuma Ridgway's rail <i>Rallus obsoletus</i> [=longirostris] <i>yumanensis</i>	FE, CT, CFP	Marshland vegetation, dense cattail stands, bulrush, reeds. Resident.	No	Not expected to occur	This species has been reported within two miles of the Project site (CDFW 2019a). However, the Project site and surrounding areas lack suitable, undisturbed marsh habitat with calm and shallow (three to eight inches deep) water.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>GRUIDAE                      CRANES</b>					
Greater sandhill crane (nesting and wintering) <i>Antigone canadensis tabida</i>	CT, CFP, BLM	Nest marshes, bogs, or meadows, and prairies. Outside breeding season, occupy shallow lakes or rivers by night and irrigated croplands, pastures, grasslands, or wetlands by day.	No	Low potential to forage; not expected to nest	The fallow agricultural fields on site are largely unsuitable as long-term wintering habitat due to lack of irrigation. This species may occasionally visit the marshy areas along the Westside Main Canal during migration. However, the Project site is outside this species' known breeding range.
<b>CHARADRIIDAE                      LAPWINGS &amp; PLOVERS</b>					
Western snowy plover (nesting) <i>Charadrius alexandrinus nivosus</i>	FT, SSC	Sandy beaches; lagoon margins; tidal mud flats; barren to sparsely vegetated alkaline or saline lakes, reservoirs, or ponds; riverine sand bars. Migrant and winter resident. Localized breeding.	No	Not expected to occur	The Project site and surrounding areas lack suitable open ground adjacent to an alkaline body of water or agricultural waste-water pond, or riverine sand bars. The closest known breeding population occurs at Salton Sea.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Mountain plover (wintering) <i>Charadrius montanus</i>	SSC, BLM	Grasslands, fields, valleys, grazed pastures, alkaline flats, fallow and/or tilled fields. Localized winter resident.	No	Low potential to forage on-site.	This species has been reported within two miles of the Project site (CDFW 2019a, Heritage Environmental Consultants 2012f). The active agricultural fields northeast of the Project site may provide more suitable wintering/foraging habitat, depending on crop rotation and status.
<b>SCOLOPACIDAE SANDPIPERS &amp; PHALAROPES</b>					
Long-billed curlew (nesting) <i>Numenius americanus</i>	WL	Breeds in northern North America in tidal mud flats, salt marshes, bays. Migrates to the coast for wintering. Fall and spring migrant through Project area.	Observed flying overhead	Not expected to nest or forage on-site.	No suitable breeding habitat is present on site. The active agricultural fields northeast of the Project site provide suitable foraging habitat during migration; however, no suitable habitat is present on site.
<b>LARIDAE GULLS, TERNS, &amp; SKIMMERS</b>					
Laughing gull (nesting colony) <i>Larus atricilla</i>	WL	Year-round resident on beaches and coastal areas of the Gulf of California. Common post-breeding visitor and occasional breeding species at Salton Sea.	No	Low potential to forage; not expected to nest	Agricultural fields northeast of the Project site may provide suitable foraging grounds during migration. However, the Project site and surrounding areas lacks suitable marsh or sandy flats adjacent to a large body of water for nesting.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>CUCULIDAE                      CUCKOOS &amp; ROADRUNNERS</b>					
Western yellow-billed cuckoo (nesting) <i>Coccyzus americanus occidentalis</i>	FT, CE, BLM	Riparian woodlands. Summer resident. Very localized breeding.	No	Not expected to occur	The Project site and surrounding areas lack suitable mature riparian forest.
<b>STRIGIDAE                      TYPICAL OWLS</b>					
Long-eared owl (nesting) <i>Asio otus</i>	SSC	Roost in dense riparian woodland, oak woodland, tamarisk woodland. Forages over grasslands and open shrublands. Rare resident and winter visitor.	No	Low potential to forage and nest	The open vegetation within and adjacent to the Project site provides suitable foraging grounds, and the tamarisk thickets may provide marginally suitable roosting habitat, but breeding not expected.
Burrowing owl (burrow sites and some wintering sites) <i>Athene cunicularia</i>	SSC, BLM	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	Observed in fourwing saltbush scrub and upland mustards in Project site and in creosote bush scrub west of Project site	Present as non-breeding winter visitor; high potential to occur/nest during breeding season	A minimum of two individuals were observed within the western and southern portions of the Project site during 2018-2019 non-breeding season surveys. This species was also observed in the active agricultural fields within one mile northeast of the Project site during 2018 breeding season surveys and has been reported within two miles of the Project site (CDFW 2019a).

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>APODIDAE                      SWIFTS</b>					
Vaux's swift (nesting) <i>Chaetura vauxi</i>	SSC	All habitat types during summer and winter migration. Breeds in coniferous forests of the central and northern California ranges.	Observed flying overhead	Low potential to forage; not expected to nest	Habitat on site is only marginally suitable for foraging during migration; however nearby agricultural fields provide better foraging opportunity. Project site is outside breeding range of this species.
<b>TYRANNIDAE                      TYRANT FLYCATCHERS</b>					
Southwestern willow flycatcher (nesting) <i>Empidonax traillii extimus</i>	FE, CE	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant, rare summer resident. Extremely localized breeding.	No	Moderate potential to forage; not expected to nest	The arrow weed and tamarisk thickets within and adjacent to the Project site may provide suitable foraging habitat during migration. However, the Project site and surrounding areas lack suitable mature riparian habitat for breeding.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Vermilion flycatcher (nesting) <i>Pyrocephalus rubinus</i>	SSC	Desert scrub habitats, agricultural areas, parks, ponds, rivers. Rare breeder in Imperial County.	No	Moderate potential to forage; low potential to nest	This species was observed approximately two miles northeast of the Project site, as reported by a security guard working at the solar field north of the Project site. A photograph was shown to the surveying biologists during the January 24, 2019, burrowing owl survey. The natural vegetation communities and agricultural fields within and adjacent to the Project site provide suitable foraging habitat during migration. The arrow weed and tamarisk thickets provide marginally suitable nesting habitat; however breeding is rare in the region.
<b>LANIIDAE                      SHRIKES</b>					
Loggerhead shrike (nesting) <i>Lanius ludovicianus</i>	SSC	Open foraging areas near scattered bushes and low trees.	Observed in tamarisk thickets on Project site and in common reed marsh and creosote bush scrub immediately adjacent to Project site	Present, likely resident; high potential to nest	This species was repeatedly observed during the biological surveys. With the combination of dense patches of shrubs or trees and adjacent open areas, the Project site and surrounding areas provide suitable breeding habitat for this species.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>VIREONIDAE                      VIREOS</b>					
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	FE, CE	Willow riparian woodlands. Summer resident.	No	Low potential to forage; not expected to nest	The arrow weed and tamarisk thickets within and adjacent to the Project site may provide somewhat suitable foraging habitat during migration. However, the Project site and surrounding areas lack suitable mature riparian habitat for breeding.
<b>POLIOPTILIDAE                      GNATCATCHERS</b>					
Black-tailed gnatcatcher <i>Polioptila melanura</i>	WL	Semi-arid and desert scrub communities including creosote bush, salt bush, mesquite, and cacti. Known to use willows and tamarisk along Colorado River.	Observed in arrow weed thickets and creosote bush scrub along the Project site boundaries south of Westside Main Canal	Present, likely resident; high potential to nest on and adjacent to Project site	This species was repeatedly observed during the biological surveys. The arrow weed thickets, fourwing saltbush scrub, tamarisk thickets, and creosote bush scrub within and adjacent to the Project site provide suitable habitat for this species.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>MIMIDAE                      MOCKINGBIRDS &amp; THRASHERS</b>					
Crissal thrasher <i>Toxostoma crissale</i>	SSC	Mesquite thickets, desert washes with trees and dense shrubs. Rare resident.	No	Low potential to forage or nest	The arrow weed and tamarisk thickets provide marginally suitable nesting habitat. For nesting, this species prefers dense thorny shrubs, which are scattered within the Project site and surrounding area. This species is also sensitive to human disturbance.
LeConte's thrasher <i>Toxostoma lecontei</i>	SSC	Desert washes, creosote bush scrub. Uncommon resident.	Observed in arrow weed thickets and fourwing saltbush scrub on Project site	Present, likely resident; low potential to nest within Project site	Although this species as observed and is likely a resident in the native desert scrub communities within and adjacent to the Project site, it is unlikely to nest on the Project site due to the lack of cactus and low number of thorny shrubs.
<b>PASSERELLIDAE                      SPARROWS</b>					
Abert's towhee <i>Melospiza aberti</i>	*	Desert scrub in Sonoran and Colorado deserts.	Observed as a common species in arrow weed thickets, fourwing saltbush scrub, and creosote bush scrub on and adjacent to Project site	Present, likely resident; high potential to nest on and adjacent to Project site	This species was repeatedly observed during the biological surveys. The arrow weed thickets, fourwing saltbush scrub, tamarisk thickets, and creosote bush scrub within and adjacent to the Project site provide suitable habitat for this species.



**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Brewer's sparrow (nesting) <i>Spizella breweri</i>	*	Big sagebrush scrub, occasionally open pinyon-juniper woodlands.	Observed once on Project site in April 2018	Observed foraging on site during winter; not expected to nest	The scrub communities within and adjacent to the Project site provide suitable foraging habitat during migration. The Project site is outside this species' known breeding range.
<b>ICTERIDAE                      YELLOW-BREASTED CHATS</b>					
Yellow-breasted chat (nesting) <i>Icteria virens auricollis</i>	SSC	Dense riparian woodland. Localized summer resident.	No	Low potential to forage; not expected to nest	The arrow weed and tamarisk thickets within and adjacent to the Project site may provide marginally suitable foraging habitat during migration. However, the Project site and surrounding areas lack suitable mature riparian habitat for breeding.
<b>ICTERIDAE                      BLACKBIRDS &amp; NEW WORLD ORIOLES</b>					
Yellow-headed blackbird (nesting) <i>Xanthocephalus xanthocephalus</i>	SSC	Breeds within deeply flooded freshwater marshes, ponds.	Observed in common reed marshes along Westside Main Canal, along Project site boundary	Occasional visitor during migration; not expected to nest	The marsh vegetation within and adjacent to the Project site occurs in small and/or narrow patches and is not associated with a large water body such as a lake or pond. Therefore, the marsh is likely unsuitable as breeding habitat for this species.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>PARULIDAE                      WOOD-WARBLEDERS</b>					
Yellow warbler (nesting) <i>Setophaga [=Dendroica] petechia</i>	SSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.	Observed in tamarisk thickets on Project site in April 2018	Occasional visitor during migration; not expected to nest	The arrow weed and tamarisk thickets within and adjacent to the Project site provide suitable foraging habitat during migration. However, the Project site and surrounding areas lack suitable mature riparian habitat for breeding.
<b>MAMMALS (Nomenclature from Baker et al. 2003)</b>					
<b>PHYLLOSTOMIDAE                      NEW WORLD LEAF-NOSED BATS</b>					
California leaf-nosed bat <i>Macrotus californicus</i>	SSC, BLM	Occurs in deserts of California, southern Nevada, Arizona and south into Baja California and Sonora, Mexico. Roosts in long caves and mine tunnels that maintain relatively warm temperatures and high humidity throughout the year. Forages by gleaning large arthropods within desert washes up to 6 miles of roost.	No	Low potential to forage; not expected to roost	The fallow agricultural fields, arrow weed and tamarisk thickets, and marshes along the Westside Main Canal provide potentially suitable foraging habitat; however . the Project site lacks suitable roost sites, and few roosting opportunities are expected within 6 miles.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>VESPERTILIONIDAE      VESPER BATS</b>					
Pallid bat <i>Antrozous pallidus</i>	SSC, BLM	Arid deserts and grasslands below 6,000 feet. Roosts in shallow caves, crevices, rock outcrops, buildings, tree cavities. Especially near water. Colonial. Gleans larger arthropods, occasionally lizards and rodents.	No	Moderate potential to forage; low potential to roost	The open desert communities within and adjacent to the Project site provide suitable foraging habitat. The tall eucalyptus, tamarisk, and palm trees within and adjacent to the Project site may provide suitable roost sites.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, BLM	Caves, mines, buildings. Found in a variety of habitats, arid and mesic. Individual or colonial. Extremely sensitive to disturbance.	No	Low potential to forage; not expected to roost	The shrub- and tree-dominated vegetation communities within and adjacent to the Project site provide potentially suitable foraging habitat. The Project site lacks suitable roost sites.
<b>MOLOSSIDAE      FREE-TAILED BATS</b>					
Western mastiff bat <i>Eumops perotis californicus</i>	SSC, BLM	Desert scrub, chaparral, oak woodland, ponderosa pine and mixed conifer forests, and meadows. Strongly tied to areas with cliffs and other significant rock features for roosting. Forages over a wide variety of habitats up to 15 miles from the roost.	No	Not expected to forage or roost	The Project site lacks suitable roost sites. The nearest suitable roosting opportunities are likely in the Mountain Springs area 15-20 miles west of the Project site. Project site likely too far from roosting sites to be suitable for foraging. ..

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC	Rugged, rocky terrain, in desert scrub, woodland, and evergreen forests. Roosts most common in rock crevices in cliffs, but have also been found in buildings, caves, and tree cavities. Forages almost entirely on large moths.	No	Low potential to forage; not expected to roost	The Project site lacks suitable roost sites. The nearest suitable roosting opportunities are likely in the Mountain Springs area 15-20 miles west of the Project site. While this species is known to travel substantial distances to forage, the potential foraging habitat on site is low quality, and better opportunities are present in active agricultural fields nearby.
<b>HETEROMYIDAE                      POCKET MICE &amp; KANGAROO RATS</b>					
Palm Springs little pocket mouse <i>Perognathus longimembris bangsi</i>	SSC, BLM	Desert riparian, desert scrub, desert wash, coastal sage scrub, and sagebrush with sandy soil. Also found on gravel washes and stony soils.	No	Low	The extent of this species' range is not well defined but does extend into the western portion of Imperial Valley. This species tends to prefer denser herbaceous cover than that found within the open desert communities within the Project site and surrounding areas.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>CRICETIDAE                      HAMSTERS, VOLES, LEMMINGS, &amp; NEW WORLD RATS AND MICE</b>					
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC	Coastal sage scrub, chaparral, desert scrub; typically associated with rock outcrops, cacti, or dense undergrowth.	No	Low	The desert communities within and adjacent to the Project site may provide suitable habitat. However, the Project site lacks cactus and rock outcrops, and no woodrat middens were observed within the Project site.
Yuma hispid cotton rat <i>Sigmodon hispidus eremicus</i>	SSC	Cattail marshes along the Colorado River.	No	Moderate	This species has been reported along the Westside Main Canal within two miles of the Project site (CDFW 2019a). The combination of wetland communities along Westside Main Canal, dense herbaceous cover within the fallow agriculture areas, and active agriculture within and adjacent to the Project site provides moderately suitable habitat conditions for this species.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

Common Name <i>Scientific Name</i>	Sensitivity Status	Habitat Preference/ Requirements	Detected On Site?	Potential to Occur On Site	Basis for Determination of Occurrence Potential
<b>MUSTELIDAE                      WEASELS, OTTERS, &amp; BADGERS</b>					
American badger <i>Taxidea taxus</i>	SSC	Grasslands, Sonoran desert scrub.	Observed in creosote bush scrub immediately south of Project site; tracks observed in fourwing saltbush scrub on Project site	Present	This species was observed south of the Project site, and tracks were observed in the western and southwestern portions of the Project site. The desert communities within and adjacent to the Project site provide suitable foraging habitat. Suitably- sized burrows were observed immediately adjacent to the southwestern edge of the Project site.
<b>BOVIDAE                              CATTLE, ANTELOPE, GOATS, &amp; SHEEP</b>					
Peninsular bighorn sheep (DPS) <i>Ovis canadensis nelsoni</i> [= <i>O. c. cremnobates</i> ]	FE, CT, CFP	Open, rocky habitat, sparse vegetated desert slopes. Rocky ridges. Mainly within San Jacintos, Santa Rosas, San Ysidros (San Diego County).	No	Not expected to occur	The Project site and surrounding areas lack suitable rocky, mountainous terrain. The Project site is outside this species' known range.

**Attachment 5**  
**Sensitive Wildlife Species Occurring or with the Potential to Occur**

(I) = Introduced species

DPS = federal Distinct Population Segment

**STATUS CODES**

FE = Listed as endangered by the federal government

FT = Listed as threatened by the federal government

CE = Listed as endangered by the state of California

CT = Listed as threatened by the state of California

CFP = California Department of Fish and Wildlife fully protected species

SSC = California Department of Fish and Wildlife species of special concern

WL = California Department of Fish and Wildlife watch list species

BLM = Bureau of Land Management Sensitive species

\* = Taxa where at least one of the following conditions applies:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines;
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;
- Population(s) in California that may be peripheral to the major portion of a taxon's range but which are threatened with extirpation within California;
- Taxa closely associated with a habitat that is declining in California at significant rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands); or
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or a non-governmental organization and determined by the CNDDDB to be rare, restricted, declining, or threatened across their range in California.

# **APPENDIX E – BIOLOGICAL RESOURCES**

## **E.2. Results of 2018 Burrowing Owl Habitat Assessment and Breeding Season Surveys for the Westside Canal Energy Center Project**





An Employee-Owned Company

August 3, 2018

Ms. Marilyn Teague  
Sempra Infrastructure, LLC  
HQ-12N1  
488 8th Avenue  
San Diego, CA 92101

Reference: Results of 2018 Burrowing Owl Habitat Assessment and Breeding Season Surveys for the Westside Canal Energy Center Project (RECON Number 8888)

Dear Ms. Teague:

This letter summarizes the results of the 2018 habitat assessment and breeding season surveys for western burrowing owl (*Athene cunicularia hypugaea*) conducted for Sempra Renewables, LLC's Westside Canal Energy Center Project (project). Project location, burrowing owl species and historical occurrence information, habitat assessment and survey methods, and results are discussed in detail below. Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. Burrowing owl was not detected within the project survey area during 2018 breeding season surveys.

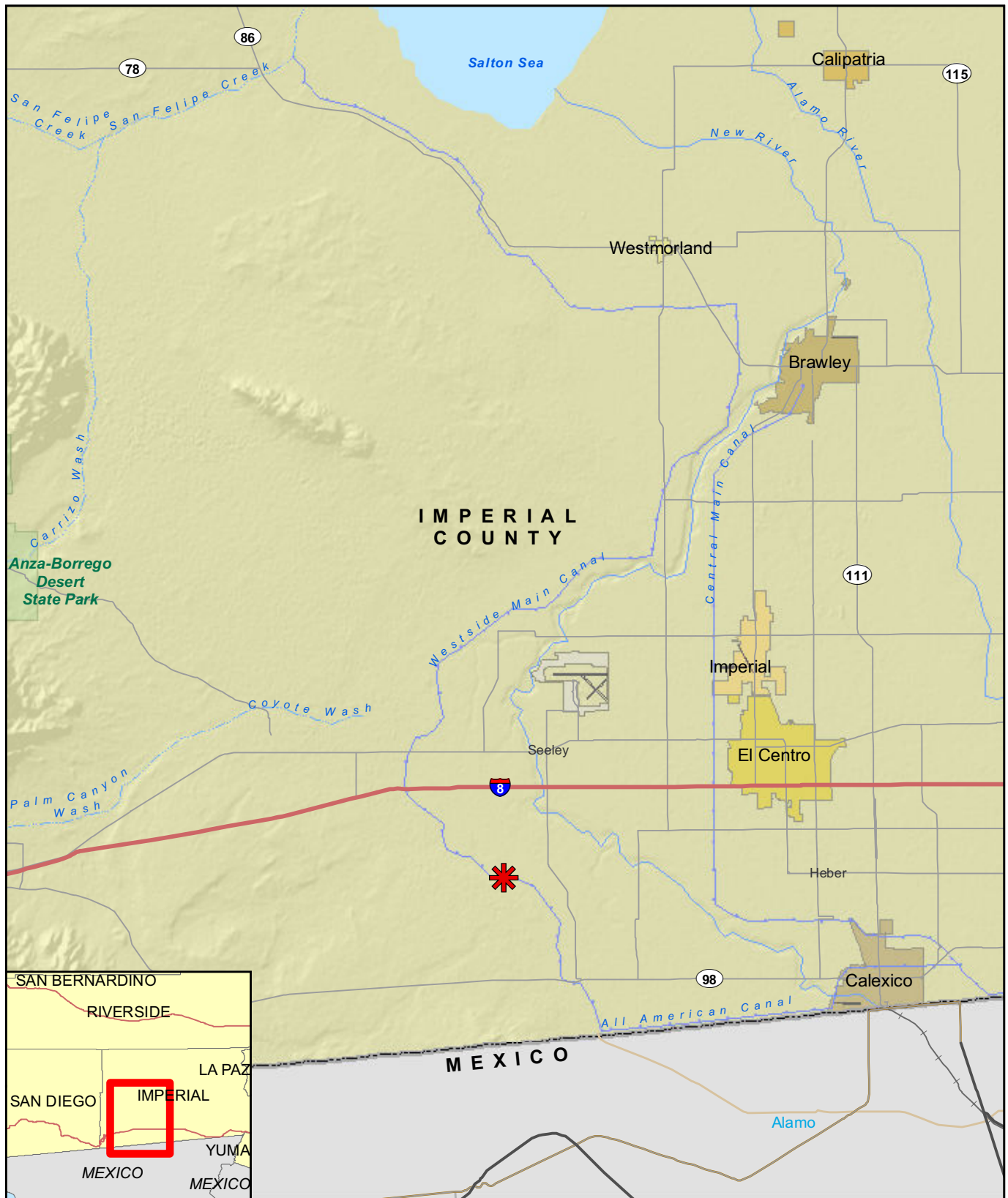
### **Project Location and Description**


The project site is located in an unincorporated area of southwestern Imperial County, approximately 4.5 miles south-southwest of Seeley, California (Figure 1). The main project area includes Assessor's Parcel Numbers (APNs) 051-350-010 and 051-350-011. Additional project components, including access routes and staging areas, include portions of adjacent APNs 051-350-019 and 051-350-018. All project components are located in the southern half of Section 34, Township 16 South, Range 12 East, on the U.S. Geological Survey (USGS) Mount Signal, California quadrangle (USGS 1976; Figure 2).

