

# COMPREHENSIVE BIOLOGICAL RESOURCES ASSESSMENT REPORT

## ALAMO SOLAR PROJECT

Helendale USGS 7.5' quadrangle

Section 34, Township 7 North, Range 4 West

APNs 0470-021-09, 0470-041-01, 0470-051-14, 0470-051-15, 0470-0051-17, 0470-011-35 and 0470-011-10

## SAN BERNARDINO COUNTY, CALIFORNIA

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Project Number 28907396, 28907452

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**CERTIFICATION**

*"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that no biological information has been withheld based on nondisclosure or consultant confidentiality agreements with the project applicant or applicant's representative and that I have no financial interest in the project."*

DATE: \_\_\_\_\_ SIGNED:  \_\_\_\_\_

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Senior Environmental Scientist

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## EXECUTIVE SUMMARY

Alamo Solar, LLC (the Applicant) has retained URS Corporation (URS) to prepare this Comprehensive Biological Resources Assessment Report for the Alamo Solar Project (Project), a proposed 17-megawatt (MW) alternative current (AC) solar photovoltaic (PV) electrical power generating facility on approximately 123 acres in unincorporated San Bernardino County, California. The site measures approximately 175 acres in size. The proposed Project will connect with an existing Southern California Edison Company (SCE) 33-kilovolt (kV) transmission line. Portions of this existing line would need to be upgraded to accommodate electricity produced by the proposed Project, and the necessary upgrades are included as a component of the proposed Project.

The Project site has been used historically for agricultural production, and does not support abundant native vegetation. The Project site supports one native vegetation community, Fremont cottonwood trees (*Populus fremontii*), which are solitary and limited in distribution. The Project site supports three non-native and/or anthropogenic vegetation types, Russian thistle stands (*Salsola tragus*), hedge mustard stands (*Sisymbrium orientale*), and ornamental/developed. No special-status plant species were detected on the Project site or gen-tie improvement corridor. Although they maintain no federal or state sensitivity designations, a number of plant species are protected by the California Desert Native Plants Act, and by the San Bernardino County Development Code. No species granted protection under the California Desert Native Plants Act and the San Bernardino County Development Code were observed on the Project site. Protected species identified on the gen-tie improvement corridor include buckhorn cholla (*Cylindropuntia acanthocarpa*), silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), cottontop cactus (*Echinocactus polycephalus*), beaver tail cactus (*Opuntia basilaris*), and Mojave yucca (*Yucca schiedigera*). Additional protected species include Joshua tree (*Yucca brevifolia*) that was found along the March-July 2013 gen-tie improvement corridor Survey Area.

Aside from common insects, a total of 48 wildlife species were observed on-site and along the gen-tie improvement corridor. Five special-status wildlife species were detected on-site, the California gull (*Larus californicus*, Watch List [WL] for nesting colonies), lark sparrow (*Chondestes grammacus*, Special Animal when nesting), horned lark (*Eremophila alpestris*, WL), olive-sided flycatcher (*Contopus cooperi*, Birds of Conservation Concern [BCC], California Species of Concern [CSC] when nesting), and sharp-shinned hawk (*Accipiter striatus*, WL when nesting). In addition, an active desert kit fox (*Vulpes macrotis arsipus*) burrow was observed on the Project site. While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, California Department of Fish and Wildlife (CDFW) regulations at 14 CCR 460 prohibit the take of this species. Two special-status wildlife species was observed on the gen-tie improvement corridor, the Mojave desert tortoise (*Gopherus agassizii*, federally listed threatened, state-listed threatened) and white-

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faced ibis (*Plegadis chihi*, WL for nesting colony). Additionally, Le Conte's thrasher (*Toxostoma lecontei*, BCC, CSC) was observed adjacent to the Project site.

One intermittent drainage, a side-channel of the Mojave River, is present on the Project site, traversing the northwest corner of the property outside the development footprint in a southwest-northeast direction. A total of 12.16 acres of non-wetland waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (USACE) are present on the Project site. No USACE-jurisdictional wetlands were found at the Project site. A total of 12.24 acres of streambed that are under the jurisdiction of the California Department of Fish and Wildlife and the Lahontan Regional Water Quality Control Board are present at the Project site.

**SECTION 1.0  
INTRODUCTION AND BACKGROUND**

**1.1 INTRODUCTION**

The Applicant proposes to construct and operate a 17-MW renewable solar PV electrical power generating facility, the Project. In addition, to accommodate the Project's electrical output, approximately five miles of existing electrical distribution lines owned and operated by SCE would be upgraded with new poles and conductors. This Biological Resources Assessment Report presents the results of focused biological field investigations that have been undertaken within the Project site and surrounding vicinity, describes the Project's impacts on biological resources, and identifies mitigation measures that would reduce impacts to below levels of significance.

The Applicant will submit a Conditional Use Permit (CUP) application to the County of San Bernardino (County), and the Planning Division of the County Land Use Services Department (Planning) will initiate review of the proposed Project as required under the California Environmental Quality Act (CEQA). The purpose of this General Biological Resources Assessment Report is to present the biological field studies that have been conducted for the Project, and to substantiate the baseline biological conditions within the Project site and surrounding area for CEQA purposes. Studies presented in this report include:

- A review of pertinent literature
- An initial site reconnaissance
- A full-coverage biological field survey
- A delineation of jurisdictional waters and streambeds
- Protocol-level surveys for the federally and state-listed threatened Mojave desert tortoise (*Gopherus agassizii*)
- Protocol-level surveys for the burrowing owl (*Athene cunicularia*)
- A focused botanical inventory, including mapping of species protected under the California Desert Native Plants Act and San Bernardino County Development Code

This Comprehensive Biological Resources Assessment Report has been prepared in accordance with the County's Report Protocol for Biological Assessment Reports. Specifically, this report meets the requirements set forth for a General Biological Resources Assessment Report, as well as a Focused Mojave Desert Tortoise Survey Report and a Focused Burrowing Owl Survey Report. The content required of these reports has been consolidated into a single Comprehensive Biological Resources Assessment Report to allow

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for easy use and understanding by decision-makers, resource agencies, and the interested public.

### 1.2 PROJECT SITE

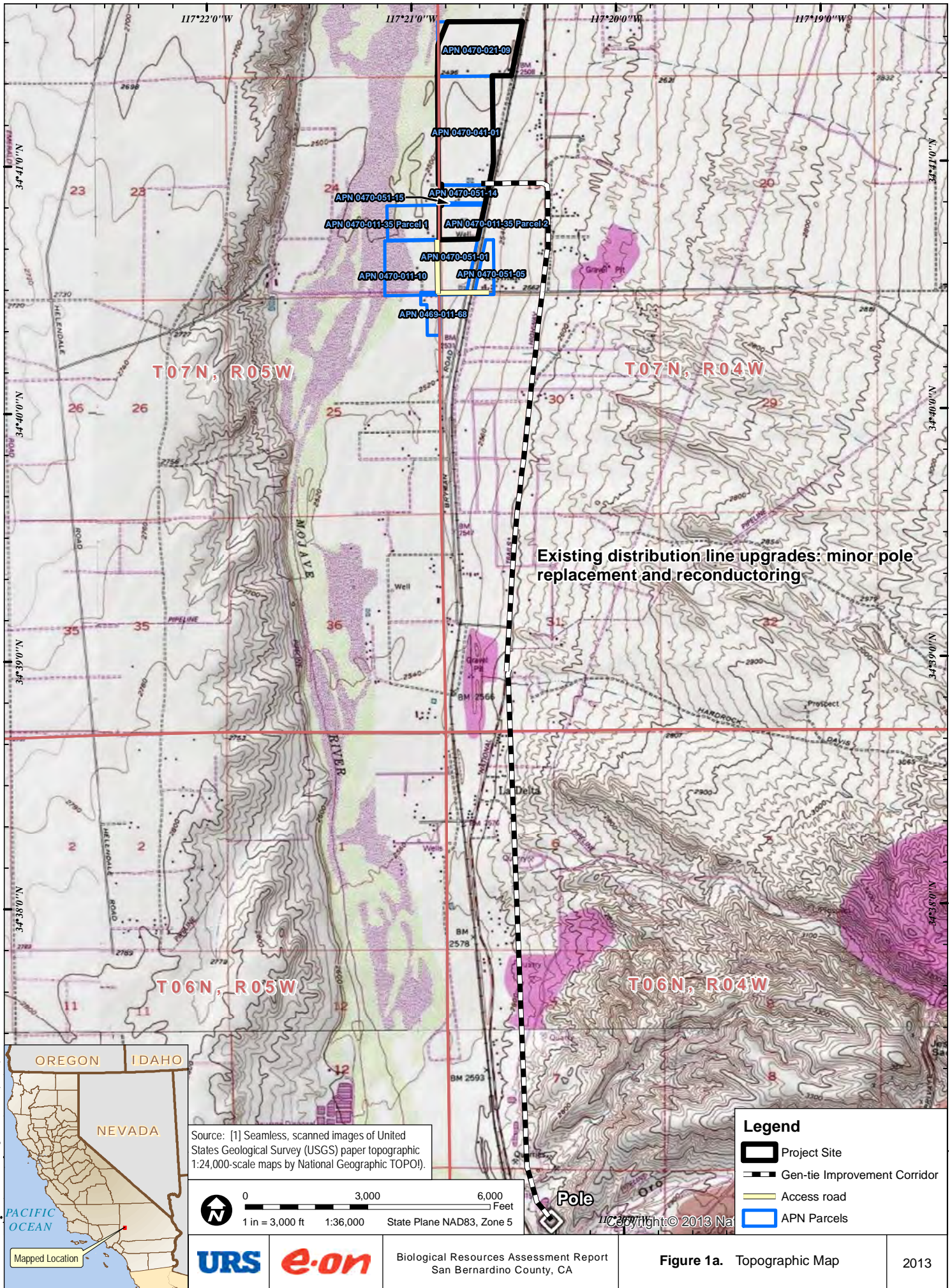
The Project site evaluated in this Comprehensive Biological Resources Assessment Report comprises approximately 190 acres and is situated in the western Mojave Desert in unincorporated San Bernardino County, approximately 0.1 mile east of the Mojave River, and approximately 3 miles north of Oro Grande, 3.5 miles south of Helendale, 7.5 miles northeast of Adelanto, and 10.8 miles northwest of downtown Victorville, California (Figure 1). The Project site is bordered to the north by agricultural lands; to the east by Bryman Road, the Atchison, Topeka and Santa Fe (AT&SF) Railroad, National Trails Highway State Route 66 (SR 66) and agricultural uses and vacant undeveloped lands; to the south by a combination of rural residential development and fallow agricultural land; and to the west by the Mojave River and agricultural uses. Site access can be achieved from Bryman Road/Aster Road and SR 66 to the east. Regional site access is provided by Interstate 15 (I-15) from the west and by U.S. Route 395 (US 395) from the east. The Project site comprises portions of Assessor's Parcel Numbers (APN) 0470-021-09, 0470-041-01, 0470-051-14, 0470-051-15, and 0470-011-35 in Sections 18, 19, and 24, Township 7 North, Range 4 West (San Bernardino Base and Meridian), within the Helendale USGS 7.5-minute series quadrangle.

The parcels that make up the Project site are primarily fallowed agricultural land with houses and outbuildings, all of which will be cleared prior to construction. The parcels' land use zoning district is RL-5 (Rural Living – 5-acre parcel minimum). The RL land use zoning district provides for rural residential uses, incidental agricultural uses, and similar and compatible uses. Under County Code Chapter 82.04, an energy generating facility would be permitted through a CUP. The proposed Project is bound to the west by RL-5 and floodway, north by RL-5, east by RL. Existing uses surrounding the project site include undeveloped land, agricultural land, and county lands, floodway and a few scattered single family residences. All residences within the proposed solar site will be abandoned prior to construction. The site is privately owned, and is not within or adjacent to any designated sensitive resource areas, ecological reserves, or other formally protected lands. The Mojave National Preserve is located approximately 75 miles to the northeast.

Elevations within the Project site range from approximately 2,487 to 2,524 feet (758 to 770 meters) above mean sea level, with the overall grade sloping gradually from south to north at approximately one percent. The Sparkle and Quartzite mountains, with peak elevations of 3,625 feet and 4,532 feet, respectively, are in a lightly developed area to the east. Microtopography within the site is minimal due to past agricultural practices, and is limited to artificial water ponds (now dry) and associated berms. Natural drainages and major landforms and topographic features are absent. The riparian corridor of the Mojave River, a



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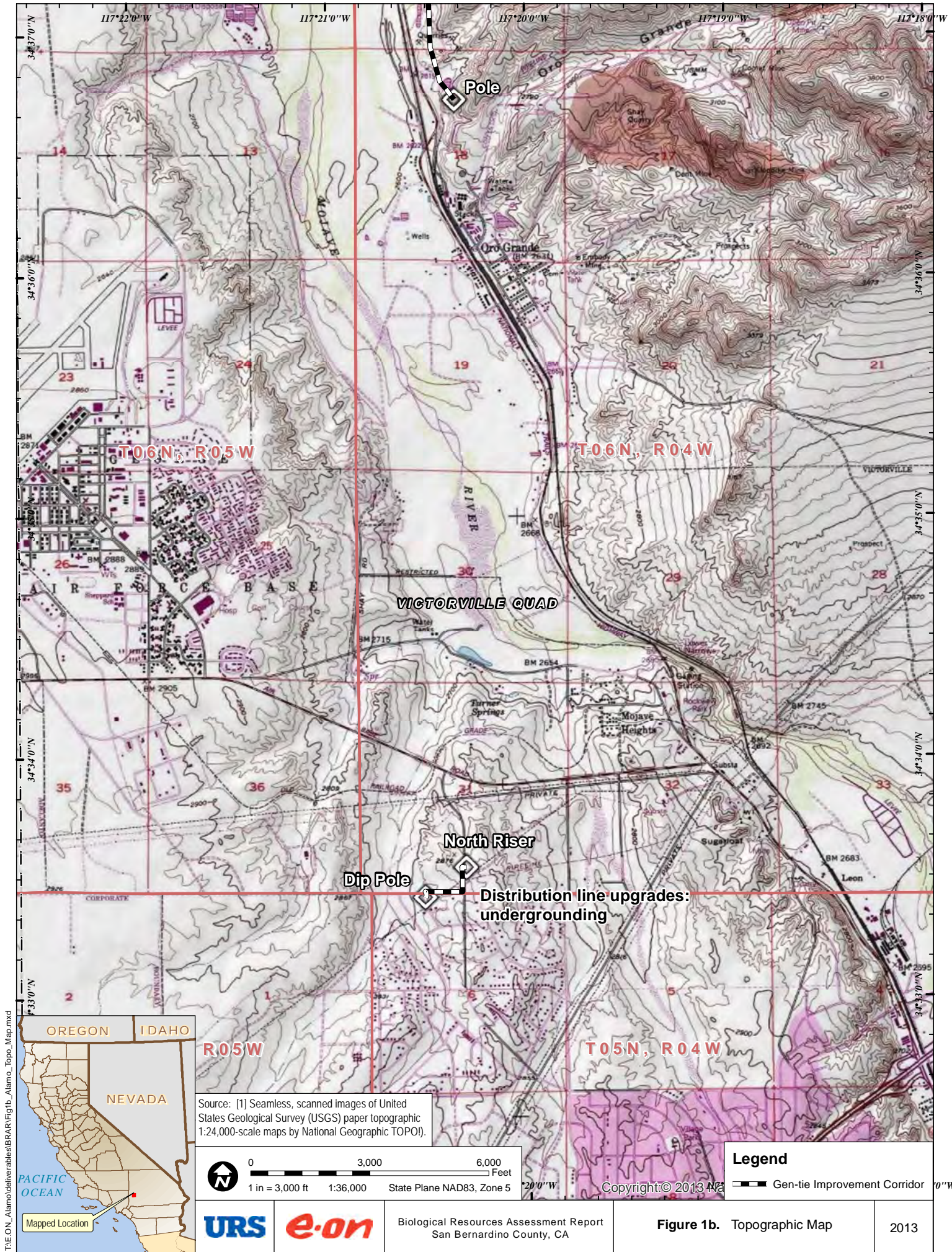
Figure 1a. Topographic Map

2013













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perennial water source with documented importance for birds and wildlife in the region, is located in proximity to the site's western boundary.

Much of the land surrounding the Project site has been subdivided into large residential lots for rural living, but only a few of these lots have been developed with residences. The closest residence to the Alamo site is located approximately 500 feet west of the site's western boundary on Melrose Road. The lands surrounding the Project site are similar in appearance to the site itself, and contain previously-disturbed soils and scattered rural residences.

### **1.3 TAXONOMIC NOMENCLATURE AND SPECIAL-STATUS SPECIES**

Sources of taxonomic nomenclature for plants, animals, and vegetation communities used in this Comprehensive Biological Resources Assessment Report are as follows:

- Plant nomenclature follows the Jepson Manual (Baldwin *et al.* 2012), and the Jepson Online Interchange for name changes
- Reptile nomenclature follows A Field Guide to Western Reptiles and Amphibians (Stebbins 2003), and the California Herps website for name changes (California Herps 2013)
- Bird nomenclature follows the American Ornithologists' Union (2008)
- Mammal nomenclature follows Mammal Species of the World (Wilson and Reeder 2005)
- Natural vegetation communities were identified based on A Manual of California Vegetation, Second Edition (Sawyer *et al.* 2009)

The term "special-status species," as used in this Comprehensive Biological Resources Assessment Report, includes:

- Plant and wildlife species that are listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), under the U.S. Endangered Species Act (ESA)
- Plant and wildlife species that are listed or candidates for listing as threatened or endangered under the California Endangered Species Act (CESA)
- Those birds, mammals, reptiles and amphibians, and fishes listed as "fully protected" by the California Fish and Game Code (Sections 3511, 4700, 5050, and 5515, respectively)
- Animals identified by the CDFW as CSC, Special Plants (SP), or Special Animals (SA)
- Birds identified as Birds of Conservation Concern (BCC) by the USFWS
- Plants occurring on Ranks 1, 2, and 4 of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS 2013)

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Common avian species that receive protection under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code during the nesting season, but otherwise maintain no applicable sensitivity designation, are not treated as special-status species in this report.

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### **SECTION 2.0**

#### **SUMMARY PROJECT DESCRIPTION**

The Alamo Solar Project “Project” is being developed by Alamo Solar, LLC (Applicant) to provide solar photovoltaic (PV) power to serve the electrical load requirements of California. The Project will generate approximately 20 MW of alternating current photovoltaic modules on approximately 123 acres of the 175-acre site. The Project will tie in electrically to a new project substation, to be located near the northwest corner of Melrose Road and Bryman Road. This substation will be the project’s point of change of ownership from the project developer to the interconnection utility, Southern California Edison (SCE). From the substation the Project will connect electrically with the existing SCE Victor-Helendale 33-kV transmission line that runs north-south along National Trails Highway (Route 66). SCE will undertake distribution line upgrades and modifications along this line that are described in the following pages, and that will be evaluated as part of this project. The electricity produced by the Solar Project will be sold through a long-term power purchase agreement.

The Project is designed to have a useful life of 20 to 30 years, although the life span could be extended by upgrades and refurbishments. In the event that the Project is decommissioned, the facility would be removed and the site prepared for subsequent land use.

In addition to seeking County approval to construct and operate the facility, the Applicant will also seek County approval to merge the lots (parcels) within the facility.

#### **2.1 PROJECT LOCATION**

The Project site is situated in the western Mojave Desert, approximately one-tenth of a mile east of the seasonal Mojave River, and approximately 3 miles north of Oro Grande, 3.5 miles south of Helendale, 7.5 miles northeast of Adelanto, and approximately 10.5 miles northwest of downtown Victorville, California. The Project site is bordered to the north by agricultural lands; to the east by Bryman Road, the AT&SF Railroad, SR 66 and agricultural uses and vacant undeveloped lands; to the south by a combination of rural residential development and fallow agricultural land; and to the west by the Mojave River and agricultural uses. The site is located Sections 18 and 19, Township 7 North, Range 4 East, San Bernardino Base and Meridian, in the Helendale U.S. Geological Survey (USGS) quadrangle, County of San Bernardino, California. Figure 1 shows the local site vicinity, and the inset on this figure shows the regional map for context.

From north to south, the project site includes APNs 0470-021-09, 0470-041-01, 0470-051-14, 0470-051-15, and 0470-0051-17, 0470-011-35 (access road only) and 0470-011-10 (access road only). The parcels that make up this project area are primarily fallowed agricultural land with houses and outbuildings, all of which will be cleared prior to construction. The parcels’ land use zoning district is RL-5 (Rural Living – 5-acre parcel

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minimum). The RL land use zoning district provides for rural residential uses, incidental agricultural uses, and similar and compatible uses. Under County Code Chapter 82.04, an energy generating facility would be permitted through a CUP. The proposed Project is bound to the west by RL-5 and floodway (FW), north by RL-5, east by RL. Existing uses surrounding the project site include undeveloped land, agricultural land and county lands, floodway and a few scattered single family residences, most of which are abandoned. All residences within the proposed solar site will be abandoned and cleared prior to construction.

## **2.2 ENVIRONMENTAL SETTING AND SURROUNDING USES**

The proposed Project site is situated within the Mojave Desert in the Mojave River watershed. The Mojave Desert is a subsection of the Basin and Range Physiographic Province characterized by long, north-south-trending mountain ranges separated by broad valleys. The site is located on a broad, flat valley floor near the Mojave River floodplain. Elevation of the Project site ranges from approximately 2,487 feet at its northern boundary up to 2,524 feet at the southeastern corner with a slope of about one percent towards the north. The site is sparsely vegetated with non-native plant communities (Russian thistle stands and hedge mustard stands), which have colonized the site following the removal of native vegetation that occurred to accommodate past agricultural uses.

No streams or other hydrologic features are present on the site. The 100-year floodplain of the Mojave River crosses through the northwestern corner of the project site but would be avoided during construction and operation of the proposed solar facility. During storm events the site drains to the river via sheet flow.

The Project site is bordered to the north by agricultural land on the north side of Cardigan Road (unpaved extension). Beyond the adjoining agricultural parcel, lands to the north of the site have been subdivided for rural residential use, although many of the parcels remain undeveloped. Conditions to the south of the site are similar. To the west, the Mojave River's floodplain comprises natural vegetation and anthropogenic land uses are absent.

## **2.3 CONCEPTUAL PROJECT LAYOUT**

### **2.3.1 Site Plan and Drainage**

The conceptual site plan is provided in Figure 2. As proposed, the Project layout would exclude any activity within jurisdictional waters of the Mojave River. There would also be no operational ground-disturbing activity within 25 feet of the Mojave River's ordinary high water mark. The facility would include the following major components: non-reflective PV solar module arrays mounted on fixed tilt or single-axis trackers and a racking system supported by embedded piers, a maximum of 20 inverters and transformers on small concrete pad pads, buried collector lines, and switchgear. The solar power generation facility would also include a small, unmanned communications enclosure that would house the supervisory







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control and data acquisition (SCADA) system to monitor and control facility operations. The enclosure would measure approximately 200 square feet in size (10 feet by 20 feet) and would be approximately 8 to 12 feet high.

Internal site circulation would include a 26-foot-wide perimeter road with an all-weather surface, and 12-foot-wide access ways (minimally graded, dirt or gravel) to provide maintenance access to the solar panels. A six-to-eight-foot-high chain link security fence will be installed around the facility, within the required setbacks from the property boundary. All Project lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting is planned to be installed at the exterior of the SCADA building and the project switchyard. Lighting will be directed downward and shielded to focus illumination on the desired areas.

External site access would be provided from Route 66, then by turning west along Heritage Way, and then by turning north along a new road segment that would run along the eastern edge of parcel 0470-011-10. Heritage Way will be expanded within its legal right-of-way. Both Heritage Way and the new access road will be between 26 feet and 36 feet wide, and will be surfaced with all-weather material.

As noted, no streams or other hydrological features are present on the solar site. On-site soils have moderate to low run-off potential and drain to the river via sheet flow during storm events. The Project's hydrological analyses (URS December 2011, March 2013) indicate construction of the Project would result in a small (less than 5 percent) increase in impervious area of the site and no substantial change in site drainage is anticipated. In addition, best management practices for erosion control would be used to avoid and minimize impacts on the environment during construction and operations and maintenance. A Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan will be prepared and implemented to avoid and minimize impacts on water quality during construction and operation.

### **2.3.2 Interconnection and Distribution System Upgrades**

The project includes distribution system upgrades that SCE will make from the project site to a point approximately five miles south near Oro Grande Canyon Road. These upgrades include wooden pole replacement and reconductoring. Construction of the upgrades will include staging areas, temporary construction easements and SCE's existing permanent 10-foot wide easement. Some new poles will also be required.

Gen-tie line upgrades for this project are planned to begin at the project substation near the northwest corner of Melrose Road and Bryman/Aster Road, which represents the point of change of ownership between the project owner and SCE. Near the project substation, the project owner will install a new customer-owned switch, and SCE will install a closer pole and a metering pole.

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From the project substation, the current gen-tie line runs east for about 1,500 feet along the Melrose Road alignment, and then turns south along National Trails Highway. Along the Melrose Road alignment, SCE will replace the existing 40-foot poles that now support a 4-kV line with taller, 50-foot poles to support both the existing 4 kV circuit and a new 33.5-kV circuit. Three new poles are planned to be added along this segment; two within the project site and one additional pole at the intersection of the Melrose Road alignment and National Trails Highway.

From the intersection of Melrose Road and National Trails Highway, the line will run south for about 2,500 feet to the intersection of National Trails Highway and Bryman Road. Along this segment, the line will use the existing SCE right-of-way for approximately 1,500 feet. SCE will replace the 40-foot poles with 50-foot poles, and add a third circuit of 33 kV to the two existing 33-kV and 4-kV circuits. The number and positions of all poles along this segment will remain the same. After running 1,500 feet south, the line will shift approximately 40 feet west before continuing to run south within the public right-of-way along National Trails Highway. Approximately four new poles will be added within this 1,000-foot segment before the line reaches the intersection of Bryman Road and National Trails Highway. The four new poles will assume roughly the same horizontal positions as the poles that run along the existing alignment.

