5.2 Biological Resources

This section describes biological resources in and near the proposed Rice Solar Energy Project (RSEP), and the potential effects that the project may have on these resources. Section 5.2.1 discusses the affected environment, including an overview of the region, habitat and vegetation communities, and special-status species including the results of biological surveys in and near the proposed RSEP site. Section 5.2.2 presents an environmental analysis of the proposed RSEP, including standards of significance, potential impacts of construction and operation of the RSEP facility, and impacts to special-status species. Section 5.2.3 evaluates any potential cumulative effects to biological resources in the project vicinity, and Section 5.2.4 addresses proposed mitigation measures that would avoid, minimize, or compensate for adverse impacts. Section 5.2.5 lists the applicable laws, ordinances, regulations, and standards (LORS) that apply to the project's biological resources. Section 5.2.6 presents agency contacts, and Section 5.2.7 presents permit requirements. Section 5.2.8 contains technical references.

5.2.1 Affected Environment

5.2.1.1 Project Location and Facilities Summary

The RSEP site is located on private property surrounded by open desert that is managed by the U.S. Bureau of Land Management (BLM). State Route (SR) 62 is immediately adjacent to the northern boundary of the proposed solar site and will be the primary access during construction and operation. The proposed generator tie-line is primarily located on BLM land. The Arizona-California Railroad and Metropolitan Water District's (MWD) Colorado Aqueduct are immediately north of and run parallel to SR 62.The abandoned former settlement of Rice is approximately 2 miles west of the project site off SR 62. Rice now consists of a few dilapidated foundations and structures. The nearest current residence and settlement is Vidal Junction, approximately 15 miles east-northeast at the junction of SR 62 and US Route 95.

The RSEP site was used as a military training base during World War II. Although the aboveground structures have been removed and some vegetation is reestablished, the "V"-shaped runway and general layout of the former Rice Army Airfield remain apparent in aerial photography. Following military use between 1942 and 1944, the land has been in private holding and was subsequently used as a private airport; however, the site was abandoned sometime between 1954 and 1958.

RESP is surrounded by several nearby areas of special BLM management. The proposed solar site is located approximately 2 miles south of BLM's Turtle Mountains Wilderness, 5 miles northeast of the Palen/McCoy Wilderness, 3 miles north of the Rice Valley Wilderness, and 9 miles northwest of the Riverside Mountains Wilderness. The proposed generator tie-line interconnection point is within less than a mile from the Rice Wilderness and immediately adjacent to the Riverside Mountains Wilderness. There are also numerous historical mining operations in the local mountains.

The local vegetation within the Rice Valley is dominated by Sonoran creosote bush scrub but a dune system is located along the southern end of the valley. This dune habitat is part of the eastern end of one of the largest dune systems in the California Desert and extends

from the Cadiz Valley to Ward Valley. These dunes are immediately south of the RSEP and extend southward to the base of the Big Maria Mountains. The former 3,770-acre Rice Valley Dunes Off-Highway Recreation Area is located immediately south of the proposed solar site. The BLM closed this area to vehicle traffic in 2002 through the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) (BLM, 2007) due, in part, to lack of use.

During construction, all logistics, laydown, and parking will be contained within the approximately 1,504-acre fenced project footprint. Other than the generator tie-line, during operation, all project facilities including parking areas, administration buildings, water treatment system, a 230-kV switchyard, the approximately 1,370-acre heliostat field and associated power generation, and evaporation ponds will also be contained within this fenced boundary. Water will be supplied by two onsite groundwater wells and the project will not require tie-in with natural gas or any other pipelines. RSEP is designed to operate with the use of dry cooling technology, which is expected to result in the annual consumption of no more than 180 acre-feet of water. Within this larger 1,504-acre construction area, the permanently disturbed final fenced property that will be used during operation is 1,410 acres in size.

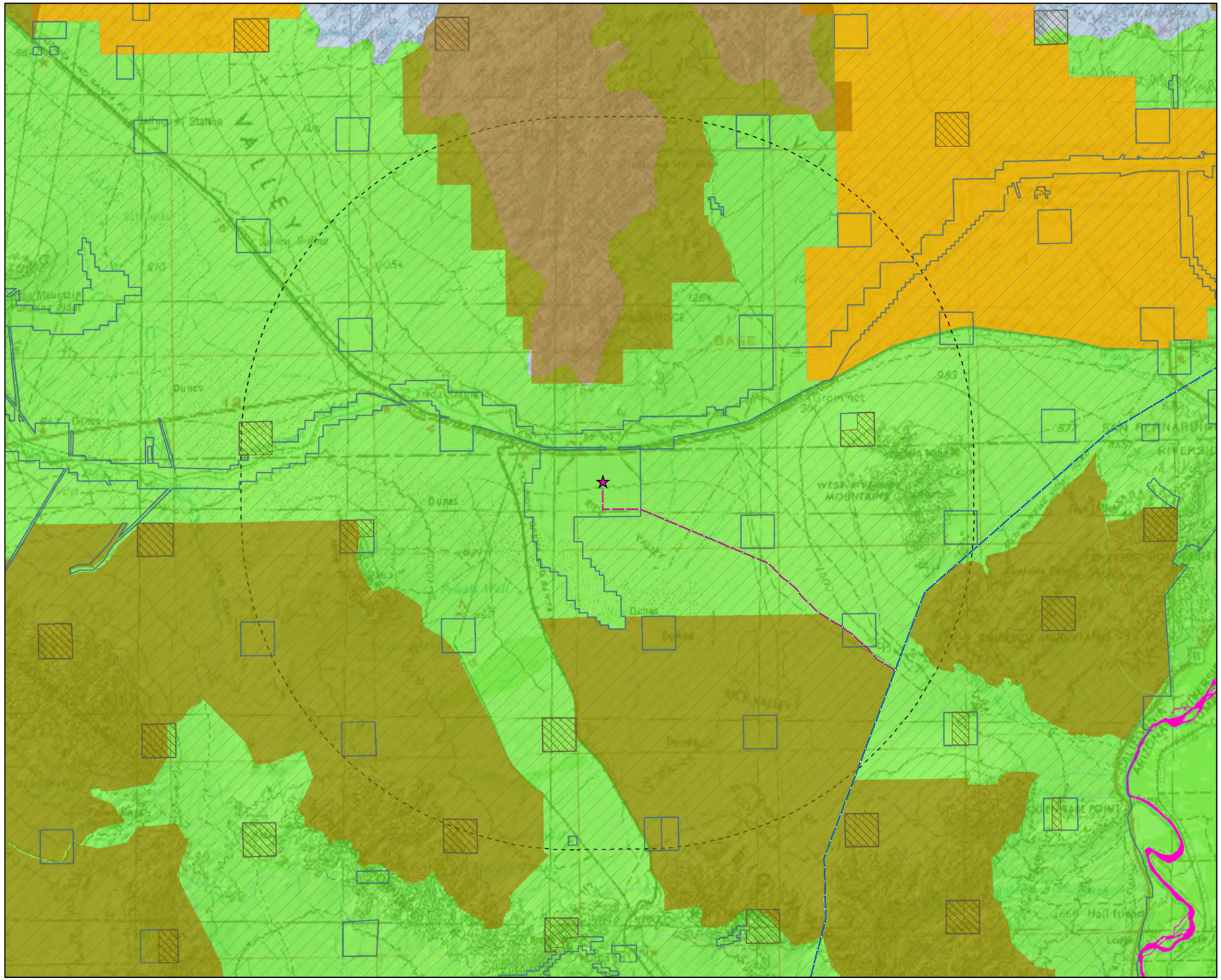
The project footprint will be contained within the 1,504-acre site other than a new generator tie-line that will interconnect to Western Area Power Administration's (Western) 161 kV/230 kV Parker-Blythe transmission line. The generator tie-line extends for 10.0-miles from the RSEP fenceline southeast to the new interconnection substation. The new generator tie-line will be located primarily on BLM land and will include the establishment of approximately 4.6 miles of new dirt service roadway and a new 300 x 400 foot substation at the point of interconnection. The remaining 5.4 miles of generator tie-line will be located adjacent to an existing dirt road (Rice Valley Road), which will serve as its access road.