The project is currently in the design phase and includes development, construction, and operation of a hybrid renewable energy facility, consisting of a solar photovoltaic plus Battery Energy Storage generating plant and an Energy Storage System. The project will also include construction of a new loop-in substation on-site, as well as construction of an access road and bridge to provide vehicular access from Liebert Road and across the Westside Canal (Figure 3). Construction and project details, such as proposed timeline, daily work schedules, equipment to be used, activities, and phasing, are not yet finalized. The project boundary shown on Figures 2, 3, and 4 is the preliminary project footprint and includes the currently anticipated permanent and temporary impacts. The estimated in-service date for the project is December 2020.

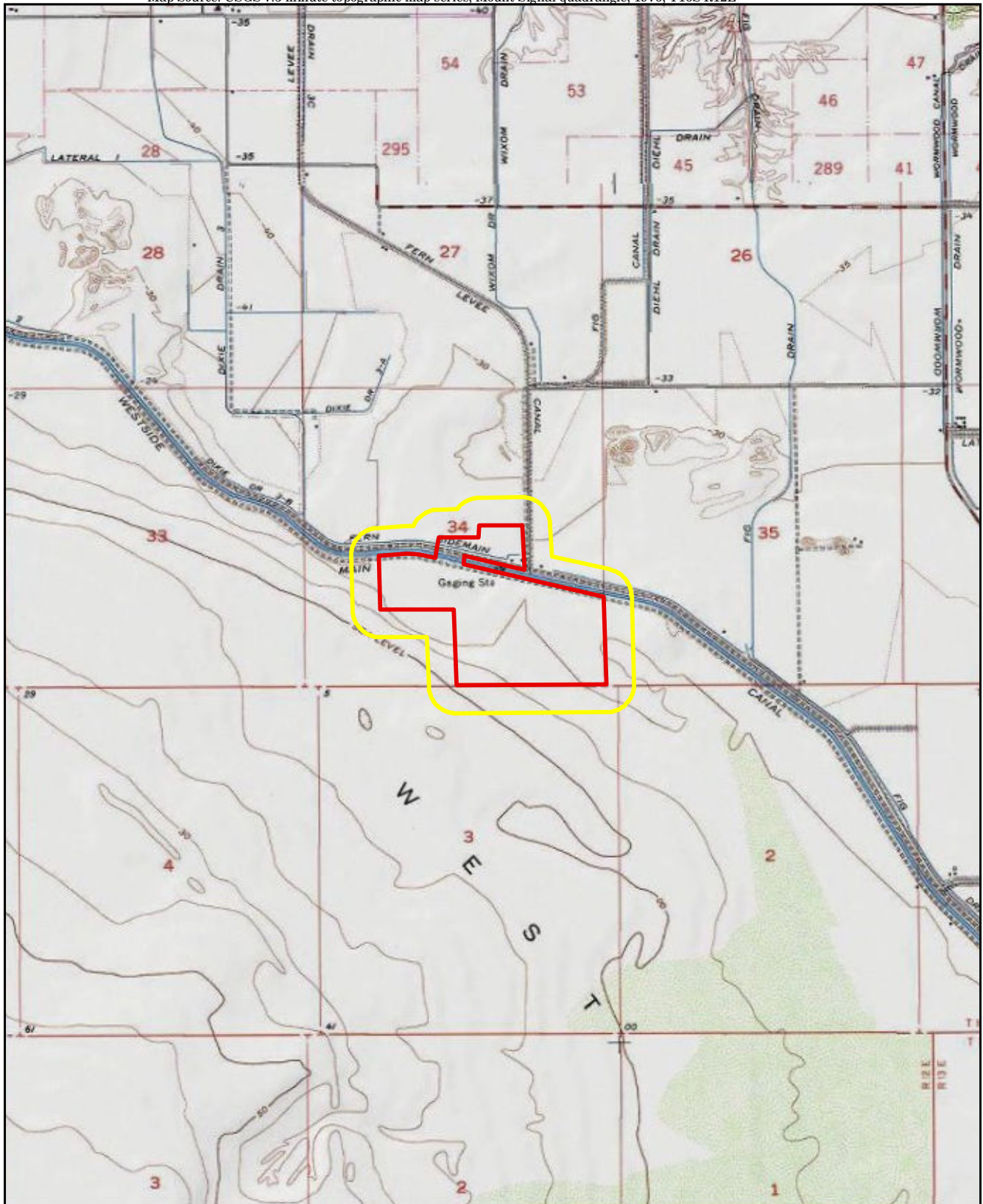
### **Western Burrowing Owl Species Description**



Burrowing owl is a California Department of Fish and Wildlife (CDFW) species of special concern. Western burrowing owl, the western subspecies, is primarily restricted to the western United States and Mexico. Studies conducted by Ruhlen et al. (2004) show that the density and abundance of this species within the Imperial Valley is exceptionally high compared to other areas in southern California.

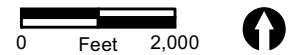


 Project Location

**FIGURE 1**  
Regional Location



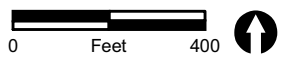
-  Project Boundary
-  Survey Area



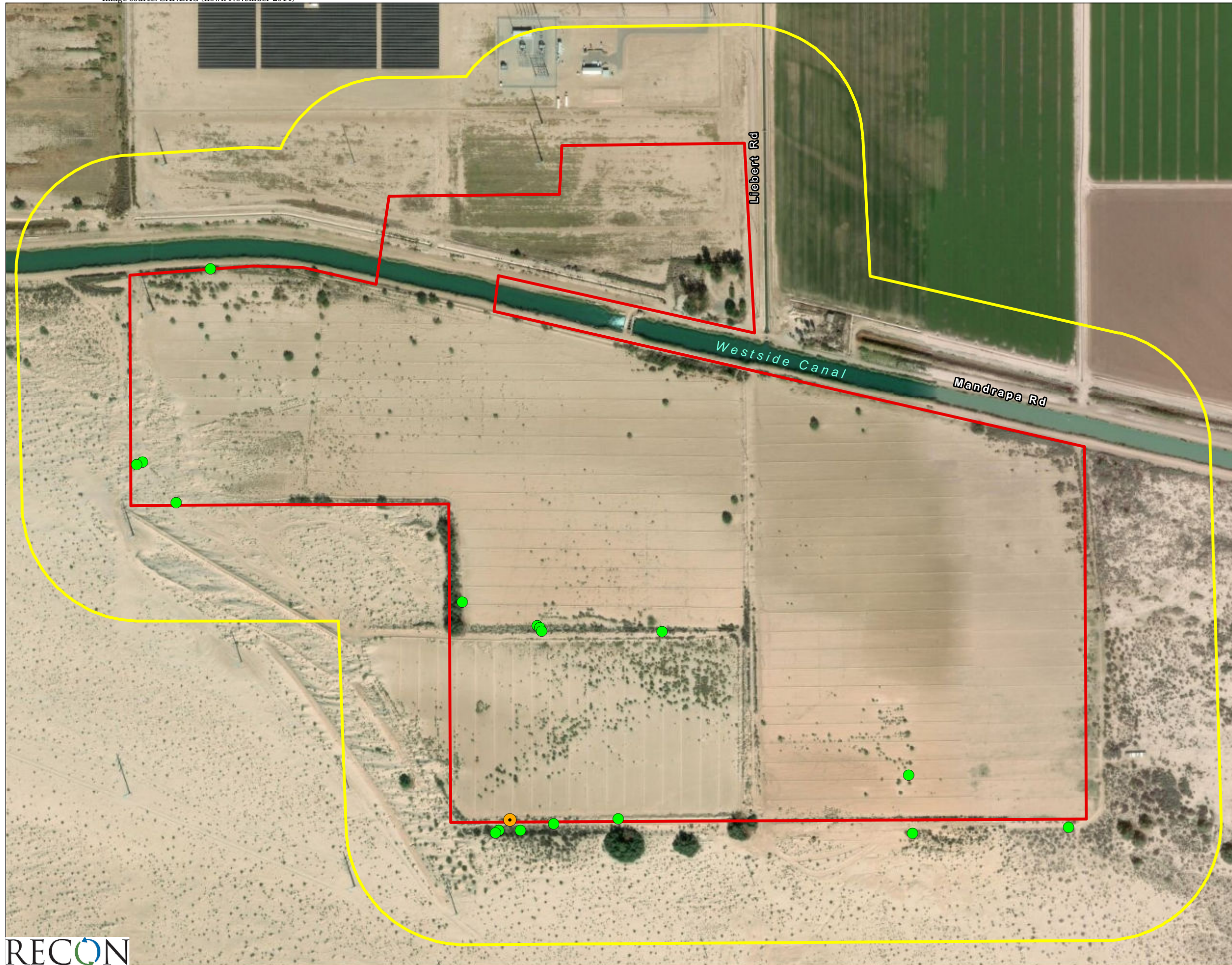
**FIGURE 2**  
Project Location on USGS Map



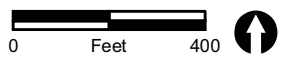
- Project Boundary
- Survey Area
- Photograph Locations
- Vegetation Communities**
- Arrow Weed Thickets
- Common Reed Marshes
- Cattail Marshes
- Creosote Bush Scrub
- Eucalyptus Groves
- Fourwing Saltbush Scrub
- Quailbush Scrub
- Tamarisk Thickets
- Upland Mustards
- Land Cover Types**
- Disturbed Habitat
- Fallow Agriculture
- Active Agriculture
- Open Water
- Developed



**FIGURE 3**  
Vegetation Communities and  
Land Cover Types within the  
2018 Burrowing Owl Survey Area



- Project Boundary
- Survey Area
- Suitable Burrow
- Suitable Burrow with Sign



**FIGURE 4**  
2018 Burrowing Owl Habitat  
Assessment and Breeding  
Season Survey Results

Habitat for the western burrowing owl includes dry, open, low-growing grasslands, deserts, and scrublands with level to gently sloping topography and well-drained soils (CDFW 2012). These areas are also often associated with burrowing mammals (Haug et al. 1993). Irrigation canals, ditches, and drains immediately adjacent to agricultural fields are also commonly used as nesting sites (Ruhlen et al. 2004). Western burrowing owl is known to use multiple burrows in addition to their nesting burrows called “satellite” burrows. These non-nesting burrows are used to seek protection from predators and for roosting during the non-breeding season (CDFW 2012).

Western burrowing owl is diurnal and typically perches during daylight at the entrance to its burrow or on adjacent structures, such as low posts. Nesting typically occurs from March through August. Western burrowing owl breeding pairs form a bond for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Western burrowing owl is an opportunistic feeder, consuming a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles (Haug et al. 1993).

Urbanization has greatly reduced the amount of suitable habitat for the western burrowing owl. Other contributions to the decline of this species include the poisoning of fossorial mammals, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

## **Methods**

For the purposes of this report, the “survey area” includes the project area and the surrounding 150 meters (see Figures 2 through 4). As land owners had not granted permission to access adjacent properties, direct access was limited to the project area south of Westside Canal (land owned by Sempra Energy), the canal roads (including Mandrapa Road), and Liebert Road. Therefore, the project area south of Westside Canal, totaling approximately 148 acres, was surveyed using line transects with surveyors spaced 150 to 230 feet apart, with low to very low vegetation density and cover allowing for excellent ground visibility. The majority of the survey area north of Westside Canal and the entirety of the 150-meter buffer south of Westside Canal, totaling approximately 180 acres, were surveyed by using binoculars or scopes. These areas were surveyed by conducting 15-minute point count surveys along the roads north of Westside Canal and project boundary south of Westside Canal, with spacing dependent on the height and density of the surrounding vegetation.

Methods used for the burrowing owl habitat assessment and breeding season surveys follow the guidelines set forth by CDFW (2012) and are detailed below.

### ***Habitat Assessment Methods***

The habitat assessment began with a review of relevant biological information to provide local and regional context, document known occurrences of the species within the project vicinity, and identify potentially suitable burrowing owl habitat within and adjacent to the project area. This analysis included record searches of the California Natural Diversity Database (CNDDB; CDFW 2018) and eBIRD (<http://ebird.org>). Additional resources reviewed included San Diego County Bird Atlas (Unitt 2004), Proceedings of the California Burrowing Owl Symposium (Barclay et al. 2007), USGS topographic maps (USGS 1976), soils survey maps (USDA 1975), and online aerial satellite imagery (Google Earth Pro 2018).

RECON Environmental, Inc. (RECON) biologists Brenna Ogg, Bernadette Rigley, Alex Fromer, and Brian Parker conducted the habitat assessment on April 5, 2018 (Table 1). The biologists assessed vegetation types, height, and density; land use; presence or absence of friable soils, burrows, and/or burrow complexes; topography; hydrological features; and presence or absence of burrowing owl sign.

Vegetation community classifications in this report follow Sawyer et al. (2009) per the CDFW guidelines. Where Sawyer et al. (2009) does not provide an appropriate classification, the following land cover types were used: developed, active agriculture, fallow agriculture, open water, and disturbed habitat.

Table 1 Survey Information				
Date	Survey Type	Surveyors	Beginning Conditions	Ending Conditions
4/5/2018	Habitat Assessment	B. Ogg, B. Rigley, A. Fromer, B. Parker	09:25; 82°F; 2–4 mph wind; sunny	14:00; 94°F; 2–5 mph wind; 50% high, thin cloud cover
4/13/2018	Breeding Season Survey #1	B. Ogg, B. Rigley, A. Fromer, S. Vargas	17:20; 81°F; 2–9 mph wind; clear sky	19:36; 70 °F; calm wind; clear sky
4/14/2018			06:00; 55°F; 0–2 mph wind; clear sky	09:55; 78°F; 1–3 mph wind; clear sky
5/7/2018	Breeding Season Survey #2	B. Ogg, B. Rigley, S. Vargas, K. Israel	17:45; 95°F; 1–4 mph wind; 0% cloud cover, slight haze	19:55; 92 °F; 2–9 mph wind; 0% cloud cover, slight haze
5/8/2018			05:25; 67°F; 2–4 mph wind; 0% cloud cover, slight haze	09:20; 88°F; 2–6 mph wind; 75% high, thin cloud cover
5/29/2018	Breeding Season Survey #3	B. Ogg, B. Rigley, A. Smisek, K. Valenti	17:45; 99°F; 1–3 mph wind; 30% cloud cover	20:11; 94°F; 4–11 mph wind; 20% cloud cover
5/30/2018			05:20; 68°F; 2–4 mph wind; 2% cloud cover	09:45; 93°F; 2–6 mph wind; 1% cloud cover with haze
7/5/2018	Breeding Season Survey #4	B. Ogg, A. Fromer, K. Valenti, V. Novik	17:55; 108°F; 1–5 mph wind; 15% high, thin cloud cover	20:22; 100°F; calm wind; 5% high, thin cloud cover
7/6/2018			05:15; 83°F; 2–4 mph wind; 25% cloud cover	09:35; 103°F; 1–3 wind; 40% cloud cover

°F = degrees Fahrenheit; mph = miles per hour; % = percent.

### ***Breeding Season Survey Methods***

RECON biologists Brenna Ogg, Bernadette Rigley, Sonya Vargas, Kevin Israel, Alex Fromer, Kayo Valenti, Andrew Smisek, and Victor Novik conducted western burrowing owl breeding season surveys in accordance with the guidelines developed by the CDFW (CDFW 2012). Surveys included four visits during the western burrowing owl breeding season. Each survey was conducted by four biologists over a two-day period, between two hours before sunset and civil dusk on the first day and between civil dawn and 10:00 on the second day. Surveys were spaced at least three weeks apart. All wildlife species observed during the surveys were noted, and all suitable burrows were recorded using a handheld Global Positioning System (GPS) device. Survey dates, personnel, times, and weather conditions are provided in Table 1.

### **Results/Existing Conditions**

#### ***Literature Review and Desktop Evaluation Results***

Based on a review of the CNDDDB and eBIRD, the agricultural fields north and east of the project site and the desert areas west of the project site have multiple records of western burrowing owl (CDFW 2018). The closest reported occurrences to the project area are between 3.5 and 4 miles to the southeast and west. One occurrence was within active agriculture, and one was within creosote scrub. Both were reported in 2007 (CDFW 2018).

Based on a review of aerial imagery and the proximity of known occurrences of the species, RECON concluded that the majority of the project area and larger survey area provide potentially suitable burrowing owl habitat. The project area largely comprises land that, although zoned for agriculture, has been inactive since approximately 2013 on the north side of Westside Canal as a result of solar energy development and 2003 or earlier on the south side of Westside Canal. Surrounding areas to the south, west, and east are

mostly undeveloped, and areas to the north include a mix of active agriculture and photovoltaic solar development.

Eight soil series occur within the survey area and are listed in their approximate order of predominance: Vint, Vint and Indio, Meloland, Rositas, Imperial-Glenbar, Indio-Vint, Holtville, and Glenbar complex. These include eleven distinct soil types, which generally comprise very fine to fine sand with varying degrees of loam, silt, and clay components (USDA 1975).

### ***Habitat Assessment Results***

The main project area south of Westside Canal consists of land that was previously used for agriculture but has remained inactive since at least 2003. This has resulted in the natural, wind-driven deposition of sand and re-establishment of native and non-native vegetation within the old agricultural fields. The westernmost and southwestern portions of the main project area currently support the highest cover of native shrub species, while the central and eastern portions mostly support a mix of native and non-native annual plant species.

The project area north of Westside Canal mostly consists of land that was previously used for agriculture but has been inactive for a relatively shorter period (since approximately 2013). Non-native weedy plant species are common in this area, with remnant patches of planted non-native trees.

Overall, areas north of the project area are more developed than those to the south of the project area. The 150-meter buffer area south of Westside Canal consists of mostly undeveloped land, with one transmission line and associated access roads to the west and one wooden shade structure and bare pad (assumed belonging to U.S. Border Patrol) to the east. Imperial Valley Substation lies approximately 1,800 feet to the south, beyond the 150-meter buffer. The 150-meter buffer area north of Westside Canal consists of active agriculture, photovoltaic solar development, and dirt roads. Dirt roads also run immediately adjacent and parallel to the north and south banks of Westside Canal, and one dirt road follows a distribution line south through the main project area.

In general, the survey area contains level topography close to sea level with short earthen berms along the edges of the active and inactive agricultural fields and irrigation canals. Small sandy hummocks occur amongst the native desert vegetation in the 150-meter buffer. The southwestern section of the old agricultural fields in the main project area sits on a slightly higher terrace than the adjacent fields to the north and west, and the elevation increases slightly from there in the southwestern corner of the 150-meter buffer, with small sand hummocks and dunes forming along the leeward side of a human-created berm/access road.

Available water sources observed during the surveys were limited to the northern portion of the survey area and included only human-created sources: Westside Canal and the irrigation ditches, channels, and temporarily ponded areas within the active agriculture fields. All of the concrete-lined irrigation channels south of Westside Canal are dilapidated and/or buried in sand, and have likely not transported water since the agricultural land south of Westside Canal went inactive. The old, unused irrigation channels south of Westside Canal may support temporary ponding during the wet season. However, there was no sign of recent ponding, and the 2017-2018 wet season had well-below average rainfall totals. Furthermore, it appeared that all annual plant stalks observed on-site in upland areas were remaining from the 2016-2017 wet season. No substantial annual growth was observed as a result of 2017-2018 rainfall.