From the intersection of Bryman Road and National Trails Highway, the line continues south within its present alignment for approximately 1.75 miles. New wires will be installed along this segment, and some poles will be replaced due to age, though all poles will remain in the same location.

Just south of the intersection of Barbosa Road and National Trails Highway, the line breaks from the right-of-way of National Trails Highway and proceeds south along the east side of the highway within SCE's current right-of-way. This segment will be upgraded with new wires. Due to the heavier conductor, some poles along this approximately 35-pole segment will be added to shorten the spans, and some poles will be replaced due to age. It is expected that approximately 11 new poles will be added and 9 poles will be replaced.

SCE's upgrades will be consistent with standards outlined by the Avian Powerline Interaction Committee. For example, avian hoods will be used at new circuits to avoid or minimize effects on large birds such as raptors.

A final portion of the project's distribution upgrades will occur in an area that is not contiguous to the other upgrades and approximately 3.8 miles to the southeast of the terminus of the distribution feeder. This section occurs at the intersection of Village Drive and Rancho Road. The circuit starts at a riser pole on Village Road, runs south to Ranch Road, and proceeds west to a second riser pole. The overall length of the affected duct bank is approximately 1,850 feet. Because the existing circuit was installed in conduit, the new

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conductors can be installed without modification to the conduit duct bank. Upgrades to this segment will occur without ground disturbance, and construction duration is not expected to take more than 8 hours.

### **2.4 PROJECT OPERATIONS**

The proposed solar facility would be unmanned. Several part-time employees would visit the site periodically (i.e., monthly or bimonthly). A few times per year, a designated representative would visit the site to wash the PV panels. Panel washing would require approximately 1 acre-foot of water per year. Water during operations would be purchased and trucked from a local licensed purveyor and/or supplied by one or more existing on-site wells. The existing on-site well would be used if it meets current Department of Water Resources (DWR) standards. If it does not, it may be upgraded or the project would purchase and truck in water. Based on an assumed use of medium-sized water tankers, purchasing the water would require approximately 80 truckloads for delivery of this water. Water or dust palliatives would be used if needed to control wind and water erosion during operations.

If the existing on-site groundwater wells are to be used, operations would be conducted in compliance with requirements of the County of San Bernardino Division of Environmental Health Services, California Department of Water Resources and the Lahontan Regional Water Quality Control Board (Basin Plan). Provided that the well water will be used for non-potable uses (solar panel washing and dust control), the County of San Bernardino will require the well(s) to meet California Department of Water Resources standards for an industrial water well. This includes a minimum depth of annular surface seal of 50 feet. Allowances for a shallower seal may be accommodated based on the total well depth.

Extraction of groundwater through the use of existing wells or the purchase of water would include coordination and compliance with the Mojave Water Agency's requirements because the groundwater basin is adjudicated. Although the total amount of groundwater extraction is not high (estimated to be a total of 10 to 15 af during construction and 1 afy during operation), use of groundwater within an adjudicated basin requires coordination with MWA, particularly if the water use will exceed 10 afy.

### **2.5 PROJECT CONSTRUCTION AND SCHEDULE**

Construction of the proposed Project is estimated to require approximately 160 workers at its peak. SCE has indicated the need for approximately 19 additional full-time-equivalent positions for upgrading its distribution line. Construction is estimated to start in mid-to-late 2014 and would take approximately eight months to complete. Approximately 10 to 15 acre-feet of water would be used during construction for dust suppression and ancillary construction activities.

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Construction activities at the Project site include removal of several abandoned residences and structures, vegetation clearing, grubbing, grading, trenching for buried cables and installation of pier foundations. Existing vegetation is minimal and would be removed as a result of construction activities. Existing structures will be removed and will require proper grading and compaction but mass grading is not expected given the relatively flat terrain of the site and the absence of heavy groundcover (Cut and fill is expected to affect only about 8,000 cubic yards of material). On-site irrigation to promote revegetation of the site is not planned.

At locations where foundations are installed for the inverters, it is expected that minor cuts would be required to place the foundations on a level pad. It is expected that the fill from these cuts would be placed around the pre-cast foundation in order to divert small, localized flows away from the foundation and prevent undermining of the same.

Mass grading is not proposed; these activities are expected to require approximately 8,000 cubic yards of cut and fill, which is expected to have minimal impact to existing drainage patterns and overall topography of the site. Where grading is required, cut-and-fill is expected to be balanced on-site, resulting in little or no import or export of earthen material.

Any water used to control dust during construction would either be provided by existing on-site wells or purchased and trucked from a local licensed purveyor. If one or more existing on-site groundwater wells are to be used, such uses would be conducted in compliance with requirements of the County of San Bernardino Division of Environmental Health Services, California Department of Water Resources and the Lahontan Regional Water Quality Control Board (Basin Plan).

Best management practices for erosion control would be used to avoid and minimize impacts on the environment during construction and operations and maintenance. A Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan will be prepared and implemented to avoid and minimize impacts on water quality during construction and operation.

## **SECTION 3.0 STUDY METHODS**

To document the existing biological conditions within the Alamo site, URS relied upon a review of available literature, as well as seasonally timed biological field investigations of the site. The methods employed are described below.

### **3.1 LITERATURE REVIEW**

Prior to conducting biological field surveys within the Alamo site, URS biologists performed a literature review to identify sensitive plants, animals, or habitats that could occur within the site. The literature review included topographic maps, aerial photographs, species-specific technical literature, and publicly available environmental documentation for other recent projects in the region. In addition, a search of the CNPS Inventory of Rare Plants Database (CNPS 2001 and 2013) and a five-mile radius query of the California Natural Diversity Database (CNDDDB; CDFW 2011c and 2013a) were performed. These resources were used to identify documented occurrences of special-status plants and wildlife species within or in the vicinity of the Project site. The CNDDDB five-mile query also provided locations of designated critical habitat for federally listed species, sensitive natural communities, ecologically sensitive areas, and state-managed lands. The results of the CNDDDB query are presented on Figure 3.

Special-status species lists generated from database and literature review were cross-referenced with vegetation and habitat types present on the Project site to create a list of special-status plant and wildlife species with potential to occur on the Project site. Each special-status species with potential for occurrence on or near the Project site is discussed individually in Section 4.4.4 of this General Biological Resources Assessment Report. A broad-scale wildlife movement analysis entitled *South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion* (SC Wildlands 2008) was a primary source for information relating to the role the Project site as a possible wildlife movement corridor.

The information gained through the literature review and subsequent analysis described above was used to determine an appropriate scope of biological field investigations for the site.

### **3.2 FIELD INVESTIGATIONS**

A total of five biological field surveys were conducted within the Alamo site between 2010 and 2013. Field investigations were initiated with a reconnaissance-level survey performed by URS biologists on October 29, 2010, and subsequent investigations included a full-coverage, spring season biological survey, a delineation of jurisdictional waters and streambeds, a jurisdictional drainage reconnaissance, a focused botanical survey, and

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protocol burrowing owl surveys. A total of three biological field surveys were conducted along the gen-tie improvement corridor in 2013. Field investigations were performed by URS biologists beginning on March 26, 2013 and included a focused botanical survey and California Desert Native Plants Act inventory, and protocol Mojave desert tortoise and burrowing owl surveys. Photographs were taken to document site conditions (Appendix A). The methods used during these efforts are described below. The location of each survey, survey dates and times, weather conditions, and names of investigators are presented in Table 1 below.

The Study Area for this Comprehensive Biological Resources Assessment Report is defined as the Project site and the gen-tie improvement corridor (Figure 4). The 2010/2011 Project site footprint was modified in 2013, resulting in additional Survey Areas to the south. The 2010/2011 gen-tie improvement corridor was modified in January 2013, and again in July 2013, resulting in additional Survey Areas along National Trails Highway. Portions of the January 2013 and July 2013 gen-tie improvement corridor Survey Area overlap, as shown in Figure 4. The Survey Area for the gen-tie improvement corridor was defined as a 25-foot buffer (50 feet total) along the gen-tie improvement corridor. As the Project site and the gen-tie improvement corridor are located within homogenous habitat and modifications are located within close proximity to previous footprints/alignments, surveys conducted are applicable across all footprints and alignments.

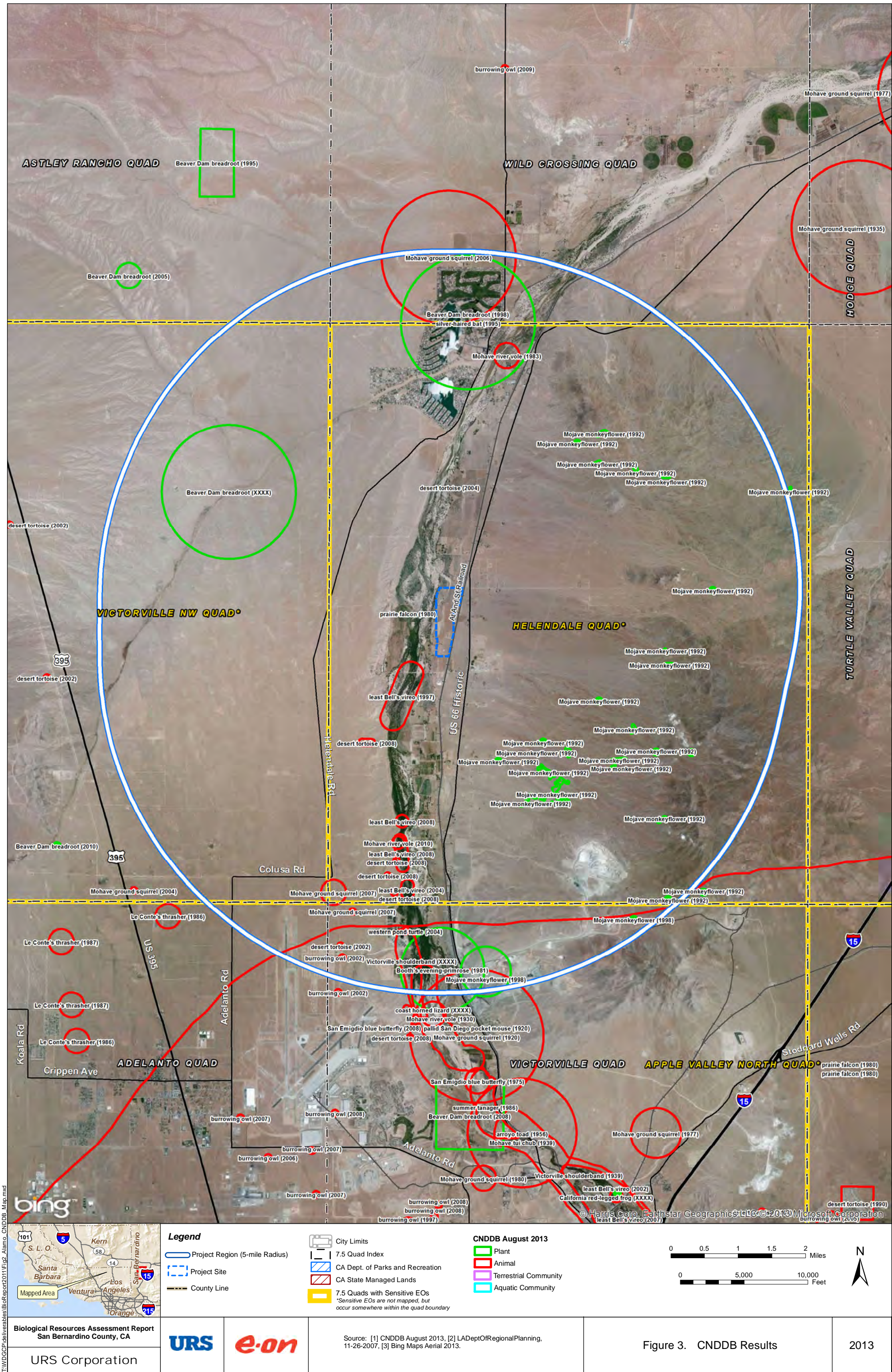
#### **3.2.1 Initial Site Reconnaissance**

A reconnaissance-level survey was conducted on the Project site (2010/2011 Survey Area) by URS biologist John Davis IV on October 29, 2010 to assess the site for potential biological constraints. The site was surveyed on foot. Biological resources and conditions that were visible at that time of year and that could be identified within the limitations of a reconnaissance-level survey effort (e.g., ephemeral streams) were documented in the field. Habitat suitability for special-status species was also assessed. Information obtained from the field surveys was cross-referenced with CNDDB query results and discussed informally with responsible agencies.

#### **3.2.2 Full-coverage Biological Surveys**

Full-coverage pedestrian surveys of the Project site (2010/2011 Survey Area) were conducted between April 8 and 13, 2011, by biologists from URS subconsultant NOREAS. Biologists walked parallel transects across the site, identifying and documenting all plants and wildlife observed. Wildlife signs, such as distinctive burrows, tracks, scat, carcasses, or other identifying features, were also documented. Where necessary, biologists collected specimens of plant species observed on-site for taxonomic identification under a microscope. Habitat suitability for special-status species was also assessed.

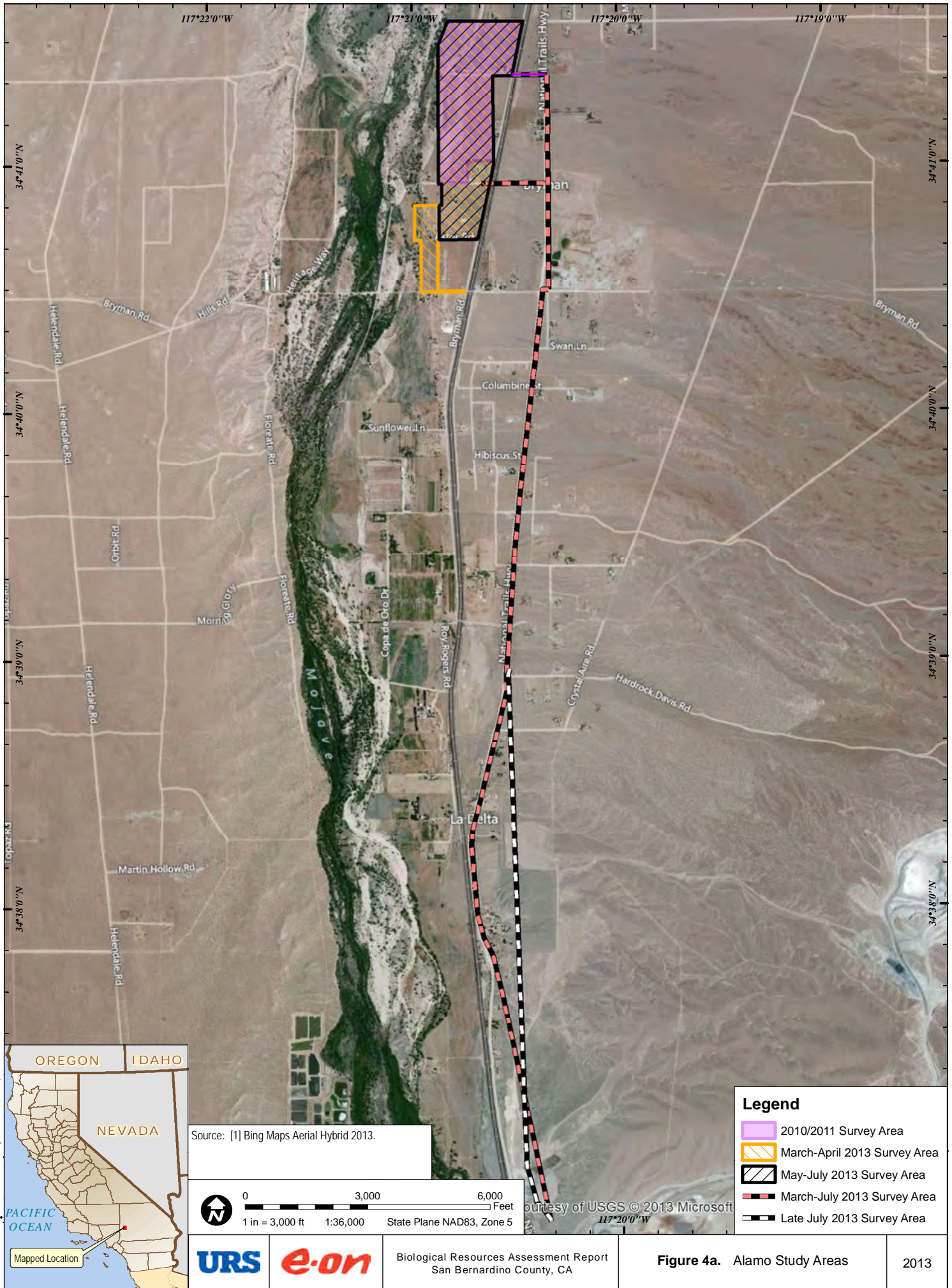








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Biological Resources Assessment Report  
San Bernardino County, CA

Figure 4a. Alamo Study Areas

2013









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**TABLE 1**  
**FIELD INVESTIGATION SUMMARY**

Survey Type	Location	Date	Time	Weather Conditions	Investigators
Initial reconnaissance-level survey	Project Site (2010/2011 Survey Area)	October 29, 2010	1000–1700	Clear skies to scattered clouds, air temperature 55–75°F, with 0–20.7 mph winds from S.	John Davis IV
Full-coverage biological survey	Project Site (2010/2011 Survey Area)	One day between April 8–13, 2011		Average high temperatures ranged from 50–73°F, with 4–11 mph average winds.	NOREAS: David Magney Leonard Malo David Brown
Delineation of jurisdictional waters and streambeds	Project Site (2010/2011 Survey Area)	September 14, 2011	0800–1830	Clear skies to scattered clouds, air temperature 66–86°F with 0–11.5 mph winds from S.	Julie Love Greg Hoisington
Jurisdictional waters reconnaissance	Gen-tie improvement corridor (March-July 2013 Survey Area)	May 28, 2013	1000–1600	Scattered clouds and hazy, air temperature 64–77°F with 6–31.1 mph winds from WSW.	Phillip Howard Ryan Randall
		May 29, 2013	0830–1700	Scattered clouds, air temperature 67–82°F with 5–36.8 mph winds from SW.	Phillip Howard Ryan Randall
		May 30, 2013	0730–1133	Clear skies, air temperature 68–82°F with 0–10.4 mph winds from SW.	Phillip Howard Ryan Randall
Floristic Surveys (Project site and gen-tie improvement corridor) and California Desert Native Plants Act Inventory (gen-tie improvement corridor)	Gen-tie improvement corridor (March-July 2013 Survey Area)	March 28, 2013	0815–1600	Scattered clouds, air temperature –65–75°F with 0–12.7 mph winds from SSW.	Christopher Julian Kallin Tea Catherine MacGregor
	Gen-tie improvement corridor (March-July 2013 Survey Area)	April 2, 2013	1138–1215	Clear skies, 80.6°F with 3.5–5.8 mph winds from WSW.	Christopher Julian Kallin Tea Catherine MacGregor

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**TABLE 1 (CONTINUED)**  
**FIELD INVESTIGATION SUMMARY**

Survey Type	Location	Date	Time	Weather Conditions	Investigators
	Project site (May-July 2013 Survey Area)	July 8, 2013	0805–1115	Clear skies, air temperature 81–95°F with 0–5.9 mph winds from SW.	Alicia Omlid Heather Rothbard
	Project site (May-July 2013 Survey Area) and Gen-tie improvement corridor (March-July 2013 Survey Area)	July 9, 2013	0626–1100	Clear skies, air temperature 72–95°F with 3.5–6.9 mph winds from WSW.	Alicia Omlid Heather Rothbard
	Gen-tie improvement corridor (March-July 2013 Survey Area)	July 10, 2013	0605–1100	Mostly cloudy, air temperature 81–97°F with 0–16.1 mph winds from WSW.	Alicia Omlid Heather Rothbard
Protocol Mojave Desert tortoise survey	Gen-tie improvement corridor (March-July 2013 Survey Area)	April 30, 2013	1540–1725	Light scattered clouds, air temperature ~85°F with 14–21.9 mph winds from S.	Phillip Howard Alicia Omlid
	Gen-tie improvement corridor (March-July 2013 Survey Area)	May 2, 2013	0755–1000	Clear skies, air temperature 56–67°F with 2–17.3 mph winds from NNE.	Phillip Howard Alicia Omlid
Protocol burrowing owl surveys	Project site (March-April 2013 Survey Area)	March 26, 2013	1200–1635	Scattered clouds, air temperature 72–77°F with 0–16.1 mph winds from SW.	Chris Julian Kallin Tea Catherine MacGregor
	Project site (March-April 2013 Survey Area) and Gen-tie improvement corridor (March-July 2013 Survey Area)	March 27, 2013	0833–1600	Clear to scattered clouds, air temperature 57–73°F with 10.4–24.2 mph winds from SW.	Chris Julian Kallin Tea Catherine MacGregor



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**TABLE 1 (CONTINUED)**  
**FIELD INVESTIGATION SUMMARY**

Survey Type	Location	Date	Time	Weather Conditions	Investigators
	Gen-tie improvement corridor (March-July 2013 Survey Area)	March 28, 2013	0815–1600	Scattered clouds, air temperature 55–75°F with 0–12.7 mph winds from SSW.	Chris Julian Kallin Tea Catherine MacGregor
	Gen-tie improvement corridor (March-July 2013 Survey Area)	April 2, 2013	1120–1138	Scattered clouds, air temperature ~75°F with 5 mph winds from WSW.	Chris Julian
	Gen-tie improvement corridor (March-July 2013 Survey Area)	April 30, 2013	1530–1725	Light scattered clouds, air temperature ~85°F with 14–21.9 mph winds from S.	Phillip Howard Alicia Omlid
	Project site (May-July 2013 Survey Area)	May 1, 2013	0750–1245	Clear skies, air temperature 63–77°F with 0–23 mph winds from NE.	Phillip Howard Alicia Omlid
	Gen-tie improvement corridor (March-July 2013 Survey Area)	May 2, 2013	0745–1005	Clear skies, air temperature 56–67°F with 2–16.1 mph winds from NNE.	Phillip Howard Alicia Omlid
	Project site (May-July 2013 Survey Area)	May 28, 2013	1000–1600	Scattered clouds and hazy, air temperature 64–77°F with 6–31.1 mph winds from WSW.	Phillip Howard Ryan Randall
	Project site (May-July 2013 Survey Area)	May 29, 2013	0830–1700	Scattered clouds, air temperature 67–82°F with 5–36.8 mph winds from SW.	Phillip Howard Ryan Randall
	Project site (May-July 2013 Survey Area)	May 30, 2013	0730–1133	Clear skies, air temperature 68–82°F with 0–10.4 mph winds from SW.	Phillip Howard Ryan Randall
	Project site (May-July 2013 Survey Area)	July 8, 2013	0805–1115	Clear skies, air temperature 81–95°F with 0–8 mph winds from SW.	Alicia Omlid Heather Rothbard

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**TABLE 1 (CONTINUED)  
FIELD INVESTIGATION SUMMARY**

Survey Type	Location	Date	Time	Weather Conditions	Investigators
	Project site (May-July 2013 Survey Area) and Gen-tie improvement corridor (March-July 2013 Survey Area)	July 9, 2013	0626–1100	Clear skies, air temperature 72–95°F with 3.5–6.9 mph winds from WSW.	Alicia Omlid Heather Rothbard
	Gen-tie improvement corridor (March-July 2013 Survey Area)	July 10, 2013	0605–1100	Mostly cloudy, air temperature 81–97°F with 0–16.1 mph winds from WSW.	Alicia Omlid Heather Rothbard
Reconnaissance-level survey	Gen-tie improvement corridor (Late July 2013 Survey Area)	July 23, 2013	1130–1500	Scattered clouds to mostly cloudy, air temperature 88–93°F with 0–11.5 mph winds from SW.	Julie Love Christopher Julian

Note: Weather source (Weather Underground 2012, Weather Underground 2013).

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### 3.2.3 Delineation of Waters and Streambeds

A formal delineation of waters of the U.S. (including wetlands) and CDFW-jurisdictional streambeds was performed on the Project site (2010/2011 Survey Area) by URS biologists Julie Love and Greg Hoisington on September 14, 2011. This section summarizes the methods used to complete the delineation; a more detailed description is provided in the stand-alone Draft Wetland Delineation and Jurisdictional Determination Report for the

Project (URS 2012). A description of applicable federal and state laws and regulations is also provided for context.

#### 3.2.3.1 Summary of Agency Permitting Authority

Streams and waterways, including ephemeral drainages, dry streambeds, and wetlands, can possess unique ecological functions and values, and are protected from human-induced destruction or degradation by a number of federal and state statutes. The federal and state agencies charged with administering these statutes and their responsibilities are described briefly below. For a more complete description of the Project's regulatory setting with regard to waters and streams, please refer to the Draft Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2012).

**3.2.3.1.1 U.S. Army Corps of Engineers Responsibility and Jurisdiction.** Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into waters of the U.S. Section 404 requires that any person proposing such a discharge first obtain a permit from the USACE. Generally speaking, waters of the U.S. are defined to include navigable waterways and their tributaries and adjacent wetlands. Intrastate waters that are not tributary to navigable waterways are generally not waters of the U.S. The lateral limits of waters of the U.S., in the absence of adjacent wetlands, are defined by the ordinary high-water mark (OHWM) on the stream bank. The USACE's regulations define wetlands using a three-parameter approach, which requires a site to possess a predominance of hydrophytic vegetation, wetland hydrology, and hydric soils to qualify as a wetland.