The entire 1,504-acre solar site will be graded and fenced for security and tortoise exclusion. Offsite stormwater will be directed around the solar site and onsite runoff will be directed toward detention basins located in the southern portion of the heliostat field. For purposes of this analysis, the project area is defined as the area within 1 mile of the site boundaries and within 0.25 mile of the centerline of proposed generator tie-line.

This section describes the biological conditions within the areas of the proposed project, beginning with a regional overview, the vegetation types and habitat present in the project area, a description of wildlife typical to the area, and a discussion of specific special-status species known to occur in the general region.

5.2.1.2 Regional Overview

The Rice Valley is a dry shallow basin with a north-south orientation, bounded by the Turtle Mountains to the north and the Big Maria Mountains to the south. The edges of the Valley are more weakly defined to the west by the Arica Mountains and to the east by the West Riverside Mountains (Figure 5.2-1). These mountain ranges are rugged and provide habitat for Nelson's bighorn sheep (*Ovis canadensis nelsoni*) and desert dry wash woodlands. The sand dunes along the southern end of the Valley are nest site opportunities for golden eagles (*Aquila chrysaetos*) and prairie falcons (*Falco mexicanus*). The Valley is dominated by a



LEGEND

- PROJECT SITE
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- TEN MILE BUFFER

PUBLIC AND CONSERVATION LANDS

- BUREAU OF LAND MANAGEMENT
- STATE LANDS COMMISSION
- BLM WILDERNESS AREA

CRITICAL HABITAT

- RAZORBACK SUCKER
- DESERT TORTOISE

ECOREGIONS

- MOJAVE DESERT
- SONORAN DESERT

Sources:
U.S. Fish and Wildlife Service Critical Habitat Data, August, 2009.
USDA Forest Service Ecoregions of California, 1994.
California Resources Agency, 2005.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 5.2-1
REGIONAL BIOLOGICAL RESOURCES
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

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creosote scrub community interrupted by part of a large sand sheet that stretches from Cadiz to Ward Valley.

The rugged mountain areas, lowland valleys, and dunes provide a diversity of topographical features that provide habitat for a variety of plant and animal species. The lack of California Natural Diversity DataBase (CNDDB) records in the area, in particular for the desert tortoise (*Gopherus agassizii*), is likely due to lack of studies in this area. Dune areas are often occupied by rare and endemic plant and animal species. Due to limited resources and limited recent development pressure in the Rice Valley, much of the local focus has likely been on the surrounding Desert Wildlife Management Areas (DWMA) and Wildlife Management Areas (WMA).

Although considered within the West Basin of the Colorado River, which drains primarily into the Salton Sea Trough, Rice Valley is a sink within no broader hydrological connectivity. Rice Valley has a small watershed and lacks any major washes. Although it is a sink, there are no perennial surface water sources and there is no evidence that a lake ever formed in the Valley during wetter climatic periods (BLM, 2007).

Current activity is primarily concentrated on the north end of the Valley as evidenced by a heavily disturbed east-west linear corridor composed of the Colorado River Aqueduct, the Arizona-California Railroad, and SR 62. These three parallel features present a major north-south barrier to wildlife passage and interrupt local hydrology.

The community of Rice, the Rice Airfield, and the Camp Rice infantry and artillery training camp were also located along this corridor. Today these long-abandoned sites are more evident from aerial photos than on the ground. At least 50 years of volunteer plant revegetation now provide relatively sparse to moderate vegetative cover of these areas. Most of the Rice Valley was likely used for military training exercises in the early 1940s. Also, an Army-Air Force exercise called Joint Exercise Desert Strike took place in this area in 1964.

Off-road enthusiast websites[1] include warnings of unexploded ordinance in the Rice Valley sand dunes. General Patton's soldiers are also credited with one of the few historical records of banded gila monster (*Heloderma suspectum cinctum*) in California from a capture in the Granite Mountains in the adjacent valley to the west (CNDDB, 2009). The Rice Valley dunes are relatively shallow and do not appear to have ever held much appeal to off-road enthusiasts even before the BLM closed the Rice Valley Dunes Off-Highway Recreation Area as part of NECO, partly because of a lack of use. As with much of the area, local mining activity dates back to the late 1800s. Some of these abandoned mines in the local mountains likely provide cavity habitat for bat species.