Vegetation communities mapped within the survey area include upland mustards (*Brassica* spp. and Other Mustards Semi-Natural Herbaceous Stands), creosote bush scrub (*Larrea tridentata* Shrubland Alliance), fourwing saltbush scrub (*Atriplex canescens* Shrubland Alliance), quailbush scrub (*Atriplex lentiformis* Shrubland Alliance), arrow weed thickets (*Pluchea sericea* Shrubland Alliance), tamarisk thickets (*Tamarix* spp. Semi-Natural Shrubland Stands), common reed marshes (*Phragmites australis* Herbaceous Alliance and Semi-Natural Stands), eucalyptus groves (*Eucalyptus* spp. Semi-Natural Woodland Stands), and cattail



marshes (*Typha* sp. Herbaceous Alliance) (see Figure 3). Additional land cover types include fallow agriculture, active agriculture, disturbed habitat, developed land, and open water (see Figure 3). Nearly all vegetation communities and land cover types within the survey area provide potentially suitable habitat for western burrowing owl due to the low stature and/or low-density vegetative cover. Areas dominated by annual plant species (e.g., upland mustards) typically support 5 to 25 percent vegetative cover with average plant height less than two feet (Photographs 1 and 2; see Figure 3 for photograph locations). Areas dominated by native upland shrubs (e.g., creosote bush scrub, fourwing saltbush scrub, quailbush scrub) typically support between 25 and 40 percent vegetative cover with shrub height generally less than four feet (Photographs 3 through 6; see Figure 3 for photograph locations). Active agricultural fields generally comprised low-growing or recently cut, irrigated vegetation (Photograph 7; see Figure 3 for photograph location).

Some stands of vegetation within the survey area would not likely provide suitable habitat on their own due to the tall (greater than six feet) height and high (greater than 75 percent cover) density of the vegetation. These include small stands or rows of arrow weed thickets, tamarisk thickets, common reed marshes, eucalyptus groves, and cattail marshes, which occur along the irrigation canals and channels as well as in the eastern 150-meter buffer south of Westside Canal. These also include some stands of creosote bush scrub and quailbush scrub with a higher density and average shrub height in the southern and southeastern 150-meter buffer, as well as in the project area north of Westside Canal. However, as these areas of tall, dense vegetation occur within a larger expanse of open, low-stature habitat, these communities were included in the focused breeding season surveys. Ecotones where the open and dense vegetation meet may provide opportunities for burrow and perch sites (Photograph 8; see Figure 3 for photograph location).

Burrows created by fossorial mammals, as well as concrete pipes associated with the irrigation channels, provide potentially suitable burrows for western burrowing owl throughout much of the survey area (Photographs 9 through 11). Fossorial mammals detected within the survey area include round-tailed ground squirrel (*Spermophilus tereticaudus*), kangaroo rat (*Dipodomys* sp.), kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and American badger (*Taxidea taxus*). Locations of potentially suitable burrows for western burrowing owl (greater than 11 centimeters in diameter and greater than 150 centimeters in depth) are shown on Figure 4. Only one burrow in the southwestern portion of the survey area had old whitewash near the burrow entrance (see "Suitable Burrow with Sign" on Figure 4 and Photograph 11). No burrowing owls, pellets, feathers, or recent sign was observed during the habitat assessment.

### ***Breeding Season Survey Results***

No western burrowing owls were detected within the survey area during 2018 breeding season surveys. As mentioned above, possible burrowing owl sign (i.e., whitewash at the entrance to a burrow) was observed in the southwestern portion of the survey area. However, by the time of the fourth breeding season survey, the entrance to this burrow had been modified and constricted, suggesting recent activity by an animal other than a burrowing owl (Photograph 12), and no new burrowing owl sign was observed at this site.

One western burrowing owl was observed incidentally outside the survey area adjacent to West Wixom Road while driving to the third morning survey. The observation location was approximately 0.75 mile northeast of the survey area at the northern edge of an active agricultural field, with a photovoltaic solar field to the north.

Possible western burrowing owl predators observed during surveys include American badger, coyote, great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperi*), red-tailed hawk (*Buteo jamaicensis*), and American crow (*Corvus brachyrhynchos*) (Coulombe 1971, Haug et al. 1993). Of these, coyote, red-tailed hawk, and American crow were the most commonly detected species. Great horned owl is a resident species on site with an active nest observed in the northeastern portion of the survey area. One burrow near the southwestern corner of the survey area also had sign of possible use by American badger. However, no evidence of western burrowing owl predation was observed.



## PHOTOGRAPH 1

Upland Mustards and Fourwing Saltbush Scrub in Old Agricultural Field (Left of Irrigation Channel) and Small Tamarisk Thickets in 150-Meter Buffer (Right of Irrigation Channel), Facing East-Northeast from South-Central Project Boundary, Taken April 5, 2018



## PHOTOGRAPH 2

Upland Mustards and Open Tamarisk Thickets in Easternmost Old Agricultural Field, Facing Northeast from the Southwest Corner of the Field, Taken April 14, 2018



### PHOTOGRAPH 3

Fourwing Saltbush Scrub in Old Agricultural Field in Central Section of Project Area, Facing East-Southeast Along Old Access Road Berm Between Fields, Taken July 6, 2018



### PHOTOGRAPH 4

Creosote Bush Scrub in Eastern 150-Meter Buffer, Facing East from Eastern Project Boundary, Taken May 7, 2018



### PHOTOGRAPH 5

Disturbed Habitat and Creosote Bush Scrub in Southern 150-Meter Buffer, Facing South from Southern Project Boundary, Taken May 29, 2018



### PHOTOGRAPH 6

Creosote Bush Scrub in the Western 150-Meter Buffer, Facing Southwest from the Inside Corner of the Western Project Boundary, Taken May 30, 2018



## PHOTOGRAPH 7

Active Agricultural Field in Northwestern 150-Meter Buffer, Facing North  
Along Liebert Road, Taken April 5, 2018



**PHOTOGRAPH 8**  
Active Agricultural Field (Left of Irrigation Channel) and Common Reed  
Marsh (Right of Irrigation Channel) in Northeastern 150-meter Buffer,  
Facing East, Taken April 5, 2018



**PHOTOGRAPH 9**  
Potentially Suitable Natural Burrow,  
Taken April 5, 2018



**PHOTOGRAPH 10**  
Potentially Suitable Human-Made Burrow,  
Taken April 5, 2018



**PHOTOGRAPH 11**  
Potentially Suitable Natural Burrow with Whitewash,  
Taken April 5, 2018



**PHOTOGRAPH 12**  
Previously Suitable Natural Burrow with Sign of Recent Disturbance,  
Taken July 6, 2018



Ms. Marilyn Teague  
Page 17  
August 3, 2018

### **Conclusion and Mitigation Requirements**

Western burrowing owl was not detected within the survey area during 2018 breeding season surveys. Therefore, western burrowing owl currently does not appear to be using the survey area as breeding habitat. However, as the project area and larger survey area provide suitable habitat for this species and the species was observed approximately 0.75 mile from the project area, non-breeding season surveys are required to determine if the species uses the survey area as a wintering site, for dispersal, or during migration. These surveys shall follow the guidelines set forth by CDFW (2012) and take place between September 1 and January 31.

Depending on the results of the non-breeding season surveys, formal consultation with CDFW may be required in order to develop an appropriate mitigation plan for the project. One or more mitigation measures, such as avoidance, minimization measures, translocation, artificial burrow construction, burrow exclusion and closure, and/or habitat-based mitigation or preservation, may be required.

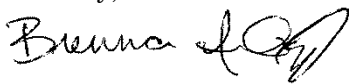
At a minimum, regardless of the results of non-breeding season surveys, take-avoidance (pre-construction) surveys for western burrowing owl would be required at least 14 days prior to ground disturbance. This effort would detect any change in western burrowing owl presence within the survey area in order to avoid direct take of owls and inform any necessary take avoidance actions. These surveys would include all areas where suitable habitat is present within the survey area (CDFW 2012).

Depending on timing of the project construction, additional and ongoing site surveillance may also be required to detect whether burrowing owls have colonized or re-colonized the survey area prior to or during project implementation (CDFW 2012).

If habitat that would be impacted by the project is determined occupied by western burrowing owl, habitat-based mitigation would also be required. Temporarily impacted areas would need to be restored to pre-project conditions. Permanent impacts to nesting, occupied and satellite burrows, and/or western burrowing owl habitat would require mitigation such that the habitat acreage, number of burrows, and burrowing owls are replaced (CDFW 2012).

If you have any questions concerning the contents of this letter, please contact me by phone or email at (619) 308-9333 extension 118 or [bogg@reconenvironmental.com](mailto:bogg@reconenvironmental.com).

Sincerely,



Brenna Ogg  
Senior Biologist  
CDFW Scientific Collecting Permit SC-9997

cc: Justin Garcia, California Department of Fish and Wildlife  
Esther Burkett, California Department of Fish and Wildlife  
Michael Flores, California Department of Fish and Wildlife

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# **APPENDIX E – BIOLOGICAL RESOURCES**

## **E.3. Results of 2018-2019 Burrowing Owl Non-Breeding Season Surveys for the Westside Canal Energy Center Project**



*An Employee-Owned Company*

April 8, 2019

Mr. Jim Pomillo  
Con Edison Clean Energy Businesses, Inc.  
100 Summit Lake Drive  
Valhalla, New York 10595

Reference: Results of 2018-2019 Burrowing Owl Non-Breeding Season Surveys for the Westside Canal Energy Center Project (RECON Number 8888)

Dear Mr. Pomillo:

This letter summarizes the results of the 2018-2019 non-breeding season surveys for western burrowing owl (*Athene cunicularia hypugaea*) conducted for the Westside Canal Energy Center Project (project), which is currently proposed by Con Edison Clean Energy Businesses, Inc. (Con Edison) and was formerly proposed by Sempra Renewables, LLC. Project location and description, burrowing owl natural history and historical occurrence information, prior burrowing owl survey results, survey methods, and results are discussed in detail below. Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. Western burrowing owl was observed within the project survey area during these surveys.

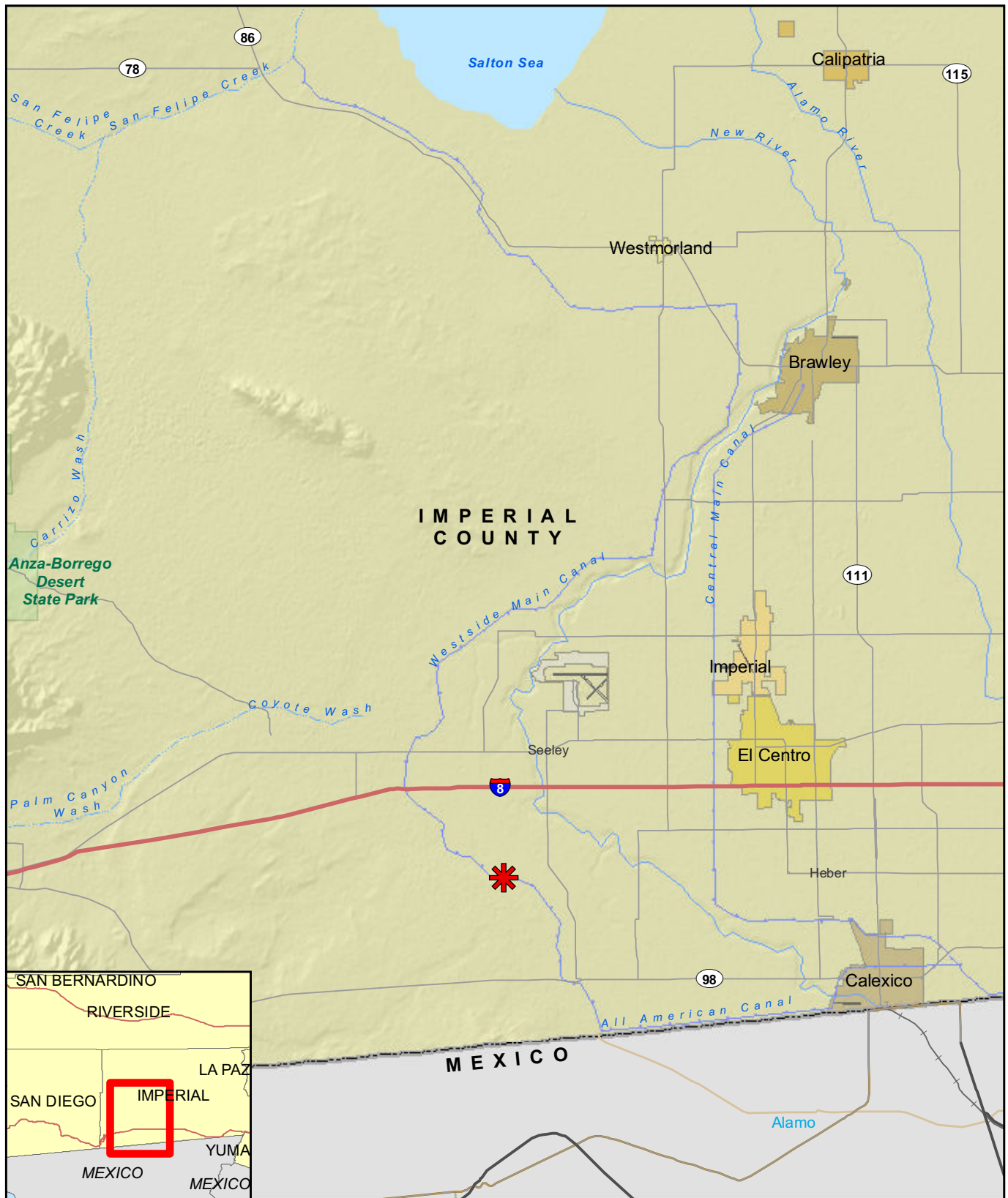
### **Project Location and Description**


The project site is located in an unincorporated area of southwestern Imperial County, approximately 4.5 miles south-southwest of Seeley, California (Figure 1). The main project area includes Assessor's Parcel Numbers 051-350-010 and 051-350-011. Additional project components, including access routes, staging areas, and tie-line connection, include portions of adjacent Assessor's Parcel Numbers 051-350-019, 051-350-018, and 051-350-009. All project components are located in the southern half of Section 34, Township 16 South, Range 12 East, on the U.S. Geological Survey (USGS) Mount Signal, California quadrangle (USGS 1976; Figure 2). An aerial photograph of the survey area is shown on Figure 3.

The project is currently in the design phase and includes development, construction, and operation of the Westside Canal Energy Center (WCEC), a Battery Energy Storage System (BESS) and renewable energy facility project. The project would consist of two distinct phases, WCEC 1 and WCEC 2, and common facilities to support each. WCEC 1 (phase 1) would consist of a Lithium-ion Battery Energy Storage System (BESS) facility, and WCEC 2 (phase 2) would consist of a flow batter BESS facility. The project would also include construction of a new loop-in substation on site, as well as construction of an access road and bridge to provide vehicular access from Liebert Road and across the Westside Canal. The project boundary used in this report is the preliminary project footprint and includes areas currently anticipated for permanent and temporary impacts. At present, construction of the access roads, bridge, and WCEC 1 is anticipated to commence in 2021 and conclude in 2022.

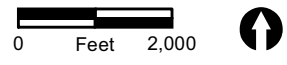
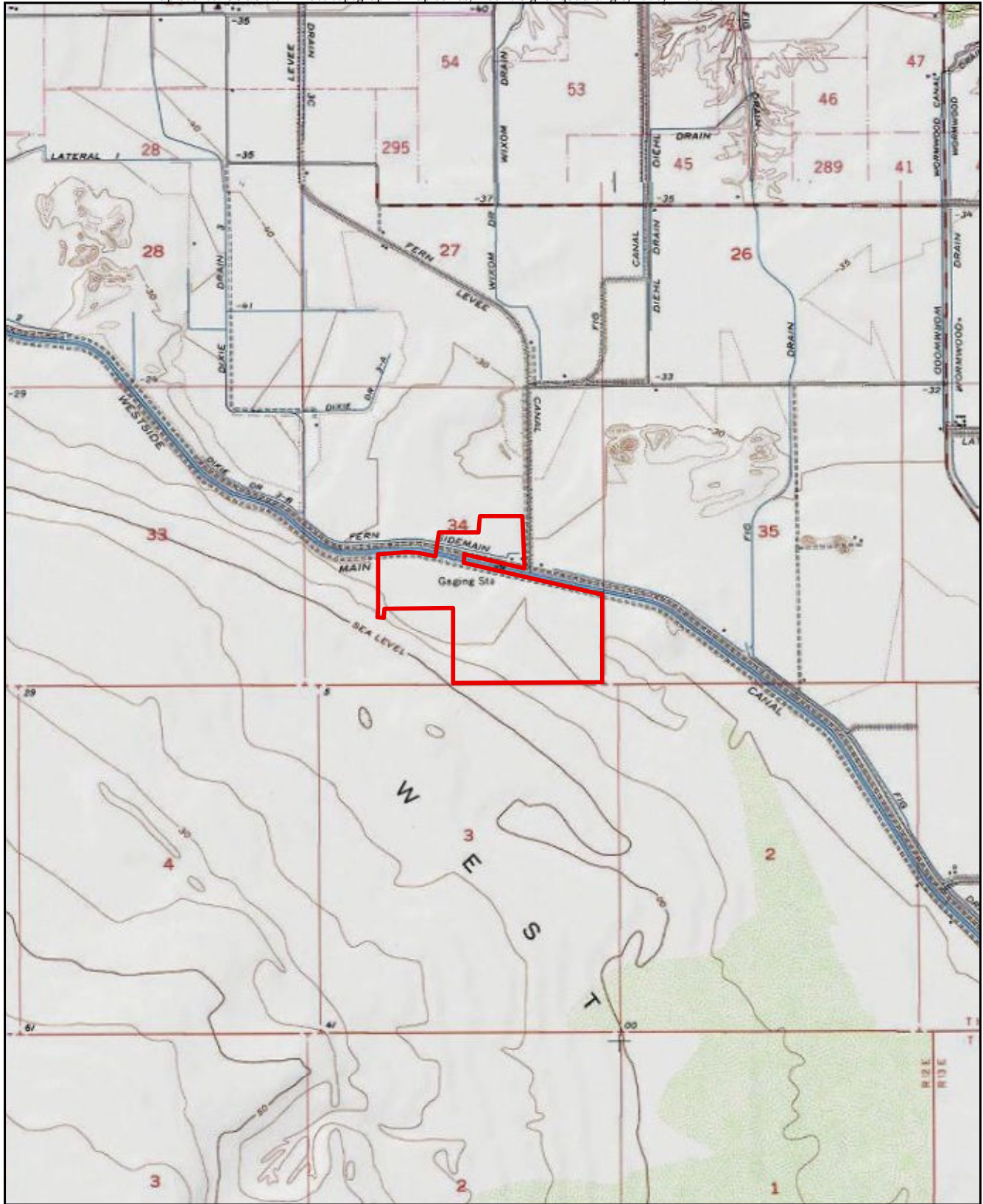
### **Western Burrowing Owl Species Description**

Burrowing owl is a California Department of Fish and Wildlife (CDFW) species of special concern. Western burrowing owl, the western subspecies, is primarily restricted to the western United States and Mexico. Studies conducted by Ruhlen et al. (2004) show that the density and abundance of this species within the Imperial Valley is exceptionally high compared to other areas in southern California.