**3.2.3.1.2 Lahontan Regional Water Quality Control Board Responsibility and Jurisdiction.** Under Section 401 of the CWA, every applicant for a federal permit or license for any activity which may result in a discharge of dredge or fill material to a water body must obtain a State-issued Water Quality Certification that the proposed activity will comply with state water quality standards (i.e., beneficial uses, water quality objectives, and anti-degradation policy). In California, the State Water Resources Control Board (SWRCB) has delegated the responsibility for issuing Section 401 Certifications to nine Regional Water Quality Control Boards (RWQCB) throughout the state. The Lahontan RWQCB issues Section 401 Certifications for projects in the Mojave River watershed. Because a Section 404 Permit is a federal permit subject to the terms of Section 401 as described above, the USACE

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cannot issue Section 404 Permits in the Project region unless the permit applicant also receives a Section 401 Certification from the Lahontan RWQCB.

Because Section 401 of the CWA is restricted to activities requiring a federal license or permit, this section does not apply to activities affecting waters outside federal jurisdiction, such as isolated, intrastate waters. However, the SWRCB has jurisdiction over all “waters of the state,” defined as any surface water or groundwater, including saline waters, within the boundaries of the state, under the Porter-Cologne Water Quality Control Act (a state statute). Recent guidance from the SWRCB (2004) requires persons proposing to discharge construction fill into waters of the state to file a Report of Waste Discharge with the appropriate RWQCB and obtain Waste Discharge Requirements authorizing the fill.

#### **3.2.3.1.3 California Department of Fish and Wildlife Responsibility and Jurisdiction.**

Pursuant to Sections 1600–1616 of the California Fish and Game Code, any entity proposing to divert, obstruct, or substantially alter the bed, bank, or channel of a stream or lake must first obtain a Streambed Alteration Agreement from the CDFW. Regulations promulgated by the CDFW define streams to include bodies of water that flow at least periodically or intermittently through a bed or channel having banks and supporting aquatic life, including watercourses having surface or subsurface flow that supports or has supported riparian vegetation. Jurisdiction under this statute encompasses all portions of the bed, banks, and channel of any stream, extending laterally to the upland edge of riparian vegetation. The upstream limit of CDFW jurisdiction is the point upstream of which there is no evidence of a defined bed and bank, and riparian vegetation is not present.

#### **3.2.3.2 Delineation Methods**

Waters of the U.S., CDFW-jurisdictional streambeds, and waters of the state within the Alamo Project site were delineated using a combination of desktop literature review and field mapping methods. Vegetation mapping within the site was also undertaken during this effort to provide biological context for the delineation data.

**3.2.3.2.1 Literature Review for Hydrologic Features.** Prior to field efforts, the United States Geologic Survey (USGS) Helendale, CA 7.5 minute quadrangle map (USGS 1968), the Soil Survey for the San Bernardino County, California, Mojave River Area (USDA-NRCS 1986, USDA-NRCS SSURGO 2008), the National Hydrography Dataset (NHD; USGS-NHD 2000), and a high-quality aerial photograph of the Project site and the surrounding area (USDA-NAIP 2009) were reviewed to determine the locations of potential hydrologic features. Additionally, an initial reconnaissance-level survey was conducted on October 29, 2010 by URS biologists to determine potentially-jurisdictional areas.

The USGS 7.5 minute quadrangle map (USGS 1968) and the National Hydrography Dataset (NHD; USGS-NHD 2000) indicated the presence of a wide wash of the Mojave River adjacent to the Project site (shown on Figure 1 with brown dots). During the initial

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reconnaissance-level survey, no additional intermittent drainages were found on the Project site.

**3.2.3.2.2 Field Delineation of Potentially Jurisdictional Features.** A formal wetland delineation and jurisdictional determination of waters of the U.S. (including wetlands), waters of the state, and CDFW-jurisdictional streambeds was performed on the Project site on September 14, 2011. The methods used during the field surveys are described below. The field delineations were conducted by URS biologists Julie Love and Greg Hoisington. Following completion of the surveys, watershed maps, aerial photographs, and other applicable literature were reviewed to ascertain whether waters identified in the field were tributary to navigable waters.

At each potentially jurisdictional watercourse within the Project site, the location of the OHWM was determined in accordance with regulations promulgated by the USACE. The channel banks were examined for signs of flow, terraces, drift deposits, changes in vegetation, and other indicators that would determine the location of the OHWM. The upstream and downstream ends of each drainage were explored, and locations where the drainages either crossed the site boundary (i.e., entered or exited the site) or ceased to exhibit an OHWM were documented. Once the OHWM was identified in the field, the boundary was walked with a Trimble GeoXH GeoExplorer 2008 handheld global positioning system (GPS) unit set to collect positional data in a “streaming” fashion. At each drainage feature, average channel width and depth were estimated in the field, features such substrate type and topography were recorded, and photographs were taken to document site conditions. In addition to the hydrologic features indicated on the USGS and NHD maps and found during the initial reconnaissance-level survey, the entire Project site was surveyed for additional hydrologic features.

Each drainage feature within the Project site was examined for the presence of a defined bed, bank, or channel, as these elements indicate that CDFW-jurisdictional streambeds may be present. Upon investigation, it became evident that the OHWM and the top of the stream bank were coterminous in the on-site drainages. Thus, the geographic information system (GIS) shapefiles created from the OHWM boundaries were used to determine the boundaries of streambeds within the site.

Following completion of the field delineation, statutory and regulatory criteria were reviewed to determine whether the delineated hydrologic features were subject to state or federal permitting authority. Watershed maps, aerial photographs, and other applicable literature were reviewed to ascertain whether waters identified in the field were tributary to navigable waters. When field data collection was complete, jurisdictional boundaries were downloaded from the Trimble GPS unit and converted into a GIS shape file using ArcGIS software. Properties such as length and acreage of each drainage were calculated through ArcGIS.

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### **3.2.4 Jurisdictional Drainage Reconnaissance**

A reconnaissance-level survey was conducted on the Project site (March-July 2013 Survey Area) by URS biologists Phillip Howard and Ryan Randal on May 28 through May 30, 2013 to assess the site for potential jurisdictional drainages. The site was surveyed on foot. When a potential jurisdictional drainage was found, a Garmin 60CSx GPS unit capable of 3-meter accuracy was used to map the center line.

### **3.2.5 Vegetation Mapping**

Vegetation mapping of the Project site (2010/2011 Survey Area) was conducted as part of the wetland delineation and jurisdictional determination survey (September 14, 2011) and modified during botanical surveys for the Project site (May-July 2013 Survey Area). On a Project-wide scale, vegetation communities were classified using Sawyer *et al.*'s *A Manual of California Vegetation* (2009), which establishes systematic classifications and definitions of vegetation communities. Each vegetation mapping unit was analyzed for characteristics to define the applicable vegetation community, such as dominant and/or co-dominant plant species and community membership rules. For vegetation communities that were not classified by *A Manual of California Vegetation*, the vegetation communities were classified using conventional naming practices (i.e., ornamental/developed) or were defined by the dominant species (i.e., Fremont cottonwood trees, Russian thistle stand, and hedge mustard stand). Vegetation within the Project site boundary was mapped by hand in the field using field observations and a high quality aerial photograph of the Project site (USDA-NAIP 2009), which was then converted into a GIS shape file using ArcGIS software.

### **3.2.6 Floristic Surveys**

In addition to the floristic surveys conducted in April 2011 as described in Section 3.2.2, additional floristic surveys were conducted in March/April 2013 and July 2013. Full-coverage, pedestrian surveys of the Project site (May-July 2013 Survey Area) were conducted between July 8–10, 2013 and along the gen-tie improvement corridor (March-July 2013 Survey Area) on March 28, April 2, July 9, and July 10, 2013 by URS biologists Chris Julia, Kallin Tea, Catherine MacGregor, Alicia Omlid, and Heather Rothbard. Biologists walked parallel transects across the Project site and gen-tie improvement corridor, identifying and documenting all plants observed. Where necessary, biologists collected specimens of plant species observed on-site for taxonomic identification under a microscope. Incidental wildlife species were also recorded.

### **3.2.7 California Desert Native Plants Act Inventory**

Several species are granted protection under the California Desert Native Plants Act (Section 80001 *et seq.* of the California Food and Agriculture Code), and are also addressed in Section 88.01.060 of the San Bernardino County Development Code. Both of these laws prohibit the

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removal of the defined species without a County-issued permit, and the Development Code contains specific provisions governing the terms under which removal of the defined species may be authorized.

Reconnaissance-level biological investigations and focused floristic surveys indicated the absence of California Desert Native Plants Act species on the Project site. Because reconnaissance-level biological investigations indicated the presence of California Desert Native Plants Act species along the gen-tie improvement corridor, subsequent field efforts were conducted to ascertain the number and location of the individuals present. Full-coverage, pedestrian surveys were conducted along the gen-tie improvement corridor (March-July 2013 Survey Area) on March 28 and April 2, 2013 by URS scientists Christopher Julian, Kallin Tea, and Catherine MacGregor. The locations of individuals were also documented during a reconnaissance-level pedestrian surveys that was conducted along the gen-tie improvement corridor (Late July 2013 Survey Area) on July 23, 2013 by URS biologists Chris Julian and Julie Love. The location of each individual was documented using Garmin 60CSx GPS unit capable of 3-meter accuracy. Incidental wildlife and plant species were also recorded.

Upon completion of the field inventory, a GIS map of individual locations was created from the spatial data gathered in the field. Each point within the GIS layer represented a single individual defined by species.

#### **3.2.8 Protocol Mojave Desert Tortoise Survey**

Protocol surveys for the Mojave desert tortoise were conducted along the gen-tie improvement corridor (March-July 2013 Survey Area) on April 30, 2013 and May 2, 2013 by Alicia Omlid and Phillip Howard in accordance with the USFWS (2010) survey protocol for this species. The surveys consisted of pedestrian transects, spaced at 10-meter intervals. Incidental wildlife and plant species were also recorded.

The USFWS Mojave desert tortoise survey protocol (USFWS 2010) requires biologists to conduct pedestrian transect surveys covering the Project's action area to identify potential burrows, sign, and presence of Mojave desert tortoise. The action area is defined by the USFWS protocol as "all areas to be affected directly or indirectly (by the Project) and not merely the immediate area involved in the (Project)" (USFWS 2010). The objectives of the protocol surveys are to:

- Determine presence or absence of desert tortoises within the action area
- Estimate the number of tortoises (abundance) within the action area
- Assess the distribution of tortoises within the action area to inform take avoidance and minimization

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The action area for the Project is defined as the entire Project site which totals approximately 175 acres and the associated access road and gen-tie improvement corridor (March-July 2013 Survey Area). Due to the severely degraded nature of the habitat throughout most of the Project site, and in consultation with CDFW, Mojave desert tortoise surveys were limited to two areas: the northwestern corner of APN 0470-021-09, which is situated in the Mojave River floodplain and outside the Project development footprint; and the gen-tie improvement corridor. Surveys were conducted by two URS biologists walking parallel 10-meter wide belt transects over the action area. If present, occurrences of all live Mojave desert tortoise and Mojave desert tortoise sign, including burrows, scat, and carcasses, were recorded on USFWS datasheets and were marked using a Garmin 60CSx GPS unit capable of 3-meter accuracy. Photographs were taken to document any Mojave desert tortoise sign observed (Appendix A). Wildlife species incidentally observed during the surveys were also recorded. Air temperature, wind speed, and wind direction were recorded at the start and end of each survey day using a WindMate 200 thermometer/anemometer. Air temperature was measured approximately five centimeters above the ground in the shade of the observer. Wind speed and direction were measured at approximately five feet above the ground.

#### **3.2.9 Protocol Burrowing Owl Survey**

Surveys for the burrowing owl were conducted on the Project site (March-April 2013 and May-July Survey Areas) and gen-tie improvement corridor (March-July 2013 Survey Area) by Chris Julian, Kallin Tea, Catherin MacGregor, Alicia Omlid, and Phillip Howard in accordance with the CDFW (2012) protocol for the species.

The CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) recommends a three-step approach to surveying for this species: 1) habitat assessment, 2) surveys, and 3) impact assessment. The habitat assessment was conducted during URS' initial reconnaissance survey for the Project on October 29, 2010. The site's geographic location, elevation, vegetation, topography, and soil characteristics were evaluated relative to the burrowing owl's habitat requirements. Because the assessment indicated that the site does contain suitable burrowing owl habitat, the remaining three phases of the survey were performed.

The survey step comprises a four full-coverage pedestrian transect surveys. Three surveys are conducted during the breeding season (April 15 to July 15), spaced three weeks apart. One survey is conducted during the non-breeding season (September 1 to January 31). The required breeding surveys were performed on March 26 to April 2, 2013, April 30 to May 2, 2013, and May 28 to May 30, 2013. The required non-breeding surveys were performed from July 8 to 10, 2013. The survey protocol recommends that the interval between survey transects should range between 10 and 30 meters, depending upon site conditions such as vegetative cover and visibility. The survey transects were spaced at 30-meter intervals, based on site conditions. A team of two or three survey biologists, each possessing substantial experience and knowledge of burrowing owl biology, physical indicators of burrowing owl



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presence, and survey techniques, walked parallel transects across the site and along the gen-tie improvement corridor. Transects were walked in a north-south orientation to reduce the effects of glare and shadows. Each biologist carried a handheld GPS unit to ensure the transects were parallel and to maintain the desired spacing and transect orientation. All burrows of sufficient size to harbor burrowing owls (3 inches in diameter or greater) were investigated for signs of use by the species, including presence of pellets, feathers, whitewash, or nearby individuals. Where burrows exhibited signs of use, the burrow locations were recorded using GPS technology. Incidental wildlife and plant species were also recorded.

Photographs were taken (Appendix A), and the nature of each burrow was described by the biologists in written notes. Wildlife and plant species incidentally observed during the surveys were also recorded. Air temperature, wind speed, and wind direction were recorded at the start and end of each survey day using a WindMate 200 thermometer/anemometer. Air temperature was measured approximately five centimeters above the ground in the shade of the observer. Wind speed and direction were measured at approximately five feet above the ground. Following completion of the transect survey, the locations of any burrows detected were plotted on a map for use during the remaining phases of the protocol survey.

#### **3.2.10 Reconnaissance-level Survey**

A reconnaissance-level survey was conducted on the gen-tie improvement corridor (Late July 2013 Survey Area) by URS biologists Christopher Julian and Julie Love on July 23, 2013 to document site conditions. Biologists walked parallel transects along the gen-tie improvement corridor. Biological resources and conditions that were visible at that time of year and that could be identified within the limitations of a reconnaissance-level survey effort were documented in the field. Habitat suitability and sign of Mojave Desert and burrowing owl were also assessed. Species protected by the California Desert Plants Act were mapped as described in Section 3.2.7.



## **SECTION 4.0 EXISTING BIOLOGICAL CONDITIONS**

This section presents the results of specific and general biological surveys that were conducted within the Alamo site and gen-tie improvement corridor between October 2010 and July 2013. The survey effort began on October 29, 2010, when a biological reconnaissance survey was conducted to assess the potential for sensitive biological resources and to recommend appropriate future surveys. Based on this initial investigation, and on comments received during early coordination with USFWS and CDFW representatives, the following surveys were conducted:

- A literature review, performed prior to conducting field investigations and intended to identify special-status species with potential to occur on the Project site and any specific survey requirements for those species
- Full-coverage floristic and wildlife surveys of the Project site (April 2011)
- Delineation of jurisdictional waters and streambeds within the Project site (September 2011)
- Jurisdictional drainage reconnaissance along the gen-tie improvement corridor (May 2013)
- Vegetation mapping of the Project site, delineating on-site vegetation communities (September 2011 and March 2013)
- Floristic survey of the Project site and gen-tie improvement corridor (March/April 2013 and July 2013)
- California Desert Native Plants Act Inventory of the gen-tie improvement corridor (March/April 2013 and July 2013)
- Protocol Mojave Desert Tortoise Survey on the gen-tie improvement corridor
- Protocol Burrowing Owl Survey on the Project site and gen-tie improvement corridor (March/April 2013, April/May 2013, late May 2013, July 2013)

Biological field investigations for the proposed Project were completed on July 23, 2013. Survey results are described below.

### **4.1 REGIONAL SETTING**

The Project site is located in the western Mojave Desert approximately 0.1 mile east of the seasonal Mojave River. The Project site has recently been used for agriculture.

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### 4.1.1 Topography

The Lucerne Valley is located in the western Mojave Desert, and is bounded by the Granite, Ord, and Rodman Mountains to the north and the San Bernardino Mountains to the south. The San Bernardino Mountains are the larger of these two ranges, reaching elevations in excess of 11,000 feet at the top of Mt. San Gorgonio, and receive considerable winter snowfall. The topography of the Alamo site slopes gradually from the south to the north, away from the San Bernardino Mountains and towards the floor of the Lucerne Valley. Topography of the site itself is relatively flat, and elevations on-site range from 2,500 to 2,500 feet above mean sea level.

### 4.1.2 Vegetation

The Project site is located within the Mojave Desert geographical region (Sawyer *et al.* 2009), a distinct vegetation region. With the exception of the northwest corner, bordered by the Mojave River, most of the Project site is a fallow agricultural field. Large non-native perennial herbs are abundant, with a low-lying understory of herbaceous non-native species and bare ground. The wash does not contain riparian habitat but does contain a few Fremont cottonwood trees and desert scrub species along the banks (see Section 4.2 for more details). Site photographs are contained in Appendix A.

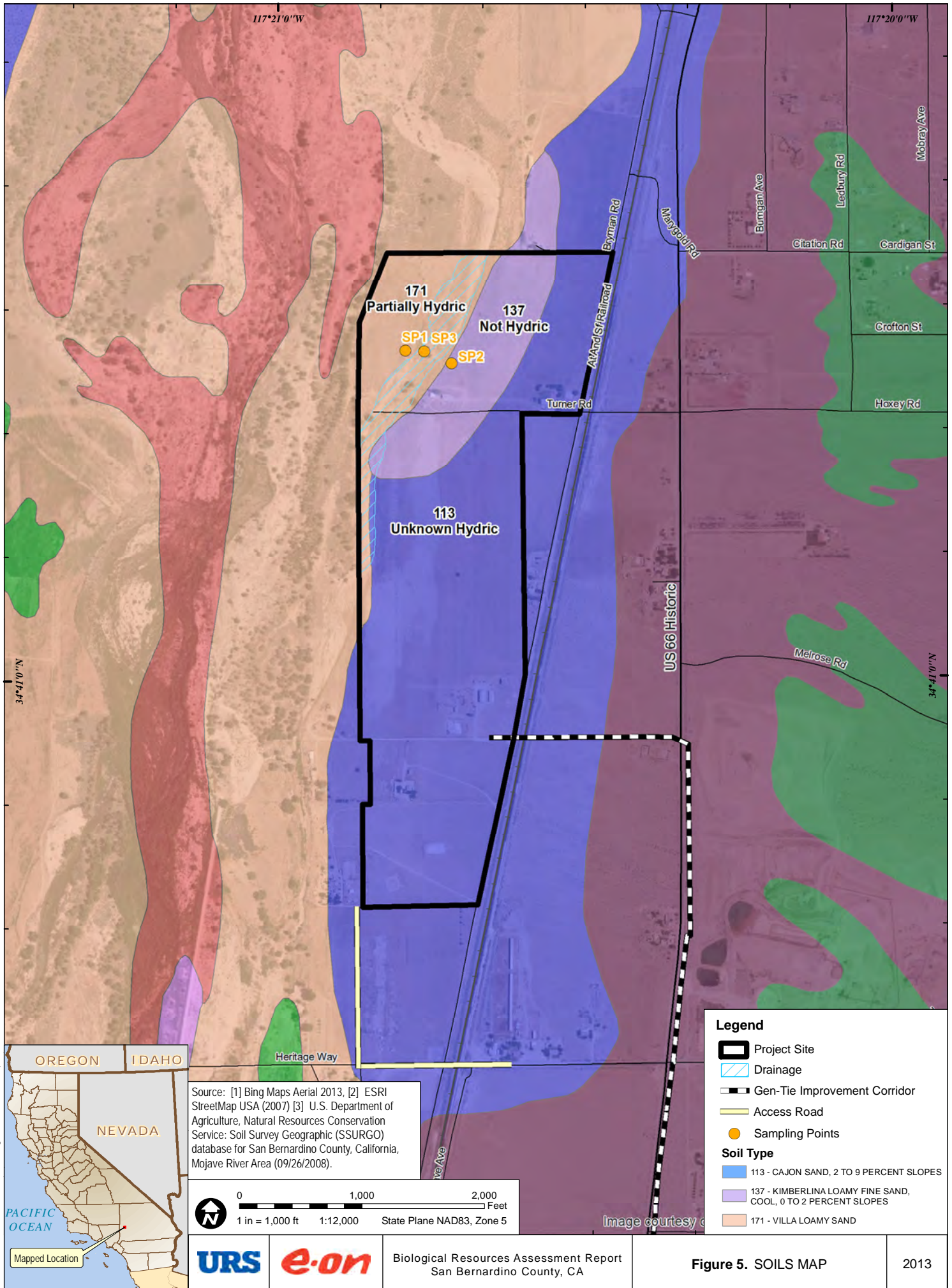
### 4.1.3 Soils

The Project site is located in Lucerne Valley, which is surrounded by the Granite mountain range, the Ord mountain range, and the San Bernardino mountain range. Lucerne Valley is characterized by relatively flat-lying topography. The Soil Survey for the San Bernardino County, California, Mojave River Area (USDA-NRCS SSURGO 2008) indicates that three soil types occur within the Project site, including the Cajon, Kimberlina, and Villa series, which are described below. None of the soil series within the Project site are identified as hydric soils by the Soil Survey. The descriptions of these soils below are abridged from the USDA-NRCS Official Soil Series Description database (USDA-NRCS 2011) and reflect characteristics of the soils as series, not specific characteristics of the Alamo Project site. See Figure 5 for a map of the soil types.

#### 4.1.3.1 Cajon Series

The Cajon series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. Cajon soils occur on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. Slopes range from 0 to 15 percent. For the geographical area in which these soils occur, the average annual precipitation is approximately 15.24 cm (6 in) and the mean annual temperature is approximately 18 degrees Celsius (°C) 65 degrees Fahrenheit (°F). Cajon soils are used mostly for range, watershed,

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and recreation; although specific examples for watershed and recreation use are not defined by the USDA-NRCS Official Soil Series Description database. A few areas are irrigated and are used for growing alfalfa and other crops. The associated vegetation is mostly desert shrubs including creosote bush, saltbush (*Atriplex* spp.), Mormon tea (*Ephedra* spp.), Joshua trees, some Indian ricegrass (*Stipa* [*Achnatherum*] *hymenoides*), annual grasses, and forbs. Cajon soils are Entisols, which are defined by a dominance of mineral soil materials and an absence of distinct horizons. They are taxonomically classified as mixed, thermic Typic Torripsamments. Cajon soils occur in a majority of the Project site.

#### **4.1.3.2 Kimberlina Series**

The Kimberlina series consists of very deep, well-drained soils that formed in mixed alluvium derived dominantly from igneous and/or sedimentary rock sources. Kimberlina soils occur on flood plains and recent alluvial fans. Slopes range from 0 to 9 percent. For the geographical area in which these soils occur, the average annual precipitation is approximately 15.24 cm (6 in) and the mean annual temperature is approximately 18°C (64°F). Kimberlina soils are used for growing irrigated field, forage, and row crops. Some areas are used for livestock grazing. When not irrigated, the associated vegetation is annual grasses, forbs, and saltbush (*Atriplex* spp.). Kimberlina soils are Entisols. They are taxonomically classified as coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthents. Kimberlina soils occur in the northwestern portion of the Project site.

#### **4.1.3.3 Villa Series**

The Villa series consists of deep, moderately well-drained soils that formed in alluvium derived mainly from granitic rocks. Villa soils occur on river flood plains. Slopes range from 0 to 2 percent. For the geographical area in which these soils occur, the average annual precipitation is approximately 10.16 cm (4 in) and the mean annual temperature is approximately 17°C (64°F). Villa soils are moderately well drained with an intermittent water table occurring at a depth of 36 inches to 6 feet for brief intervals during the winter and late spring. Runoff is slow and Villa soils have moderately rapid permeability. Specifically villa loamy sand is partially hydric. Villa soils are used for irrigated crops such as alfalfa. Associated native vegetation includes saltbush (*Atriplex* spp.), mesquite (*Prosopis* sp.), creosote bush (*Larrea tridentata*), annual grasses and forbs. Villa soils are Entisols. They are taxonomically classified sandy, mixed, thermic Typic Torrifluvents. Villa soils occur in association with the Mojave River in the northwestern portion of the Project site.

#### **4.1.4 Hydrology**

According to the Watershed Boundary Dataset prepared by the California Interagency Watershed Mapping Committee (CalWater), which is responsible for all interagency watershed mapping and dataset creation in the state of California, the Project site is within the Mojave hydrologic unit of the South Lahontan hydrologic region. More specifically, the

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site is within the Upper Mojave planning watershed in the Upper Mojave super planning watershed (CalWater 2004)<sup>1</sup>, where all water flows to the Mojave River.

The main stem of the Mojave River is located outside of the Project site and flows near the northwest corner of the Project site. The Mojave River is a relatively permanent water of which portions are Traditionally Navigable Waterways under the jurisdiction of USACE. The river flows northeast from its headwaters in the San Bernardino Mountains, terminating at Soda Lake (dry). The river is approximately 110 miles long, collecting groundwater from its approximately 4,500-square-mile watershed. The Mojave River is the largest drainage system in the Mojave Desert, and is used for drinking water, among other uses, by the neighboring communities (Mojave River Watershed Group 2012). Although the Mojave River is intermittent in the reach adjacent to the Project site, other reaches are perennial. Most of the water in the river is underground, only surfacing in areas with impermeable rock substrate.

Lucerne Valley is characterized by a moderate climate with warm, dry summers and cold, dry winters with occasional dustings of snowfall. Average monthly temperatures range from 30°F in January and February to 99°F in July and August. Average monthly rainfall totals range from 0.05 inch in June to 1.26 inches in February, with an average yearly total of 6.19 inches (The Weather Channel 2011).