Other than the development in the northern part of the Valley and ephemeral domestic sheep grazing, today the Rice Valley appears to be subject to light use by humans. Much of the Valley is now contained within the Rice Valley Wilderness Area but, according to the BLM, the Valley presents few recreational opportunities other than spring season wildflower viewing due to the lack of water, sparse vegetation, and mostly level topography (BLM, 2007).

[1] cf., http://www.dirtopia.com/wiki/Rice_Valley_Dunes and http://www.socalfunplaces.com/topic_sanddunes.htm

5.2.1.3 Habitat and Vegetation Communities

Sonoran creosote bush scrub is the most prevalent vegetation community in the Colorado Desert and was the only community type that was identified in the footprint of the proposed solar site and generator tie-line alignment. The dominate shrub is creosote bush (*Larrea tridentata*). Other shrubs species present include burrobrush (*Hymenoclea salsola*), burro-weed (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), and white rhatany (*Krameria grayi*). Herbaceous species present include *Calycoseris wrightii*, pebble pincushion (*Chaenactis carphoclinia* var. *carphoclinia*), desert dandelion (*Malacothrix glabrata*), devil's lettuce (*Amsinckia tessellata*), *Cryptantha nevadensis*, mustard (*Brassica tournefortii*), rattlesnake weed (*Chamaesyce polycarpa* var. *hirtella*), Arizona lupine (*Lupinus arizonicus*), *Camissonia boothii* ssp. *condensata*, plantain (*Plantago ovata*), and Mediterranean grass (*Schismus barbatus*). Rice Valley is characterized by widely spaced shrubs and impressive spring wildflower displays. Other habitat community types in the Rice Valley include sand dunes and desert dry wash woodlands.

Although considered within the West Basin of the Colorado River, which drains primarily into the Salton Sea Trough, Rice Valley is a sink within no broader hydrological connectivity. Rice Valley has a small watershed and lacks any major washes. Streams, washes and playas are dry most of the year, with surface water only present in response to storm events. Although it is a sink, there are no perennial surface water sources and there is no evidence that a lake ever formed in the Valley during wetter climatic periods (BLM, 2007). No wetlands or waters were identified in the project area.

5.2.1.4 Wildlife Species Observed or Expected to Occur

Although dry relative to the general area, flat, and sparsely vegetated, the overall project area provides interesting habitat value based on the context of the surrounding topography, which includes mountains, sand dunes, and dry wash woodlands. The project area provides habitat for lowland desert species such as reptiles and small mammals that are year-round residents of Rice Valley, to migratory birds that may visit the area during their breeding season or as their winter refuge. Despite the constructed barriers at the north end of the Valley, the project area may have significant value as forage and dispersal for species that may occupy Rice Valley on a more ephemeral basis.

The project area provides likely habitat for common reptile species such as the side-blotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), long-nosed leopard lizard (*Gambelia* spp.), rattlesnakes (*Crotalus* spp.), western whiptail (*Cnemidophorus tigris*), and desert horned lizard (*Phrynostoma platyrhinos*). More high-profile management species such as the desert tortoise and the Mojave fringe-toed lizard (*Uma scoparia*) are also expected to occur within the project area.

Common desert mammals such as Audubon's cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), and whitetail antelope squirrel (*Ammospermophilus leucurus*) are expected to be found and others such as bobcat (*Felis rufus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereiagentueus*), and kit fox (*Vulpes macrotis*) are likely frequent visitors if not residents of Rice Valley. Burro deer (*Odocoileus hemionus crooki*), a species subject to BLM management, may also move through the area for forage or dispersal.

The project area likely hosts a large variety of bird species common to the Eastern Colorado Desert. These include the black-throated sparrow (*Amphispiza bilineata*), Brewer's sparrow (*Spizella breweri*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), Anna's hummingbird (*Calypte anna*), Costa's hummingbird (*Calypte costae*), black-tailed gnatcatcher (*Polioptila melanura*), blue-gray gnatcatcher (*Polioptila caerulea*), rock wren (*Salpinctes obsoletus*), canyon wren (*Catherpes mexicanus*), phainopepla (*Phainopepla nitens*), northern mockingbird (*Mimus polyglottos*), western kingbird (*Tyrannus* verticalis), horned lark (*Ermophila alpestris*), verdin (*Auriparus flaviceps*), mourning dove (*Zenaidura macroura*), Gambel's quail (*Lophortyx gambelii*), turkey vulture (*Cathartes aura*), lesser nighthawk (*Chordeiles acutipennis*), poorwill (*Phalaenoptilus nuttallii*), common raven (*Corvus corax*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*). The burrowing owl (*Athene cunicularia*) is a particular management concern and is likely to occur in the project area.

The Southern Mojave metapopulation of the Nelson's bighorn sheep is a major management concern in the Colorado Desert with entire portions of their historic range now unoccupied. The Little Maria, Big Maria, and Riverside mountains that surround Rice Valley were once occupied by this large ungulate and California Department of Fish and Game (CDFG) may eventually plan to repopulate these areas if reestablishment does not occur from source populations in the nearby Granite and Turtle mountains (BLM, 2007). The aqueduct, railroad, and SR 62 are major barriers and risks to bighorn sheep that might move from the Turtle Mountains south through Rice Valley. The southwestern portion of the original Rice Valley Grazing Allotment was retired due to its proximity to the Palen Mountain bighorn sheep herd and it is possible that the bighorn from the west or north could move through the Rice Valley. There is a strong potential that the mountains surrounding Rice Valley will eventually be reoccupied by bighorn sheep.

5.2.1.5 Biological Resources Survey Methods

Protocol surveys for desert tortoise and reconnaissance surveys for other wildlife species were conducted by Sundance Biology, Inc. under the direction of Ms. Mercy Vaughn. Ms. Vaughn is a wildlife biologist and co-owner of Sundance Biology, Inc. She holds a B.A. degree in ecology and evolutionary biology from the University of Arizona. Ms. Vaughn has 19 years of experience as a field biologist and biological resources consultant, including 2.5 years of continuous academic research on the population density, age structure, movement patterns and natural history of the desert tortoise on Desert Peak in Southeastern Arizona. Ms. Vaughn and her associates have surveyed hundreds of miles of desert tortoise transects in the Mojave and Sonoran deserts on behalf of permitting efforts for project development. She is authorized to handle and attach radio telemetry units to desert tortoises by the U.S. Fish and Wildlife Service (USFWS).