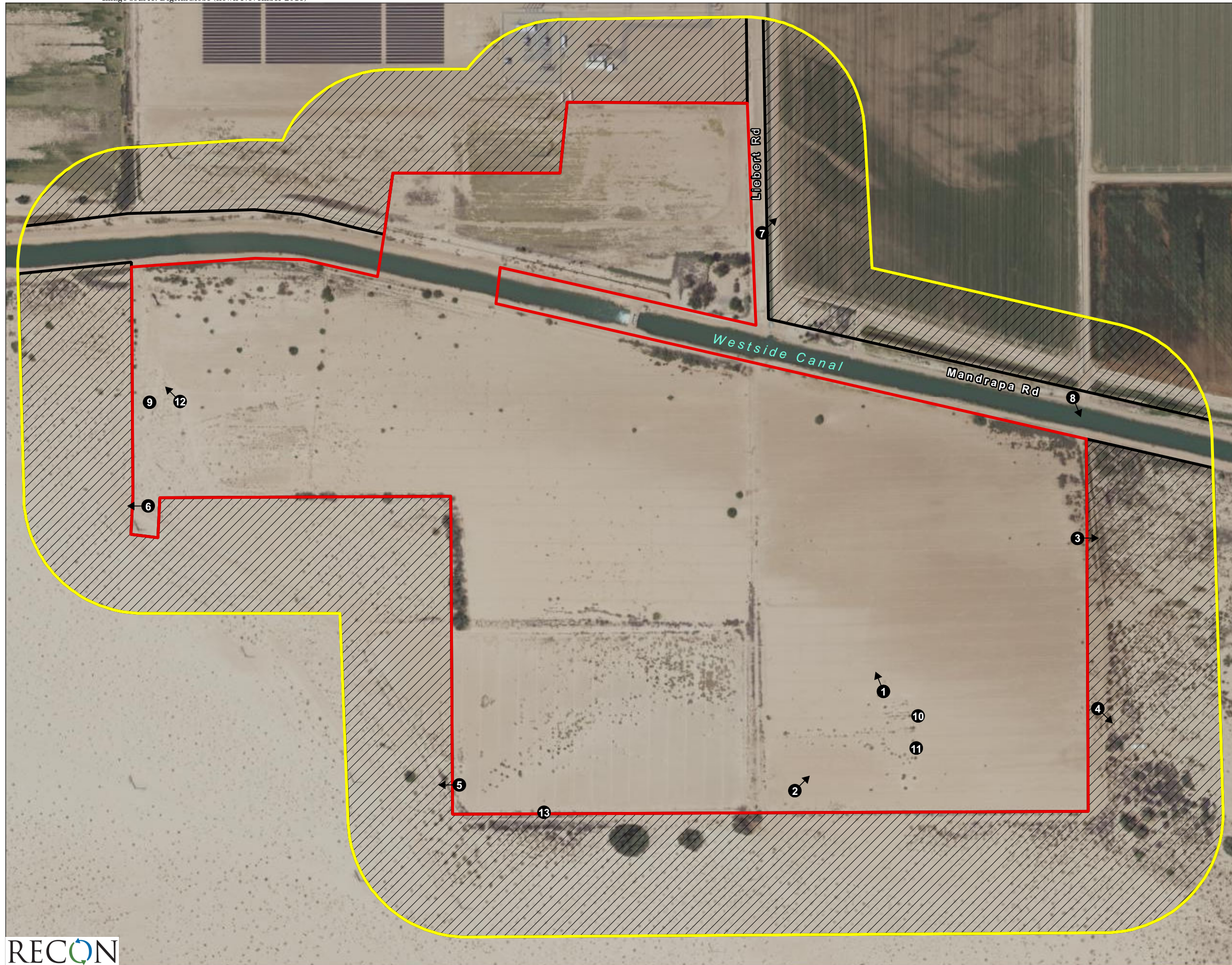
 Project Location





**FIGURE 1**  
Regional Location



 Project Boundary

**FIGURE 2**  
Project Location on USGS Map



-  Project Boundary
-  Survey Area
-  No Direct Access
-  Photograph Locations



**FIGURE 3**  
Project Area on  
Aerial Photograph

Habitat for western burrowing owl includes dry, open, low-growing grasslands, deserts, and scrublands with level to gently sloping topography and well-drained soils (CDFW 2012). These areas are also often associated with burrowing mammals (Haug et al. 1993). Irrigation canals, ditches, and drains immediately adjacent to agricultural fields are also commonly used as nesting sites (Ruhlen et al. 2004). Western burrowing owl is known to use multiple “satellite” burrows in addition to their nesting burrows. Satellite burrows are used to seek protection from predators and for roosting during the non-breeding season (CDFW 2012).

Western burrowing owl is diurnal and typically perches at the entrance to its burrow or on adjacent structures, such as low posts. Nesting typically occurs from March through August. Breeding pairs form a bond for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout this period. Western burrowing owl is an opportunistic feeder, with a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles (Haug et al. 1993).

Urbanization has greatly reduced the amount of suitable habitat for western burrowing owl. Other contributions to the decline of this species include the poisoning from pest control measures intended to control fossorial mammals, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

### **Previous Habitat Assessment and Breeding Season Survey Summary**

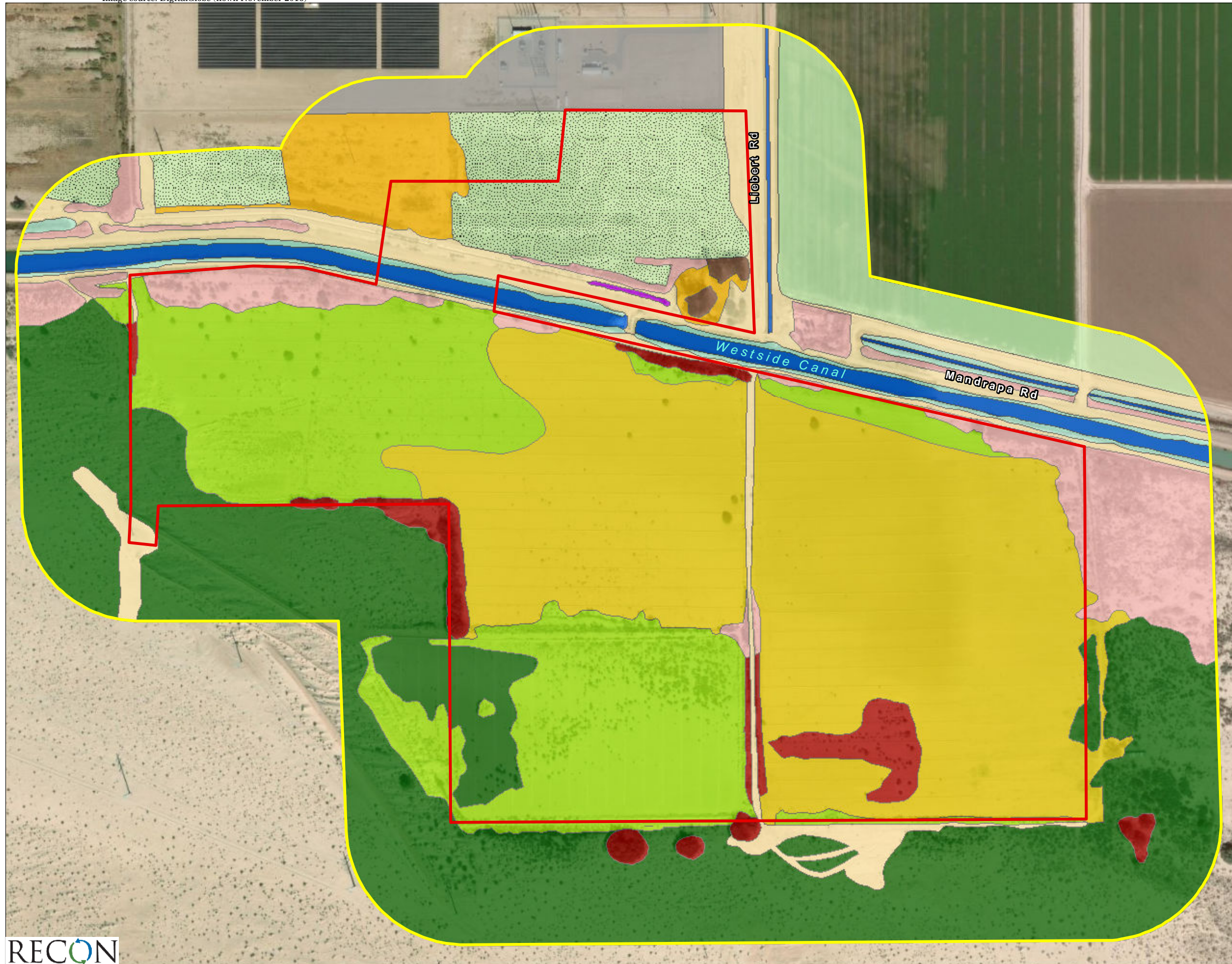
In 2018, RECON Environmental, Inc. (RECON) conducted a literature review, desktop evaluation, habitat assessment, and breeding season surveys for burrowing owl for the project. The assessment and surveys were conducted in accordance with the guidelines developed by CDFW (CDFW 2012); the methods and results are detailed in the survey report prepared by RECON (2018). In summary, the majority of the survey area provides suitable habitat for western burrowing owl, with low stature and/or low-density vegetative cover providing suitable foraging habitat, and fossorial mammals and other man-made structures providing suitable burrows. However, no western burrowing owls were detected within the survey area during the 2018 breeding season surveys.

Vegetation community/land cover type mapping used in this report is largely consistent with that provided in the habitat assessment and breeding season survey report prepared by RECON in 2018. However, minor revisions have been made as a result of the biologists gaining direct access to additional areas and seasonal variations providing a better understanding of plant species composition on site. The updated vegetation mapping is provided on Figure 4, and Photographs 1 through 8 provide representative views of the survey area. Vegetation communities mapped within the survey area include upland mustards (*Brassica* spp. and Other Mustards Semi-Natural Herbaceous Stands), creosote bush scrub (*Larrea tridentata* Shrubland Alliance), fourwing saltbush scrub (*Atriplex canescens* Shrubland Alliance), quailbush scrub (*Atriplex lentiformis* Shrubland Alliance), arrow weed thickets (*Pluchea sericea* Shrubland Alliance), tamarisk thickets (*Tamarix* spp. Semi-Natural Shrubland Stands), common reed marshes (*Phragmites australis* Herbaceous Alliance and Semi-Natural Stands), eucalyptus groves (*Eucalyptus* spp. Semi-Natural Woodland Stands), and cattail marshes (*Typha* sp. Herbaceous Alliance). Additional land cover types include fallow agriculture, active agriculture, disturbed habitat, developed land, and open water.

### **Methods**

For the purposes of this report, the “survey area” includes the project area and the surrounding 150 meters (see Figure 3). At the start of the survey period, only one land owner granted permission to access an adjacent property. Therefore, direct access was limited to lands owned by Con Edison (the majority of the project area south of Westside Canal) and Imperial Irrigation District (one parcel north of Westside Canal), the canal roads (including Mandrapa Road), and Liebert Road. By the fourth survey, full access had been granted to the entire project boundary north and south of Westside Canal; however, the majority of the 150-meter buffer remained unavailable to direct access (see Figure 3). Where direct access was available, areas were surveyed using line transects with surveyors spaced 100 to 200 feet apart, with low to very low vegetation density and cover allowing for excellent ground visibility and wide transect spacing. Areas where direct access was unavailable were surveyed using binoculars or scopes. These areas were surveyed by conducting 15-minute point surveys along the project boundary and access roads, with spacing dependent on the height and density of the surrounding vegetation.





- Project Boundary
- Survey Area
- Vegetation Communities**
- Arrow Weed Thickets
- Common Reed Marshes
- Cattail Marshes
- Creosote Bush Scrub
- Eucalyptus Groves
- Fourwing Saltbush Scrub
- Quailbush Scrub
- Tamarisk Thickets
- Upland Mustards
- Land Cover Types**
- Disturbed Habitat
- Fallow Agriculture
- Active Agriculture
- Open Water
- Developed

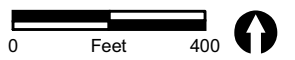


FIGURE 4  
Vegetation Communities  
and Land Cover Types



**PHOTOGRAPH 1**  
Old Agricultural Field with Upland Mustards (foreground) and  
Fourwing Saltbush Scrub (background), Facing Northwest from East-Central  
Portion of Project Area, Taken January 25, 2019



**PHOTOGRAPH 2**  
Upland Mustards and Tamarisk Thickets in Easternmost Old Agricultural  
Field, Facing Northeast from Southern Boundary, Taken April 14, 2018



**PHOTOGRAPH 3**

Dense Arrow Weed Thicket in Eastern 150-meter Buffer, Facing East from  
Northeastern Project Boundary, Taken January 25, 2019



**PHOTOGRAPH 4**

Creosote Bush Scrub in Eastern 150-meter Buffer, Facing Southeast from  
Eastern Project Boundary, Taken January 25, 2019



**PHOTOGRAPH 5**  
Fourwing Saltbush Scrub in Southwestern Portion of Survey Area,  
Facing Southwest, Taken January 25, 2019



**PHOTOGRAPH 6**  
Creosote Bush Scrub in the Western 150-meter Buffer, Facing West from the  
Western Project Boundary, Taken December 17, 2018



### PHOTOGRAPH 7

Active Agricultural Field and Irrigation Channel in Northeastern 150-meter Buffer, Facing Northeast, Taken December 16, 2018



### PHOTOGRAPH 8

Westside Canal and Common Reed Marsh in Eastern Portion of Survey Area, Facing South, Taken November 8, 2018

RECON biologists Brenna Ogg, Brian Parker, Beth Procsal, Mandy Weston, JR Sundberg, Kayo Valenti, and Victor Novik conducted burrowing owl non-breeding season surveys in accordance with the guidelines developed by CDFW (CDFW 2012). Surveys included four visits during the burrowing owl's non-breeding season. Each survey was conducted by five biologists over a two-day period, between two hours before sunset and civil evening twilight on the first day and between morning civil twilight and 10:00 on the second day. Surveys were spaced at least four weeks apart. All wildlife species observed during the surveys were noted. All suitable burrows were recorded using a handheld Global Positioning System (GPS) device, and presence or absence of burrowing owl sign (e.g., pellets, whitewash, prey remains, feathers, or decoration) was documented. Survey dates, personnel, times, and weather conditions are provided in Table 1.

<b>Table 1</b>				
<b>Survey Information</b>				
<b>Date</b>	<b>Survey Type</b>	<b>Surveyors</b>	<b>Beginning Conditions</b>	<b>Ending Conditions</b>
10/4/2018	Non-Breeding Season Survey #1	B. Ogg, B. Parker, E. Procsal, M. Weston, V. Novik	16:22; 89°F; 5–10 mph wind; 5% cloud cover	19:36; 84 °F; 5–10 mph wind; 5% cloud cover
10/5/2018			06:14; 69°F; 3–6 mph wind; clear sky	09:55; 82°F; 5–12 mph wind; <1% cloud cover
11/8/2018	Non-Breeding Season Survey #2	B. Ogg, B. Parker, E. Procsal, M. Weston, J. Sundberg	14:45; 82°F; 6–12 mph wind; 0% cloud cover	19:11; 74 °F; 2–7 mph wind; 0% cloud cover
11/9/2018			05:41; 51°F; 0–2 mph wind; 0% cloud cover	10:00; 78°F; 0–7 mph wind; 0% cloud cover
12/6/2018	Non-Breeding Season Survey #3	B. Ogg, B. Parker, E. Procsal, M. Weston, K. Valenti	14:38; 70°F; 0–1 mph wind; 0% cloud cover	17:05; 59°F; 0–1 mph wind; 0% cloud cover
12/7/2018			06:11; 45°F; 0 mph wind; 15% cloud cover	10:00; 59°F; 0–2 mph wind; 90% cloud cover
1/24/2019	Non-Breeding Season Survey #4	B. Ogg, B. Parker, E. Procsal, M. Weston, K. Valenti	15:07; 71°F; 3–6 mph wind; 85% cloud cover	17:33; 61°F; 0–2 mph wind 10% cloud cover
1/25/2019			06:15; 46°F; 0–2 mph wind; 5% cloud cover	10:00; 69°F; 0–2 wind; <1% cloud cover
°F = degrees Fahrenheit; mph = miles per hour; % = percent.				

### Non-Breeding Season Survey Results

Four western burrowing owl observations were made during 2018-2019 breeding season surveys, representing at least two, but likely three, individuals. Each observation is described below, and the observation locations are shown on Figure 5. Data for these western burrowing owl observations were submitted to the California Natural Diversity Database on April 2, 2019.

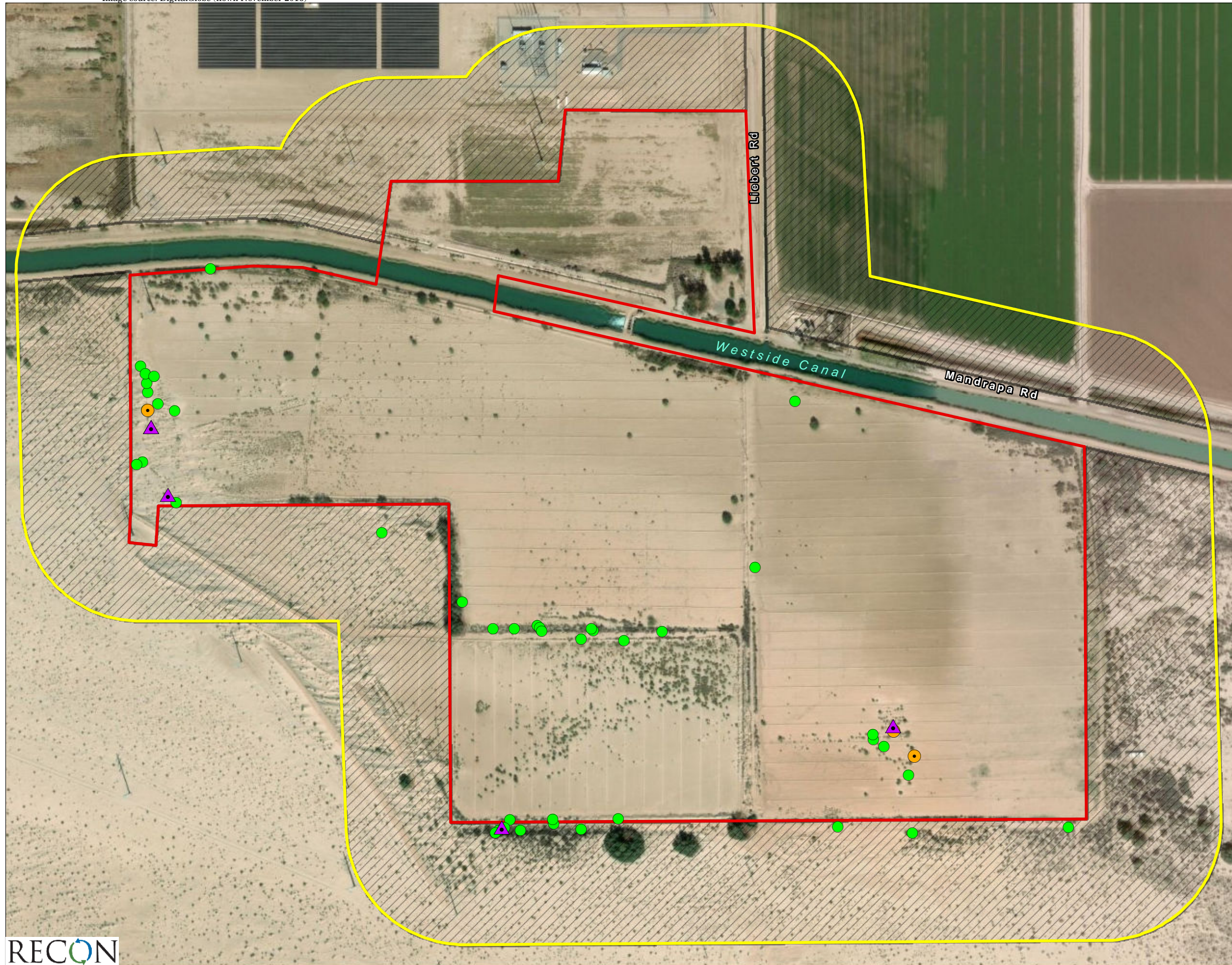
- One western burrowing owl was observed on November 9, 2018, in creosote bush scrub along the westernmost project boundary. It was flushed from the vicinity of a burrow and flew off to the northwest. The burrow did not have any sign of whitewash, pellets, or feathers, but there was a large number of mammal, insect, and bird tracks, including burrowing owl tracks (Photograph 9).
- One western burrowing owl was observed on December 17, 2018, near the previous observation in creosote bush scrub along the westernmost project boundary, and likely represents a repeat observation of the owl observed on November 9, 2018. The owl was flushed from a small sandy hillock with creosote and a burrow, and flew off to a berm, where it perched for several minutes before flying out of sight.
- One western burrowing owl was observed on December 17, 2018, within an open fallow agricultural field sparsely vegetated by low-growing tamarisk shrubs in the southeastern portion of the survey area. This individual was flushed from the vicinity of a small sinkhole, flew north, and then circled off site to the south. The sinkhole (see Photograph 11) had abundant whitewash and appeared to be an active western burrowing owl burrow. A second burrow with whitewash and pellets was found approximately 135 feet southeast of the first burrow (see Photograph 12).
- One western burrowing owl was detected using an infrared motion-triggered trail camera on December 16, 2018 (Photograph 13). The camera was placed adjacent to a dirt road along the southern project boundary. Two suitable burrows with no owl sign were located approximately 10 feet from the camera location. A third suitable burrow with whitewash had been detected within approximately 45 feet of the camera location during 2018 breeding season surveys; however, that burrow has since been disturbed and partially backfilled by animal activity. Four photos were triggered by a western burrowing owl at 19:16. While the photos are over-exposed, the shape and posture of the bird photographed is consistent with burrowing owl.

As mentioned above, three suitable burrows with western burrowing owl sign (i.e., whitewash, pellets, and/or tracks) were observed near the western burrowing owl observations: one in close proximity to the observation near western project boundary and two near the observations in the fallow agricultural field in the southeastern portion of the project area.