#### **4.1.5 Protected Lands in the Project Vicinity**

The Project site is within the Bureau of Land Management's (BLM) *West Mojave Plan* habitat conservation planning area (BLM 2005a). This interagency Habitat Conservation Plan was prepared by the BLM in collaboration with the region's cities, counties, state, and federal agencies. The plan would apply to the 3.2 million acres of public lands and 2.9 million acres of private lands within the planning area, and would be consistent with the resource management plans of the region's five military bases, as well as with the Desert Tortoise Recovery Plan. However, the Plan is currently being litigated; therefore, the Project site has no formal protection under this Plan.

Designated critical habitat for the federally threatened desert tortoise is located approximately 1.5 miles to the west of the Project site; however, it does not overlap with the Project site.

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<sup>1</sup> The California Interagency Watershed Map is the State of California's working definition of watershed boundaries. The California Interagency Watershed Map describes California watersheds, beginning with the division of the State's 101 million acres into ten Hydrologic Regions (HR). Each HR is progressively subdivided into six smaller, nested levels: the Hydrologic Unit (HU, major rivers), Hydrologic Area (HA, major tributaries), Hydrologic Sub-Area (HSA), Super Planning Watershed (SPWS), and Planning Watershed (PWS). At the Planning Watershed level (the most detailed level), where implemented, polygons range in size from approximately 3,000 to 10,000 acres. At all levels, a total of 7,035 polygons represent the State's watersheds. (CalWater 2011)



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### 4.2 VEGETATION COMMUNITIES

The Project site is located within the Mojave Desert geographical region (Sawyer Keeler-Wolf 1995), a distinct vegetation region. With the exception of the northwest corner, bordered by the Mojave River, most of the Project site is a fallow agricultural field. Large non-native perennial herbs are abundant, with a low-lying understory of herbaceous non-native species and bare ground. The majority of the site on the west and north sides is dominated by Russian thistle (*Salsola tragus* [*S. kali*]) and is classified as a Russian thistle stand (120.81 acres). The remainder of the site is dominated by hedge mustard (*Sisymbrium orientale*) and is classified as a hedge mustard stand (43.32 acres). There are several solitary Fremont cottonwoods along the Mojave River (0.32 acre); however, these solitary trees do not have the associated canopy or understory to qualify as a Fremont cottonwood forest (*Populus fremontii* forest alliance, Sawyer *et al.* 2009). In addition, there are two small areas of developed lands that support ornamental vegetation (8.51 acres). Other dominant species on-site include native herbs such as fiddleneck (*Amsinckia tessellata* ssp. *tessellata*) and non-native herbs such as red-stem fillaree (*Erodium cicutarium*), summer barley (*Hordeum murinum* ssp. *glaucum*), and Arab grass (*Schismus arabicus*). See Table 2 for acreages of each vegetation community, Figure 6 for a map of the vegetation communities on the Project site, and Section 4.4.1 for a plant species list.

**TABLE 2**  
**VEGETATION COMMUNITIES WITHIN THE PROJECT SITE**

Vegetation Community	Aerial Extent (Acres)	Percent of Site Cover
Hedge mustard stand	42.32	24.6%
Fremont cottonwood trees	0.32	0.2%
Ornamental/developed	8.51	4.9%
Russian thistle stand	120.81	70.3%
Total	171.96	100%

The natural areas of the gen-tie improvement corridor are dominated by creosote bush-white burr sage scrub (*Larrea tridentata*-*Ambrosia dumosa* shrubland alliance) with patches of fourwing saltbush scrub (*Atriplex canescens* shrubland alliance). Rural residential areas with ornamental vegetation are located throughout the gen-tie improvement corridor. See Section 4.4.1 for a plant species list.

### 4.3 JURISDICTIONAL WATERS AND STREAMBEDS ON THE PROJECT SITE

As stated previously, the Alamo site is located within the Upper Mojave planning watershed, where all water flows to the Mojave River. The main stem of the Mojave River is located outside of the Project site and flows near the northwest corner of the Project site. The Mojave

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River is a relatively permanent water, portions of which are Traditionally Navigable Waterways under the jurisdiction of the USACE.

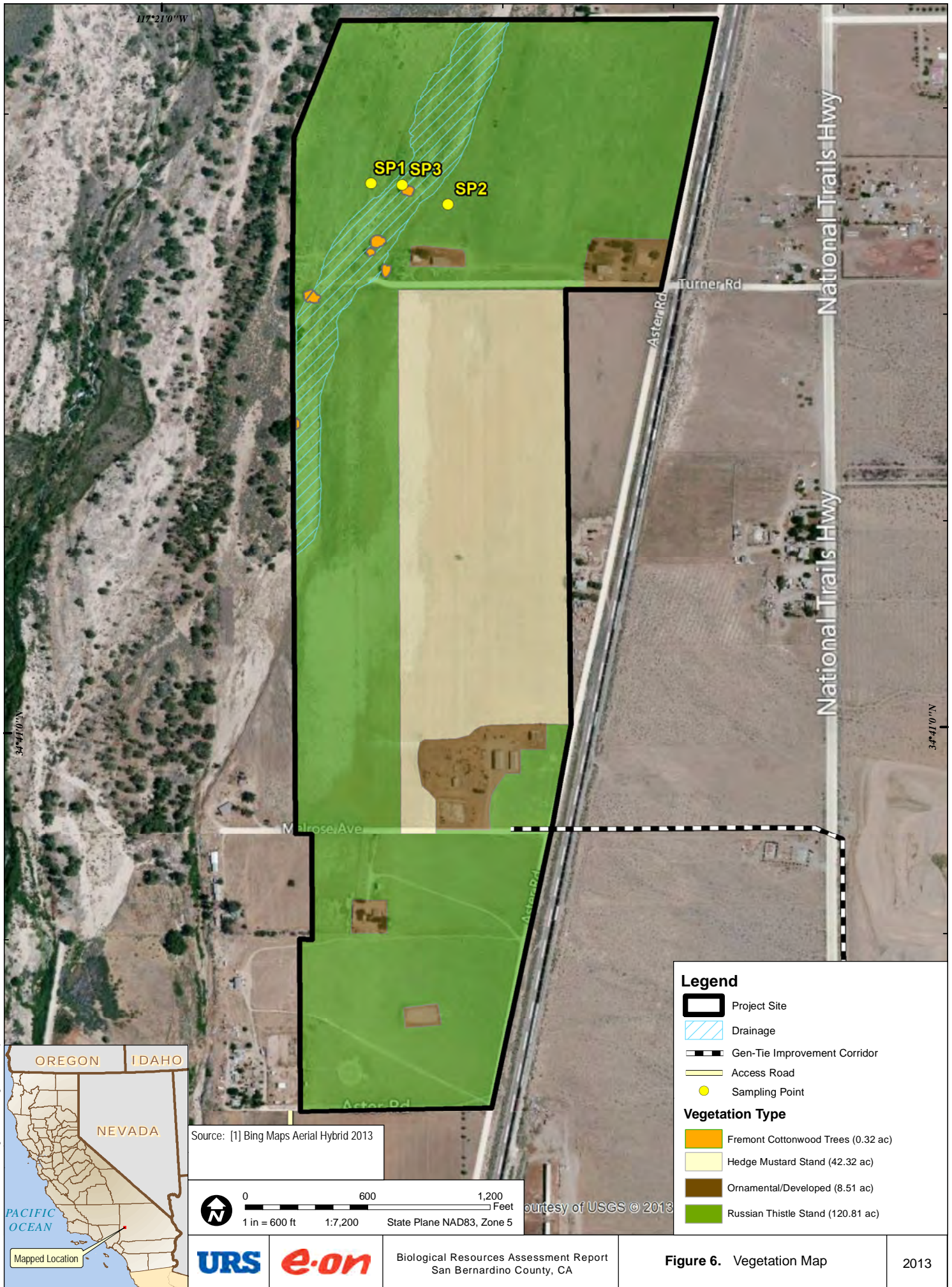
An intermittent eastern side channel of the Mojave River is located in the northwest corner of the Project site; however, it is located outside of the Project's disturbance footprint. This side channel was detected and evaluated in the field, and is described in detail in the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2012). Activities within the Mojave River would be subject to the permitting authority of the USACE, CDFW, and the Lahontan RWQCB. Drainage characteristics are described below and are summarized in Table 3.

**TABLE 3**  
**DRAINAGE DESCRIPTION**

Characteristics	Description
Drainage length (on-site)	2,839 feet
Average width	285 feet
Bank height	3 to 5 feet in most areas, maximum of 10 feet
Jurisdictional acreage	12.16 acres
Vegetation characteristics	Channel bottom and banks are mostly unvegetated
Substrate characteristics	Channel bottom is loose and sandy, with occasional cobbles. Banks are sandy but consolidated.
Hydrologic characteristics	Channel receives overflow from Mojave River during large storms, but is predominately dry. Banks are gradual throughout most of the on-site reach, but incision is evident near the northern end.

The on-site side channel of the Mojave River appears to convey flows only during large storm events, based on the presence of a 1-to-2-foot-high terrace separating the side channel from the remainder of the floodplain to the west. The on-site side channel has mostly defined gradual sloped banks, with some deeply cut banks at its northern end. Bank heights range from 3 feet to 5 feet in most areas, with heights up to 10 feet. The length of the side channel within the Project site is approximately 2,839 feet, and the width varies up to 285 feet. Sinuosity is mild, as the channel is relatively straight. The channel bottom is mostly unvegetated, and upland plant species (primarily Russian thistle) are present on some terraces and portions of the banks. The drainage supports solitary riparian trees (Fremont cottonwoods), situated within the Project site but outside the proposed facility footprint. The substrate within the channel bottom is loose and unconsolidated and composed mostly of sand, with varying particle size from sand to cobble.

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#### **4.3.1 Extent of Agency Jurisdiction**

As described above, the Project site contains one drainage that exhibits bed/bank characteristics. A summary of the total acreage of waters subject to the permitting authority of the USACE, CDFW, and the Lahontan RWQCB is presented below. All jurisdictional areas are displayed on Figure 7.

##### **4.3.1.1 Waters of the United States**

Because only wetland hydrology was observed on-site and no hydrophytic vegetation or hydric soil was observed, no USACE-jurisdictional wetlands are present within the Project site. Because the Mojave River is a relatively permanent water of which portions are Traditionally Navigable Waters, the on-site side channel of the Mojave River is characterized as non-wetland waters of the U.S. subject to Clean Water Act jurisdiction pursuant to regulatory guidance issued by the USACE and EPA. A total of 12.16 acres of non-wetland waters of the U.S. under the jurisdiction of the USACE are present on the Project site (Figure 7).

##### **4.3.1.2 Waters of the State**

The defined stream channel exhibited defined beds and banks, and is a water of the state. The jurisdictional acreage in these areas under the Porter-Cologne Water Quality Control Act was determined to be coterminous with the extent of CDFW jurisdictional streambeds (see Section 4.3.2.3 below), due to the simple nature of channel and absence of riparian vegetation or other any aquatic features that would be under the jurisdiction of one agency but not the other. A total of 12.24 acres of waters of the state under the jurisdiction of the Lahontan RWQCB were present on the Project site (Figure 7).

##### **4.3.1.3 California Department of Fish and Wildlife Jurisdictional Streams**

Because it exhibited a defined bed, bank, and channel, the on-site side channel of the Mojave River is subject to the CDFW's permitting authority under Sections 1600 *et seq.* of the California Fish and Game Code. A total of 12.24 acres of CDFW jurisdictional streams are present on the Project site (Figure 7). A total of 0.32 acre of riparian vegetation was present, with a few riparian trees (Fremont cottonwoods) being present outside the top of bank. As stated above, the boundaries of CDFW-jurisdictional streambeds are coterminous with the limits of waters of the state in this case.

##### **4.3.1.4 Potential Jurisdictional Drainages along the Gen-tie Improvement Corridor**

Several potentially jurisdictional drainages were observed along the gen-tie improvement corridor. Because these drainages were predominately minor, and exhibited signs of ephemeral hydrology and sheet flow, it is likely that the precise locations of these features

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vary from year to year. Figure 8 shows the location of the potentially jurisdictional drainages located along the gen-tie improvement corridor.

#### 4.4 PLANTS AND WILDLIFE

During the biological field investigations described in Section 3.2 of this Comprehensive Biological Resources Assessment Report, biologists recorded the occurrence of over 100 plant and wildlife taxa within the Alamo site. The species detected are described below, with emphasis on those species which are afforded protection by federal, state, or local laws or regulations. Results for all Study Areas are presented below, with emphasis on results for the current Project site and current gen-tie improvement corridor.

##### 4.4.1 Survey Results – Plant Species

In general, the plant species found on the Project site were invasive non-native herbs with a few native trees. No special-status plant species were detected on the Project site or gen-tie improvement corridor. Although they maintain no federal or state sensitivity designations, a number of the plant species are protected by the California Desert Native Plants Act, and by the San Bernardino County Development Code. No species granted protection under the California Desert Native Plants Act or the San Bernardino County Development Code were observed on the Project site. Protected species identified on the gen-tie improvement corridor include buckhorn cholla (*Cylindropuntia acanthocarpa*), silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), cottontop cactus (*Echinocactus polycephalus*), beaver tail cactus (*Opuntia basilaris*), and Mojave yucca (*Yucca schedigera*). Additional protected species include Joshua tree (*Yucca brevifolia*) that was found along the March-July 2013 gen-tie improvement corridor Survey Area, south of Barbosa Road. See Section 4.4.3 below for details about sensitive species observations. A complete list of the plant species observed within the Project site and gen-tie improvement corridor is presented in Table 4 below.

##### 4.4.2 Survey Results – Wildlife Species

Based on results of the biological investigations performed within the Alamo site, wildlife use of this site appears to be limited. Aside from common insects, wildlife species observed on-site were primarily birds, mammals, and reptiles typically found in the Mojave Desert. Fishes and amphibians were not observed on-site, and are not expected to use the site due to the lack of suitable aquatic habitat. A complete list of the wildlife species observed within the Project site and gen-tie improvement corridor is presented in Table 5 below.

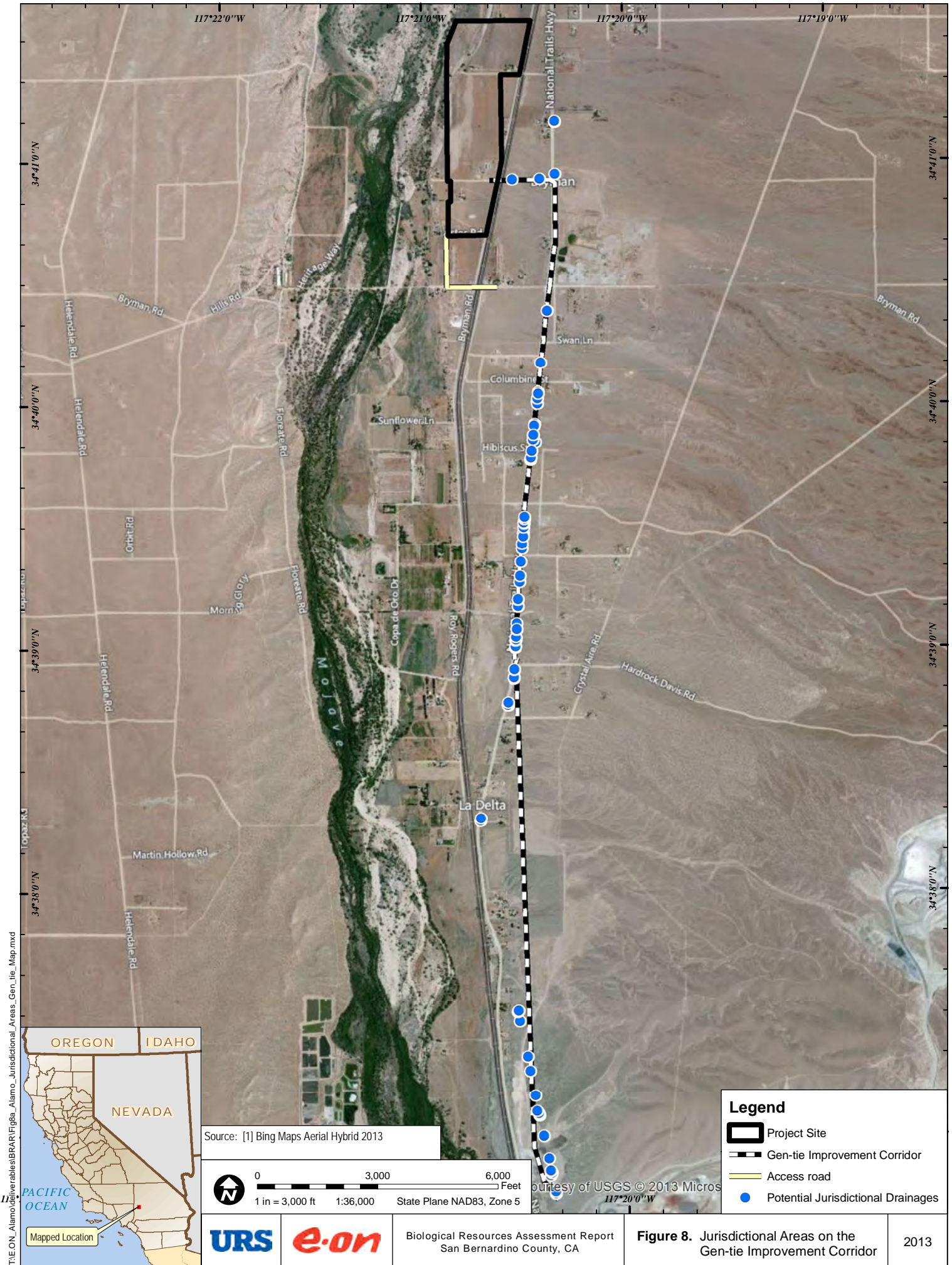
Five special-status wildlife species were observed during biological surveys of the Project site: California gull, horned lark, lark sparrow, olive-sided flycatcher, and sharp-shinned hawk. In addition, an active desert kit fox burrow was observed in the river side channel that is in the northwestern part of Project site (and outside the proposed solar facility footprint).











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**TABLE 4  
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND  
GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<b>GYMNOSPERMS (Non-flowering Plants)</b>		
<b>Family Ephedraceae – Ephedras</b>		
<i>Ephedra nevadensis</i>	Mormon tea	N
<b>ANGIOSPERMS (Flowering Plants)</b>		
<b>MONOCOTS</b>		
<b>Family Poaceae – Grasses</b>		
–	Unknown grass	–
<i>Aristida adscensionis</i>	Sixweeks three-awn	N
<i>Arundo domax</i>	Giant reed	E
<i>Bromus diandrus</i>	Ripgut brome	E
<i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome	E
<i>Bromus</i> sp.	brome	E
<i>Bromus tectorum</i>	Cheat grass	E
<i>Cynodon dactylon</i>	Bermuda grass	E
<i>Distichlis spicata</i>	Saltgrass	N
<i>Elymus triticoides</i>	Beardless wild rye	N
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	E
<i>Hordeum murinum</i> ssp. <i>glaucum</i> <sup>1</sup>	Smooth barley	E
<i>Schismus arabicus</i> <sup>1</sup>	Arab grass	E
<i>Schismus barbatus</i> <sup>1</sup>	Mediterranean grass	E
<i>Sorghum bicolor</i>	Sorghum	E
<i>Stipa hymenoides</i>	Sand rice grass	N
<b>EUDICOTS</b>		
<b>Family Agavaceae – Century Plants</b>		
<i>Yucca brevifolia</i>	Joshua tree	N
<i>Yucca schidigera</i>	Mojave yucca	N
<b>Family Apocynaceae – Dogbanes</b>		
<i>Nerium oleander</i>	Oleander	E
<b>Family Asteraceae – Sunflowers</b>		
–	Unknown annual sunflower	–
–	Unknown sunflower shrub	–
<i>Ambrosia acanthicarpa</i>	Annual bur-sage	N



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**TABLE 4 (CONTINUED)  
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND  
GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<i>Ambrosia dumosa</i>	White bur-sage	N
<i>Ambrosia salsola</i>	Cheesebush	N
<i>Argemone corymbosa</i>	Prickly poppy	N
<i>Artemisia dracunculus</i>	Tarragon	N
<i>Artemisia tridentate</i>	Big sagebrush	N
<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>	Mule fat	N
<i>Chaenactis fremontii</i>	Fremont pincushion	N
<i>Chaenactis macrantha</i>	Mojave pincushion	N
<i>Encelia actoni</i>	Mountain bush sunflower	N
<i>Encelia farinosa</i>	Brittlebush	N
<i>Ericameria cooperi</i>	Cooper's goldenbush	N
<i>Ericameria nauseosa</i>	Rubber rabbitbrush	N
<i>Ericameria nauseosa</i> var. <i>mohavense</i>	Mojave rabbitbrush	N
<i>Helianthus</i> sp.	Sunflower	–
<i>Isocoma acradenia</i> var. <i>acradenia</i>	Alkali goldenbush	N
<i>Lactuca serriola</i>	Prickly wild lettuce	E
<i>Malacothrix californica</i>	California desert dandelion	N
<i>Malacothrix coulteri</i>	Snake's head	N
<i>Malacothrix glabrata</i>	Desert dandelion	N
<i>Sonchus oleraceus</i>	Common sow thistle	E
<i>Stephanomeria pauciflora</i>	Wirelettuce	N
<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>	Mojave aster	N
<b>Family Bignoniaceae – Trumpet-Creepers</b>		
<i>Chilopsis linearis</i>	Desert willow	N
<b>Family Boraginaceae – Borages</b>		
<i>Amsinckia menziesii</i>	Small-flowered fiddleneck	N
<i>Amsinckia tessellate</i> ssp. <i>tessellate</i> <sup>1</sup>	Desert fiddleneck	N
<i>Cryptantha pterocarya</i>	Wingnut cryptantha	N
<i>Cryptantha</i> sp.		
<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	Wild heliotrope	N
<i>Pectocarya</i> sp.	combseed	N
<i>Phacelia crenulata</i> var. <i>minutiflora</i>	Cleftleaf wild heliotrope	N

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**TABLE 4 (CONTINUED)  
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND  
GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<i>Plagiobothrys jonesii</i>	Mojave popcorn flower	N
<b>Family Brassicaceae – Mustards</b>		
<i>Brassica</i> sp.		
<i>Brassica tournefortii</i>	Asian mustard	E
<i>Descurainia sophia</i>	Flixweed	E
<i>Hirschfeldia incana</i>	Shortpod mustard	E
<i>Lepidium fremontii</i>	Desert alyssum	N
<i>Sisymbrium irio</i>	London rocket	E
<i>Sisymbrium orientale</i> <sup>1</sup>	Hedge mustard	E
<b>Family Cactaceae – Cacti</b>		
<i>Cylindropuntia acanthocarpa</i>	Buckhorn cholla	N
<i>Cylindropuntia echinocarpa</i>	Silver cholla	N
<i>Cylindropuntia ramosissima</i>	Pencil cholla	N
<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	Cottontop cactus	N
<i>Echinocereus engelmannii</i>	Hedgehog cactus (dead)	N
<i>Opuntia basilaris</i>	Beaver tail cactus	N
<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus	N
<b>Family Chenopodiaceae – Goosefoots</b>		
<i>Atriplex canescens</i>	Four-winged saltbush	N
<i>Atriplex canescens</i> ssp. <i>linearis</i>	Slenderleaf saltbush	N
<i>Atriplex confertifolia</i>	Shadscale	N
<i>Atriplex polycarpa</i>	Allscale	N
<i>Atriplex torreyi</i> ( <i>Atriplex lentiformis</i> ssp. <i>torreyi</i> )	Torrey's saltbush	N
<i>Atriplex</i> sp.	Saltbush	N
<i>Chenopodium</i> sp.	Goosefoot	–
<i>Krascheninnikovia lanata</i>	Winterfat	N
<i>Monolepsis nuttalliana</i>	Nuttall's poverty weed	N
<i>Salsola tragus</i> <sup>1</sup>	Russian thistle	E
<i>Suaeda nigra</i>	Bush seepweed	N
<b>Family Cucurbitaceae – Gourds</b>		
<i>Cucurbita palmata</i>	Coyote melon	N

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**TABLE 4 (CONTINUED)  
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND  
GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<b>Family Ephedraceae – Ephedras</b>		
<i>Ephedra nevadensis</i>	Nevada ephedra	N
<i>Ephedra viridis</i>	Green ephedra	N
<b>Family Euphorbiaceae – Spurges</b>		
<i>Croton californicus</i>	California croton	N
<i>Euphorbia albomarginata</i> ( <i>Chamaesyce albomarginata</i> )	Rattlesnake sandmat	N
<b>Family Fabaceae – Legumes</b>		
–	Unknown tree	–
<i>Astragalus lentiginosus</i> var. <i>variabilis</i>	Barneby freckled milkvetch	N
<i>Glycyrrhiza lepidota</i>	Wild licorice	N
<i>Medicago</i> sp.	Sweetclover	–
<i>Psoralea aborescens</i> var. <i>minutifolia</i>	Johnson's indigobush	N
<i>Robinia pseudoacacia</i>	Black locust	E
<b>Family Geraniaceae – Geraniums</b>		
<i>Erodium cicutarium</i> <sup>1</sup>	Redstem filaree	E
<i>Erodium texanum</i>	Texas filaree	N
<b>Family Lamiaceae – Mints</b>		
<i>Salvia columbariae</i>	Chia	N
<i>Scutellaria Mexicana</i> ( <i>Salazaria Mexicana</i> )	Bladder-sage	N
<b>Family Loasaceae – Loasas</b>		
<i>Mentzelia albicaulis</i>	Whitestem blazing star	N
<i>Mentzelia desertorum</i>	Desert stickleaf	N
<b>Family Malvaceae – Mallows</b>		
<i>Eremalche exilis</i>	White mallow	N
<i>Malva</i> sp.	Mallow	–
<i>Sphaeralcea</i> sp.	Globe mallow	N
<b>Family Nyctaginaceae – Four O'Clocks</b>		
<i>Mirabilis</i> sp.	Wishbone bush	–
<b>Family Onagraceae – Evening-Primroses</b>		
<i>Chylismia brevipes</i> ssp. <i>brevipes</i>	Golden suncup	N
<i>Chylismia claviformis</i> ssp. <i>claviformis</i>	Mojave brown-eyed primrose	N

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**TABLE 4 (CONTINUED)  
PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND  
GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<i>Oenothera</i> sp.	Evening primrose	N
<b>Family Papaveraceae – Poppies</b>		
<i>Eschscholzia minutiflora</i>	Pygmy poppy	N
<b>Family Pinaceae – Pines</b>		
<i>Pinus</i> sp.	Ornamental pine	–
<i>Pinus radiata</i>	Monterey pine	N
<b>Family Plantaginaceae – Plantains</b>		
<i>Plantago ovata</i>	Desert indianwheat	N
<i>Plantago ovata</i> var. <i>fastigiata</i>	Desert indianwheat	N
<b>Family Polemoniaceae – Phloxes</b>		
<i>Aliciella hutchinsifolia</i> ( <i>Gilia hutchinsifolia</i> )	Desert pale aliciella	N
<b>Family Polygonaceae – Buckwheats</b>		
<i>Eriogonum deflexum</i> var. <i>deflexum</i>	Flat topped skeleton weed	N
<i>Eriogonum inflatum</i>	Desert trumpet	N
<i>Eriogonum</i> sp.	Buckwheat	N
<i>Rumex hymenosepalus</i>	Wild-rhubarb	N
<i>Rumex</i> sp.	dock	–
<b>Family Rutaceae – Rues</b>		
<i>Thamnosma montana</i>	Desert rue	N
<b>Family Salicaceae – Willows</b>		
<i>Populus fremontii</i> ssp. <i>fremontii</i> <sup>i</sup>	Fremont's cottonwood	N
<i>Populus</i> sp.	Ornamental cottonwood	–
<i>Salix gooddingii</i>	Goodding's black willow	N
<b>Family Solanaceae – Nightshades</b>		
<i>Datura wrightii</i>	Jimson weed	N
<i>Lycium andersonii</i>	Anderson thornbush	N
<i>Lycium cooperi</i>	Cooper's boxthorn	N
<b>Family Tamaricaceae – Tamarixes</b>		
<i>Tamarix aphylla</i>	Athel tamarisk	E
<i>Tamarix ramosissima</i>	Salt cedar	E
<b>Family Ulmaceae – Elms</b>		
<i>Ulmus pumila</i>	Siberian elm	E

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**TABLE 4 (CONTINUED)**  
**PLANT SPECIES OBSERVED WITHIN THE PROJECT SITE AND**  
**GEN-TIE IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Native/ Exotic
<i>Ulmus</i> sp.	Elm	–
<b>Family Viscaceae – Mistletoes</b>		
<i>Phoradendron californicum</i>	Desert mistletoe	N
<i>Phoradendron leucarpum</i> ssp. <i>macrophyllum</i> ( <i>Phoradendron macrophyllum</i> )	Big leaf mistletoe	N
<b>Family Zygophyllaceae – Caltrops</b>		
<i>Larrea tridentata</i>	Creosote bush	N

<sup>1</sup> Dominant within the Project site.