Intensive botanical surveys were conducted by Sycamore Environmental, Inc. under the direction of R. John Little. Dr. Little holds a Ph.D. in botany from Claremont Graduate School, Rancho Santa Ana Botanical Garden. He has more than 28 years of experience as a project manager and biological resources consultant for development projects. He is a past president of the California Botanical Society and has served on the board of directors of the California Native Plant Society (CNPS). Dr. Little's taxonomic work includes preparing a Flora of Starr Ranch in southern California, research in the genus *Viola* and preparation of the Violaceae and Frankeniaceae family treatments for the *Jepson Manual: Higher Plants of*

California, the *Vascular Plants of Arizona,* and the *Flora of the San Juan Basin*, and preparation of the *Viola* and *Hybanthus* treatments for the *Flora of North America*.

Resumes for Dr. Little and Ms. Vaughn are found in Appendix 5.2A. The wildlife resources impact assessment in this AFC was prepared by CH2M HILL biologist John Cleckler. Mr. Cleckler's resume is also included in Appendix 5.2A. The botanical and hydrological impact assessment was prepared by Sycamore Environmental, Inc. The botanical resources and desert tortoise/wildlife surveys are found in Appendix 5.2B and 5.2C, respectively.

Aerial photographs and U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Rice, Grommet, Big Maria Mountains Northwest) were used to identify potential wetland and water resources in the project area. In addition, drainage patterns were noted by the botanical field survey crews as they conducted the surveys, and ephemeral washes were mapped using field observations and aerial photography.

Lists of special-status plant and animal species were compiled for the project area based on the CNDDB (CNDDB, 2009), USFWS (2009a and 2009b), BLM (BLM, 2009a and 2009b), and project-specific onsite field surveys. These comprehensive lists of special-status species are provided in Appendix 5.2B.

Tables 5.2-1 and 5.2-2 are lists of the special-status species that were evaluated as potentially occurring in the project area. Table 5.2-2 is found at the end of this section because of its size. The reference information is based on known occurrences, historical records, or the presence of suitable habitat for any given life stage of a particular species. The known locations of special-status species identified in the CNDDB records within a 5-mile range of the project area are shown on Figure 5.2-2. The lists include species listed as threatened or endangered that have special requirements under the Federal Endangered Species Act (FESA) (USFWS, 1970) and the California Endangered Species Act (CESA) (CDFG, 2003) and other non-listed special-status species that could become listed in the future. The tables also include the habitat types that may support these species in the project area.

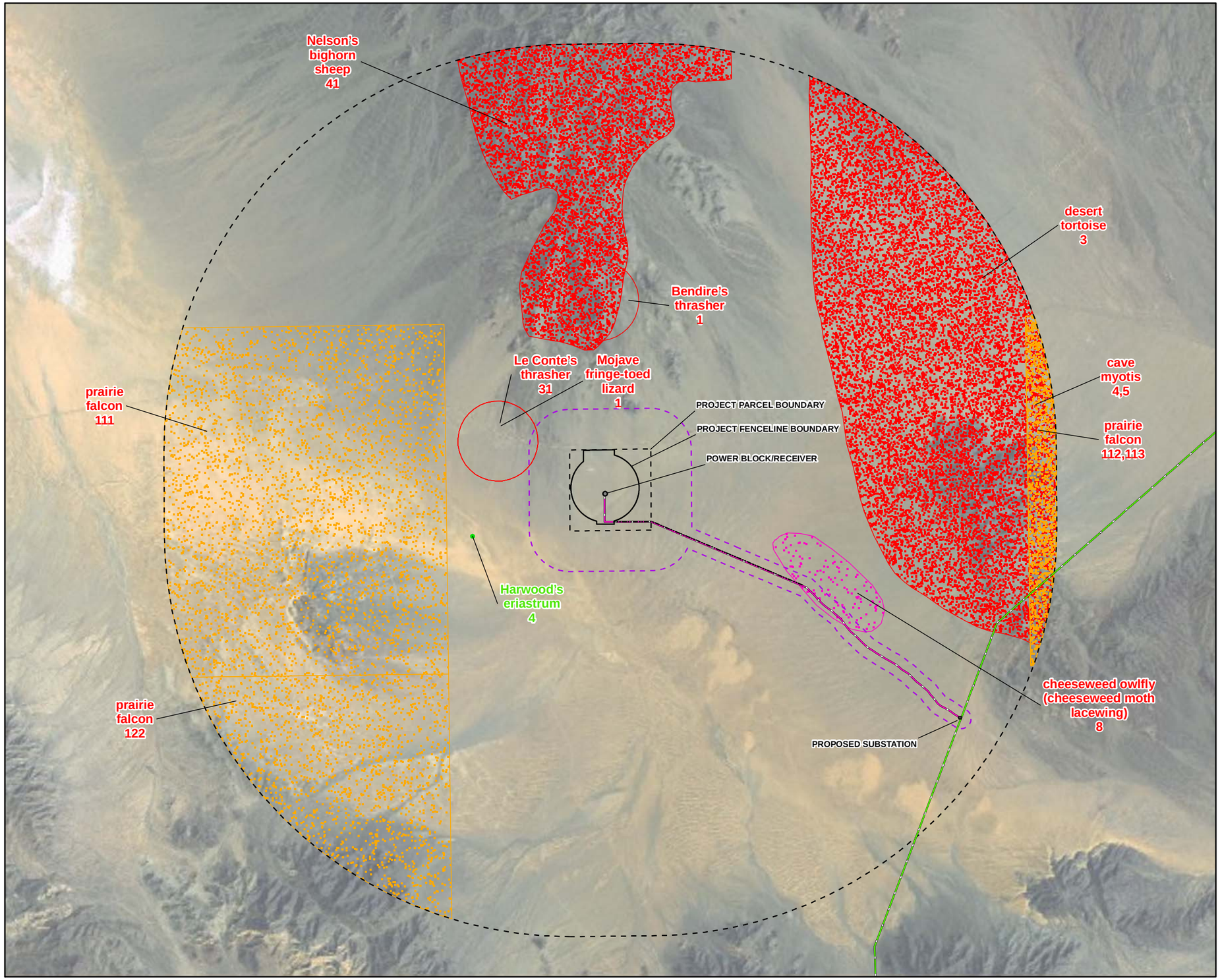
5.2.1.5.1 Special-Status Plant Survey Methods

Potential to Occur

File data from USFWS, CNDDB, CDFG, and BLM were used to determine the special-status plants that could occur in the project area. Field surveys were conducted by Sycamore Environmental botanists to determine if habitat for special-status species identified in the file data was present in the project area. Special-status plant species for which suitable habitat is present in the project study area are listed in Table 5.2-1. The assessment was conducted as follows:

A plant was considered to be of special-status if it met one or more of the following criteria:

- Federally or state-listed, proposed, or candidate for listing, as rare, threatened or endangered (USFWS, 1996b; CNDDB, 2009) Designated by the CNPS in its Inventory of Rare and Endangered Plants of California (CNPS, 2009)
- Designated by the BLM as a sensitive plant on the Palm Springs and Needles field office lists (BLM, 2009a and 2009b).