Possible burrowing owl predators detected during the non-breeding season surveys include great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus hudsonius*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), and coyote (*Canis latrans*) (Coulombe 1971, Haug et al. 1993). Coyote, red-tailed hawk, and American crow were regularly detected throughout the survey period. Great horned owl is a resident species on site with an active nest observed in the northeastern portion of the survey area. Although not detected during the non-breeding season surveys, RECON has previously observed American badger (*Taxidea taxus*) within the survey area. No evidence of burrowing owl predation was observed.

### Conclusion and Mitigation Requirements

Four western burrowing owl observations were recorded during the 2018-2019 non-breeding season surveys, representing at least two, but likely three, individuals. Based on these results and the negative results of the 2018 breeding season surveys, western burrowing owl appears to use the project area and larger survey area as a wintering site or for migration and dispersal, but is not currently using the site as breeding habitat.









-  Project Boundary
-  Survey Area
-  No Direct Access
-  Suitable Burrow
-  Suitable Burrow with Sign
-  Western Burrowing Owl (*Athene cunicularia hypugaea*) Observation



FIGURE 5  
2018-2019 Burrowing Owl  
Non-Breeding Season  
Survey Results





**PHOTOGRAPH 9**

Active Burrow Located Near First Burrowing Owl Observation, in Creosote Bush Scrub in Western Portion of Survey Area, Taken November 9, 2018



**PHOTOGRAPH 10**

Burrowing Owl Observed in Creosote Bush Scrub, Facing Northeast From Western Portion of Survey Area, Taken November 9, 2018 through Spotting Scope



PHOTOGRAPH 11

Active Burrow Located in Tamarisk Thicket within Old Agricultural Field in Southeastern Portion of Survey Area, Taken December 17, 2018



PHOTOGRAPH 12

Active Burrow with Pellets and Whitewash Within Old Agricultural Field in Southeastern Portion of Survey Area, Taken December 17, 2018



**PHOTOGRAPH 13**  
Burrowing Owl Observed in Fourwing Saltbush Scrub near  
Southern Boundary, Taken December 16, 2018 with Trail Camera

Mr. Jim Pomillo  
Page 17  
April 8, 2019

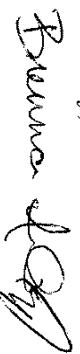
Based on these results, formal consultation with CDFW would be required to develop an appropriate mitigation plan for the project. One or more mitigation measures, such as avoidance, minimization measures, translocation, artificial burrow construction, burrow exclusion and closure, and/or habitat-based mitigation or preservation, may be required.

At a minimum, take-avoidance (pre-construction) surveys for western burrowing owl would be required at least 14 days prior to ground disturbance. This effort would detect any change in western burrowing owl presence within the survey area in order to avoid direct take of owls and inform any necessary take avoidance actions. These surveys would include all areas where suitable habitat is present within the survey area (CDFW 2012). Depending on the timing of construction or any delays in project activities, ongoing site surveillance may be required to detect whether the species has re-colonized the project area prior to or during project implementation (CDFW 2012).

If occupied western burrowing owl habitat would be impacted by the project, habitat-based mitigation would also be required. Temporarily impacted areas would need to be restored to pre-project conditions. Permanent impacts to nesting, occupied and satellite burrows, and/or suitable habitat would require mitigation such that the habitat acreage, number of burrows, and burrowing owls are replaced (CDFW 2012).

If you have any questions concerning the contents of this letter, please contact me by phone or email at (619) 308-9333 extension 118 or [bogg@reconenvironmental.com](mailto:bogg@reconenvironmental.com).

Sincerely,



Brenna Ogg  
Senior Biologist  
CDFW Scientific Collecting Permit SC-9997

cc: Justin Garcia, California Department of Fish and Wildlife  
Esther Burkett, California Department of Fish and Wildlife

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1976 Mount Signal, California 7.5 Minute Topographic Map.

# **APPENDIX E – BIOLOGICAL RESOURCES**

## **E.4. Jurisdictional Waters/Wetlands Delineation Report for the Westside Canal Battery Storage Project**



**Jurisdictional Waters /  
Wetland Delineation Report  
for the Westside Canal  
Battery Storage Project,  
Imperial County, California**

*Prepared for*

Con Edison Clean Energy Businesses  
101 W. Broadway, Suite 1120  
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Contact: Mr. Curtis Kebler

*Prepared by*

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RECON Number 8888.1  
January 18, 2021

A handwritten signature in black ink, appearing to read "A. Smisek", is positioned above the name of the biologist.

Andrew Smisek, Associate Biologist

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- 1: Maps
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  - 2: Project Location on USGS Map
  - 3: Project Location on Aerial Photograph
  - 4: Project Location on Soils Map
  - 5: Vegetation Communities within the Review Area
  - 6: National Wetlands Inventory within Review Area
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- 5: Ordinary High Water Mark Data Sheets
- 6: Ground Level Color Photographs
- 7: References Cited

## Acronyms and Abbreviations

APN	Assessor Parcel Number
FAC	Facultative
FACU	Facultative-Upland
FACW	Facultative-Wetland
GPS	global positioning system
IID	Imperial Irrigation District
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
Project	Westside Canal Battery Storage Project
TNW	Traditional Navigable Waterway
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey



## 1.0 Site Description and Landscape Setting

The Westside Canal Battery Storage Project (Project) would be located in the unincorporated Mount Signal area of Imperial County, approximately 8.0 miles southwest of the city of El Centro and approximately 5.3 miles north of the U.S.-Mexico border. Figure 1 (in Attachment 1) shows the regional location of the Project. The Project site is comprised of two parcels owned by Westside Canal Battery Storage, LLC, a subsidiary of Con Edison Clean Energy Businesses: Assessor Parcel Number (APN) 051-350-010 and APN 051-350-011, totaling approximately 148 acres. These parcels have limited access corridors for vehicular traffic and are considered less desirable for agricultural production, as reflected by the last 15 years during which no farming activity has occurred.

The Project site is approximately one-third mile north of the Imperial Valley Substation and directly south of the intersection of Liebert Road and the Imperial Irrigation District's (IID) Westside Canal. The Project site is bounded by the Westside Canal to the north, Bureau of Land Management lands to the south and west, and vacant private land to the east. The Campo Verde solar generation facility is located north of the Project site, across the Westside Canal. The entire Project site is located in the southern half of Section 34, Township 16 South, Range 12 East, on the U.S. Geological Survey (USGS) Mount Signal, California quadrangle (USGS 1976; Attachment 1: Figure 2). An aerial photograph of the Review Area is shown in Attachment 1: Figure 3.

The two Project parcels are proposed for development as a utility-scale energy storage complex. The Project would also utilize portions of two parcels located north of the Westside Canal (APN 051-350-019 owned by IID and APN 051-350-018 owned by a private land owner) for site access and as a temporary construction staging area. The Project would also access a small portion of APN 051-350-009 within an IID easement for connection to the existing IID Campo Verde Imperial Valley 230 kilovolt radial gen-tie line during the construction of a switching station on the Project site. The total proposed Project development footprint, encompassing both temporary and permanent impacts, would be approximately 163 acres.

The applicant will accompany the U.S. Army Corps of Engineers (USACE) on all site visits. The USACE must contact the applicant prior to visiting the site. The contact information for the applicant is:

Property Owner: Westside Canal Battery Storage, LLC  
Applicant: Westside Canal Battery Storage, LLC  
Primary Contact: Curtis Kebler, Director, Business Development  
Telephone: (619) 318-6735  
E-mail: KeblerC@conedceb.com

## 2.0 Site Alterations, Current and Past Land Use

A majority of the Review Area has been altered by past agricultural uses. The land was likely graded and the soil regularly tilled, fertilized, and watered. During agricultural operations, it likely supported minimal natural vegetation. The agricultural fields within the Review Area have been left fallow for approximately the past ten years.

### 2.1 Soils

Information on the soil types occurring in the Review Area is summarized from the Soil Survey for Imperial County (U.S. Department of Agriculture [USDA] 1981) and the Hydric Soils of California list (hydric soil list) obtained from the Natural Resource Conservation Service (NRCS; 2015). Soil types mapped within the Review Area are shown in Attachment 1: Figure 4. The following 10 soil types are mapped within the Review Area: Glenbar complex; Holtville silty clay, wet; Imperial-Glenbar silty clay loams, wet, 0–2 percent slopes; Indio-Vint complex; Meloland fine sand; Meloland very fine sandy loam, wet; Rositas fine sand, 0–2 percent slopes; Rositas fine sand, wet, 0–2 percent slopes; Vint loamy very fine sand, wet; and Vint and Indio very fine sandy loams, wet (USDA 1981). Water is also mapped within the Westside Canal (see Attachment 1: Figure 4). None of these soil types are listed as hydric in Imperial County.

### 2.2 Hydrology

The Westside Canal is a manmade, natural-bottom canal conveying water from the All-American Canal for irrigation use within the Imperial Valley area. It crosses through the northern portion of the Review Area, flowing east to west. Within the Review Area, a drop structure, known as the Fern Check structure, occurs within the canal and regulates water levels. During the survey, water levels were regulated at approximately 18 inches below the top of the bank east of the drop structure, and approximately five feet below the top of the bank west of the drop structure. In addition to the Westside Canal, the east-west concrete-lined secondary canal mentioned above and a concrete-lined secondary canal extending north-south in the northeast portion of the Review Area contained flowing water at the time of the survey.

### 2.3 Vegetation

The following vegetation communities and land cover types were mapped within the Review Area: upland mustards (*Brassica* spp. and Other Mustards Semi-Natural Herbaceous Stands), creosote bush scrub (*Larrea tridentata* Shrubland Alliance), four-wing saltbush scrub (*Atriplex canescens* Shrubland Alliance), quailbush scrub (*Atriplex lentiformis* Shrubland Alliance), arrow-weed thickets (*Pluchea sericea* Shrubland Alliance), tamarisk thickets (*Tamarix* spp. Semi-Natural Shrubland Stands), common reed marshes (*Phragmites australis* Herbaceous Alliance and Semi-Natural Stands), eucalyptus groves

(*Eucalyptus* spp. Semi-Natural Woodland Stands), cattail marshes (*Typha* sp. Herbaceous Alliance), disturbed habitat, fallow agriculture, open water, and developed land (Attachment 2: Table 1; Attachment 1: Figure 5).

## **3.0 Precipitation Data and Analysis**

Climate data, including precipitation totals, for the nearest recording station to the Project site was gathered from the NRCS National Water and Climate Center databases (NRCS 2020). The climate data obtained are discussed below.

### **3.1 Climate and Growing Season**

The Review Area is located within the Sonoran Desert region of southern California, in an area generally characterized as hot dry throughout most of the year, with slightly cooler and wetter winters. The majority of precipitation typically falls between December and March as somewhat frequent low-intensity rainfall. Infrequent and very localized high-intensity monsoonal rainfall can occur during the summer months. The growing season is typically very short after winter rainfall as precipitation amounts are low and temperatures begin to increase quickly during the spring months and into summer.

### **3.2 Antecedent Precipitation Tool Summary**

The Antecedent Precipitation Tool was used to analyze the 30-day rolling total and the 30-year normal range of precipitation data for the nearest recording weather stations to the Review Area. The data presented in the Antecedent Precipitation Tool Results graphic (Attachment 3) indicate that minimal precipitation occurred in the vicinity of the Review Area in the days prior to the February 5, 2018 survey and that normal conditions occurred at the time of the survey.

The three canal features that occur within the Review Area are likely insignificantly affected by local precipitation amounts because flow within these features is regulated by a series of drop structures.

### **3.3 Wetland Hydrology and Analysis**

Hydrology within the Review Area as a whole consists of only the three manmade canal features described above. These do not appear to be significantly influenced by precipitation events and they are all controlled using drop structures.

Manufactured drainage ditches, both concrete-lined and natural-bottomed, occur along berms that define the boundaries of abandoned agricultural fields throughout much of the Review Area. However, these drainage ditches appear to be unused since abandonment of the agricultural operations on-site. No other portions of the Review Area contain topographic bottomlands where a substantial amount of water could concentrate and/or flow to develop hydrology indicators.

## 4.0 Investigation Methods

A routine jurisdictional waters/wetland delineation, following the guidelines set forth by USACE (1987 and 2008), was performed to gather field data at locations with potential jurisdictional waters in the Project Review Area. The Review Area for this study, as identified by the Westside Canal Battery Storage, LLC, comprises the proposed Project boundary and the surrounding 100-foot radius (see Attachment 1: Figure 3). RECON biologist Andrew Smisek conducted the routine delineation fieldwork on February 5, 2019. Once on-site, the potential federal and state jurisdictional areas were examined to determine the presence and extent of any jurisdictional waters.

### 4.1 Wetland Parameters

#### 4.1.1 Hydrophytic Vegetation

Vegetation communities comprising partially or entirely hydrophytic plant species were examined, and data for each vegetation stratum (i.e., tree, shrub, herb, and vine) were recorded on the datasheet provided in the 2008 Arid West Regional Supplement (USACE 2008). The percent absolute cover of each species present was visually estimated and recorded.

First, the wetland indicator status of each species recorded within a vegetation community was determined by using the National Wetland Plant List (Lichvar et al. 2016). Dominant species with an indicator status of NI (No Indicator) or not listed in the 2016 National Wetland Plant List were evaluated as either wetland or upland indicator species based on local professional knowledge of where the species are most often observed in habitats that are characteristic in southern California.

The dominance test was then used to determine which vegetation community qualified as hydrophytic vegetation at each site. In situations where a site failed the dominance test but contained positive indicators of hydric soils and/or wetland hydrology, the prevalence index was used. The presence or absence of morphological adaptations was noted; however, none of the sampled wetland areas required an analysis of morphological adaptations to determine if the vegetation was hydrophytic.

#### 4.1.2 Hydric Soils

Sample points were selected within potential wetland areas and where the apparent boundary between wetland and upland was inferred based on changes in the composition of the vegetation and topography. Soil pits were dug to a depth of at least 18 inches or to a depth necessary to determine soil color, evidence of soil saturation, depth to groundwater, and indicators of a reducing soil environment (i.e., mottling, gleying, and hydrogen sulfide odor). A Munsell Soil-Color Book (2009) was used to determine soil colors, and the 2008 Arid West Regional Supplement (USACE 2008) and the Field Indicators of Hydric Soils in

the United States guide (USDA 2017) was used to determine the presence of hydric soil indicators.

### 4.1.3 Wetland Hydrology

Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. All portions of any potentially occurring wetlands or non-wetland waters within the Review Area were inspected for signs of hydrology as defined in the 2008 Arid West Regional Supplement (USACE 2008). The location of any water conveyance structures, such as culverts, that may influence the hydrology of any potentially jurisdictional resource were recorded and considered when making a hydrology determination.

## 4.2 Pre-Field Review

Prior to conducting the delineation, an aerial photograph, USGS topographic maps of the site, USDA soil maps of the site, the Mount Signal, California quadrangle (USGS 1976), and the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) were examined to aid in the determination of potential waters of the U.S. on-site (U.S. Fish and Wildlife 2019; Attachment 1: Figure 6).

## 4.3 On-site Wetland Investigation

Once on-site, the parcel of land was examined to determine the presence of any indicators of wetlands, including wetland vegetation, hydric soils, and hydrology. Field data, including hand drawn maps and recorded global positioning system (GPS) points and lines, were later digitized/downloaded into ArcGIS. Mapped jurisdictional waters created using these data were analyzed in ArcGIS to provide acreages or target jurisdictional and vegetation boundaries. USACE wetland determination data forms are included as Attachment 4, USACE Ordinary High Water Mark (OHWM) data forms are included as Attachment 5, and photographs of the Review Area are provided in Attachment 6. Descriptions of the potential wetland vegetation communities sampled are provided below.

Quailbush scrub occurs in two patches north of the Westside Canal in the northern portion of the survey area (Attachment 1: Figure 5). At approximately 50 percent cover, quailbush (Facultative [FAC]) dominates this vegetation community (Attachment 6: Photograph 1). The understory is mostly bare, with sparse cover of upland herbaceous species such as Bermuda grass (*Cynodon dactylon*; Facultative-Upland [FACU]) and non-native mustard (*Sisymbrium* sp.; FACU). The eastern patch of quailbush scrub is small and surrounded by arrow weed thickets and Eucalyptus woodland. The western patch of this vegetation community is larger, extending north and west outside the survey area. Both patches occur within areas that appear to have been historically used for agriculture but have since been abandoned. Manufactured berms and ditches occur along much of the perimeter of the patches. Although the ditches are no longer used for irrigation, these patches of quailbush scrub occur within 25 feet of an actively used, concrete-lined secondary canal, and within

100 feet of the Westside Canal. Laterally seeping water from these sources may contribute to the presence of quailbush scrub within the survey area.

Arrow weed thickets occur in five different patches throughout the survey area, the majority of which occur as linear strips paralleling the Westside Canal and an actively used, concrete-lined secondary canal (Attachment 1: Figure 5). Arrow weed (Facultative-Wetland [FACW]) dominates this vegetation community at approximately 50 percent cover (Attachment 6: Photograph 2).

Occasional saltcedar (*Tamarix ramosissima*; NI) occur within this vegetation community, and the understory consists of a sparse cover of non-native mustard and narrow-leaved cryptantha (*Cryptantha angustifolia*; NI) occurring in openings between shrubs. As with the quailbush scrub, lateral seepage from the Westside Canal and secondary canal may contribute to the presence of this hydrophytic vegetation community.

Tamarisk thickets occur mostly as patches within the southern portion of the survey area (Attachment 1: Figure 5). One patch occurs as a linear strip paralleling the Westside Canal in the northern portion. This patch is dominated by saltcedar at approximately 50 percent cover. Although saltcedar does not have a wetland indicator status, it generally occurs within stream corridors in this region. Therefore, a wetland indicator status of FAC has been assigned for the purposes of this report. The saltcedar individuals in this northern patch appear mature and robust. The tamarisk thickets in the southern portion of the survey area mostly occur along a network of berms and ditches that were likely historically manufactured for agriculture use but have since been abandoned. These small and linear patches of tamarisk thickets are dominated by either saltcedar with an approximate cover of 30 percent or athel (*Tamarix aphylla*; FAC) with an approximate cover of 80 percent (Attachment 6: Photograph 3). The patches of athel were likely planted as a wind screen when the site was actively used for agriculture. One patch of tamarisk thicket occurs within an abandoned agriculture field in the southeast portion of the survey area and contains sparse saltcedar at approximately 10 percent cover. The individuals here appear stressed with substantially diminished canopies.

Common reed marshes occur as linear strips averaging between 5 and 10 feet in width along the banks of the Westside Canal in the northern portion of the survey area. This vegetation community is dominated by common reed (FACW) which has approximately 35 percent cover (Attachment 6: Photograph 4). Arrow weed occurs in most portions of this vegetation community as a subdominant species at approximately five percent cover. The banks of the canal are steep and contain a substantial proportion of large rock and pieces of concrete. Although common reed growth occurs both along the slope and on top of the banks, no growth occurs from portions of the bank at or below the water level.

Cattail marshes occur only within the small, concrete-lined secondary canal extending east-west north of the Westside Canal in the northern portion of the survey area. This vegetation community is dominated by southern cattail (*Typha domingensis*; Obligate [OBL]) as noted in previous surveys conducted for this Project (RECON 2018). However, it appears this vegetation was dug out of the secondary canal prior to this survey, as the removed cattails were observed piled nearby.

## 4.4 On-site Ordinary High Water Mark Investigation

The lateral extent of the OHWM was delineated using the observed hydrology indicators within the Westside Canal and two concrete-lined secondary canals in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008). The indicators observed include surface water, water staining, and drift deposits. Based on observations made during other surveys conducted for this Project during various times of the year since April 2018, it is assumed these three manufactured canals actively convey water continuously. Photographs of the three canals are provided in Attachment 6 (see Photographs 5–7). Water flow within these features is regulated through a series of drop structures to fulfill the irrigation demands of the surrounding agricultural land uses. It appears the volume of flow within these three features is fairly consistent.

## 5.0 Description of All Wetlands and Other Non-wetland Waters

The aquatic resources delineated include three non-wetland waters features within the Review Area, the Westside canal and two secondary canals. No wetland areas were detected. A summary of the aquatic resources and location of these resources in relation to the Review Area boundary are provided in Attachment 2: Table 2 and on Attachment 1: Figure 7, respectively.

### 5.1 Wetlands

No wetlands were delineated within the Review Area. The areas containing hydrophytic vegetation did not contain hydrology or hydric soil indicators (see Attachment 4). Although it is possible that the area of cattail marshes within the Review Area would have met all three wetland parameters, this wetland habitat was removed prior to the jurisdictional delineation survey and, therefore, was not delineated as a wetland for this report.

### 5.2 Non-wetland Waters

A total of 5.97 acres and 6,475 linear feet of non-wetland waters were delineated within the Review Area (see Attachment 2: Table 2). Non-wetland waters within the Review Area include the Westside Canal, the east-west concrete-lined secondary canal, and the north-south concrete-lined secondary canal. The lateral extent of each of these features was based on the OHWM, as determined by hydrology indicators. The Westside Canal averages approximately 90 feet in width throughout the Review Area. The east-west canal is approximately 4 feet in width, and the north-south canal is approximately 15 feet in width.