Notes:

Scientific nomenclature, native status, and habit follows Baldwin *et al.* 2012 with updates from Jepson 2013.

While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, CDFW regulations at 14 CCR 460 prohibit the take of this species. One additional special-status wildlife species was observed on the gen-tie improvement corridor: white-faced ibis. Additionally, one special-status species was found adjacent to the Project site within the Mojave River corridor: Le Conte’s thrasher.

Due to the absence of native vegetation, the portion of the Alamo site that is currently proposed for development does not provide suitable habitat for these species. Birds are highly mobile, and the individuals observed were either flying over the survey area (as was the case with the observed California gulls and white-faced ibis) or were passing through from adjacent vegetated areas.

See Section 4.4.3 below for details about the sensitive species observed.

## **4.4.2.1 Mojave Desert Tortoise Survey Results**

Although CDFW determined that protocol surveys were not required within the Project site footprint, no desert tortoise sign was observed during any of the biological surveys conducted on the Project site. Protocol surveys for the Mojave desert tortoise did not detect live Mojave desert tortoise along the gen-tie improvement corridor; however, a live Mojave desert tortoise was detected within a burrow in this area during protocol burrowing owl surveys in July 2013. Although the individual was only partly visible, it appeared to be a medium-sized adult (estimated 22cm maximum carapace length) and free from obvious health conditions (nares and eyes clear, no signs of shell trauma). The fact that the individual was detected during one burrow survey but not another is not surprising, considering the linear nature of



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**TABLE 5  
WILDLIFE SPECIES OBSERVED WITHIN THE PROJECT SITE AND GEN-TIE  
IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State) <sup>1</sup>	Observation notes
<b>Insects</b>			
Agelenidae Family	Funnel weaver spider	None/None	Hole
Anisoptera Suborder	Dragonfly	None/none	
<i>Artogeia rapae</i>	Cabbage white butterfly	None/None	
Coccinellidae Family	Ladybird beetle	None/None	
<i>Edrotes ventricosus</i>	Edrotes dune beetle	None/None	
Formicidae Family	Ant	None/None	
Lycaenidae Family	Blue butterfly	None/None	
Pentatomidae Family	Stink beetle	None/None	Dead
<i>Pogonomyrmex</i> sp.	Harvester ant	None/None	
Sphingidae Family	Sphinx moth	None/None	
<i>Vanessa cardui</i>	Painted lady butterfly	None/None	
<b>Reptiles</b>			
<i>Aspidoscelis tigris tigris</i>	Great Basin whiptail lizard	None/None	
<i>Dipsosaurus dorsalis</i>	Desert iguana	None/None	Juvenile, scat
<i>Gopherus agassizii</i>	Mojave desert tortoise	FT/ST	In burrow
<i>Phrynosoma platyrhinos calidiarum</i>	Southern desert horned lizard	None/None	Scat; live
<i>Sceloporus magister</i>	Desert spiny lizard	None/None	
<i>Uta stansburiana elegans</i>	Western side-blotched lizard	None/None	
<b>Amphibians</b>			
<i>Pseudacris hypochondriaca hypochondriaca</i>	Baja California tree frog	None/None	Observed in river corridor, outside project footprint
<b>Birds</b>			
<i>Accipiter striatus</i>	Sharp-shinned hawk	None/WL (Nesting)	Hunting
<i>Agelaius phoeniceus</i>	Red-winged blackbird	None/None	
<i>Buteo jamaicensis</i>	Red-tailed hawk	None/None	
<i>Callipepla californica</i>	California quail	None/None	
<i>Callipepla gambelii</i>	Gambel's quail	None/None	
<i>Calypte anna</i>	Anna's hummingbird	None/None	
<i>Campylorhynchus brunneicapillus</i>	Cactus wren	None/None	

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**TABLE 5 (CONTINUED)  
WILDLIFE SPECIES OBSERVED WITHIN THE PROJECT SITE AND GEN-TIE  
IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State) <sup>1</sup>	Observation notes
<i>Carpodacus mexicana</i>	House finch	None/None	
<i>Cathartes aura</i>	Turkey vulture	None/None	
<i>Chondestes grammacus</i>	Lark sparrow	None/SA (Nesting)	
<i>Chordeiles acutipennis</i>	Lesser nighthawk	None/None	
<i>Columbina livia</i>	Rock pigeon	None/None	
<i>Contopus cooperi</i>	Olive-sided flycatcher	BCC/CSC (Nesting)	
<i>Corvus corax</i>	Common raven	None/None	Fly over, Nest
<i>Eremophila alpestris</i>	Horned lark	None/Watch List	Large flock flyover
<i>Falco sparverius</i>	American Kestrel	None/None	Nest; mating in River Corridor outside project footprint
Hirundinidae Family	Swallow	–	Flyover
Icterinae Subfamily	Blackbird	–	
<i>Larus californicus</i>	California gull	None/WL (Nesting colony)	Flyover
<i>Mimus polyglottos</i>	Northern mockingbird	None/None	
<i>Passer domesticus</i>	House sparrow	None/None	
<i>Pavo cristatus</i>	Peacock	None/None	Feather only
<i>Plegadis chihi</i>	White-faced ibis	None/WL (Nesting colony)	Flyover
<i>Quiscalus mexicanus</i>	Great-tailed grackle	None/None	
<i>Sayornis saya</i>	Say's phoebe	None/None	
<i>Sialia Mexicana</i>	Western bluebird	None/None	
<i>Streptopelia decaocto</i>	Eurasian collared dove	None/None	
<i>Sternella neglecta</i>	Western meadowlark	None/None	Flyover
<i>Sturnus vulgaris</i>	European starling	None/None	
<i>Toxostoma lecontei</i>	Le Conte's thrasher	BCC/CSC	
<i>Tyrannus verticalis</i>	Western kingbird	None/None	
<i>Zenaida macroura</i>	Mourning dove	None/None	
<i>Zonotrichia leucophrys</i>	White-crowned sparrow	None/None	
<b>Mammals</b>			
<i>Ammospermophilus leucurus</i>	White-tailed antelope squirrel	None/None	
<i>Canis lupis familiaris</i>	Domestic dog	None/None	

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**TABLE 5 (CONTINUED)**  
**WILDLIFE SPECIES OBSERVED WITHIN THE PROJECT SITE AND GEN-TIE  
IMPROVEMENT CORRIDOR (2010–2013)**

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State) <sup>1</sup>	Observation notes
<i>Capra aegagrus hircus</i>	Domestic goat	None/None	
<i>Dipodomys</i> sp.	Kangaroo rat	–	
<i>Lepus californicus</i>	Black-tailed jackrabbit	None/None	
<i>Lepus</i> sp.	Jackrabbit	None/None	Scat, live
<i>Spermophilus beecheyi</i>	California ground squirrel	None/None	
<i>Sylvilagus audubonii</i>	Desert cottontail rabbit	None/None	
<i>Thomomys bottae</i>	Botta's pocket gopher	None/None	
<i>Vulpes macrotis arsipus</i>	Desert kit fox	None/CDFW 14 CCR 460	Burrow only, located outside project footprint

<sup>1</sup> (CDFW 2011b).

Status Definitions:

FE = Federally listed Endangered.

FT = Federally listed Threatened.

FC = Candidate for Federal Listing.

BCC = USFWS Birds of Conservation Concern.

SE = State-listed Endangered.

ST = State-listed Threatened.

CFP = California Fully Protected.

CSC = California Species of Special Concern.

WL = Species is on the CDFW Watch List, which means that the species is not currently considered a Species of Special Concern.

SA = CDFW Special Animal (tracked in CNDDB but maintains no other applicable sensitivity designation).

the gen-tie improvement corridor and the relatively high mobility of the Mojave desert tortoise.

## 4.4.2.2 Burrowing Owl Survey Results

Protocol surveys for the burrowing owl did not detect this species, nor its sign, within the Project site or the gen-tie improvement corridor. While habitat for this species is present, it is possible that burrowing owls are in low abundance in the project vicinity, or that they may prefer adjacent lands with native or agricultural vegetation where the prey base may be more abundant.

## 4.4.3 **Special-status Species Observed within the Project Site and Gen-tie Improvement Corridor**

No special-status plants were detected on the Project site or gen-tie improvement corridor. Although they maintain no federal or state sensitivity designations, a number of plant species

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are protected by the California Desert Native Plants Act, and by the San Bernardino County Development Code. No species granted protection under the California Desert Native Plants

Act and the San Bernardino County Development Code were observed on the Project site. Protected species identified on the gen-tie improvement corridor include buckhorn cholla, silver cholla, pencil cholla, cottontop cactus, Joshua tree, and Mojave yucca.

Five special-status wildlife species were observed on the Project site: California gull, horned lark, lark sparrow, olive-sided flycatcher, and sharp-shinned hawk. In addition, an active desert kit fox burrow was observed on the Project site. While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, CDFW regulations at 14 CCR 460 prohibit the take of this species. Two special-status wildlife species were observed on the gen-tie improvement corridor: Mojave desert tortoise and white-faced ibis. Additionally, Le Conte's thrasher (*Toxostoma lecontei*, *Birds of Conservation Concern*, California Species of Concern) was observed adjacent to the Project site within the March-April 2013 Survey Area. The regulatory status and biology of the sensitive plant and wildlife species, as well as the documented occurrences of these species within the Alamo site and gen-tie improvement corridor, are described below.

#### **4.4.3.1 Joshua Tree (*Yucca brevifolia*)**

The species is an evergreen monocot endemic to the Mojave Desert, and generally occurs from 600 to 1,800 meters (2,000 to 6,000 feet) elevation. The species prefers well-drained soils, and Joshua tree woodland is often outcompeted by other plant communities in soils where water retention is greater (Royo 1997). Studies conducted in Joshua Tree National Park have indicated that the growth rate for Joshua trees is approximately two feet for every ten years, and that trees can remain in a "juvenile" state (having not produced a flower) for many years (Gossard 1992). The Joshua tree has no formal state or federal sensitivity designation. Despite the absence of a formal sensitivity designation, the Joshua tree receives protection under the California Desert Native Plants Act (Section 80001 *et seq.* of the California Food and Agriculture Code) and under Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code. These laws prohibit the destruction of Joshua trees without a County-issued permit and require that Joshua trees within lands proposed for development be transplanted. Further, where removal of "specimen" size trees is proposed, the Development Code requires a finding that no reasonable alternative means of developing the land exists. "Specimen" trees are defined to include those Joshua trees meeting the following criteria (San Bernardino County Development Code Section 88.01.050(f)(3)(C)):

1. A circumference measurement equal to or greater than 50 inches measured at 4.5 feet above natural grade level
2. Total tree height of 15 feet or greater
3. Trees possessing a bark-like trunk

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4. A cluster of 10 or more individual trees, of any size, growing in close proximity to each other

No Joshua trees were detected on the Project site or gen-tie improvement corridor; however, one Joshua tree was detected south of Barboa Road within the March-July 2013 Survey Area. URS biologists noted the possibility that this individual may have been planted.

#### **4.4.3.2 Plants Protected by the California Desert Native Plants Act**

Although they maintain no federal or state sensitivity designations, a number of plant species are protected by the California Desert Native Plants Act, and by the San Bernardino County Development Code. The California Desert Native Plants Act is intended to prohibit the unlawful harvest of certain native desert plant species, and the species protected are generally either woody or succulent. Harvest of these species must be authorized by the County Sheriff or Agricultural Commissioner through issuance of a permit. No protected species were identified on the Project site. Protected species identified on the gen-tie improvement corridor include buckhorn cholla (1 individual), silver cholla (9 individuals), pencil cholla (5 individuals), cottontop cactus (3 individuals), beaver tail cactus (1 individual), and Mojave yucca (9 individuals). Additionally, pencil cholla (2 individuals), silver cholla (1 individual), Mojave yucca (2 individuals), and Joshua tree (1 individual), was found within the March-July 2013 Survey Area for the gen-tie improvement corridor. Locations of protected species detected within the Alamo site are shown graphically on Figure 9.

#### **4.4.3.3 Mojave Desert Tortoise (*Gopherus agassizii*. FT, ST)**

The Mojave desert tortoise is a reptile listed as threatened under both the Endangered Species Act and the California Endangered Species Act. The species occurs in the Mojave Deserts of southeastern California, southern Nevada, and western Utah, and is most commonly found in desert washes, canyon bottoms, and rocky hillsides below 3,530 feet in elevation. The dominant shrub commonly associated with desert tortoise habitat is creosote bush (*Larrea tridentata*). Other shrubs including white bursage, cheese bush (*Hymenoclea salsola*), Desert senna (*Cassia armata*), and Mojave prickly-pear (*Opuntia mojaviensis*) provide suitable habitat for the species. Desert tortoises spend 95 percent of their lives underground; therefore, suitable soil is a requirement for burrow construction. Throughout most of the Mojave Desert, desert tortoises occur most commonly on gently sloping terrain with soils ranging from sand to sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Desert tortoises can also be found in steeper, rockier areas throughout their range.

Although protocol surveys were not required within the Project site footprint, no desert tortoise sign was observed during any of the biological surveys conducted on the Project site. Protocol surveys for this species conducted along the gen-tie improvement corridor did not identify any tortoises, scat or tracks; however, one live Mojave Desert tortoise was observed

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on the gen-tie improvement corridor during protocol burrowing owl surveys conducted on July 10, 2013. The live tortoise was found in a burrow 0.6 mile from the southern end of the main gen-tie improvement corridor. A desert tortoise live encounter form was completed and is included as Appendix B. A CNDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

#### **4.4.3.4 Sharp-shinned Hawk (*Accipiter striatus*, WL when Nesting)**

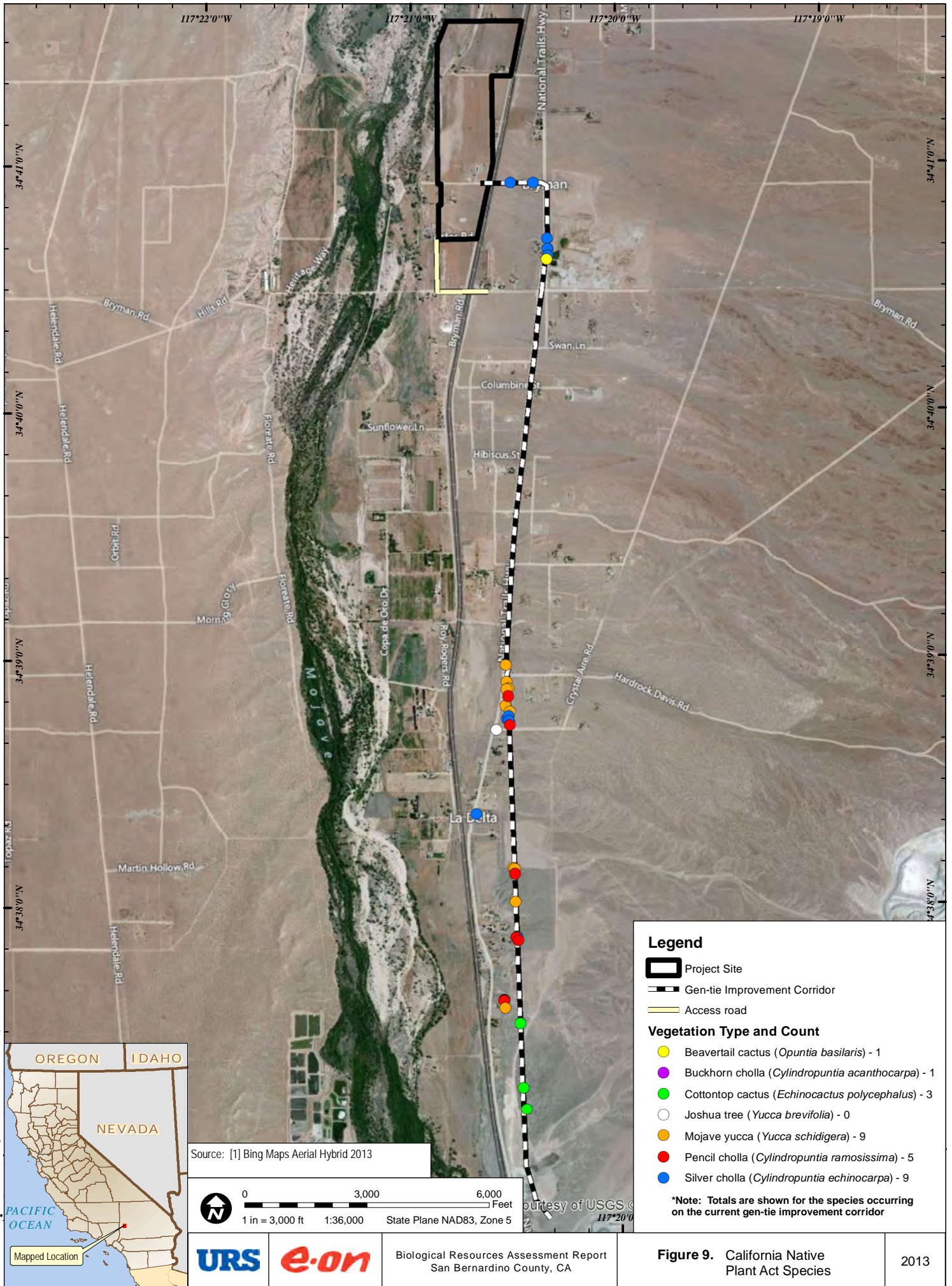
Sharp-shinned hawk occurs only as a winter visitor to the area. The species nests in deciduous, conifer, and mixed woodlands, especially in areas with a closed canopy. The species feeds primarily on small birds, though is also known to prey on small mammals, insects, reptiles and amphibians (BLM 2013).

A sharp-shinned hawk was observed on the Project site near the recreation vehicle on Turner road clutching a small songbird during the protocol burrowing owl survey conducted on May 1, 2013; however, the species was not observed to be nesting at the Project site. Though it is unlikely, the isolated Fremont cottonwood trees at the Project side may provide marginal suitable nesting habitat for the species. However, given that the species primarily overwinters in the area, the species is unlikely to nest at the Project site. This raptor is highly mobile, and could forage over the Project site. A CNDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

#### **4.4.3.5 Lark Sparrow (*Chondestes grammacus*, SA)**

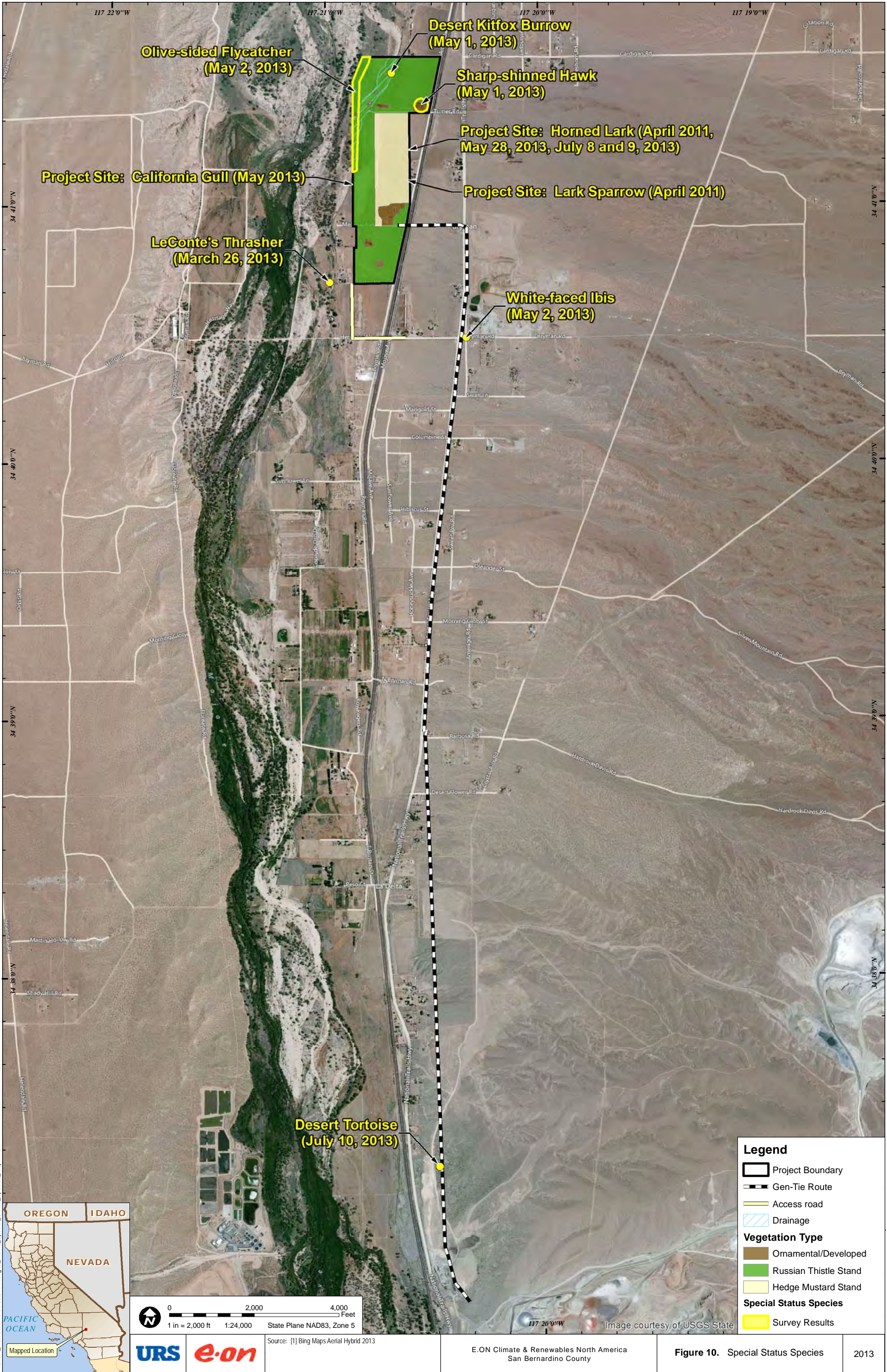
The lark sparrow is a resident species in lowlands and foothills throughout coastal California except for the extreme north and portions of the central coast, and is also present year-round in the Central Valley, the Sierra foothills, the Imperial Valley, the eastern deserts, and the Antelope Valley. It breeds in northeastern California and the Owens Valley, but is absent there in the winter; it also winters in the Colorado River Valley but is absent in most of that region in summer. Outside California, it breeds in British Columbia and the southern Prairie Provinces south to north-central Mexico and winters from the extreme southern United States south through much of Mexico (Martin and Parrish 2000). Most spring migrants pass through southern California by late May; most fall migrants pass through from late July to late September (Garrett and Dunn 1981). Lark sparrows occupy sparse valley foothill hardwood, valley foothill hardwood-conifer, open mixed chaparral and similar brushy habitats, and grasslands with scattered trees or shrubs. Shrub habitats favored by lark sparrows are generally two to six feet high. Lark sparrows prefer habitats where trees or shrubs provide lookouts and song perches. They feed mostly on seeds and grains in winter, but also feed their young on insects, especially grasshoppers. Lark sparrows nest on the ground and low in shrubs and trees.