LEGEND

- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- POWER BLOCK/RECEIVER
- PROJECT FENCELINE BOUNDARY
- PROJECT PARCEL BOUNDARY
- PROPOSED SUBSTATION
- 10 MILE BUFFER
- BUFFER *

CNDDB DATA AUGUST 2009

- PLANT (80M)
- ANIMAL (SPECIFIC)
- ANIMAL (NON-SPECIFIC)
- ANIMAL (CIRCULAR)
- SENSITIVE EO'S (COMMERCIAL ONLY); 99909

Notes:
1. Source: California Dept. of Fish and Game, California Natural Diversity Database (CNDDB) August, 2009.
2. * 1 mile buffer around project site and 0.25 miles around transmission line.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 5.2-2
SPECIAL-STATUS SPECIES WITHIN THE SURVEY AREA
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

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TABLE 5.2-1
Special-Status Plants and Natural Communities With the Potential to Occur in the RSEP Area

Special-Status Plant Species	Common Name	Federal Status[a]/BLM[b]	State Status[a]/CNPS[b]	Source[c]
Abronia villosa var. *aurit a*	Chaparral sand-verbena	—	—/1B.1	2, 5
Astragalus insularis var. *harwoodii*	Harwood's milk-vetch	—	—/2.2	5
Astragalus lentiginosus var. *coachellae*	Coachella Valley milk-vetch	E	—/1B.2	1, 3
Astragalus tricarinatus	Triple-ribbed milk-vetch	E	—/1B.2	1, 3
Coryphantha alversonii (=*Escobaria vivipara* var. *alversonii*)	Foxtail cactus	—	—/4.3	2
Eriastrum harwoodii	Harwood's eriastrum	—	E/1B.2	2
Linanthus maculatus	Little San Bernardino Mountains linanthus	—/ BLM	—/1B.2	3

[a]**Listing Status** Federal status determined from USFWS letter (USFWS, 2009a and b). State status determined from CDFG (2009a, b, and c). Codes used in table are:

E = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare; ***** = Possibly extinct.

[b]**Other Codes** Other codes determined from CDFG (2009a, b, and c), CNPS (2009), CDFG (2009 a and b), and BLM status determined from BLM (2009a and b). Codes used in table are as follows:

CNPS List (plants only): **1A** = Presumed Extinct in CA; **1B** = Rare or Endangered (R/E) in CA and elsewhere; **2** = R/E in CA and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution

CNPS List Decimal Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); **.2** = Fairly endangered in CA (20-80% of occurrences threatened); **.3 =** Not very endangered in CA (< 20% of occurrences threatened or no current threats known).

BLM: BLM Sensitive

[c]**Sources 1** = From USFWS letter (USFWS, 2009a and b). **2** = From CNDDB. **3** = BLM List for Palm Springs District (BLM, 2009a). **4** = BLM List for Needles District (BLM, 2009b). **5 =** Observed or included by Sycamore Environmental

Lists of CDFG special-status species reviewed included the Special vascular plants, bryophytes, and lichens list (CDFG, 2009a) and State and Federal listed endangered, threatened, and rare plants of California (CDFG, 2009b).

A species was determined to have potential to occur within the project site if its known or expected geographic range includes the project site or the vicinity of the project site, and if its known or expected habitat is found within or near the project site.

A search of the CNDDB (2 May 2009 version; CDFG 2009c) was conducted for the Rice, Grommet, and Big Maria Mountains Northwest quadrangles and the 12 adjacent USGS quads to determine known records of special-status species in or near the project area. Table 5.2-3 lists the USGS quads evaluated.

The project area is located in the portion of Riverside County under jurisdiction of the Carlsbad Field Office of the U.S. Fish and Wildlife Service (CFWO). San Bernardino County is located immediately north of the RSEP and is in the area under the jurisdiction of the Ventura Field Office of the U.S. Fish and Wildlife Service (VFWO). Because the RSEP is immediately adjacent to San Bernardino County, Sycamore Environmental obtained lists from both the CFWO and VFWO for Riverside and San Bernardino counties that identify

federal-listed plant species that potentially occur in or could be affected by projects in Riverside and San Bernardino (USFWS, 2009a; 2009b).

TABLE 5.2-3
USGS Quadrangles Evaluated for the RSEP Botanical Surveys

Sablon	Horn Springs	Vidal Northwest	Vidal Junction
Arica Mountains	**Rice**	**Grommet**	Vidal
Little Maria Mountains	Styx	**Big Maria Mountains Northwest**	Big Maria Mountains Northeast
Not applicable	Inca	Big Maria Mountains Southwest	Big Maria Mountains Southeast

Note: The quadrangles are listed in geographical position. Quadrangle names in bold are those that contain project features

The generator tie-line corridor is located in the area of responsibility of Palm Springs-South Coast Field Office of the BLM. The area immediately north of the RSEP is in the area of responsibility of Needles Field Office of the BLM. Because the project area is immediately adjacent to the area of responsibility of the Needles Field Office, Sycamore Environmental obtained lists from both the Palm Springs and Needles field offices that identify special-status plant species that potentially occur in or could be affected by projects in the region (BLM, 2009a; 2009b). Appendix D of the botanical survey report (Appendix 5.2B) lists special-status plants that were considered for inclusion in Table 5.2-1 because their geographic range includes the project site or its vicinity, but were rejected because their known or expected habitats are not found within or near the project site.