The Westside Canal flows west and north from the Project site through an expanse of agricultural land where it is used to irrigate agricultural fields. Any unused water within the canal continues north through a series of drains to empty into the Salton Sea, a Traditional Navigable Waterway (TNW). The two concrete-lined canals also extend from the Review Area throughout the expanse of agriculture land and connect with other canals and waterways, eventually draining into the Salton Sea. Additionally, as the Westside Canal and these secondary canals are assumed to convey water nearly continuously, they would be considered Relatively Permanent Waters. Their connectivity to a TNW and status as Relatively Permanent Waters would likely put the Westside Canal and these two concrete-lined secondary canals within the Review Area under the jurisdiction of USACE.

## **6.0 Deviation from National Wetland Inventory**

The results of this analysis varies slightly from the NWI (see Attachment 1, Figure 6). The NWI includes a perennial riverine system with a natural bottom (code R2UBHx) along the alignment of the Westside Canal within the Review Area. This description is accurate with what was observed during the survey (see Attachment 2: Table 2). The NWI also includes an intermittent riverine system (code R4SBCx) along the alignment of the 15-foot-wide north-south running canal. However, based on regular field surveys since April 2018 and a review of aerial photography, this canal is likely perennial (see Attachment 2: Table 2). The fact that this canal is concrete-lined is not included in the NWI details for this feature. No system is mapped by the NWI along the 4-foot-wide east-west running canal. As with the north-south canal, this feature appears to be perennial (see Attachment 2: Table 2). All three features within the Review Area are subject to regulated water flow through the use of drop structures.

## **7.0 Mapping Method**

The maps of the delineated jurisdictional waters within the Review Area are based on the above analysis. The boundary of the majority of aquatic resource was obtained from a combination of GPS data collected in the field and aerial photography. Geographic information system mapping software (ArcMap) was used to produce the graphical maps contained in this report.

## **8.0 Results and Conclusions**

Potential USACE jurisdictional waters include all three non-wetland waters features mapped within the Review Area: the Westside canal, the east-west concrete-lined canal, and the north-south concrete-lined canal. As described above, hydrology indicators were used to delineate the OHWM for each of these features. Flow within these features is regulated by a series of drop structures for the purposes of the surrounding agricultural needs. Because it appears these features flow perennially, and because they have a direct connection downstream to a TNW, they may be considered non-wetland waters of the U.S.



type for these features is considered to be “relatively permanent waters” due to their perennial flow and connectivity with a TNW.

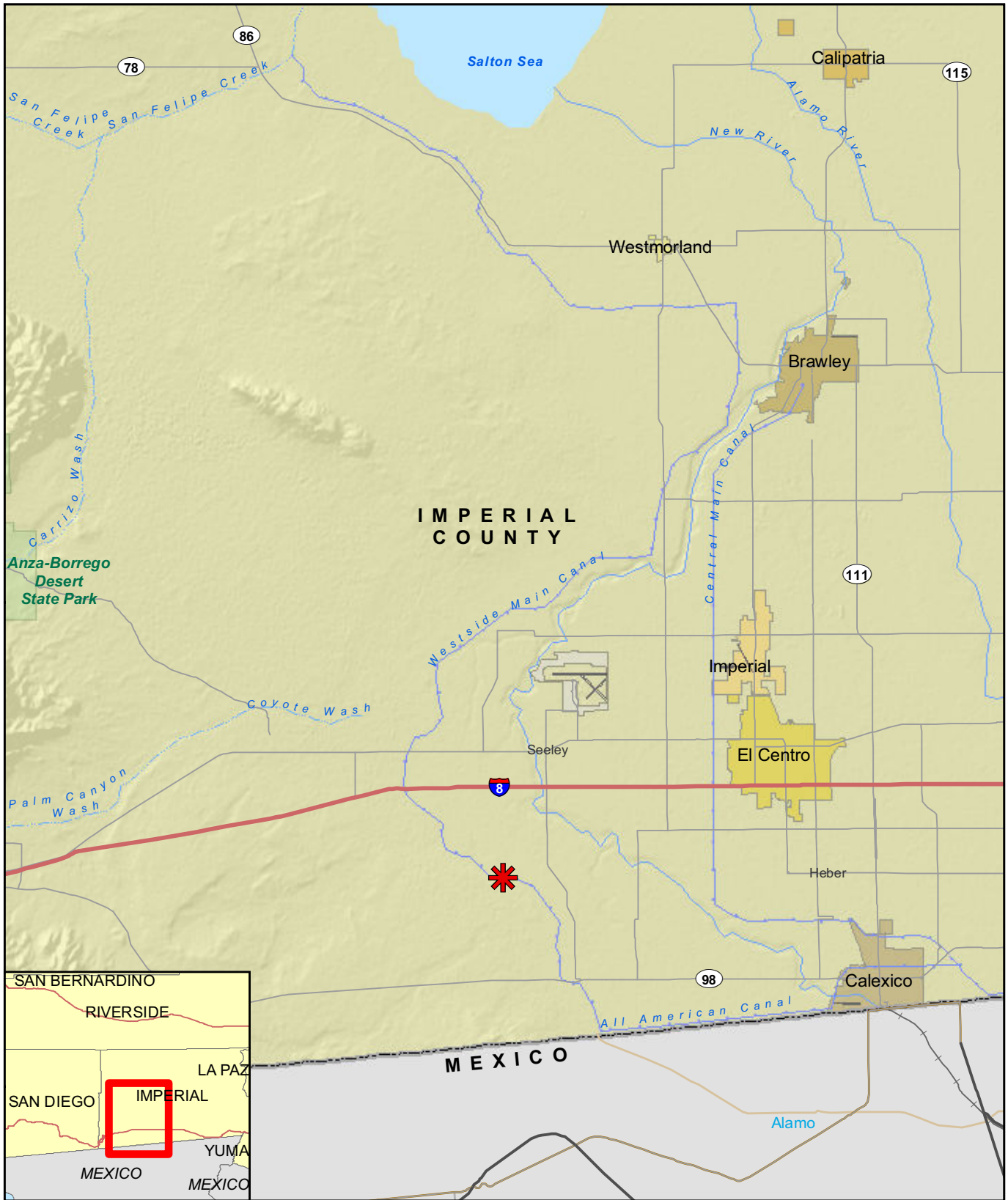
## **9.0 Disclaimer Statement**

This report describes the results of a jurisdictional waters delineation conducted within the approximately 163-acre Review Area. The jurisdictional waters delineation is used to identify and map the potential extent of the federal jurisdictional waters of the U.S. The purpose of this study was to identify and map the limits of any aquatic water features on the property to provide necessary background information for analysis by USACE in making a jurisdictional determination. USACE will review the content of this report and ultimately make a determination of federal jurisdiction for any waters of the U.S. that may be present in the Review Area. References used in the preparation of this report are included below in Attachment 7.

## **ATTACHMENTS**

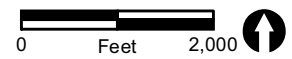
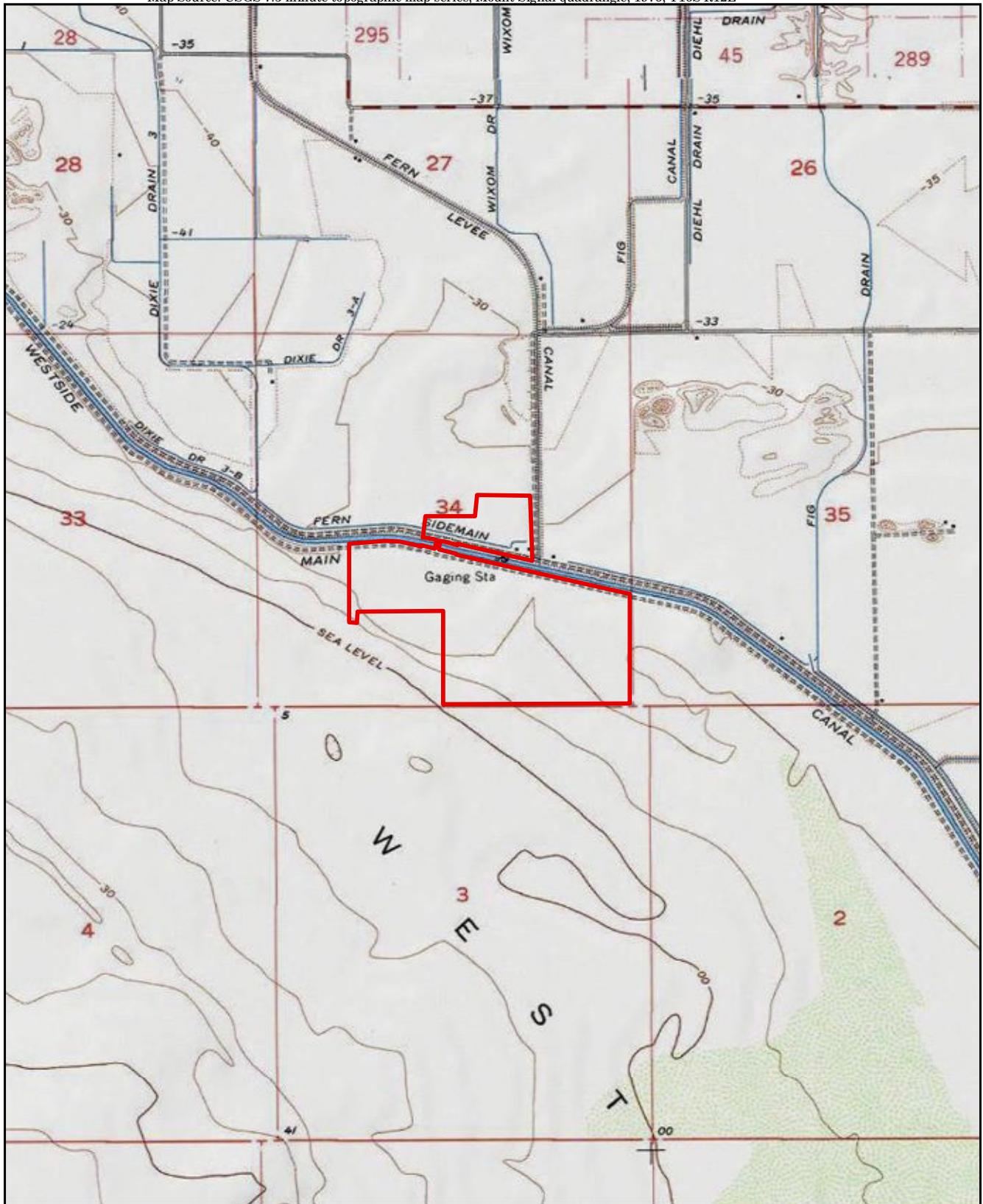
# **ATTACHMENT 1**

## Maps



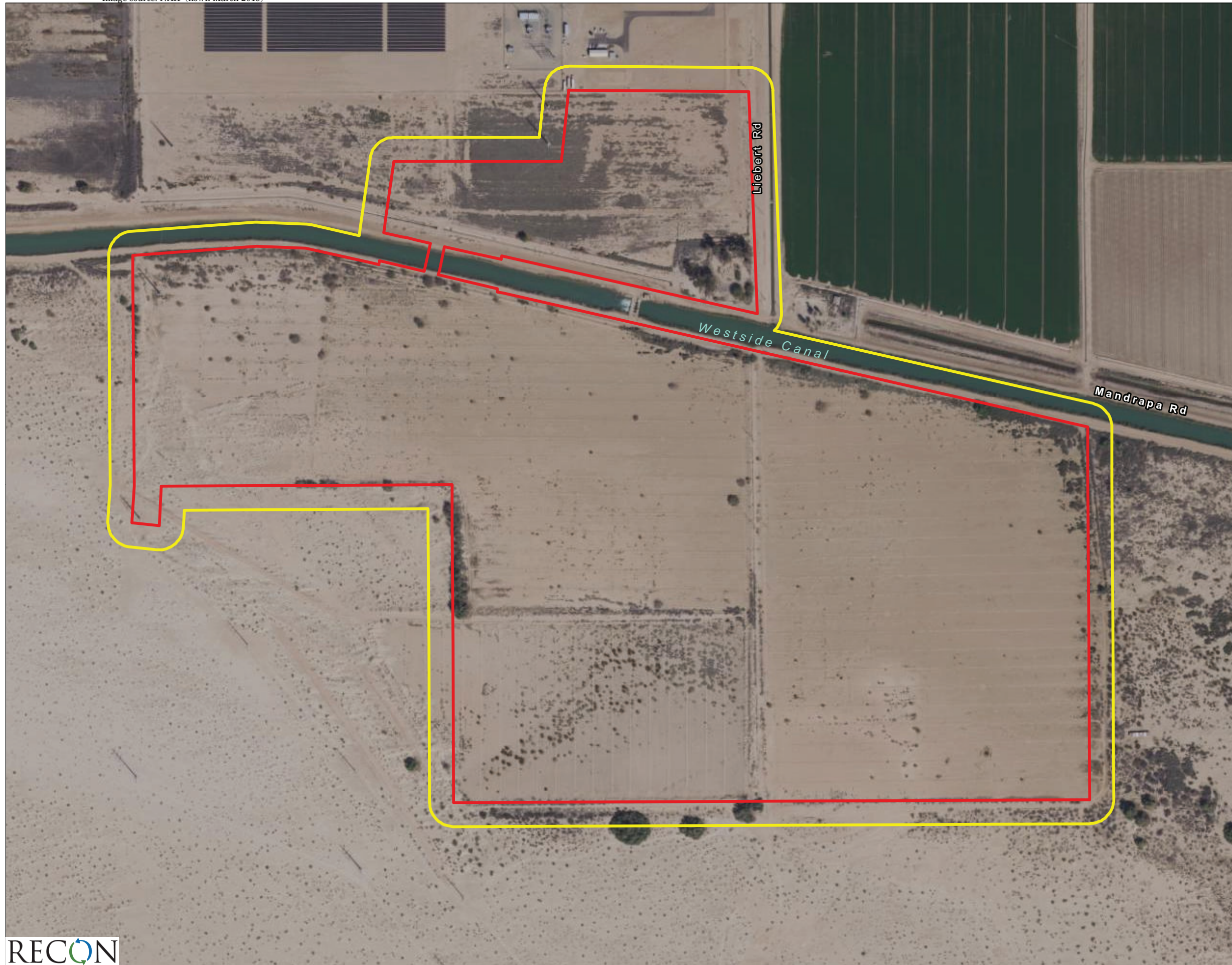
 Project Location



**FIGURE 1**  
Regional Location



 Project Boundary

FIGURE 2  
Project Location on USGS Map



-  Project Boundary
-  Review Area

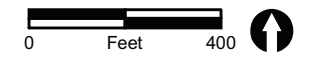
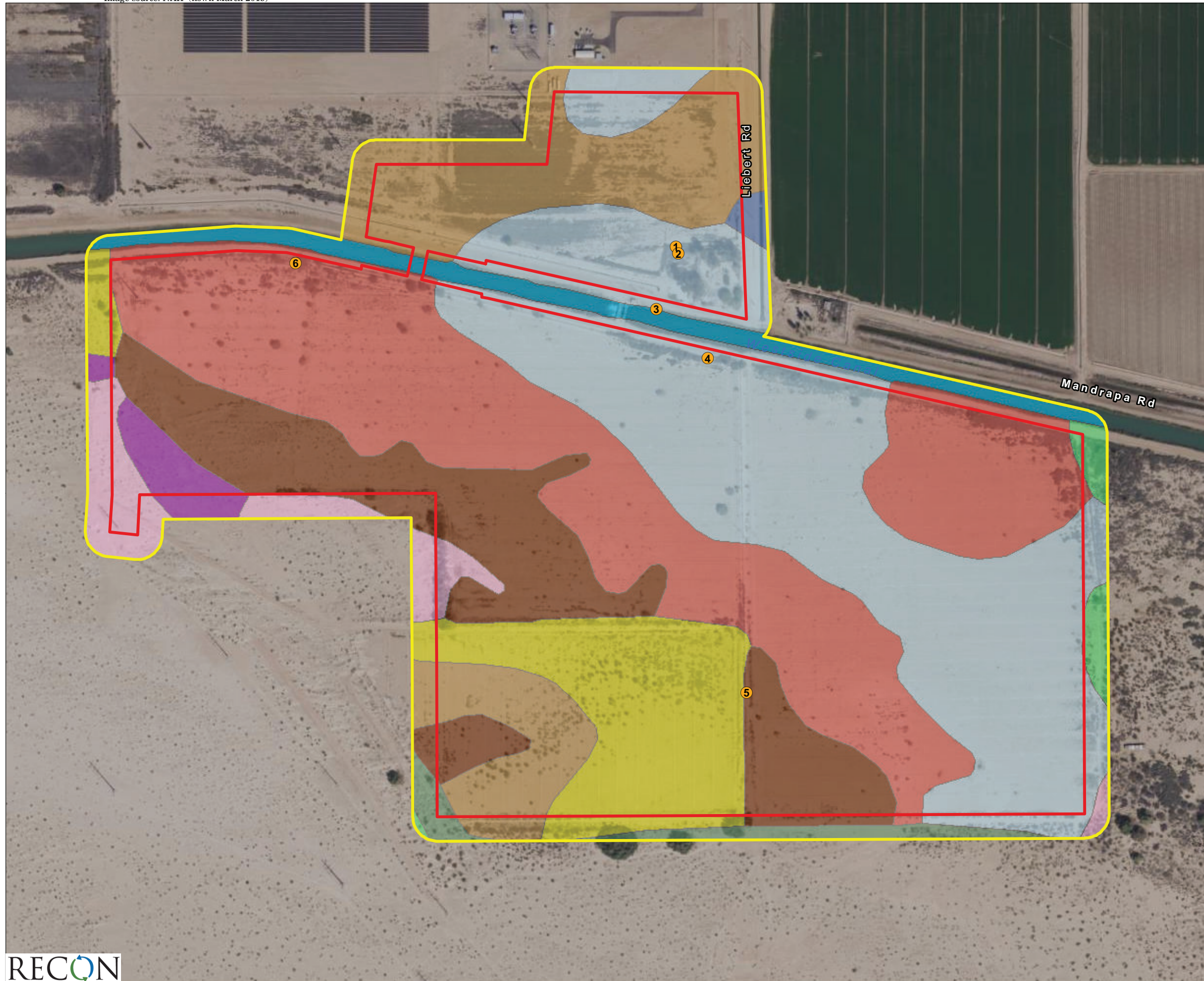


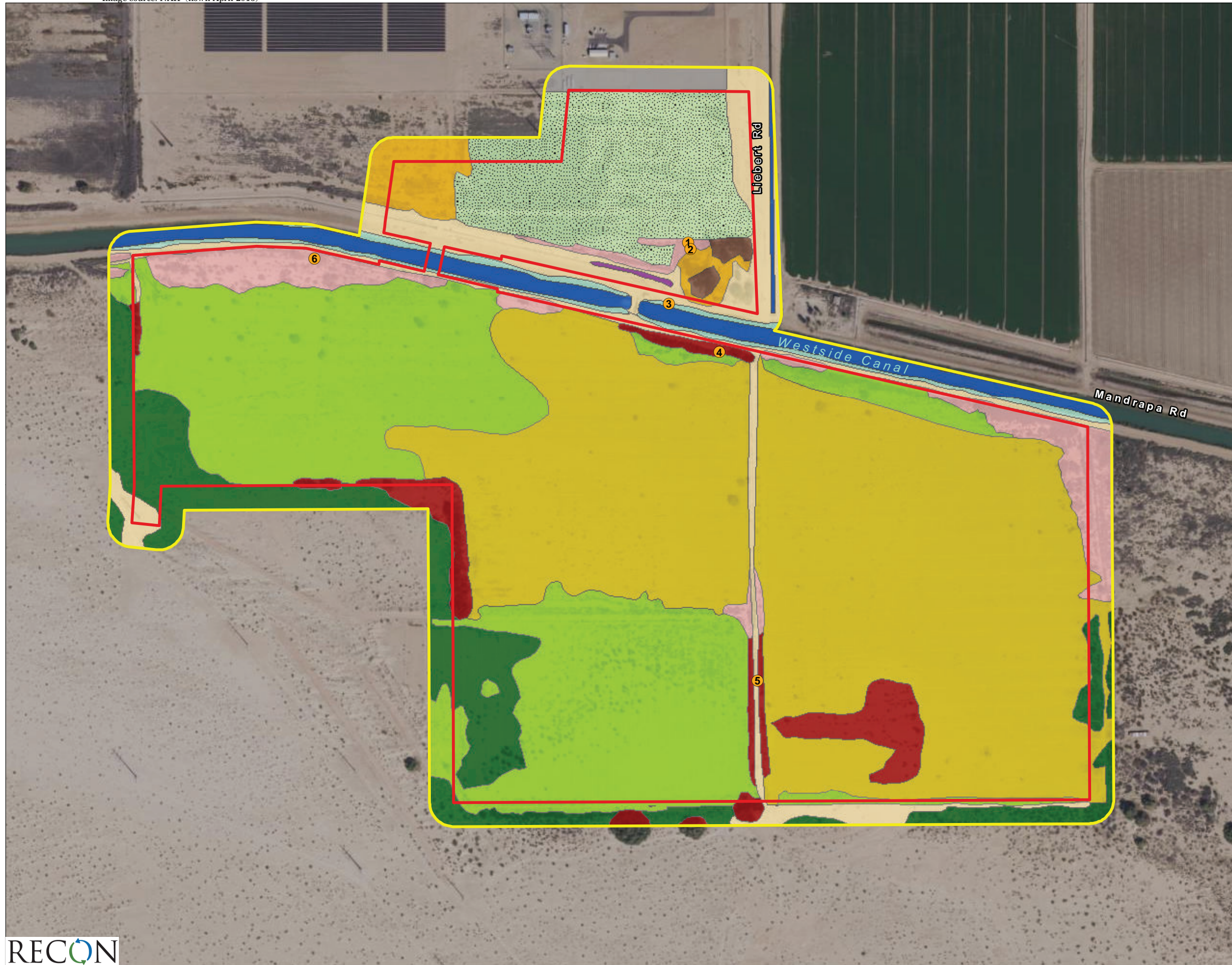
FIGURE 3  
Project Location on  
Aerial Photograph