T:\E.ON\_Alamogordo\deliverables\BRAR\Fig10\_Alamogordo\_Special\_Status\_Species\_Map.mxd



0 2,000 4,000 Feet  
1 in = 2,000 ft 1:24,000 State Plane NAD83, Zone 5

URS

e-on

Source: [1] Bing Maps Aerial Hybrid 2013

E.ON Climate & Renewables North America  
San Bernardino County

Figure 10. Special Status Species

2013





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Lark sparrow individuals were observed on the Project site during the full-coverage biological survey conducted in April 2011; however, the species was not observed to be nesting at the Project site. The Project site provides suitable nesting habitat for the species, primarily along the drainage (outside the development footprint). A CNDDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

#### **4.4.3.6 Olive-sided Flycatcher (*Contopus cooperi*, BCC/CSC when Nesting)**

This species is an uncommon to common, summer resident of forested and woodland portions of California. Summer range of this species generally does not include deserts, the Central Valley, or other lowland valleys and basins. Olive-sided flycatchers generally place nests in conifers 5 to 70 feet above the ground. The species occurs primarily in forested habitats such as mixed conifer and redwood (*Sequoiadendron giganteum*), and lodgepole pine (*Arceuthobium americanum*). Olive-sided flycatchers feed mainly on flying insects by sallying from high perches over forest canopies or adjacent meadows (CDFW 2013b, Zeiner *et al.* 1988–1990).

Two olive-sided flycatchers were observed on the western edge of the Project site during the protocol burrowing owl survey conducted on May 28, 2013; however, the species was not observed to be nesting at the Project site. Though it is unlikely, the solitary Fremont cottonwood trees at the Project site may provide marginal suitable nesting habitat for the species. However, the Fremont cottonwood trees on the Project site provide the species with adequate perches for foraging. A CNDDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

#### **4.4.3.7 Horned Lark (*Eremophila alpestris*, WL)**

The horned lark is common to abundant in a variety of open habitats, usually where trees and large shrubs are absent, such as grasslands (CDFW 2011a). Horned larks are yearlong residents of California. In the winter, this species flocks in the desert lowlands; migrants from outside of California join these flocks. Horned larks nest on the ground in the open, in grass-lined nests.

Horned lark individuals were observed on the Project site during the full-coverage biological survey conducted in April 2011, a flock of over 500 was observed on May 28, 2013, and a flock was observed on July 8 and 9, 2013; however, the species was not observed to be nesting at the Project site. Suitable nesting habitat for the species is present throughout the Project site. A CNDDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

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#### **4.4.3.8 California Gull (*Larus californicus*, WL for Nesting Colonies)**

The California gull is a fairly common nester in alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades, and an abundant visitor to coastal and interior of the lands in the nonbreeding season. Adults roost in large concentrations along shorelines, landfills, pastures, and on islands.

A flock of California gull individuals were observed flying over on the Project site during protocol burrowing owl surveys on March 26, 2013; however, the species was not observed to be nesting or otherwise using the Project site. Suitable nesting habitat for the species is not present on the Project site. Because the observation was a flyover by a migratory species, a CNDDDB California Native Species Field Survey Form was not completed for this observation. The location of the observation is presented on Figure 10.

#### **4.4.3.9 White-faced Ibis (*Plegadis chihi*, WL for Nesting Colony)**

The white-faced ibis is widespread in California during migrations, and found uncommonly in the summer months in portions of southern California. White-faced ibis generally roost and nest in dense, emergent wetlands. It is believed that the species no longer regularly breeds anywhere in California. This species typically feeds by probing in mud with its long bill, generally preying on earthworms, insects, crustaceans, amphibian, and small fishes (CDFW 2013b, Zeiner *et al.* 1988–1990).

A white-faced ibis was observed flying over the gen-tie improvement corridor at the point of interconnection (Bryman Road and National Trails Highway) during protocol burrowing owl surveys conducted on May 2, 2013; however, the species was not observed to be nesting at the Project site. The Project site lacks suitable nesting habitat for this species, and is outside the currently understood breeding range. Because the observation was a flyover by a migratory species, a CNDDDB California Native Species Field Survey Form was not completed for this observation. The location of the observation is presented on Figure 10.

#### **4.4.3.10 Le Conte's Thrasher (*Toxostoma lecontei*, BCC, CSC)**

This species is an uncommon to rare, year-round resident in southern California deserts from southern Mono County south to the Mexican border, and in the western and southern San Joaquin Valley. Le Conte's thrashers commonly place their nests in dense, spiny shrubs or in densely branched cactus in desert wash habitat, 1.5 to 3.5 feet above the ground. The species occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. Le Conte's thrashers feed mainly on insects and spiders, but occasionally feed on plant seeds, bird eggs, and small lizards (Sheppard 1996).

A Le Conte's thrasher was observed adjacent to the southwestern portion of the Project site within the March-April 2013 Survey Area during the protocol burrowing owl survey



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conducted on March 26, 2013; however, the species was not observed to be nesting at the Project site. The Project site lacks suitable nesting habitat for this species. A CNDDDB California Native Species Field Survey Form was completed and is included in Appendix C. The location of the observation is presented on Figure 10.

#### **4.4.3.11 Desert kit fox (*Vulpes macrotis arsipus*)**

The desert kit fox is a small fox native to the Mojave and Sonoran deserts of California, Oregon, Nevada, Utah, Colorado, Texas, New Mexico, and Arizona, as well as parts of Mexico. While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, CDFW regulations at 14 CCR 460 prohibit the take of this species. Thus, to be compliant with CDFW regulations, the project must be accomplished without hunting, shooting, catching, capturing, or killing desert kit foxes, or attempting these activities.

An active desert kit fox burrow was observed along the drainage in the northwestern part of the Project site during protocol burrowing owl surveys conducted on May 1, 2013. Although this area is within the Project boundary, it is outside the Project's facilities footprint and will be avoided during construction and operations. A live sighting was not observed at the Project site. The Project site provides suitable habitat for the species, primarily along the river side channel. The location of the observation is presented on Figure 10.

#### **4.4.4 Special-status Species and Communities Not Observed but with the Potential to Occur within the Project Site**

Special-status species and sensitive natural communities not observed on-site or along the gen-tie improvement corridor but with potential to occur on the Project site based on range and habitat requirements are discussed below and listed in Table 6. Figure 3 displays the results of the query of CNDDDB records for sensitive plant, native plant communities, and wildlife occurrences within a 5-mile radius of the Project site.

##### **4.4.4.1 Plants**

A total of three special-status plant species have been documented in the vicinity of the Project site based on the 5-mile radius query of CNDDDB records (see Table 6 and Figure 3); however, no special-status plant species were identified during the 2011 and 2013 focused botanical surveys on the Project site. A description of the species' habitat requirements, blooming periods, known occurrences, and an evaluation of their potential to occur at the Project site are provided below.

##### **4.4.4.1.1 Booth's Evening-Primrose (*Eremothera boothii* ssp. *boothii*, CNPS List 2.3).**

Booth's evening-primrose is an annual herbaceous species that has been observed along the banks of the Mojave River approximately four miles downstream of the Project site. The

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**TABLE 6**  
**SPECIAL-STATUS SPECIES THAT HAVE THE POTENTIAL**  
**TO OCCUR ON-SITE BUT THAT HAVE NOT BEEN OBSERVED**

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State)	Likelihood of Occurrence on-Site
<b>Plants</b>			
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	None/CNPS List 2.3	Low, due to disturbed soils and lack of natural habitat.
<i>Mimulus mohavensis</i>	Mojave monkeyflower	None/CNPS List 1B.2	Low, due to disturbed soils and lack of natural habitat.
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	None/CNPS List 1B.2	Low, due to disturbed soils and lack of natural habitat.
<b>Invertebrates</b>			
<i>Helminthoglypta mohaveana</i>	Victorville shoulderband	None/CSC	Low, due to lack of natural habitat.
<b>Reptiles</b>			
<i>Emys marmorata</i>	Western pond turtle	None/CSC	Low. Aquatic habitat is absent.
<i>Gopherus agassizii</i>	Desert tortoise	FT/ST	Low. Site habitat is unsuitable, and protocol surveys along gentle improvement corridor were negative.
<i>Phrynosoma blainvillii</i>	Blainville's horned lizard	None/CSC	Low, due to lack of natural habitat.
<b>Birds</b>			
<i>Accipiter cooperii</i>	Cooper's hawk	None/WL (nesting)	Low. Nesting/foraging habitat is absent, but present in adjacent river.
<i>Asio flammeus</i>	Short-eared owl	None/CSC (nesting)	Site is outside breeding range, and wintering habitat is suboptimal due to absence of shrubs.
<i>Asio otus</i>	Long-eared owl	None/CSC (nesting)	Low, due absence of natural habitat and trees for nesting.
<i>Athene cunicularia</i>	Burrowing owl	None/CSC	Low. Habitat is suitable, but protocol surveys were negative.
<i>Buteo regalis</i>	Ferruginous hawk	None/WL (wintering)	Site is outside breeding range, and wintering habitat is suboptimal due to absence of shrubs.
<i>Buteo swainsoni</i>	Swainson's hawk	None/ST (nesting)	Low, due absence of natural habitat and trees for nesting.

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**TABLE 6 (CONTINUED)**  
**SPECIAL-STATUS SPECIES THAT HAVE THE POTENTIAL**  
**TO OCCUR ON-SITE BUT THAT HAVE NOT BEEN OBSERVED**

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State)	Likelihood of Occurrence on-Site
<i>Dendroica petechial brewsteri</i>	Yellow warbler	None/CSC (nesting)	
<i>Empidonax trailii extimus</i>	Southwestern willow flycatcher	FE/SE	Low, due to absence of suitable habitat. May occur in the river southwest of the site.
<i>Falco mexicanus</i>	Prairie falcon	None/WL (nesting)	Low, due absence of natural habitat and nesting substrate.
<i>Icteria virens</i>	Yellow-breasted chat	None/CSC (nesting)	Low, due absence of natural habitat.
<i>Lanius ludovicianus</i>	Loggerhead shrike	None/CSC (nesting)	Low, due absence of natural habitat.
<i>Myiarchus tyrannulus</i>	Brown-crested flycatcher	None/WL (nesting)	Low, due absence of natural habitat.
<i>Piranga rubra</i>	Summer tanager	None/CSC (nesting)	Low, due absence of natural habitat.
<i>Pyrocephalus rubinus</i>	Vermilion flycatcher	None/CSC (nesting)	Low, due absence of natural habitat.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE/SE	Low, due to absence of suitable habitat. Known to occur in the river southwest of the site.
<b>Mammals</b>			
<i>Antrozous pallidus</i>	Pallid bat	None/CSC	Low, due to absence of suitable roosting substrate.
<i>Chaetodipus fallax pallidus</i>	Pallid San Diego pocket mouse	None/CSC	Low, due absence of natural habitat.
<i>Microtus californicus mohavensis</i>	Mohave River vole	None/CSC	Low, due absence of natural habitat. May occur in the river west of the site.
<i>Spermophilus mohavensis</i>	Mohave ground squirrel	None/ST	Low. Site is within the species' historic range, but not within a currently known population area. Habitat is unsuitable.
<i>Lasionycteris noctivagans</i>	Silver-haired bat	None/SA	Low. Site lacks suitable habitat, though the forested river corridor to the west of the site is suitable.

Regulatory Status Definitions:

FE = Federally listed Endangered.

FT = Federally listed Threatened.

FC = Candidate for Federal Listing.

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**TABLE 6 (CONTINUED)**  
**SPECIAL-STATUS SPECIES THAT HAVE THE POTENTIAL  
TO OCCUR ON-SITE BUT THAT HAVE NOT BEEN OBSERVED**

BCC = USFWS Birds of Conservation Concern.

SE = State-listed Endangered.

ST = State-listed Threatened.

CFP = California Fully Protected.

CSC = California Species of Special Concern.

SA = CDFW Special Animal (tracked in CNDDDB but maintains no other applicable sensitivity designation).

CNPS = California Native Plant Society.

1A = Presumed extinct/extirpated in California.

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

2 = Rare, threatened, and endangered in California but more common elsewhere.

3 = Plants about which more information is needed.

4 = A watch list of plants of limited distribution.

1 = Seriously endangered in California.

2 = Fairly endangered in California.

3 = Not very endangered in California.

species blooms from April to June. Booth's evening-primrose typically occurs in Joshua tree woodland or pinyon-juniper woodland, however, the species also occurs in general on sandy flats and steep loose slopes. Therefore, the species could occur in the desert wash on the Project site.

**4.4.4.1.2 Mojave Monkeyflower (*Mimulus mohavensis*, CNPS List 1B.2).** Mojave monkeyflower is an annual herbaceous species that has been observed in numerous locations to the east of the Project site. The species has not been observed west of the Mojave River. This species blooms from April through June. It typically occurs in Joshua tree woodland and creosote bush scrub, but has been observed along the banks of the Mojave River near Barstow. Therefore, this species could occur in the desert wash at the Project site.

**4.4.4.1.3 Beaver Dam Breadroot (*Pediomelum castoreum*, CNPS List 1B.2).** Beaver Dam breadroot is a perennial herbaceous species that has been observed approximately four miles to the north, south, and west of the Project site. This species occurs in sandy areas and tends to occur in road cuts and other open disturbed areas. Beaver Dam breadroot blooms from April to May. Given that this species is a perennial and was not detected during the full-coverage survey for the project conducted during the blooming period for this species, this species is unlikely to occur at the Project site.

#### **4.4.4.2 Natural Communities**

No natural communities have been documented in the vicinity of the Project site based on the 5-mile radius query of CNDDDB records (see Table 6 and Figure 3), and no natural communities were identified during the 2011 and 2013 focused botanical surveys on the Project site.

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### 4.4.4.3 Wildlife

In addition to the special-status wildlife species described in Section 4.4.3.3 of this Comprehensive Biological Resources Assessment Report, a total of 24 special-status wildlife species have been documented in the vicinity of the Alamo site, based on the 5-mile radius query of CNDDDB records (CDFW 2013a) (see Table 6 and Figure 3) and communication with resource agency representatives. A description of the species' habitat requirements, known occurrences, and an evaluation of their potential to occur at the Project site are provided below.

#### 4.4.4.4 Victorville Shoulderband (*Helminthoglypta mohaveana*, CSC)

According to CNDDDB records, this species has been observed approximately five miles south of the Project site on the west bank of the Mojave River. CNDDDB records indicate that the species was observed in a rocky outcrop north of the unincorporated town of Oro Grande. This documented occurrence also suggested that the species may have been estivating under loose rocks on a hillside (CDFW 2013a). Though data is limited for this species, assuming that hillsides with loose rocks are a habitat requirement for the species in this area, it is assumed to be unlikely for this species to occur within the Project site due to the lack of suitable habitat.

#### 4.4.4.5 Western Pond Turtle (*Emys marmorata*, CSC)

Western pond turtles occur in a wide variety of habitats that are associated with permanent or nearly permanent water. Habitat requirements for this species also include basking sites such as mats of vegetation, logs, and rocks. The species feeds on aquatic plants, aquatic invertebrates, fishes, and frogs. The reproductive season for this species is generally from March to August. Home ranges are generally limited, though females may move up to 100 meters in search of suitable nest sites, often placing nests along the sandy banks of large slow-moving streams (CDFW 2013b). CNDDDB records indicate one occurrence of this species in 2004, located along the Mojave River within 5 miles of the Project site. Potential for this species to occur on site is low, due to the lack of suitable habitat within the Project site and the distance between the CNDDDB occurrence and the Project site location.

#### 4.4.4.6 Desert tortoise (*Gopherus agassizii*, FT, ST)

Habitat requirements for this burrowing reptile include firm ground for burrowing, sandy or gravelly desert habitats including washes, canyons, alluvial fans and oasis, with brush for cover and a variety of plants for forage including herbs, flowers, legumes, cactus, and grass. Agricultural practices render habitat unsuitable for this species, as intact soils are required for burrow construction. The reproductive season for desert tortoise is March through October. According to CNDDDB records, this species has been observed in several locations along the Mojave River (CDFW 2013a). The desert wash at the Project site provides suitable habitat



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for the desert tortoise, especially for use as a migration corridor. However, the remainder of the Project site provides poor habitat for the species, given the disturbance to the soil from past agricultural use and development of the site. In addition, no sign of desert tortoise (e.g., scat, burrows) was observed during protocol surveys conducted on the northwestern Project site parcel (APN 0470-021-09) or during other biological surveys conducted on the Project site. Therefore, desert tortoise may burrow along the banks of the desert wash, but is unlikely to burrow on the remainder of the Project site. Desert tortoise may travel along the desert wash or traverse the remainder of the Project site.

**4.4.4.6.1 Blainville's Horned Lizard (*Phrynosoma blainvillii*, CSC).** Blainville's horned lizard, otherwise known as the coast horned lizard, occurs in sandy areas, washes, floodplains and wind-blown deposits in a wide variety of habitats including valley-foothill hardwood, conifer, riparian, pine-cypress, and juniper woodlands, as well as annual grassland from 3,280 to 6,560 feet (1,000 to 2,000 meters) elevation. The Project site offers potential habitat for the species throughout the site. However, this species has not been observed within five miles of the Project site according to CNDDDB records and the population of the species along the Mojave River is believed to be extinct (BLM 2005b). Therefore, it is highly unlikely that this species would occur at the Project site.

**4.4.4.6.2 Cooper's Hawk (*Accipiter cooperii*, WL when Nesting).** Cooper's hawk is known in the area primarily as a winter visitor (BLM 2005b). The species nests in deciduous, conifer, and mixed woodlands, especially riparian woodlands (BLM 2005b). According to CNDDDB records, the Cooper's hawk has not been observed within five miles of the Project site, however, the species has occurred in the Mojave River Valley (BLM 2005b). The Fremont cottonwood trees at the Project site provide suitable nesting habitat for the species, however, given that the species primarily overwinters in the area, the species is unlikely to nest at the Project site. The species could forage over the Project site.

**4.4.4.6.3 Short-eared Owl (*Asio flammeus*, CSC when Nesting).** This species hunts in open areas with few trees such as grasslands, prairies, dunes, meadows, and salt or freshwater wetlands. They require dense vegetation such as tall grass clumps and brush for concealing their nests, which are built on dry ground, and for roosting. Their breeding season is from March through July. This species has not been confirmed as breeding in the region, and there are no recorded sightings within five miles of the Project site. Potential for this species to occur on-site is low, due to the lack of suitable nesting habitat on the site, though suitable foraging habitat does occur there.

**4.4.4.6.4 Long-eared Owl (*Asio otus*, CSC when Nesting).** This nocturnal species hunts in open areas but requires dense thickets of relatively small trees for roosting and nesting. Their breeding season is from February through June. There are no recorded observations in the vicinity of the Project site. Potential for this species to occur is unlikely because while suitable foraging habitat occurs there, the site lacks suitable nesting habitat.

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**4.4.4.6.5 Burrowing Owl (*Athene cunicularia*, CSC when Nesting).** The burrowing owl is a small owl that inhabits open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Burrowing owls usually nest in burrows excavated by ground squirrels, badgers, or other small or medium-sized mammals, although they may dig their own burrows in soft soil. Their prey consists mostly of insects, small mammals, reptiles, birds, and carrion. In the breeding season, burrowing owls frequently forage hundreds of yards from their burrows, and some have been recorded foraging up to 2 miles from their nests. This has been noted in particular in cases where owls live in small colonies, such as in the Central Valley and the Imperial Valley in California (Gervais *et al.* 2003; Rosenberg and Haley 2004).

Although sign of this species was not detected during protocol surveys on the site for during other biological surveys conducted on-site, the species has been observed approximately five miles to the south of the Project site, near the Mojave River. Therefore, the banks of the desert wash provide suitable nesting habitat for the species. Over the remainder of the site, a couple of ground squirrel burrows were detected which could be used by burrowing owls, however, the majority of the site soils are disturbed by past agricultural use of the property (i.e., disking). Therefore, the species is not expected to nest at the Project site, with the exception of the potential to nest along the banks of the desert wash. Finally, the species could forage over the Project site.

**4.4.4.6.6 Ferruginous Hawk (*Buteo regalis*, WL when Wintering).** This large raptor only occurs in California when wintering. Ferruginous hawks can be seen perching on power poles and on the ground, and foraging over open grasslands, desert scrub, and low foothills. This species has not been observed within five miles of the Project site. Potential for this species to occur is likely during the winter due to the presence of suitable perching and foraging habitat.

**4.4.4.6.7 Swainson's Hawk (*Buteo swainsoni*, ST).** This migratory raptor nests uncommonly in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Most Swainson's hawks winter in Argentina (England *et al.* 1997). The species is generally present in California from March to October. In general, Swainson's hawks breed in open stands of trees in juniper-sage flats, riparian areas, and oak savanna, and forage in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. In the West Mojave Plan area, they nest in extremely low densities in Fremont cottonwoods along stream courses or planted as windbreaks, as well as in desert scrub with an overstory of Joshua trees. This species has not been observed within five miles of the Project site according to CNDDDB records and no nests were observed during surveys conducted for the project. Nevertheless, the Fremont cottonwoods at the Project site provide potential nesting habitat for the species, and the species could forage throughout the Project site.

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**4.4.4.6.8 Yellow Warbler (*Dendroica petechial brewsteri*, CSC when Nesting).** The yellow warbler nests in four locations within the West Mojave Plan area, one of which is along the Mojave River near Victorville (BLM 2005b), but greater than five miles away from the Project site (according to the CNDDDB records). This species occurs in riparian woodland habitat, or forests dominated by cottonwoods and willows. Within the West Mojave Plan area, all four breeding locations contain cottonwoods and willows; Fremont cottonwoods frequently form the canopy at the breeding sites along the Mojave River. Given this, the Fremont cottonwoods along the desert wash at the Project site provide suitable nesting habitat for this species. In addition, the species could forage throughout the site.

**4.4.4.6.9 Prairie Falcon (*Falco mexicanus*, WL when Nesting).** In 1980, a prairie falcon was observed in close proximity to the Project site according to CNDDDB records. This species nests on a sheltered ledge of a cliff overlooking a large, open area. In California, the average home range for the species is 58 to 288 square kilometers. Given the lack of cliffs or rock outcrops on the site, this species is not likely to nest on the Project site. However, the species may forage throughout the Project site.

**4.4.4.6.10 Yellow-breasted Chat (*Icteria virens*, CSC when Nesting).** Similar to the yellow warbler, the yellow-breasted chat nests in five locations within the West Mojave Plan area, one of which is along the Mojave River near Victorville (BLM 2005b), but greater than five miles away from the Project site (according to the CNDDDB records). This species occurs in riparian woodland habitat, or forests or desert scrub dominated by cottonwoods, willows, arrow weed (*Pluchea sericea*), salt cedar (*Tamarix* spp.), and mulefat (*Baccharis salicifolia*). Within the West Mojave Plan area, all five breeding locations contain cottonwoods and willows. Given this, the Fremont cottonwoods along the desert wash at the Project site provide suitable nesting habitat for this species. In addition, the species could forage throughout the site.

**4.4.4.6.11 Loggerhead Shrike (*Lanius ludovicianus*, CSC when Nesting).** This species breeds in brushlands and open woodlands with grass cover. Their breeding season is from March through August. They hunt in open areas but require tall shrubs, trees, fences, or telephone lines for perching, and thorny plants or barbed wire for impaling prey. The loggerhead shrike is the most widely distributed vertebrate in the West Mojave Plan area, however it is not common anywhere in the desert (BLM 2005b). It has not been observed within five miles of the Project site according to CNDDDB records. Nevertheless, there is the chance that this species could nest in the scrub along the desert wash on the Project site or within the proposed gen-tie line location. Otherwise, the Project site does not contain breeding habitat for the species. Finally, the loggerhead shrike could forage throughout the Project site as well.

**4.4.4.6.12 Brown-crested Flycatcher (*Myiarchus tyrannulus*, WL when Nesting).** Similar to the yellow warbler, the brown-crested flycatcher nests in multiple locations within the

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West Mojave Plan area, one of which is along the Mojave River near Victorville (BLM 2005b), but greater than five miles away from the Project site (according to the CNDDDB records). This species occurs in riparian woodland habitat, or forests or desert scrub dominated by cottonwoods and willows. The Fremont cottonwoods along the desert wash at the Project site provide suitable nesting habitat for this species. In addition, the species could forage throughout the site.

**4.4.4.6.13 Summer Tanager (*Piranga rubra*, CSC when Nesting).** Similar to the yellow warbler, the summer tanager nests in multiple locations within the West Mojave Plan area, one of which is along the Mojave River near Victorville (BLM 2005b). According to the CNDDDB records, this species has been observed approximately six miles south of the Project site. This species occurs in riparian woodland habitat, or forests or desert scrub dominated by cottonwoods and willows. The Fremont cottonwoods along the desert wash at the Project site provide suitable nesting habitat for this species. In addition, the species could forage throughout the site.

**4.4.4.6.14 Vermilion Flycatcher (*Pyrocephalus rubinus*, CSC when Nesting).** The vermilion flycatcher occurs in low-lying, open riparian areas with accessible water. Cottonwoods, sycamores, and oak trees are used for nesting by this species. This species has not been observed within five miles of the Project site. Given the presence of the Fremont cottonwoods, this species could nest in the desert wash area in the Project site; it could also forage throughout the Project site.