Reference Plant Surveys

The closest populations of known special-status species that could potentially occur in the study area were evaluated just prior to conducting the field surveys. Three species were identified: Harwood's eriastrum (*Eriastrum harwoodii*), chaparral sand-verbena plants (*Abronia villosa* var. *aurita*), and foxtail cactus (*Coryphantha alversonii*).

It was determined that the closest population of Harwood's eriastrum (*Eriastrum harwoodii*) is located 2.4 miles west of the project area. This reference population was visited by project botanists to assess this species' phenology. At the same location where *Eriastrum harwoodii* occurred, a large population of chaparral sand-verbena plants (*Abronia villosa* var. *aurita*) was also observed. Both species were in flower and fruit. An attempt was made on March 25, 2009 to find a reference population of foxtail cactus (*Coryphantha alversonii*) that had been recorded along Blythe-Rice Road (aka Meder Road; Midland-Rice Road). However, no evidence of this population was found at the previously known location. The area along Blythe-Rice Road between SR 62 and the *Coryphantha* record was being heavily grazed by hundreds of sheep on March 25, 2009. Because all cacti in the study area were identifiable to genus, it was not necessary to find another reference population to determine the phenology of *Coryphantha*. This species was not observed in the study area.

There are no known reference populations of Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*), triple-ribbed milk-vetch (*Astragalus tricarinatus*), or Little San Bernardino Mountains

linanthus (*Linanthus maculatus*) on the Rice, Grommet, Big Maria Mountains Northwest, or the 12 surrounding quads (CNDDB, 2009). Thus, there was no reason to attempt to conduct reference surveys for these species.

Rare Plant Protocol Survey Methods

The botanical surveys were conducted following the guidelines set forth by USFWS (1996),CDFG (2000), and CNPS (2001). Scientific nomenclature follows Hickman, ed. (1993). The BLM is in the process of preparing a protocol for rare plant surveys, but the draft survey protocol has not been completed (pers. comm., C. Grant).

Information on the biology, distribution, taxonomy, legal status, and other aspects of the special-status species was obtained from documents on file in the library of Sycamore Environmental. Standard references used for the biology and taxonomy of plants included Abrams (1923-1960); CNPS (2009); CDFG (2007); Hickman, ed. (1993); Baldwin et al. (2002); Munz (1959; 1974); and Sawyer and Keeler-Wolf (1995). On-line references included CalPhotos (2009) and the Consortium of California Herbaria (2009a).

Botanists walked parallel transects throughout the entire 2,560-acre RSEP site to search for special-status plants. Botanists also walked parallel transects throughout the entire 10.0-mile-long, 300-foot-wide (362.6 acre) generator tie-line corridor to search for special-status plants. The survey was conducted by four (plant site) or three (generator tie-line) botanists. The botanists maintained an even spacing between themselves while walking the transects. Each botanist searched ahead and to their side as they walked. Transects in the western-third of the project area were oriented in an east/west alignment. Transects in the remaining portion of the project area were oriented in a north/south alignment.

One botanist carried a sub-meter accurate Trimble GeoXT global positioning system (GPS) unit to maintain the correct bearing for the transect. When a potential special-status species was observed by one of the botanists, the other botanists would converge at the location to discuss and evaluate the plant. Data collected at these locations included taking photographs, mapping the location with the GPS, collecting a specimen (or photographing it), and searching similar habitat in the vicinity for additional specimens. When a small, immature chaparral sand-verbena plants was encountered at two locations, the plants were not collected because fruits are needed for positive identification. Photographs were taken instead.

The location of survey area boundaries for the proposed plant site were determined using USGS section monuments located in the field and geographic information system (GIS) property boundary and generator tie-line route data uploaded onto a Trimble GeoXT GPS unit. The entire project site and generator tie-line corridor were surveyed intensively for rare plants. Locations of the special-status species in the project area were mapped using a sub-meter accurate Trimble GeoXT GPS unit.

All plant species observed were either identified on site or were collected for later identification. Voucher specimens were collected for nearly every species encountered. These specimens were carefully pressed and labeled for subsequent review and identification. Standard floras including Abrams (1923-1960); Hickman, ed. (1993); Baldwin et al. (2002); and Munz (1959; 1974) were used to identify the voucher specimens. On-line references used included CalPhotos (2009) and the Consortium of California Herbaria

(2009a). In addition, the herbarium at University of California (UC) at Berkeley was visited to examine specimens of *Abronia villosa* var. *aurita* to compare them with the specimens collected at the reference site on Blythe-Rice Road. Voucher specimens of the special-status species and duplicates of non-special-status species will be deposited at the UC Berkeley and UC Davis herbaria. CNDDB, California Native Species Field Survey Forms were completed for special-status species and will be submitted to CNDDB for entry into the database.

Fieldwork was conducted during late March 2009 to coincide with the evident and identifiable period of special-status plants with the potential to occur in the project area. Surveys were conducted between March 23 and March 27 and on May 8. Figure 5.2-3 shows vegetation and habitat types within 1 mile of the project site and one quarter-mile of the generator tie-line, within which the surveys took place.