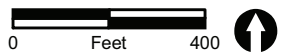
- Project Boundary
- Review Area
- Sample Points
- Soil Type**
- Glenbar Complex
- Holtville Silty Clay, Wet
- Imperial-Glenbar Silty Clay Loams, Wet, 0-2% Slopes
- Indio-Vint Complex
- Meloland Fine Sand
- Meloland Very Fine Sandy Loam, Wet
- Rositas Fine Sand, 0-2% Slopes
- Rositas Fine Sand, Wet, 0-2% Slopes
- Vint And Indio Very Fine Sandy Loams, Wet
- Vint Loamy Very Fine Sand, Wet
- Water



**FIGURE 4**  
Project Location on Soils Map

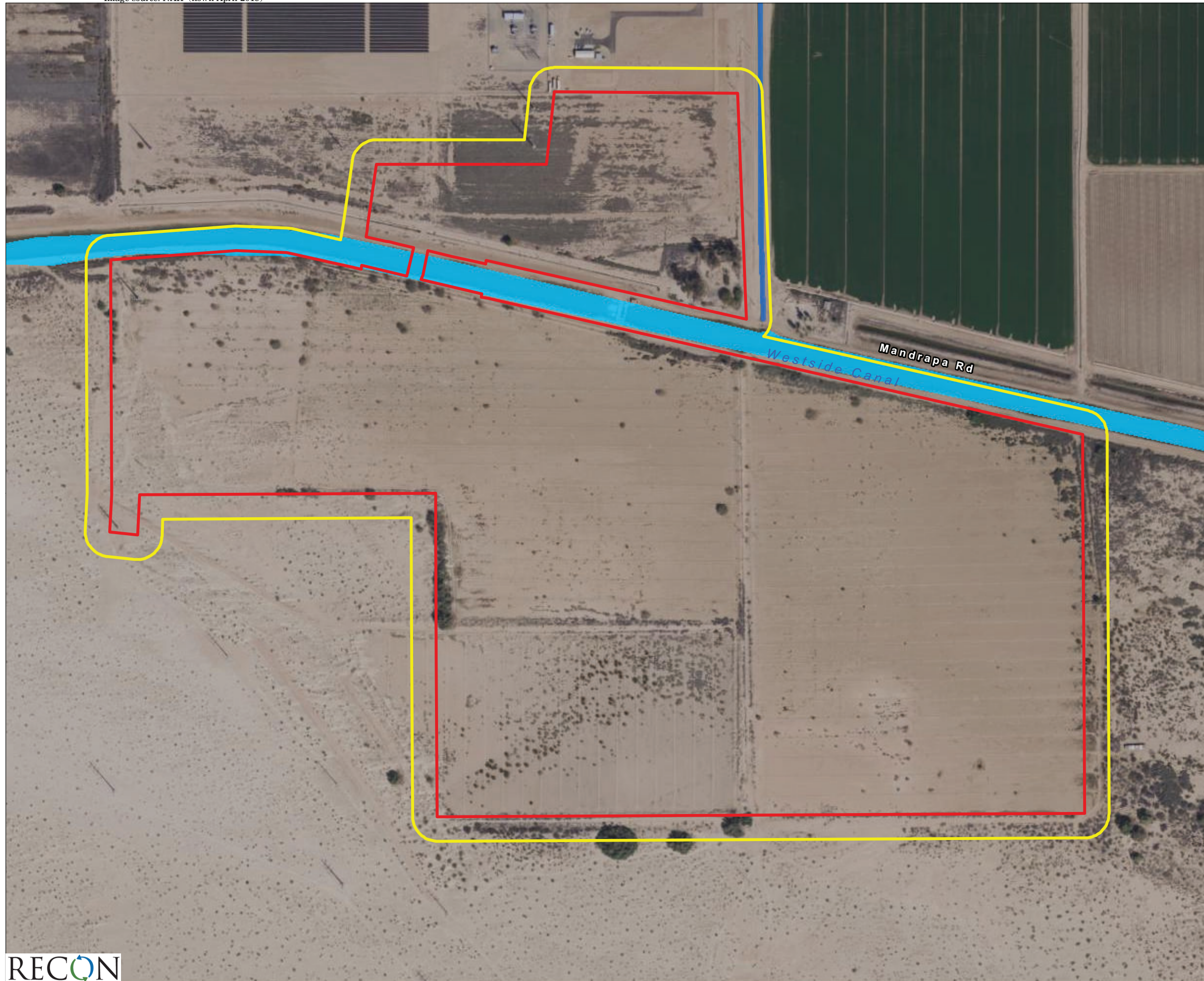


- Project Boundary
- Review Area
- Sample Points
- Vegetation Communities**
- Arrow Weed Thickets
- Common Reed Marshes
- Cattail Marshes
- Creosote Bush Scrub
- Eucalyptus Groves
- Fourwing Saltbush Scrub
- Quailbush Scrub
- Tamarisk Thickets
- Upland Mustards
- Land Cover Types**
- Disturbed Habitat
- Fallow Agriculture
- Open Water
- Developed

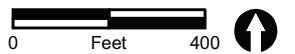


**FIGURE 5**  
Vegetation Communities  
within the Review Area

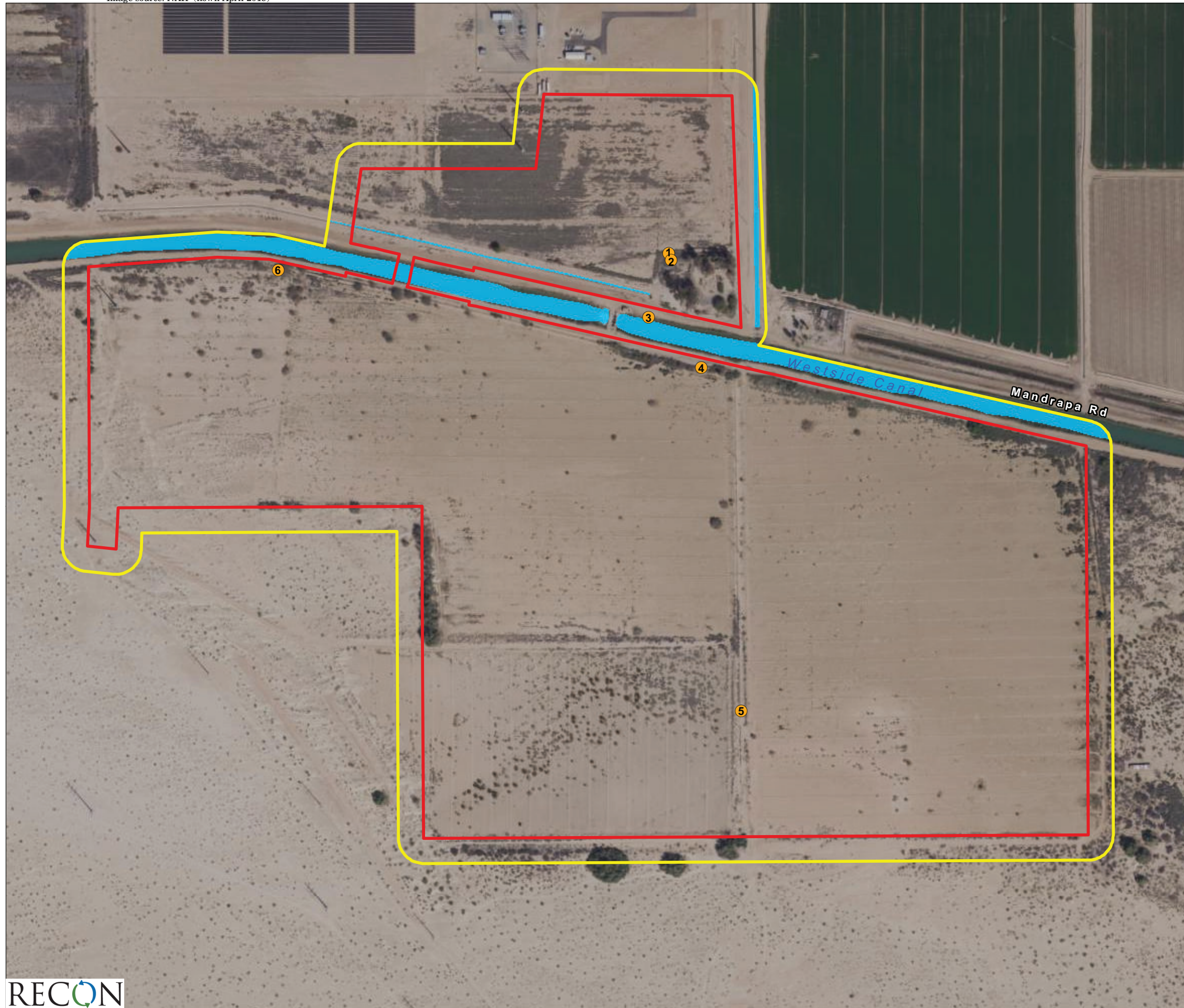








- Project Boundary
- Review Area
- National Wetlands Inventory**
- Riverine (R2UBHx)
- Riverine (R4SBCx)



**FIGURE 6**  
National Wetlands Inventory  
within Review Area



-  Project Boundary
-  Review Area
-  Sample Points
-  Potential Non-wetland Waters of the U.S.

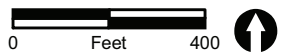


FIGURE 7

Aquatic Resources Delineation

## **ATTACHMENT 2**

### Tables

Attachment 2: Table 1 Vegetation Communities/Land Cover Types within the Review Area	
Community or Type	Acres
creosote bush scrub	16.19
fourwing saltbush scrub	50.25
quailbush scrub	3.48
arrow weed thickets	8.88
tamarisk thickets	6.60
common reed marshes	2.46
eucalyptus groves	0.58
cattail marshes	0.14
disturbed habitat	13.13
fallow agriculture	14.96
open water	5.85
developed land	1.63
upland mustards	75.66
<b>Total</b>	<b>200.52*</b>
*Total acreage varies from sum of cells due to rounding.	

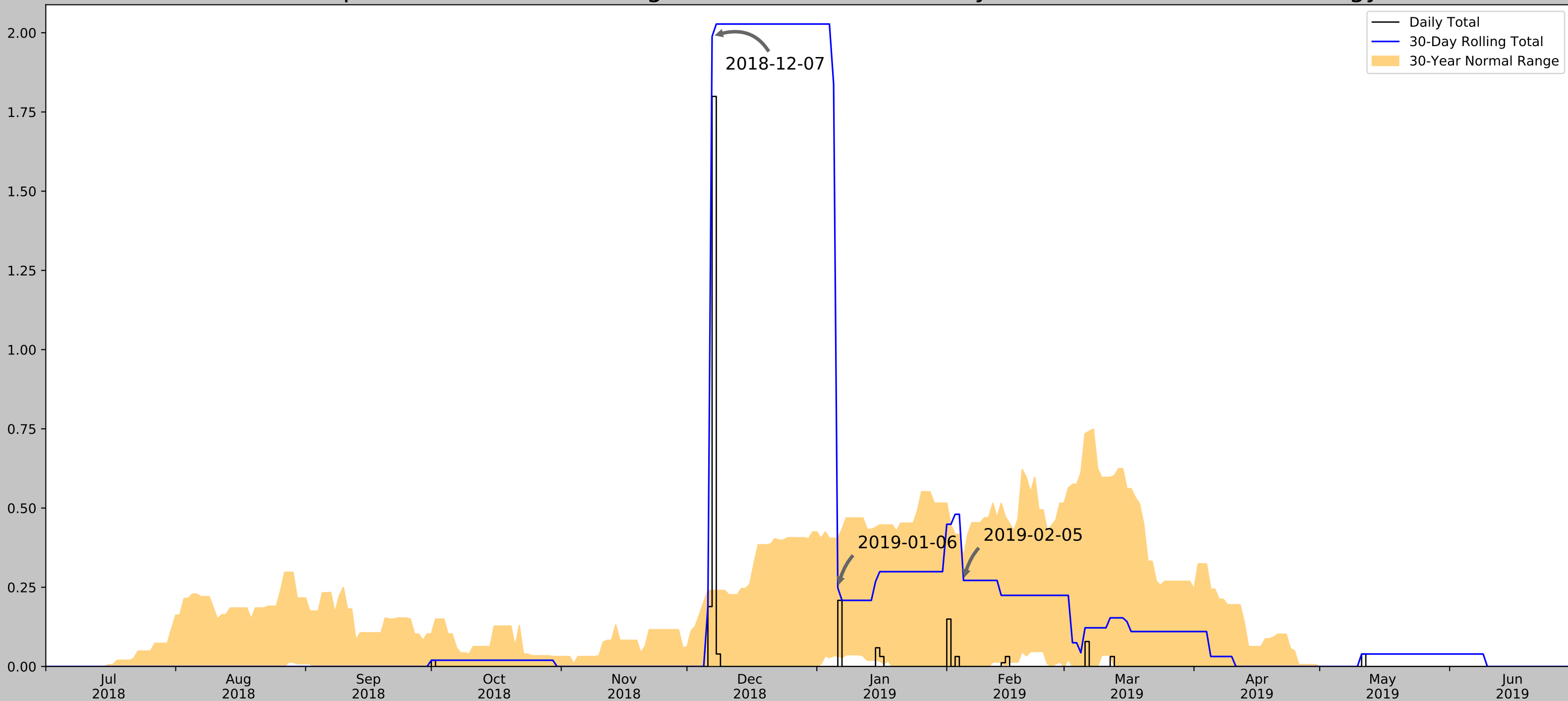
Attachment 2: Table 2 Summary of Aquatic Resources									
Waters ID	Cowardin Code	HGM Code	Area (acre)	Linear Feet	Waters Type	Latitude (dd NAD83)	Longitude (dd NAD83)	Local Waterway	Dominant Vegetation
NWW-01	R2UB	R	5.54	(4,200)	RPW	32.731609	-115.717145	Man-made Canal	unvegetated
NWW-02	R2	R	0.12	(1,300)	RPW	32.732202	-115.718308	Man-made Canal	unvegetated
NWW-03	R2	R	0.31	(975)	RPW	32.731513	-115.714205	Man-made Canal	unvegetated
R2UB = Unconsolidated Bottom, Lower Perennial, Riverine; R2 = Lower Perennial, Riverine; HGM = hydrogeomorphic; R = Riverine; RPW = Relatively Permanent Water									

## **ATTACHMENT 3**

### Antecedent Precipitation Tool Results

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



— Daily Total  
— 30-Day Rolling Total  
 30-Year Normal Range

Coordinates	32.731666, -115.718854
Observation Date	2019-02-05
Elevation (ft)	-21.39
Drought Index (PDSI)	Mild wetness
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2019-02-05	0.0	0.345276	0.271654	Normal	2	3	6
2019-01-06	0.033465	0.404724	0.248032	Normal	2	2	4
2018-12-07	0.0	0.240157	1.988189	Wet	3	1	3
Result							Normal Conditions - 13




Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
EL CENTRO 2 SSW	32.7669, -115.5617	-29.856	9.451	8.466	4.333	10859	77
EL CENTRO NAF	32.8167, -115.6833	-41.995	6.228	20.605	2.931	309	13
IMPERIAL CO AP	32.8342, -115.5786	-58.071	10.797	36.681	5.254	26	0
IMPERIAL	32.8489, -115.5667	-63.976	11.988	42.586	5.905	159	0

## **ATTACHMENT 4**

### Jurisdictional Waters Data Sheets

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 1  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): base of berm Local relief (concave, convex, none): none Slope (%): 0-1  
 Subregion (LRR): D Lat: 32.73210876240 Long: -115.71532588300 Datum: UTM  
 Soil Map Unit Name: Vint Loamy Very Fine Sand NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: This sample point occurs at the base of a berm within a dense patch of arrow weed north of the Westside Canal and a parallel active irrigation channel.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Pluchea sericea</i>	70	Yes	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
70 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust _____				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Arrow weed within this patch appears to follow the southern boundaries of an abandoned agriculture field where berms have been constructed north of the canal and irrigation channel.



**SOIL**

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	7.5 YR 4/3	80					loamy sand	roots and dark organic inclusions occur as well
6-18	7.5 YR 4/3	90					loamy sand	small silica grains in matrix

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks: no hydric soil indicators observed.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

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

**Secondary Indicators (2 or more required)**

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Thin Muck Surface (C7)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

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

Remarks: No hydrology indicators observed.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 2  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): D Lat: 32.73203015400 Long: -115.71529258200 Datum: UTM  
 Soil Map Unit Name: Vint Loamy Very Fine Sand NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample point occurs in small patch of quailbush north of the Westside Canal and a parallel active irrigation channel.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: _____ )</b>				
1. <i>Atriplex lentiformis</i>	30	Yes	FAC	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
2. <i>Pluchea sericea</i>	2	No	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
<b>Herb Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust _____				

Remarks: The vegetation here occurs within an area surrounded by berms and just north of the canal and irrigation channels.

**SOIL**

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5 YR 4/3	100					sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Vernal Pools (F9)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present?    Yes _____    No <u>X</u></p>
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Remarks: No hydric soil indicators observed.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Biotic Crust (B12)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><b>Secondary Indicators (2 or more required)</b></p> <p><input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b></p> <p><input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b></p> <p><input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b></p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
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<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>Water Table Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>Saturation Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b>    Yes _____    No <u>X</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 3  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): top of bank Local relief (concave, convex, none): none Slope (%): 0-1  
 Subregion (LRR): D Lat: 32.73141170350 Long: -115.71558746800 Datum: UTM  
 Soil Map Unit Name: Vint Loamy Very Fine Sand NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample point occurs at top of north bank along Westside Canal within a patch of common reed marsh.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: _____ )</b>				
1. <i>Phragmites australis</i>	50	Yes	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
2. <i>Pluchea sericea</i>	10	No	FACW	
3. <i>Tamarix ramosissima</i>	2	No	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
<b>Herb Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust _____				

Remarks: Within patch of common reed marsh which extends down canal bank but stops at water level. Common reed marsh continues along both banks of the canal throughout the survey area.

**SOIL**

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	7.5 YR 4/3	100					sandy clay loam	
5-9	10 YR 6/3	100					sand	
9-18	7.5 YR 4/3	98	5 YR 4/6	2	C	M	sandy clay loam	some redox features observed

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No <u>X</u></p>
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Remarks: Although some redox features were observed, they only occur below 9 inches in depth and the matrix chroma is 3. Does not meet criteria of any hydric soil indicators.

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1) (Nonriverine)</p> <p><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)</p> <p><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Biotic Crust (B12)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><b>Secondary Indicators (2 or more required)</b></p> <p><input type="checkbox"/> Water Marks (B1) (Riverine)</p> <p><input type="checkbox"/> Sediment Deposits (B2) (Riverine)</p> <p><input type="checkbox"/> Drift Deposits (B3) (Riverine)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
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<p><b>Field Observations:</b></p> <p>Surface Water Present? Yes _____ No _____ Depth (inches): _____</p> <p>Water Table Present? Yes _____ No _____ Depth (inches): _____</p> <p>Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators were observed at the top of the canal bank where common reed marsh occurs.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 4  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 0-1  
 Subregion (LRR): D Lat: 32.73085684430 Long: -115.71490757200 Datum: UTM  
 Soil Map Unit Name: Vint Loamy Very Fine Sand NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample point occurs within a ditch south of the Westside Canal along the boundary of an abandoned agriculture field.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Washingtonia robusta</u>	3	Yes	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
2. _____				
3. _____				
4. _____				
	3	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____ )				
1. <u>Tamarix ramosissima</u>	40	Yes	FAC	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Pluchea sericea</u>	20	Yes	FACW	
3. _____				
4. _____				
5. _____				
	60	= Total Cover		
Herb Stratum (Plot size: _____ )				
1. <u>Cryptantha angustifolia</u>	5	Yes	NI	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Sisymbrium sp.</u>	5	Yes	NI	
3. <u>Schismus barbatus</u>	3	No	NI	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
	13	= Total Cover		
Woody Vine Stratum (Plot size: _____ )				
1. _____				
2. _____				
		= Total Cover		
% Bare Ground in Herb Stratum <u>87</u> % Cover of Biotic Crust _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: The saltcedar individuals here are robust and this vegetation parallels the road and ditch along the south side of the canal.