**4.4.4.6.15 Least Bell's vireo (*Vireo bellii pusillus*, FE, SE).** Habitat requirements for Least Bell's vireo include dense riparian areas comprised of willows (*Salix* spp.), cottonwoods (*Populus* spp.), *Baccharis* spp., wild blackberry (*Rubus ursinus*), or mesquite (*Prosopis* spp.). This species requires willow thickets and other low riparian shrubs for nesting and roosting cover. Least Bell's vireo typically places nests 2–10 feet from the ground on the branches of willows, mesquite, or other small trees and shrubs. Least Bell's vireo feeds by gleaning insects from branches usually no higher than 8 feet from the ground. Formerly a common and widespread resident throughout much of California, population decline has been drastic throughout much of its historic range, mostly attributed factors such as habitat loss and brood parasitism by brown-headed cowbirds (CDFW 2013b). CNDDDB records indicate a total of 4 occurrences of least Bell's vireo along the Mojave River within a 5 mile radius of the Project site since 1997, with the most recent occurrence in 2008. The Fremont cottonwoods observed within the Project site are sporadic throughout the wash, and likely do not provide dense enough of cover to support nesting or roosting of least Bell's vireo. This species is more likely to occupy the main stem of the Mojave River which is beyond the boundary of the Project site. Given this, it is unlikely that the species would occur throughout the Project site.

**4.4.4.6.16 Pallid Bat (*Antrozous pallida*, CSC).** The pallid bat can occasionally establish day roosts in hollow trees. There are no CNDDDB records for the species within five miles of

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the Project site; however, the species could utilize the Fremont cottonwood trees on the Project site as a day roost. This species may also forage over the Project site. This species is a yearlong resident, but they hibernate in the winter, typically near summer day roosts.

**4.4.4.3.17 Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*, CSC).** This species occurs in desert washes, desert scrub, desert succulent shrub, pinyon-juniper habitat, and annual grassland. This species has been observed along the Mojave River approximately five miles south of the Project site. Given this, it is assumed that the species could occur throughout the Project site.

**4.4.4.3.18 Mojave River Vole (*Microtus californicus mohavensis*, CSC).** The Mojave River vole, also known as the Mojave River meadow mouse, occurs in moist habitats along the Mojave River, including irrigated pastures in the vicinity of the Mojave River. Alfalfa fields can also provide habitat for the species (BLM 2005b). This species has been observed along the Mojave River approximately five miles south of the Project site. Given this, it is assumed that the species could occur throughout the Project site.

**4.4.4.3.19 Mohave Ground Squirrel (*Spermophilus mohavensis*, ST).** The optimum habitats for this species include open desert scrub, alkali desert scrub, and Joshua tree woodland. The Mohave ground squirrel breeds from March through May. Joshua tree seeds are an important food source, but the species can also feed in annual grasslands. The species construct their burrows under large shrubs; the presence of shrubs may also be important as a food source to enable a population to persist during a drought. This species has been observed in multiple locations approximately four to five miles north and south of the Project site, in close proximity to the Mojave River. Due to the lack of shrubs over the majority of the Project site, and the disturbance of the soil due to past agricultural activities, the species is unlikely to burrow in these areas. The only area where the species may burrow would be along the banks of the desert wash at the Project site or possibly within the area of the proposed gen-tie line. The species may also forage throughout the Project site.

**4.4.4.3.20 Silver-haired Bat (*Lasionycteris noctivagans*, SA).** The silver-haired bat roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. The species migrates to hibernation sites, believed to be in Mexico for California populations. This species requires a nearby source of water. According to CNDDDB records, this species has been observed approximately five miles north of the Project site, along the Mojave River. The species could utilize the Fremont cottonwood trees on the Project site as a roost. This species may also forage over the Project site.

## 4.5 WILDLIFE MOVEMENT

The Mojave River serves as an important wildlife movement corridor in the region. In the County of San Bernardino's Open Space Plan, the Mojave River is identified as a major open space area and wildlife movement corridor. The Mojave River is the major perennial river in

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the desert region, and is an area of extreme biologic importance. It especially is critical given the potential barrier to migration of some wildlife that is caused by SR 66 to the east.





## **SECTION 5.0 PROJECT IMPACTS**

Impacts of the proposed Alamo Solar Project on biological resources are addressed below. To facilitate the County's environmental review of the project under CEQA, the analysis is organized to reflect the topics addressed in the Initial Study Checklist (Appendix G to the State CEQA Guidelines).

### **5.1 IMPACTS TO EXISTING ON-SITE VEGETATION COMMUNITIES AND LAND COVERS**

*Criterion: Impacts would be significant if the Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.*

As described in Section 4.1.2 above, vegetation within the Alamo site is significantly disturbed and includes two mapped plant communities: Russian thistle stands and hedge mustard stands. (The site also contains areas in the vicinity of the on-site rural residences that were mapped as developed/ornamental, but these are not formally-defined plant communities.) Native habitats, including riparian habitats and other communities designated by the CDFW as sensitive, do not occur within the site boundaries. The gen-tie improvement corridor contains a variety of vegetation communities and land covers, including residential and industrial developments, ornamental landscaping, ruderal vegetation associated with edges of development, and intact desert scrub habitats. Riparian vegetation communities or other habitats that are considered sensitive by the CDFW are not present. Considering this information, the Project's impacts on existing vegetation would be *less than significant*.

### **5.2 IMPACTS TO JURISDICTIONAL WATERS AND STREAMBEDS**

*Criterion: Impacts would be significant if the Project would 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.*

As described and illustrated in Section 4.3 above, and explained in greater detail in the Jurisdictional Determination Report for the Project (URS 2012), jurisdictional delineations indicate the Project site is located adjacent to the Mojave River corridor, but that the jurisdictional limits of the river are beyond the Project's facilities footprint. No wetlands are present on-site, and development of the Alamo site would not directly impact jurisdictional wetlands or waters.

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A number of ephemeral drainages traverse the gen-tie improvement corridor, although they lack sufficient hydrology to support riparian vegetation or exhibit wetland characteristics. These features exhibit defined beds and banks and are regulated under Section 1600 *et seq.* of the California Fish and Game Code which specifies that a Streambed Alteration Agreement must be obtained from the CDFW prior to undertaking an activity that would divert, obstruct, or substantially alter the streambeds. Federal protection under the Clean Water Act may also apply if the ephemeral drainages bear significant nexus to the Mojave River. Because the extent of disturbance proposed along the gen-tie improvement corridor is minimal, and because Southern California Edison will retain flexibility to avoid sensitive resources during final site design, it is unlikely (but still possible) that ephemeral washes would be affected by the Project. If they occurred, impacts to desert washes would be ***significant, absent mitigation***. However, to ensure compliance with applicable laws, Mitigation Measure BIO-7 would require the project applicant or SCE to acquire a Section 404 Permit and/or Streambed Alteration Agreement prior to filling or altering desert washes along the gen-tie improvement corridor. Implementation of this mitigation measure would reduce potential impacts to a less than significant level.

### 5.3 IMPACTS TO PLANTS AND WILDLIFE

***Criterion: Impacts would be significant if the Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.***

As described in Section 4.0 above, the Alamo site has been degraded by past agricultural land uses and no longer supports natural vegetation. Biological investigations of the site indicated that the predominant vegetation present is Russian thistle (*Salsola tragus*) and hedge mustard (*Sisymbrium officinale*), two invasive weeds. The several agricultural buildings and residences are present within the site, and around the buildings are ornamental plantings including tamarisk (*Tamarix* spp.) and other trees that are not found elsewhere on site. A few living creosote bush (*Larrea tridentata*) and saltbush shrubs (*Atriplex* spp.) were observed, but were sparsely distributed. Habitat conditions on-site are not characteristic of natural Mojave Desert environments, and the site is not suitable for occupation by most of the sensitive species that occur in the surrounding desert. As described in Section 4.4 above, a suite of biological surveys were conducted within the Alamo site but no special-status species were documented on the site.

While the Mojave River corridor, which is adjacent to the site's western boundary, contains suitable habitat for a variety of special-status species, these plants and animals are not expected to use the Project site due to the disturbed nature of the site and the absence of habitat. Even riparian species that are known to utilize adjacent uplands for foraging

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purposes, such as the federally and state-listed endangered southwestern willow flycatcher (*Empidonax trailii extimus*) and least Bell's vireo (*Vireo bellii pusillus*), are unlikely to find prey in an area that is largely unvegetated and whose sparse vegetation is dominated by Russian thistle. The same is true of mammal species that likely occur in the River corridor, such as the Mojave river vole (*Microtus californicus mohavensis*) and pallid San Diego pocket mouse (*Perognathus fallax pallidus*); while these species occur in proximity to the Project site, the site does not provide suitable habitat for these species during any life stage and the species are not likely to venture onto the site. During a site visit on January 15, 2013, representatives from the CDFW concurred with this interpretation, and indicated that conducting surveys for these species on the Project site was unnecessary due to the absence of suitable habitat.

#### 5.3.1 Impacts to Common Plants and Wildlife

Common plants and wildlife species that currently utilize the Project site could be impacted by construction and operation of the proposed Project. Generally speaking, short-term impacts could potentially include injury or mortality of wildlife during construction. Long-term habitat loss would not occur, as natural habitats do not occur within the 175-acre site under existing conditions. Nonetheless, the limited existing plants within proposed disturbance zones would be eliminated during grading or site preparation activities, as these species are immobile. For the common wildlife that inhabit the site, ground disturbance have potential to cause injury and/or mortality of individuals. The extent to which species would be impacted would be dependent on several factors, including the species' mobility and the extent to which the species relies on the site for life history requirements. Species of low mobility, or those that use the site during particularly vulnerable portions of the life history, such as nesting periods, would be expected to sustain greater impacts than highly mobile species or those whose use of the site is transitory. Because development of the Project site would not disturb natural habitat areas, regionally abundant plants and wildlife species would not be substantially affected by the Project. Considering this information, and because these species tend to be broadly distributed and regionally abundant, impacts to common plants and wildlife within the Alamo site would be *less than significant*.

Because recent observations elsewhere in the Mojave desert have suggested that PV solar projects may have the potential to attract migratory birds seeking water, a mitigation measure (BIO-11) has been included that will require avian mortality monitoring during and after construction. By documenting any observed occurrences of avian injury or mortality and reporting these incidents to the USFWS, this measure will serve to increase the body of available knowledge concerning the effects of PV installations on the avifauna. However, because this issue is still emerging and because the vast majority of migratory birds are not special-status species, impacts associated with attraction of migrating birds to the site are not expected to rise to the level of significance under CEQA.

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Within the gen-tie improvement corridor, existing wooden electrical poles would be re-conducted, and in some cases replaced with newer poles within a similar, but not identical, alignment. Ground disturbance associated with these improvements would be minor, and would include approximately 400 square feet of disturbance at each pole location. While the long-term effects of this activity would be insignificant due to the temporary nature of the impacts and the limited acreage involved, common plants and wildlife located within these impact footprints would be susceptible to injury or destruction during construction. For common species, this impact would be *less than significant* because these species are abundant and well-represented in the vicinity and the region. The proposed improvements would be constructed in accordance with the Avian Power Line Interaction Committee's published guidance (Avian Power Line Interaction Committee 2012), which would reduce the risk of raptors and other large birds becoming electrocuted due to contact with the lines.

#### 5.3.2 Impacts to the Mojave Desert Tortoise (*Gopherus agassizii*)

Protocol surveys were conducted in April and May 2013 along the gen-tie improvement corridor (March-July 2013 Survey Area) in accordance with the USFWS (2010) survey protocol for this species (see Section 4.4.3). One live adult tortoise was detected in a burrow in creosote bush scrub habitat within the gen-tie improvement corridor during protocol burrowing owl surveys. Pole replacement and re-conducting activities, along with associated movement of personnel and equipment, would disturb the ground surface and may compact shallow subsurface soils. If these activities were to occur in an area where Mojave desert tortoises are present, it is foreseeable that this species could be injured or killed by contact with construction equipment. Tortoises in subterranean burrows are often difficult to detect, and could also be crushed or entombed during construction. Due to the high level of regulatory protection afforded the Mojave desert tortoise, these impacts would be *significant, absent mitigation*.

Because the Mojave desert tortoise is listed under the Endangered Species Act and California Endangered Species Act as a threatened species, the Project would either need to avoid the potential to take this species or would require incidental take authorization under these statutes. Project-related take of this species would be prevented, and potential impacts reduced to a less than significant level, through Mitigation Measures requiring the implementation of a Worker Environmental Awareness Program (BIO-1), presence of a biological monitor during construction (BIO-2), installation of tortoise exclusion fencing around disturbance zones (BIO-3), and pre-construction surveys for this species (BIO-4). Potential cumulative effects associated with increasing populations of the common raven (*Corvus corax*), a known predator of young Mojave desert tortoises that is well-adapted to human development, would be reduced through Mitigation Measure BIO-10 (Raven Management).

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#### 5.3.3 Impacts to the Desert Kit Fox (*Vulpes macrotis arsipus*)

The desert kit fox is a small fox native to the Mojave and Sonoran deserts of California, Oregon, Nevada, Utah, Colorado, Texas, New Mexico, and Arizona, as well as parts of Mexico. While the desert kit fox is not designated by federal, state, or local agencies as a special-status species, CDFW regulations at 14 CCR 460 prohibit the take of this species. Thus, to be compliant with CDFW regulations, the project must be accomplished without hunting, shooting, catching, capturing, or killing desert kit foxes, or attempting these activities. An active desert kit fox burrow was detected outside the Project's development footprint along the drainage in the northwestern part of the Project site; a live sighting was not observed. Sign of this species was not detected within the gen-tie improvement corridor during biological surveys. Given these observations, there is a moderate probability that desert kit fox could use the site considering this species' high mobility and willingness to tolerate human disturbance and utilize disturbed habitats. Because the desert kit fox does not carry an applicable designation as a sensitive or special-status species, project impacts to this species would be *less than significant*. However, the survey and passive relocation requirements specified in Mitigation Measure BIO-6 would further reduce the potential for the project to impact this species and would ensure compliance with CDFW regulations.

#### 5.4 IMPACTS TO WILDLIFE MOVEMENT

***Criterion: Impacts would be significant if the Project would 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.***

The Alamo site is located in proximity to the Mojave River, a regionally important feature that provides stopover habitat and drinking water for a wide variety of wildlife species that traverse the desert during migration. However, as described in Section 4.0 above, the Alamo Project site has been previously disturbed and no longer contains intact habitat. The proposed limits of disturbance are confined to areas of former agricultural use, and no construction personnel or equipment would be allowed to enter the riparian area. The river corridor in the vicinity of the Project site has a width of approximately 0.4 mile, allowing wildlife to avoid temporary indirect impacts such as construction noise by moving within the river corridor if needed. The site perimeter fencing that would be installed around the site is not expected to hinder wildlife movement or habitat connectivity because the lands to be fenced do not contain natural habitat, and because most of the proposed fences would be installed in locations that are generally similar to the alignments of existing agricultural fencing.

Because the proposed impacts within the gen-tie improvement corridor would be minor and temporary, impacts in this area would not affect wildlife movement or habitat connectivity.



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Considering this information, impacts of the proposed Project on wildlife movement and habitat connectivity would be *less than significant*.

#### 5.5 CONSISTENCY WITH RESOURCE POLICIES AND ORDINANCES

***Criterion: Impacts would be significant if the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.***

The proposed Alamo Solar Project has been designed with consideration for the policies and ordinances of San Bernardino County, and the proposed Project is consistent with these policies and ordinances. However, in some instances, these ordinances may impose additional requirements on the Project. Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code require that where removal of Joshua trees or cacti is proposed, all individuals to be removed shall be transplanted or stockpiled for future transplanting wherever possible. Development of the proposed Project would not require Joshua trees or cacti to be removed, however, as these species do not occur within the Project site. Although limited numbers of Joshua trees, Mojave yucca, and cacti occur within the gen-tie improvement corridor, the density of these plants is low enough that they could easily be avoided during construction.

Absent any sort of strategy for avoiding or salvaging Joshua trees or cacti during the proposed gen-tie line improvements, the Project would potentially conflict with Sections 88.01.050 and 88.01.060 of the San Bernardino County Development Code. This conflict would represent a ***potentially significant impact, absent mitigation***. However, avoidance of Joshua trees and cacti, per mitigation measure BIO-8, would ensure consistency with the Development Code and reduce this potential impact (resulting from conflict with local policies or ordinances protecting biological resources) to a less than significant level.

#### 5.6 CONSISTENCY WITH HABITAT CONSERVATION PLANS

***Criterion: Impacts would be significant if the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.***

The Alamo site is not enrolled in any formal Habitat Conservation Plan or Natural Community Conservation Plan. However, several large-scale conservation plans are being developed in the region, and the Project's expected consistency with these plans is described below. It is important to note that these plans have not yet been formally approved, are without regulatory weight, and may be subject to significant change prior to approval. These plans are described briefly below.

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#### **5.6.1 Desert Renewable Energy Conservation Plan**

Following issuance of California Executive Order S-14-08 in November 2008, a team of federal and state agencies began work on the Desert Renewable Energy Conservation Plan (DRECP), a comprehensive planning document intended to provide binding, long-term endangered species permit assurances and to facilitate the review and approval of compatible renewable energy projects within the Mojave and Sonoran deserts of Southern California. The four agencies, which include the BLM, the USFWS, the California Energy Commission, and the CDFW, collectively form the “Renewable Energy Action Team” (REAT) responsible for preparing the DRECP. As of July 2013, a draft of the DRECP document has not been made available for public review and environmental review under NEPA and CEQA has not yet occurred. Based on information released by the REAT in January 2013, the DRECP will identify “Development Focus Areas,” within which the DRECP’s planned comprehensive incidental take authorizations and streamlined approval process would be applicable. Outside designated Development Focus Areas, projects on private land would continue to be approved through existing local government review processes; the DRECP would not prohibit development on private lands (REAT 2013). Because the DRECP has not yet been finalized, it is not known whether or not the Alamo project site would be situated within a Development Focus Area. However, because the site is under private ownership, it appears that the DRECP would not prohibit development of the site in either case. The expected date of a final, effective DRECP is not known but is likely to be substantially beyond the approval and construction timeline of the Alamo project due to the large-scale, complex nature of the DRECP.

#### **5.6.2 West Mojave Plan**

In 2006, the BLM adopted the West Mojave Plan, a habitat conservation plan and federal land use plan amendment that presents a comprehensive strategy to conserve and protect sensitive biological resources within approximately 6.2 million acres in the western Mojave Desert while also providing a streamlined program for complying with state and federal endangered species laws. Two state agencies and 15 local jurisdictions, including the County of San Bernardino, worked closely with the BLM during preparation of the West Mojave Plan. The two species of primary importance covered in the West Mojave Plan are the Mojave desert tortoise and Mohave ground squirrel. Because these species have not been detected within the Alamo site, the development of the site would not pose significant conflicts with this plan. Because the proposed activities within the gen-tie improvement corridor are associated with modernizing an existing transmission facility and would not involve any changes in land use, these activities would not conflict with the West Mojave Plan. It should be noted that the BLM’s approval of the West Mojave Plan has been the subject of recent litigation, and that the legal process may necessitate some deviation from the version approved in 2006. Thus, some uncertainty exists regarding the exact terms of this plan. By court order, the BLM is required to prepare a revised plan prior to March 31, 2014.

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Considering the information presented in Sections 5.6.1 and 5.6.2 above, the project will have ***no impact*** relative to approved conservation plans.

## **SECTION 6.0 MITIGATION MEASURES**

Mitigation measures described below offset potentially significant impacts on biological resources. The measures are provided to inform the County's environmental analysis of the Project under CEQA.

**BIO-1 Worker Environmental Awareness Program.** Prior to any construction activities on the project site or within the gen-tie improvement corridor, the Applicant will implement a Worker Environmental Awareness Program (WEAP) to educate on-site workers about sensitive environmental issues associated with the Project. The program will be administered to all on-site personnel, including the Applicant's personnel, contractors, and all subcontractors, on the first day of work prior to the employee's commencing work on the site. The WEAP will place special emphasis on the protected species that have potential to occur within the Alamo site, including the Mojave desert tortoise, burrowing owl, nesting birds, and desert kit fox, among other plant and wildlife species.

The program will include the following elements:

- A presentation, developed by or in consultation with a qualified biologist, discussing the sensitive biological resources with potential to occur on-site, and explaining the reasons for protecting these resources and penalties for non-compliance
- Brochures or booklets, containing written descriptions and photographs of protected species as well as a list of site rules pertaining to biological resources, to be provided to all WEAP participants
- Contact information for the project biological monitor, and instructions to contact the monitor with any questions regarding the WEAP presentation or booklets
- An acknowledgement form, to be signed by each worker indicating that they received WEAP training and will abide by the site rules protecting biological resources
- Conspicuous stickers, identifying the project and signifying WEAP completion, to be distributed immediately following WEAP training and required on personnel hard hats

The project Applicant will be responsible for ensuring that all on-site personnel, throughout the duration of project construction, receive WEAP training. A training log, to be signed by all on-site personnel immediately following WEAP training, will be maintained on the project site during construction to document compliance with this measure.

**BIO-2 Biological Monitor.** Prior to issuance of a grading permit for the Project, a qualified biologist shall be retained by the Applicant as the biological monitor subject to the approval of the County of San Bernardino. The biological monitor shall be present at all times during

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vegetation clearing or ground disturbance, and shall ensure that impacts to biological resources are avoided or minimized to the fullest extent possible. When construction activities have progressed to the point where biological resources are no longer present, as determined by the biological monitor, biological monitoring in the area may be reduced or discontinued with approval from the County of San Bernardino. The biological monitor shall have the authority to stop specific grading or construction activities if violations of mitigation measures or any local, state, or federal laws are suspected.

**BIO-3 Mojave Desert Tortoise Exclusion Fencing.** Prior to initiation of construction activities along the gen-tie improvement corridor, the activity footprint of each work location will be surveyed for the Mojave desert tortoise by a qualified biologist. If Mojave desert tortoises or their recent sign are detected, the Applicant shall not initiate construction, and shall instead contact the USFWS and CDFW to develop an avoidance strategy and/or seek authorization for incidental take of Mojave desert tortoise. Within 24 hours following completion of the survey (assuming negative survey results), a desert tortoise exclusion fence shall be installed surrounding the disturbance area. The exclusion fence shall be installed in accordance with the specifications set forth in Chapter 8 of the USFWS' Desert Tortoise Field Manual (USFWS 2009), and installation of the fence shall be overseen by a biologist familiar with the installation of tortoise exclusion fencing. If tortoise exclusion fences are left in place for a period exceeding one week at any location, the fences will be inspected weekly for any signs of damage or wear that could potentially compromise the integrity of the exclusion perimeter. If damage or excessive wear is observed, the exclusion fence will be repaired immediately. Results of any necessary fence inspections will be maintained to document compliance with this provision.

**BIO-4 Pre-construction Mojave Desert Tortoise Surveys and Avoidance.** Within 14 days prior to construction-related ground clearing and/or grading, the Applicant shall retain a qualified biologist to conduct surveys for signs of occupancy by the Mojave desert tortoise. Surveys shall cover the entire area proposed for disturbance, shall be conducted by walking parallel transects spaced no more than 10 meters apart, and shall focus on detecting any live tortoises or their sign, including carcasses, burrows, palates, tracks, and scat. Should any sign indicating the presence of Mojave desert tortoise be detected, the Applicant shall not proceed with ground clearing and/or grading activities in the area of the find, and shall instead contact the USFWS and CDFW to develop an avoidance strategy and/or seek authorization for incidental take of Mojave desert tortoise.

The results of the pre-construction surveys, including graphics showing the locations of any tortoise sign detected, and documentation of any avoidance measures taken, shall be submitted to the USFWS, CDFW, and the County of San Bernardino within 14 days of completion of the pre-construction surveys or construction monitoring to document compliance with applicable federal and state laws pertaining to the protection of Mojave desert tortoise.

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**BIO-5 Pre-construction Nesting Bird Surveys and Avoidance.** Within 30 days prior to vegetation clearing or ground disturbance associated with construction or grading that would occur during the nesting/breeding season (February through August, unless determined otherwise by a qualified biologist based on observations in the region), the Applicant shall retain a qualified biologist to determine if active nests of species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present within or adjacent to the disturbance zone or within 100 feet (300 feet for raptors) of the disturbance zone. The surveys shall be conducted no more than seven days prior to initiation of disturbance work. If ground disturbance activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than seven days will have elapsed between the survey and ground disturbance activities.

If active nests are found, clearing and construction within 100 feet of the nest (or a lesser distance if approved by the USFWS) shall be postponed or halted, until the nest is vacated and juveniles have fledged, as determined by the biologist. Avoidance buffers shall be established in the field with highly visible construction fencing or flagging, and construction personnel shall be instructed on the sensitivity of nest areas. A qualified biologist shall serve as a construction monitor during those periods when construction activities will occur near active nests to ensure that no inadvertent impacts on these nests occur.

The results of pre-construction nesting bird surveys, including graphics showing the locations of any nests detected, and documentation of any avoidance measures taken, shall be submitted to the County of San Bernardino and CDFW within 14 days of completion of the pre-construction surveys or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds.

**BIO-6 Pre-construction Desert Kit Fox Surveys and Passive Relocation.** To avoid unauthorized take of the desert kit fox, the project Applicant shall retain a qualified biologist to conduct preconstruction surveys for this species within 14 days prior to ground disturbance. The survey shall be conducted by walking parallel transects spaced no more than 20 meters apart, and shall be focused on detecting any desert kit fox individuals or dens within the disturbance footprint. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active based on field observations. If necessary, motion-sensitive cameras or a tracking medium shall be used to determine whether a den is active.

Inactive dens in areas that would be impacted by construction activities shall be excavated by hand and/or mechanically and backfilled to prevent reuse by desert kit fox.

Active and potentially active dens in areas that would be impacted by construction activities shall be monitored by a qualified biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species



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are captured after three nights, the den shall be excavated and backfilled by hand to prevent reuse. If tracks are observed, the den shall be classified as active. Outside the desert kit fox pupping season (January 15 through July 31, unless determined otherwise by a qualified biologist based on observations in the region), the den may be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the kit fox from continuing to use the den. After verification that the den is unoccupied, it shall then be excavated and backfilled by hand to prevent reuse, while ensuring that no kit fox are trapped in the den. No excavation of active desert kit fox dens shall be permitted during the pupping season.