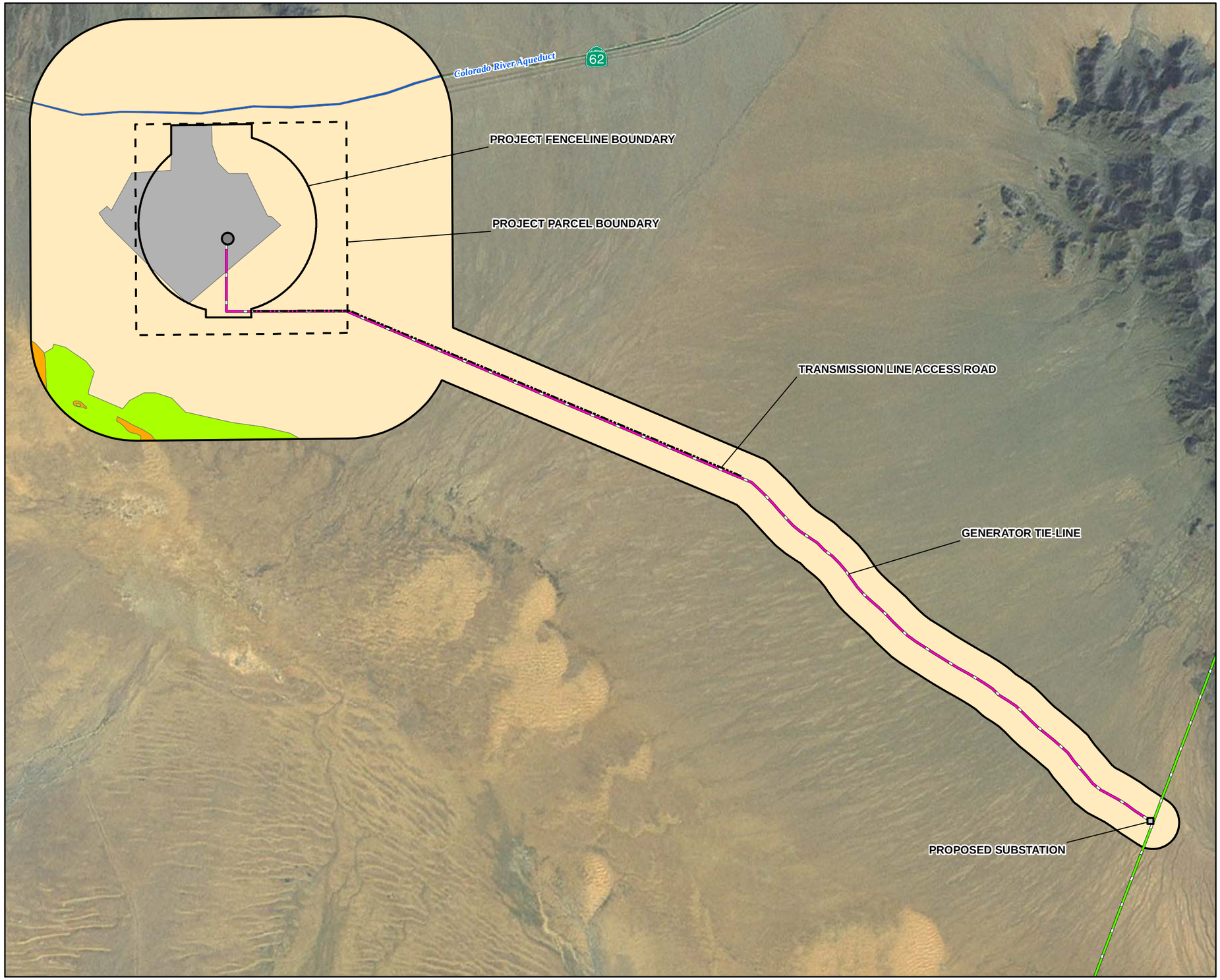
The historic (1908-present) average precipitation for the Blythe gauge from September through March is 2.44 inches (CDWR, 2009). From September 2008 through March 2009, the Blythe gauge received approximately 1.41 inches of rain (CDWR, 2009). Although the 2009 rainfall was 58 percent of the historical average, a large number of annual species were observed (53) in the project area. In addition, two of the four listed annual species that could occur in the study area were found during the survey. This demonstrates that the total rainfall recorded at Blythe from September through March 2009 did not prevent the germination of annual species in the Rice study area.

5.2.1.5.2 Special-Status Wildlife Species Survey Methods

Pre-field Investigation

Knowledge of the general area along with information provided in the NECO as well as from the CNDDB, BLM, USFWS, and CDFG, resulted in a list of special-status wildlife species that the biologists considered for analysis. Their potential for occurrence within the project area or to be affected by the proposed project was considered dependent on available suitable habitat on, or adjacent to, the project site.

Species that are federal or state listed as threatened or endangered, candidates for listing, species of special-concern, or sensitive by BLM are compiled in Table 5.2-2. (Because of the length of this table, it is included at the end of this section). A total of 45 special-status wildlife species, including one invertebrate, one mollusk, eight reptile, 23 bird, and 12 mammal species, were identified during the literature search and biological field surveys as known to be present or potentially occurring within or in the vicinity of the project area. More specifically, the list includes animal species that were considered in the analysis of the effects of the proposed project. This list includes those species covered in the NECO. Rice Valley has the potential to provide all the life history needs for some of these animal species while others, such as migrating birds, may be limited to a more ephemeral presence. Based on the distribution information provided in the NECO, the Colorado Desert fringe-toed lizard, flat-tailed horned lizard, and Yuma clapper rail (*Rallus longirostris yumanensis*, Federal Endangered, California Threatened) included in Table 5.2-2 are not expected to occur within the Rice Valley and are unlikely to be directly or indirectly affected by the proposed project and were therefore removed from further consideration.



LEGEND

- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- PROJECT PARCEL BOUNDARY
- PROJECT FENCELINE BOUNDARY
- PROPOSED SUBSTATION
- POWER BLOCK/RECEIVER
- BUFFER

VEGETATION TYPE

- ACTIVE SAND DUNE
- COLORADO RIVER AQUEDUCT
- DISTURBED AREA/SONORAN CREOSOTE BUSH SCRUB
- SONORAN CREOSOTE BUSH SCRUB
- STABILIZED SAND DUNE

Notes:
1. Source: Sycamore Environmental Consultants, Inc. Field Survey, 2009. California Department of Forestry and Fire Protection, Multi-source Land Cover Data (v02_2), 2002.
2. 1 mile buffer for Project site, 1/4 mile buffer around proposed transmission line.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 2,500 5,000
Feet

FIGURE 5.2-3
RSEP VEGETATION MAP
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

CH2MHILL

SAC\\ZION\SACGIS\PROJ\SOLARPROJECTS\SOLARRESERVE_377714\MAPFILES\HABITATMAP.MXD MHASKELL MCLAY1 10/12/2009

Special-status animal species that may require additional surveys and project analysis include the desert tortoise, the burrowing owl, and nesting birds. The results of these surveys will provide additional guidance for final placement of project features and appropriate avoidance and/or minimization measures. A summary of these species' status, life history, and analysis of their potential to be affected by the proposed RSEP are included in Table 5.2-2 and as follows. Limited information is given on the animal species that are considered unlikely to be affected primarily based on their current recognized distribution.