**SOIL**

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5 YR 4/3	100					sand	organic litter on soil surface, soil moist from 0-9 inches

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks: No hydric soil indicators observed.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Secondary Indicators (2 or more required)**

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Thin Muck Surface (C7)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

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

Remarks: No hydrology indicators observed.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 5  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): base of berm Local relief (concave, convex, none): none Slope (%): 0-1  
 Subregion (LRR): D Lat: 32.72710429080 Long: \_\_\_\_\_ Datum: UTM  
 Soil Map Unit Name: Meloland Very Fine Sandy Loam NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point occurs along the base of a berm on boundary of abandoned agriculture field.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: _____ )</b>				
1. <i>Tamarix ramosissima</i>	30	Yes	FAC	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species _____ x 4 = _____ UPL species <u>3</u> x 5 = <u>15</u> Column Totals: <u>38</u> (A) <u>115</u> (B)  Prevalence Index = B/A = <u>3.02</u>
2. <i>Pluchea sericea</i>	5	No	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
<b>Herb Stratum (Plot size: _____ )</b>				
1. <i>Cryptantha angustifolia</i>	2	Yes	NI	<b>Hydrophytic Vegetation Indicators:</b> _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Sisymbrium sp.</i>	1	Yes	NI	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		

Remarks: Tamarisk individuals here appear diminished and stressed. This vegetation extends along the base of the berm. Vegetation does not meet dominance test or prevalence index criteria.



**SOIL**

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5 YR 4/3	100					sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No <u>X</u></p>
---	---

Remarks: No hydric soil indicators observed.

**HYDROLOGY**

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

<p><b>Field Observations:</b></p> <p>Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____</p> <p>Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____</p> <p>Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u></p>
--	--

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

Remarks: No hydrology indicators observed.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Westside Canal Energy Center City/County: Imperial County Sampling Date: 2/5/2019  
 Applicant/Owner: ConEdison Clean Energy Businesses State: CA Sampling Point: 6  
 Investigator(s): Andrew Smisek Section, Township, Range: Section 34, Township 16 South, Range 12 East  
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 0-1  
 Subregion (LRR): D Lat: 32.73194547090 Long: -115.72037306600 Datum: UTM  
 Soil Map Unit Name: Vint And Indio Very Fine Sandy Loams, Wet NWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample point occurs within a ditch south of the Westside Canal and adjacent road.	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: _____ )</b>				
1. <i>Pluchea sericea</i>	50	Yes	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <i>Tamarix ramosissima</i>	10	Yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
<b>Herb Stratum (Plot size: _____ )</b>				
1. <i>Sisymbrium sp.</i>	2	Yes	NI	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Cryptantha angustifolia</i>	1	No	NI	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>97</u> % Cover of Biotic Crust _____				

Remarks: Arrow weed vegetation continues east-west paralleling the canal, road, and ditch.

**SOIL**

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>		
0-18	7.5 YR 4/3	100					sand

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present?    Yes _____    No <u>X</u></p>
---	---

Remarks: No hydric soil indicators observed.

**HYDROLOGY**

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

<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>Water Table Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>Saturation Present?    Yes _____    No <u>X</u>    Depth (inches): _____</p> <p>(includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b>    Yes _____    No <u>X</u></p>
--	--

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

Remarks: No hydrology indicators observed.

## **ATTACHMENT 5**

### Ordinary High Water Mark Data Sheets

## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Westside Canal Battery Storage Project <b>Project Number:</b> 8888.1 <b>Stream:</b> Westside Canal <b>Investigator(s):</b> Andrew Smisek	<b>Date:</b> February 5, 2019 <b>Time:</b> 1200 <b>Town:</b> Mt. Signal <b>State:</b> CA <b>Photo begin file#:</b> <b>Photo end file#:</b>
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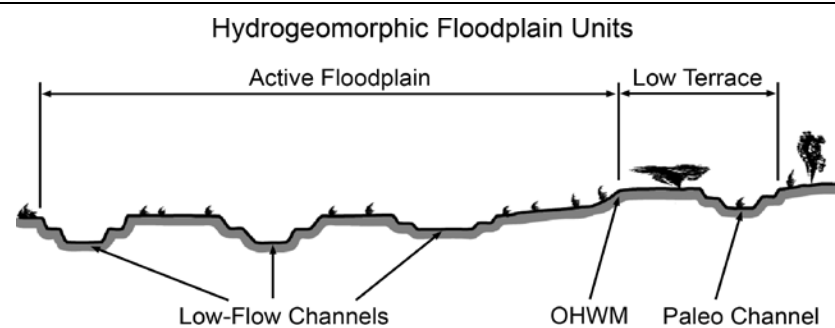
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b> Where pipeline is exposed due to bank erosion and bank stabilization proposed.  <b>Projection:</b> Mercator <b>Datum:</b> WGS84 <b>Coordinates:</b> 32.731609, -115.717145
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**Potential anthropogenic influences on the channel system:**  
 This canal has been manufactured for the purposes of delivering irrigation water to the surrounding agricultural land uses. Any vegetation that may develop within the canal is likely removed as part of regular maintenance. It was build with a natural bottom and steeply sloped banks of mostly rip rap rock.

**Brief site description:**  
 This sample transect occurs downstream of a drop structure that controls water flow and water levels within he canal. The active floodplain is approximately 90 feet in width and contains open water with sparse vegetation occurring at the top of the banks.

**Checklist of resources (if available):**

<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event
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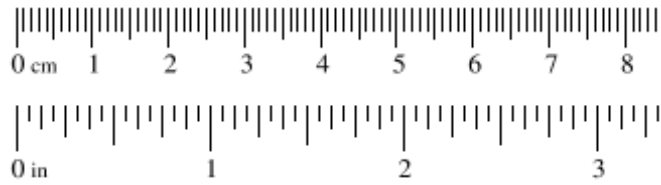


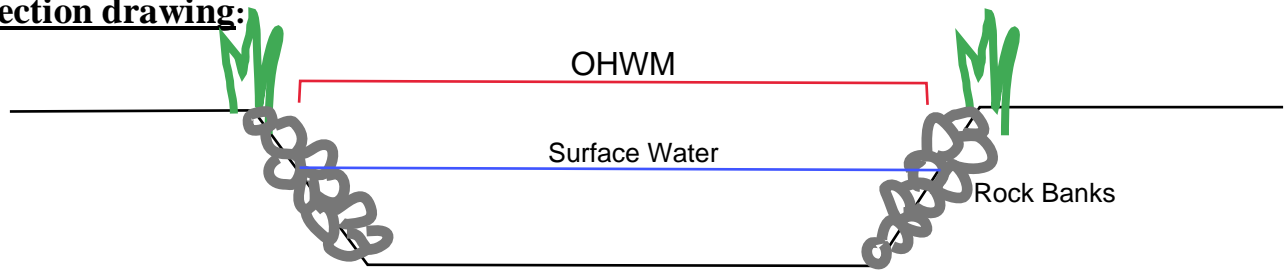
- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
  2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
  3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
    - a) Record the floodplain unit and GPS position.
    - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
    - c) Identify any indicators present at the location.
  4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
  5. Identify the OHWM and record the indicators. Record the OHWM position via:
 

<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

### Wentworth Size Classes

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



**Cross section drawing:****OHWM**

GPS point: \_\_\_\_\_

**Indicators:**

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

**Comments:**

The OHWM appears obvious at the water surface level where substantial water staining is present. The water levels within this canal appear to be maintained at a mostly consistent level.

**Floodplain unit:**     Low-Flow Channel     Active Floodplain     Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: 0 %    Tree: \_\_\_\_\_ %    Shrub: \_\_\_\_\_ %    Herb: \_\_\_\_\_ %

Community successional stage:

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

**Indicators:**

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

**Comments:**

The active floodplain occurs below the OHWM which appeared obvious at the surface water level where substantial water staining is present. The canal was manufactured to have a bed and bank, and small drift deposits were observed.

Project ID: 8888.1

Cross section ID: 1

Date: February 5, 2019 Time: 1200

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: 35 %

Community successional stage:

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

**Indicators:**

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

**Comments:**

Common reed marshes occur as linear strips averaging between 5 and 10 feet in width along the tops of the banks of the Westside Canal, but not below the recorded OHWM.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:

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

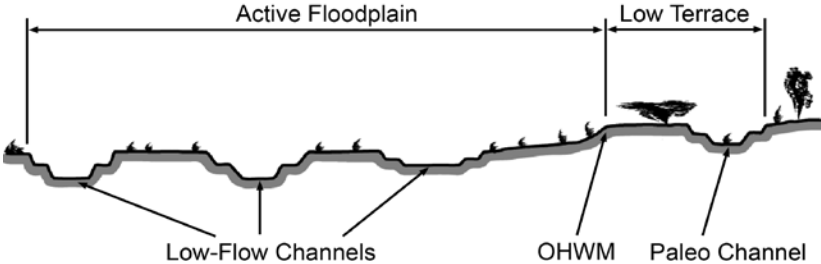
**Indicators:**

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

**Comments:**

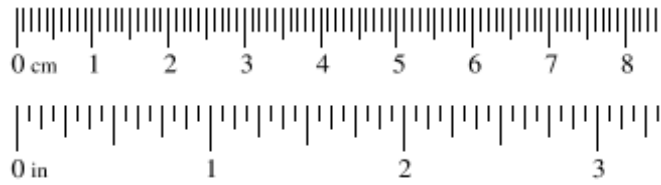


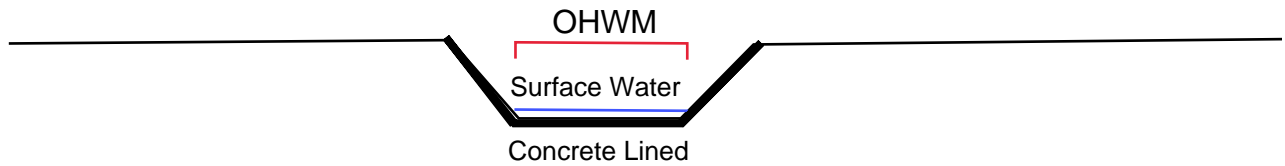
## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Westside Canal Battery Storage Project <b>Project Number:</b> 8888.1 <b>Stream:</b> Secondary Canal <b>Investigator(s):</b> Andrew Smisek	<b>Date:</b> February 5, 2019 <b>Time:</b> 1230 <b>Town:</b> Mt. Signal <b>State:</b> CA <b>Photo begin file#:</b> <b>Photo end file#:</b>				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b> Where pipeline is exposed due to bank erosion and bank stabilization proposed.  <b>Projection:</b> Mercator <b>Datum:</b> WGS84 <b>Coordinates:</b> 32.732202, -115.718308				
<b>Potential anthropogenic influences on the channel system:</b> This secondary canal is concrete-lined and has been manufactured for the purposes of delivering irrigation water to the surrounding agricultural land uses. Any vegetation that may develop within the canal is likely removed as part of regular maintenance.					
<b>Brief site description:</b> This secondary canal is fed by the primary Westside Canal, is concrete lined, and approximately 4 feet in width.					
<b>Checklist of resources (if available):</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography            Dates:  <input type="checkbox"/> Topographic maps  <input type="checkbox"/> Geologic maps  <input type="checkbox"/> Vegetation maps  <input checked="" type="checkbox"/> Soils maps  <input type="checkbox"/> Rainfall/precipitation maps  <input type="checkbox"/> Existing delineation(s) for site  <input checked="" type="checkbox"/> Global positioning system (GPS)  <input type="checkbox"/> Other studies         </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data            Gage number:            Period of record:  <input type="checkbox"/> History of recent effective discharges  <input type="checkbox"/> Results of flood frequency analysis  <input type="checkbox"/> Most recent shift-adjusted rating  <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event         </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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<b>Hydrogeomorphic Floodplain Units</b> 					
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b> <ol style="list-style-type: none"> <li>1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.</li> <li>2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.</li> <li>3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.             <ol style="list-style-type: none"> <li>a) Record the floodplain unit and GPS position.</li> <li>b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.</li> <li>c) Identify any indicators present at the location.</li> </ol> </li> <li>4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.</li> <li>5. Identify the OHWM and record the indicators. Record the OHWM position via:             <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> </li> </ol>		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

### Wentworth Size Classes

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



**Cross section drawing:****OHWM**

GPS point: \_\_\_\_\_ Surface Water

**Indicators:**

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

**Comments:**

The OHWM appears obvious at the water surface level where substantial water staining is present. The water levels within this secondary canal appear to be maintained at a mostly consistent level.

**Floodplain unit:**     Low-Flow Channel     Active Floodplain     Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: 0 %    Tree: \_\_\_\_\_ %    Shrub: \_\_\_\_\_ %    Herb: \_\_\_\_\_ %

Community successional stage:

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

**Indicators:**

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

**Comments:**

The active floodplain occurs below the OHWM which appeared obvious at the surface water level where substantial water staining is present. The canal was manufactured to have a concrete bed and bank.

Project ID: 8888.1

Cross section ID: 2

Date: February 5, 2020 Time: 1230

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:

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

**Indicators:**

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

**Comments:**

Unvegetated uplands occur outside this concrete lined secondary canal.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:

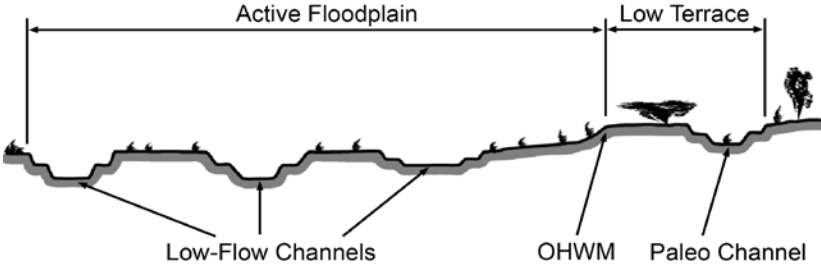
- NA  Mid (herbaceous, shrubs, saplings)
- Early (herbaceous & seedlings)  Late (herbaceous, shrubs, mature trees)

**Indicators:**

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

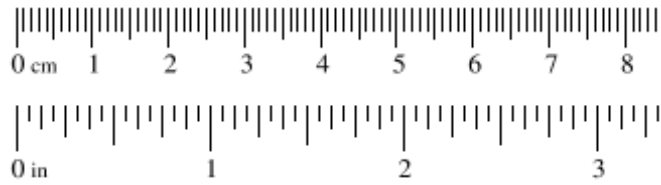
**Comments:**

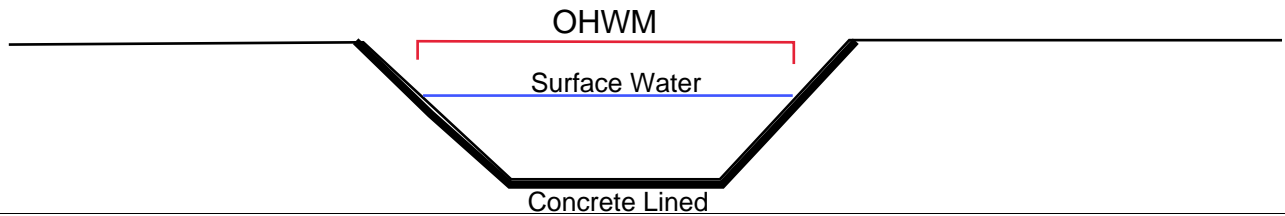
## Arid West Ephemeral and Intermittent Streams OHWM Datasheet

<b>Project:</b> Westside Canal Battery Storage Project <b>Project Number:</b> 8888.1 <b>Stream:</b> Secondary Canal <b>Investigator(s):</b> Andrew Smisek	<b>Date:</b> February 5, 2019 <b>Time:</b> 1300 <b>Town:</b> Mt. Signal <b>State:</b> CA <b>Photo begin file#:</b> <b>Photo end file#:</b>				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?  Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	<b>Location Details:</b> Where pipeline is exposed due to bank erosion and bank stabilization proposed.  <b>Projection:</b> Mercator <b>Datum:</b> WGS84 <b>Coordinates:</b> 32.731513, -115.714205				
<b>Potential anthropogenic influences on the channel system:</b> This secondary canal is concrete-lined and has been manufactured for the purposes of delivering irrigation water to the surrounding agricultural land uses. Any vegetation that may develop within the canal is likely removed as part of regular maintenance.					
<b>Brief site description:</b> This secondary canal is fed by the primary Westside Canal, is concrete lined, and approximately 15 feet in width.					
<b>Checklist of resources (if available):</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography            Dates:  <input type="checkbox"/> Topographic maps  <input type="checkbox"/> Geologic maps  <input type="checkbox"/> Vegetation maps  <input checked="" type="checkbox"/> Soils maps  <input type="checkbox"/> Rainfall/precipitation maps  <input type="checkbox"/> Existing delineation(s) for site  <input checked="" type="checkbox"/> Global positioning system (GPS)  <input type="checkbox"/> Other studies         </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data            Gage number:            Period of record:  <input type="checkbox"/> History of recent effective discharges  <input type="checkbox"/> Results of flood frequency analysis  <input type="checkbox"/> Most recent shift-adjusted rating  <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event         </td> </tr> </table>		<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: <input type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event				
<b>Hydrogeomorphic Floodplain Units</b> 					
<b>Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:</b> <ol style="list-style-type: none"> <li>1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.</li> <li>2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.</li> <li>3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.             <ol style="list-style-type: none"> <li>a) Record the floodplain unit and GPS position.</li> <li>b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.</li> <li>c) Identify any indicators present at the location.</li> </ol> </li> <li>4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.</li> <li>5. Identify the OHWM and record the indicators. Record the OHWM position via:             <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> </li> </ol>		<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

### Wentworth Size Classes

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



**Cross section drawing:****OHWM**

GPS point: \_\_\_\_\_ Surface Water

**Indicators:**

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

**Comments:**

The OHWM appears obvious at the water surface level where substantial water staining is present. The water levels within this secondary canal appear to be maintained at a mostly consistent level.

**Floodplain unit:**     Low-Flow Channel     Active Floodplain     Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: 0 %    Tree: \_\_\_\_\_%    Shrub: \_\_\_\_\_%    Herb: \_\_\_\_\_%

Community successional stage:

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

**Indicators:**

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

**Comments:**

The active floodplain occurs below the OHWM which appeared obvious at the surface water level where substantial water staining is present. The canal was manufactured to have a concrete bed and bank.

Project ID: 8888.1

Cross section ID: 3

Date: February 5, 2020 Time: 1300

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:

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

**Indicators:**

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

**Comments:**

Unvegetated uplands occur outside this concrete lined secondary canal.

**Floodplain unit:**  Low-Flow Channel  Active Floodplain  Low Terrace

GPS point: \_\_\_\_\_

**Characteristics of the floodplain unit:**

Average sediment texture: \_\_\_\_\_

Total veg cover: \_\_\_\_\_ % Tree: \_\_\_\_\_ % Shrub: \_\_\_\_\_ % Herb: \_\_\_\_\_ %

Community successional stage:

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

**Indicators:**

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

**Comments:**



## **ATTACHMENT 6**

### Ground Level Color Photographs



**PHOTOGRAPH 1**  
View of Quailbush Scrub in Northern Portion of Survey Area  
at Sample Point 2, Facing South.



**PHOTOGRAPH 2**  
View of Arrow Weed Thickets in Northern Portion of Survey Area  
at Sample Point 1, Facing North.



**PHOTOGRAPH 3**  
View of Athel Tamarisk Thickets in Southern Portion of Survey Area,  
Facing North.



**PHOTOGRAPH 4**  
View of Common Reed Marshes Along Westside Canal, Facing West.



**PHOTOGRAPH 5**  
View of East-west Concrete-lined Channel North of the Westside Canal,  
Facing East.



**PHOTOGRAPH 6**  
View of Westside Canal, Facing West.



**PHOTOGRAPH 7**  
View of North-south Concrete-lined Canal, Facing Northeast

## **ATTACHMENT 7**

### References Cited

## References Cited

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- U.S. Geological Survey (USGS)  
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