The Applicant shall submit a report to the County of San Bernardino and CDFW within 30 days of completion of pre-construction desert kit fox surveys describing the survey methods, results, and details of any dens backfilled or foxes observed.

**BIO-7 Authorizations for Impacts to Ephemeral Washes.** If feasible, the Applicant shall avoid filling or altering the ephemeral desert washes that traverse the gen-tie improvement corridor during construction. If avoidance is not feasible, prior to undertaking any activity that would divert, fill, obstruct, or substantially alter any of the washes, the project Applicant will enter into a Streambed Alteration Agreement with the CDFW authorizing the proposed activity as required by Section 1602 of the California Fish and Game Code. The project Applicant will ensure that all project personnel comply with all stated terms and conditions of the Agreement, including any seasonal or weather-related restrictions on work activities within the streambeds, construction site housekeeping practices, or other limitations the CDFW may impose. The Applicant shall also contact the Los Angeles District of USACE, and shall obtain a Section 404 Permit for the proposed work if required.

**BIO-8 Avoidance of Joshua Trees and Cacti.** If feasible, the Applicant shall avoid the need to remove Joshua trees, Mojave yucca, or cacti during construction activities along the gen-tie improvement corridor. If avoidance is not feasible, the Applicant or SCE shall acquire a permit from the County of San Bernardino as required by Section 88.01.050 of the San Bernardino County Development Code prior to removing these species.

**BIO-9 Migratory Bird Fund Contribution.** The Applicant shall work with the USFWS to make a mutually agreeable contribution to a fund designed to identify and reduce sources of mortality of migratory birds in the region. The contribution level shall reflect that project impacts to migratory bird populations are expected to be small and less than significant.

**BIO-10 Raven Management.** Alamo Solar Project, LLC and SCE shall implement the following measures to mitigate project-specific impacts that could result in a local increase in common ravens:

- Dispose of all trash and food-related waste in secure, self-closing receptacles to prevent the introduction of subsidized food resources for common ravens.

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- Use water for construction, operation and maintenance in a manner that does not result in puddling.
- The biological monitor identified in mitigation measure BIO-2 shall implement the following at the project site:
  - Remove and dispose of road kills of common wildlife species from the project site and access road. No species subject to the Endangered Species Act would be removed.
  - Document common raven use of the project site and access road on a daily basis. If frequently used perching locations are identified, use physical, auditory or visual bird deterrents to discourage use by common ravens.
  - Remove any inactive raven nests in the project site or along the access road.
- SCE will address common raven nests according to existing procedures or permits applicable to transmission line upgrades and maintenance activities.

Alamo Solar Project, LLC and SCE would implement the following measure to mitigate indirect and cumulative impacts it cannot fully eliminate:

Contribute to the Regional Raven Management Plan. The contribution shall consist of a one-time payment of a total of \$105 per acre of disturbance, including the project site and gen-tie improvement corridor.

**BIO-11 Avian Mortality Monitoring.** In an effort to contribute meaningful data regarding the effects of industrial-scale photovoltaic solar projects on migratory birds, the Applicant shall perform construction-phase and operations-phase avian mortality monitoring at the Alamo project site. Prior to issuance of a grading permit for the project, the Applicant shall submit an Avian Protection Plan to the County of San Bernardino and the USFWS ensuring that any birds encountered dead or injured on the project site are documented. At a minimum, the plan shall include the following elements:

### *1. Bird Encounter Protocol during Construction*

This section of the plan will include a protocol to be used upon discovery of a dead or injured bird during project construction, to ensure timely and consistent data collection. At a minimum, the plan will require the Applicant and on-site biological monitor to determine pertinent information, such as the following:

- The species, life stage (adult or juvenile), and sex (if practical) of the bird;
- The likely cause of injury or death, if apparent; and,

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- The approximate date of death, for individuals that have been dead for a period prior to discovery.

#### *2. Construction-Phase Reporting Requirements*

This section of the plan will require that avian injury/mortality data be compiled and transmitted to the County of San Bernardino and the USFWS on a periodic basis, and will specify the frequency and method by which this notification should be made. However, in the event that avian species listed as Threatened or Endangered under the Endangered Species Act are encountered, the plan shall require that the USFWS be notified immediately. Additionally, the applicant shall not destroy, collect, or remove bird remains from the site without first obtaining any required permits from the USFWS and/or CDFW.

#### *3. Operations-Phase Mortality Monitoring*

This section of the plan require that the Applicant retain a qualified biologist to conduct periodic avian mortality monitoring during operations at the Alamo site, and will detail the methods by which this monitoring should be conducted. The plan shall require monitoring for a minimum period of two years following completion of construction. A minimum of five monitoring events shall be conducted during each year, and will be scheduled to coincide with peak migration periods. However, one monitoring event each year will be conducted during the winter months (November through January), to assess any mortality of wintering birds.

#### *4. Adaptive Management*

This section of the plan will set forth a process through which changes to the monitoring schedule or methods may be implemented if warranted due to unforeseen circumstances or other factors. During the construction- and operations-phase avian mortality monitoring, the Applicant and monitoring biologist will keep the County of San Bernardino and USFWS informed of monitoring progress and will alert these agencies if it appears that changes to the monitoring schedule or methods are needed. If it is apparent that substantial project-related injury or mortality of birds may be occurring, or if there are substantial unresolved questions regarding the Project's effects on avian species, then the monitoring period, methods, or frequency may be modified to address these concerns. In addition, if specific project elements are resulting in substantial avian injury or mortality, the plan shall direct that the Applicant work with the USFWS to identify and implement reasonable measures to modify these elements in a manner that lessens the effects on migratory birds.

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**SECTION 7.0  
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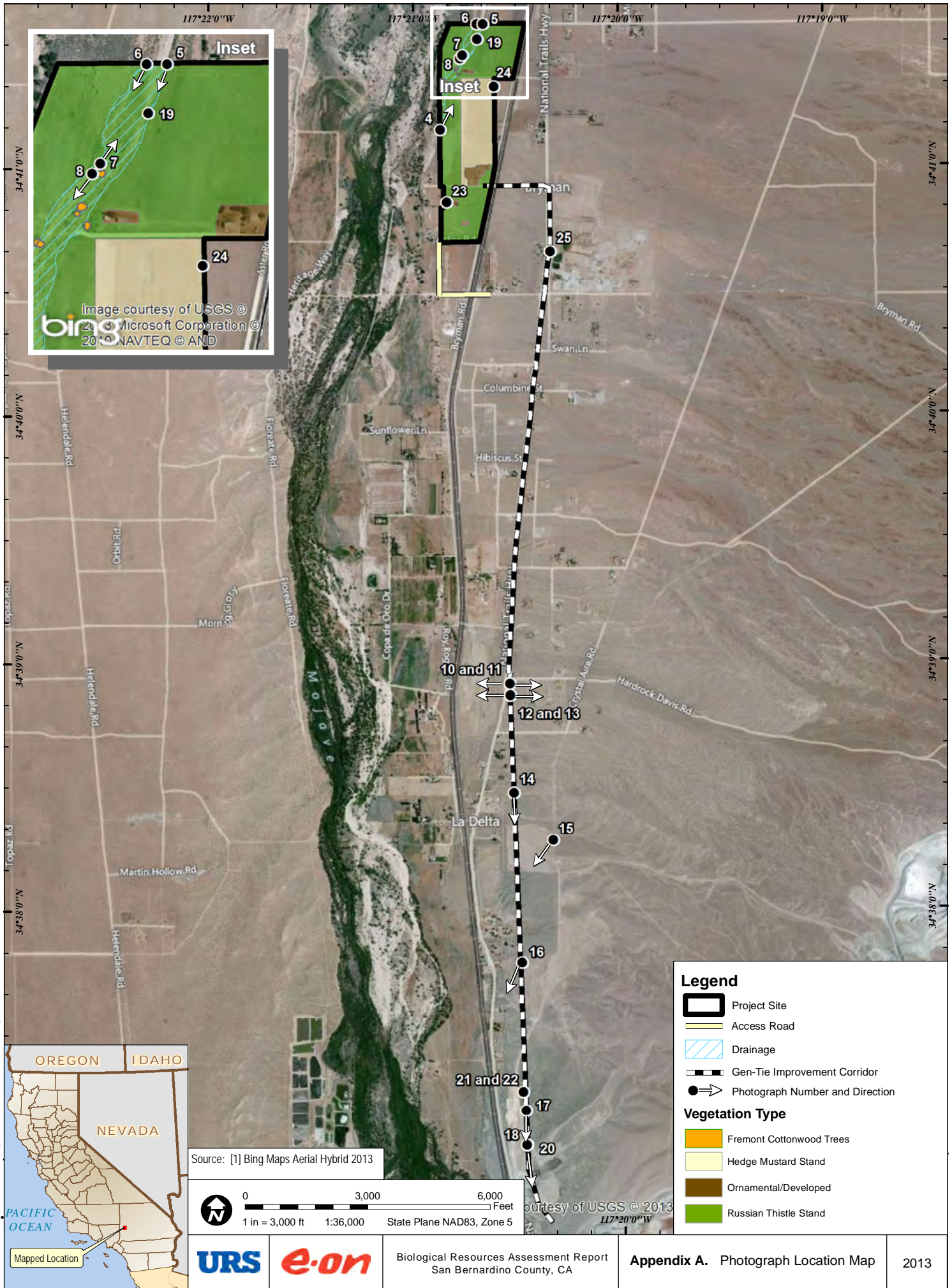


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**APPENDIX A  
PHOTOGRAPH LOCATION MAP AND SITE PHOTOGRAPHS**









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Photograph 1. April 2011.  
Overview of the project site.



Photograph 2. April 2011.  
Overview of the project site.

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Photograph 3. April 2011.  
Overview of the project site.



Photograph 4. September 14, 2011.  
Project Site. View to the north, taken from southern project boundary.  
Drainage W1, top of bank visible on the right. APN 0470-041-01.



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Photograph 5. September 14, 2011.

View to the south, taken from northern project boundary.

Drainage W1 on the left, top of bank and associated uplands on the left. APN 0470-021-09.



Photograph 6. September 14, 2011.

Project Site. View to the south, taken from northern project boundary.

Drainage W1, low flow channel on the left and river terrace on the right. APN 0470-021-09.

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Photograph 7. September 14, 2011.

Project Site. View to the north, taken from Sampling Point 3 of the Jurisdictional Wetlands Delineation. Low flow channel of Drainage W1. Russian thistle stand visible. APN 0470-021-09.



Photograph 8. September 14, 2011.

Project Site. View to the south, taken from Sampling Point 3 of the Jurisdictional Wetlands Delineation. Low flow channel of Drainage W1. Solitary Fremont cottonwood visible in background. APN 0470-021-09.



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Photograph 9. April, 2011.  
Project Site. Individual Fremont cottonwood trees.



Photograph 10. July 23, 2013. Gen-tie improvement corridor. View to the east, of a drainage four meters wide by nine inches deep. Creosote bush is on either side of the drainage. APN 0469-052-03.



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Photograph 11. July 23, 2013. Gen-tie improvement corridor. View to the west, from within a drainage. Creosote bush is on either side of the drainage and in the background. APN 0469-052-03.



Photograph 12. July 23, 2013. Gen-tie improvement corridor. View to the east. A drainage 2.5 meters wide and nine inches deep, with creosote bush-white burr sage scrub. APN 0469-052-03.

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Photograph 13. July 23, 2013. View to the west. Gen-tie improvement corridor. Creosote bush-white burr sage scrub present, with Mojave River in far background.  
APN 0469-052-03.



Photograph 14. July 23, 2013. Gen-tie improvement corridor. View to the south, of the edge of the survey fence. Creosote bush is present, and the gen-tie improvement corridor is located in the background. APN 0468-042-14.



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Photograph 15. July 23, 2013. Gen-tie improvement corridor. View to the southwest, taken outside of the Study Area, looking into the fenced area. The staging area is in the far background of the graded area. APN 0468-042-14.



Photograph 16. July 23, 2013. Gen-tie improvement corridor. View to the southwest. A major drainage is in the foreground and stretches into the background, with creosote bush-white burr sage scrub. APN 0468-102-04.

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Photograph 17. July 23, 2013. Gen-tie improvement corridor. View to the south.  
Transmission plant in the background left. APN 0468-102-04.



Photograph 18. July 23, 2013. Gen-tie improvement corridor. View to the south. The  
northern edge of the active quarry and debris pile, with the Gen-tie improvement corridor on  
the right. APN 0468-102-04.

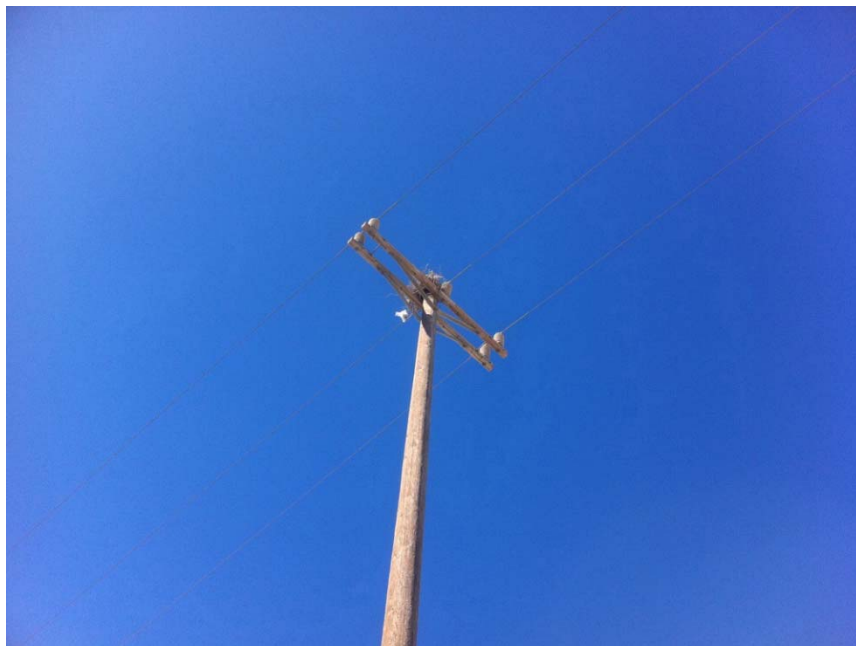


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Photograph 19. May 1, 2013. Active Desert kit fox den in bank of floodplain, with fox tracks nearby and claw marks in burrow. APN 0470-021-09.



Photograph 20. May 2, 2013. Gen-tie improvement corridor. Raven nest in transmission tower; adult flushed from nest during survey. APN 0468-102-04.

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Photograph 21. July 10, 2013. Gen-tie improvement corridor. Desert tortoise burrow under Creosote bush canopy. APN 0468-102-04.



Photograph 22. July 10, 2013. Gen-tie improvement corridor. Occupied burrow; left side of desert tortoise is visible. APN 0468-102-04.



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Photograph 23. March 26, 2013. Project Site. Larger burrow with no burrowing owl sign.  
APN 0470-051-14.



Photograph 24. March 27, 2013. Project site. Rodent burrow beneath a dead shrub, large enough to support a burrowing owl; no burrowing owl sign. APN 0470-041-01.

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Photograph 25. March 28, 2013. Gen-tie improvement corridor. Buckhorn cholla damaged by fire. Close to APN 0470-052-22.



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**APPENDIX B**  
**LIVE MOJAVE DESERT TORTOISE FORM**





Alamo DETO LIVE ENCOUNTER FORM

Names: A. Omlid, H. Rothbard

Date (M/D/Y): 07/10/2013

Start time (time DETO found): 0657 Start temp (F): 81° Cloud%: 30 Wind (mph): 1.0 Precipitation (Y/N): N  
End time (time DETO left): 0707 Stop temp (F): 83.5 Cloud%: 30 Wind (mph): 1.0 Precipitation (Y/N): N

Grid # On distribution updates  
portion of site pole # 80205  
GPS Waypoint: DETO LAM 0710 Burrow Orientation: N  
Easting: 468689 Burrow Length: Unknown  
Burrow Class: 1

DETO Location: ☒ In Burrow  
☐ Under Veg ☐ In Open  
☐ At Entrance of Burrow  
Sex: unknown

Burrow Type: ☐ Pallet ☒ Dirt Burrow  
☐ Caliche Den ☐ Rock ☐ n/a

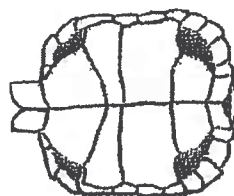
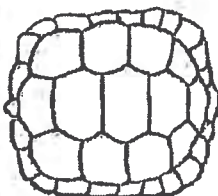
Scat Present? ☒ Yes ☐ No

Northing: 3831067 Burrow Width: 25cm  
Map Datum: UTM, NAD83 Burrow Height: 9cm

Estimated MCL (mm): 22cm  
Did the tortoise void? No

Scat Class: 112 3 class 2 seats on burrow mound  
Closest Plant: Larrea tridentata

Beak, Nares & Eyes (describe in notes)		Evidence of Trauma (describe in notes)		Notes (all Unknowns require a description)
Nares Wet	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Head	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	DT was sideways in burrow, could only see left side of tortoise. Gular barely visible. Difficult to sex.
Nares Damp	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Gulars	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Exudate Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Forelimbs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Bubbles from Nares	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Hindlimbs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
One Nare Occluded	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Shell	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	All categories (to left on this sheet) are based on visibility of the left side of the tortoise.
Both Nares Occluded	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Shell Condition		
Dirt on nose/beak	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Lesions	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Eyes Runny	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Chips or chews	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Eyelids Swollen	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Ticks or Mites	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Burrow and tortoise found under a creosote w/ layer of small, dead annuals on top of burrow. In small canyon approximately 50 m north of gravel road that parallels Route 66. Burrow / DT located on downhill slope under pole # 80205.
Eyes Sunken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Shell Disease	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Breathing		Shell Abnormalities	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Smooth	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Fungal Areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Wheezing	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Flaking	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
Rasping or Clicking	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown			
Behavior				
Alert	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Lethargic	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown			
Withdraw into Shell	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown			
Limbs or head hanging	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown			





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**APPENDIX C  
CNDDDB FORMS**



For Office Use Only

Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work (mm/dd/yyyy): 07/10/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals \_\_\_\_\_ Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Christopher Julian, URS Corporation

Address: 130 Robin Hill Road, Suite 100  
Santa Barbara, CA 93117

E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: ☐ H ☐ M ☒ S ☐ Source of Coordinates (GPS, topo. map & type): GPS  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: ☐ H ☐ M ☐ S ☐ GPS Make & Model \_\_\_\_\_  
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet  
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐  
Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

A Mojave desert tortoise was found in its burrow during a protocol burrowing owl survey. The burrow faced north and was situated in a sandy embankment between two large creosote bushes, with a layer of small, dead annuals on top of the burrow. The location was a small canyon approximately 50m north of a gravel road that parallels Route 66. The burrow and desert tortoise were located on a downhill slope under transmission pole #80205.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
☐ Compared with specimen housed at: \_\_\_\_\_  
☐ Compared with photo / drawing in: \_\_\_\_\_  
☐ By another person (name): \_\_\_\_\_  
☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital  
Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐



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Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work (mm/dd/yyyy): 07/10/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk. Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_ Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Christopher Julian, URS Corporation

Address: 130 Robin Hill Road, Suite 100  
Santa Barbara, CA 93117

E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: ☐ H ☐ M ☒ S ☐ Source of Coordinates (GPS, topo. map & type): GPS  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: ☐ H ☐ M ☐ S ☐ GPS Make & Model \_\_\_\_\_  
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet  
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐  
Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

A Mojave desert tortoise was found in its burrow during a protocol burrowing owl survey. The burrow faced north and was situated in a sandy embankment between two large creosote bushes, with a layer of small, dead annuals on top of the burrow. The location was a small canyon approximately 50m north of a gravel road that parallels Route 66. The burrow and desert tortoise were located on a downhill slope under transmission pole #80205.

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Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

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☐ By another person (name): \_\_\_\_\_  
☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐

Mail to:  
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Department of Fish and Game  
1807 13<sup>th</sup> Street, Suite 202  
Sacramento, CA 95811

Fax: (916) 324-0475 email: CNDDDB@dfg.ca.gov

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EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals \_\_\_\_\_ Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

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E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_

Quad Name: Helendale Elevation: approximately 2640'

T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒ Source of Coordinates (GPS, topo. map & type): GPS

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DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

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Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
☐ Compared with specimen housed at: \_\_\_\_\_  
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☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐

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Date of Field Work (mm/dd/yyyy): 07/10/2013

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California Native Species Field Survey Form

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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

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Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_

Quad Name: Helendale Elevation: approximately 2640'

T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒ Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☐ GPS Make & Model \_\_\_\_\_

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

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Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
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☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐



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Date of Field Work (mm/dd/yyyy): 07/10/2013

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California Native Species Field Survey Form

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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Christopher Julian, URS Corporation

Address: 130 Robin Hill Road, Suite 100

Santa Barbara, CA 93117

E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_

Quad Name: Helendale Elevation: approximately 2640'

T 06N R 04W Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒ Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☐ GPS Make & Model \_\_\_\_\_

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet

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Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

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Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
☐ Compared with specimen housed at: \_\_\_\_\_  
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☐ By another person (name): \_\_\_\_\_  
☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes ☒ no ☐

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Department of Fish and Game  
1807 13<sup>th</sup> Street, Suite 202  
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Date of Field Work (mm/dd/yyyy): 07/10/2013

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California Native Species Field Survey Form

Send Form

Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

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Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒ Source of Coordinates (GPS, topo. map & type): GPS  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☐ GPS Make & Model \_\_\_\_\_  
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet  
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐  
Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

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Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
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Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐



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California Native Species Field Survey Form

Send Form

Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
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Animal Information

1  
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☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
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Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

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Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
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Photographs: (check one or more) Slide Print Digital  
Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐

Mail to:  
California Natural Diversity Database  
Department of Fish and Game  
1807 13<sup>th</sup> Street, Suite 202  
Sacramento, CA 95811

Fax: (916) 324-0475 email: CNDDDB@dfg.ca.gov

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Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work (mm/dd/yyyy): 07/10/2013

Reset

California Native Species Field Survey Form

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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found?

☒ Yes ☐ No

If not, why?

Total No. Individuals \_\_\_\_\_ Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.

Yes, Occ. #

Collection? If yes:

Number

Museum / Herbarium

Reporter: Christopher Julian, URS Corporation

Address: 130 Robin Hill Road, Suite 100

Santa Barbara, CA 93117

E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

Plant Information

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

Animal Information

1

# adults

# juveniles

# larvae

# egg masses

# unknown

☐

wintering

☐

breeding

☐

nesting

☐

rookery

☒

burrow site

☐

other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino

Landowner / Mgr.: \_\_\_\_\_

Quad Name: Helendale

Elevation: approximately 2640'

T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒

Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☐

GPS Make & Model \_\_\_\_\_

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐

Horizontal Accuracy \_\_\_\_\_ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

A Mojave desert tortoise was found in its burrow during a protocol burrowing owl survey. The burrow faced north and was situated in a sandy embankment between two large creosote bushes, with a layer of small, dead annuals on top of the burrow. The location was a small canyon approximately 50m north of a gravel road that parallels Route 66. The burrow and desert tortoise were located on a downhill slope under transmission pole #80205.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): \_\_\_\_\_  
☐ Compared with specimen housed at: \_\_\_\_\_  
☐ Compared with photo / drawing in: \_\_\_\_\_  
☐ By another person (name): \_\_\_\_\_  
☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes ☒ no ☐

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Date of Field Work (mm/dd/yyyy): 07/10/2013

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**California Native Species Field Survey Form**

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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Christopher Julian, URS Corporation

Address: 130 Robin Hill Road, Suite 100  
Santa Barbara, CA 93117

E-mail Address: chris.julian@urs.com

Phone: (805) 692-6000

**Plant Information**

Phenology: \_\_\_\_\_% vegetative \_\_\_\_\_% flowering \_\_\_\_\_% fruiting

**Animal Information**

1  
# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

**Location Description (please attach map AND/OR fill out your choice of coordinates, below)**

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
T<sub>06N</sub> R<sub>04W</sub> Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☐  
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐  
Source of Coordinates (GPS, topo. map & type): GPS  
GPS Make & Model \_\_\_\_\_  
Horizontal Accuracy \_\_\_\_\_ meters/feet  
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐  
Coordinates: Mojave desert tortoise burrow 468689E, 3831067N, approximately 2640' in elevation

**Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:**

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Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: The site is along a gen-tie improvement corridor.

Visible disturbances:

Threats: The parcels are proposed for development.

Comments:

**Determination: (check one or more, and fill in blanks)**

- ☐ Keyed (cite reference): \_\_\_\_\_  
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☐ By another person (name): \_\_\_\_\_  
☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital  
Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐



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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found? ☒ Yes ☐ No If not, why? \_\_\_\_\_

Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

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Animal Information

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# adults # juveniles # larvae # egg masses # unknown  
☐ wintering ☐ breeding ☐ nesting ☐ rookery ☒ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

The observation occurred along a proposed gen-tie improvement corridor, in a small canyon approximately 50m from a gravel road that parallels Route 66. The tortoise was on the downhill side of transmission pole number 80205.

County: San Bernardino Landowner / Mgr.: \_\_\_\_\_  
Quad Name: Helendale Elevation: approximately 2640'  
T 06N R 04W Sec 7, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H ☐ M ☐ S ☒ Source of Coordinates (GPS, topo. map & type): GPS  
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DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy \_\_\_\_\_ meters/feet  
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐  
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Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

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California Native Species Field Survey Form

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Scientific Name: *Gopherus agassizii*

Common Name: Mojave Desert Tortoise

Species Found?

☒ Yes ☐ No

If not, why?

Total No. Individuals \_\_\_\_\_ Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.  
Yes, Occ. # \_\_\_\_\_

Collection? If yes:

Number \_\_\_\_\_

Museum / Herbarium \_\_\_\_\_

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GPS Make & Model \_\_\_\_\_

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐

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☐ Other: Identification in the field by those familiar with the species

Photographs: (check one or more) Slide Print Digital  
Plant / animal ☐ ☐ ☒  
Habitat ☐ ☐ ☒  
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