Species with Potential to Occur

Invertebrates

The **cheeseweed owlfly** or cheeseweed moth lacewing (*Oliarces clara*, BLM Sensitive Species) is a unique, rare, and poorly understood insect. It is the only member of the genus Oliarces in North America. All other representatives are found in Australia. In North America, the distribution of the cheeseweed owlfly is thought to be restricted to the Colorado River Valley in southwestern Arizona, southern California, and Clark County Nevada.

This insect is typically associated with creosote bush scrub communities on or near bajadas adjacent to mountains, hilltops, or rocky outcrops. The majority of this lacewing's life cycle is spent in the larval phase presumably feeding on the roots of the creosote. They then emerge from the sand between April and May to complete a short adult phase, which is primarily limited to mating followed by laying eggs in the sand near a creosote bush. The adults are thought to congregate above prominent points such as mountain or hill tops to engage in a "till topping" mating practice. It is likely that the adults never feed and die soon after eggs are laid.

Appropriate bajada creosote habitat is located in the Rice Valley and the CNDDB includes a record of this species at the base of the West Riverside Mountains, approximately 1.6 miles east of the proposed solar site and immediately adjacent to if not just within the proposed generator tie-line corridor. This species has the potential to occur in the proposed generator tie-line corridor.

Mollusks

Little is known about **white desert snail** (*Eremarionta immaculata*), which is thought to be endemic to the Riverside Mountains. As a mollusk in an arid environment, the shells of dead individuals are more likely to be found than the live snails. This species is typically associated with rocky areas with microclimates that retain sufficient moisture. Moss and lichens can be indicators of appropriate habitat. Like many other snails, the white desert snail will withdraw into its shell when seasonal conditions become too dry.

The Riverside Mountains are approximately 6.2 miles from the proposed solar site and approximately 4 miles from the proposed generator tie-line corridor. The RSEP footprint does not include appropriate rocky habitat where this species would be likely to occur. This species is not further considered in the analysis of the project due to the unlikelihood of the construction and operation having an adverse effect on the white desert snail or its potential habitat.

Reptiles

Of the purported 26 credible records of the **banded Gila monster** (BLM Sensitive Species and California Species of Special Concern) in California, it is intriguing that one of those observations were credited to troops involved in training maneuvers in preparation for World War II (CNDDB, 2009). They found a Gila monster in the Granite Mountains, approximately 17 miles southwest of the propose RSEP. At the time, these troops were likely based at the infantry training base adjacent to the Rice Airfield.

The banded Gila monster is the only venomous lizard in North America and the northern extent of their range includes the southwestern corner of Utah through southern Nevada and into eastern Riverside and San Bernardino counties. The distribution then extends south into northern Mexico. It is typically associated with rocky areas in high mountain ranges often linked with riparian areas.

The proposed RSEP footprint does not include the rocky habitat where this species might be found but it is interesting to consider that the Gila monster may still inhabit the surrounding mountains. This species is not further considered in the analysis of the project due to the unlikelihood of the construction and operation having an adverse effect on the banded Gila monster or its potential habitat.

The **chuckwalla** (*Sauromalus obesus*) is the largest iguanid lizard in the United States and is closely associated with areas of rocky, tallus, or scree habitat. The RSEP footprint does not include areas where the chuckwalla would be expected to occur; however, the species is likely to be found in the Arica Mountains to the west and the West Riverside Mountains to the east of RSEP. Appropriate habitat does occur within the mile buffer from the proposed generator tie-line interconnection but proposed activities are unlikely to have direct or indirect effects on these areas. This species is not further considered in the analysis of the project due to the unlikelihood of the construction and operation having an adverse effect on the chuckwalla or its potential habitat.

The Colorado Desert fringe-toed lizard and the **Mojave fringe-toed lizard** (*Uma scoparia*, BLM Sensitive Species and California Species of Concern) are two of five fringe-toed species in the United States. These two species share a close association with and are particularly adapted for windblown sand habitat. They are primarily expected in dune areas but are also found in flats, riverbanks, washes, and hummocks with sufficient fine, loose sand for burrowing.

Although similar, the two species are separated geographically but both occur within the NECO Planning Area. The range of the Colorado Desert fringe-toed lizard does not include the Rice Valley or the dune system that runs through the Rice Valley. This species does occur within the NECO Planning Area near the Algodones Dunes. Therefore, there will be no further discussion of the Colorado Desert fringe-toed lizard in this analysis.

The distribution of the Mojave fringe-toed lizard includes sandy areas from the southern end of Death Valley south to the Colorado River and into western Arizona. The NECO distribution map for the Mojave fringe-toed lizard includes all of the RSEP area (BLM, 2002) but the species is most likely to be encountered in the dune areas adjacent to the project.

The lizard was observed during the April/May 2009 desert tortoise survey in dune habitat approximately 0.75 mile from the proposed project boundary. The associated dune habitat is

not within the proposed project footprint. However, as noted by Sundance Biology, this lizard may occasionally move into the footprint by way of the sandy washes (Appendix 5.2C). Fringe-toed lizards are threatened by off-road travel on dune habitat and any features or activities that result in the compaction, stabilization of sand or otherwise disrupt the transport of blowsand. There is concern regarding the proposed project's potential indirect effects on the local sand transport on which the dune system relies.

The **desert rosy boa's** (*Lichanura trivirgata*, BLM Sensitive Species) range includes desert and chaparral areas throughout the southwestern United States, Baja California, and the Sonoran Desert in Mexico. This snake is often found in areas with rock outcrops or granitic rock and high sun exposure. The NECO distribution map for the rosy boa includes the entire RSEP area and only excludes the dune areas of the Rice Valley (BLM, 2002).

On August 4, 1989, USFWS published an emergency rule listing the Mojave Desert population of the **desert tortoise** as endangered (USFWS, 1989). The USFWS final rule, dated April 2, 1990, determined the Mojave population of the desert tortoise to be threatened under the FESA (USFWS, 1990a). The tortoise was listed in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to increased predation by common ravens, collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the listing. The tortoise was state-listed in California as threatened in 1989.

The Desert Tortoise Recovery Plan was released on June 28, 1994 (USFWS, 1994b) and a draft revised Recovery Plan was issued in 2008 (USFWS, 2008). As part of the recovery strategy, the USFWS designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah (USFWS, 1994b). The plan recommends implementation of reserve-level protection of desert tortoise populations and habitat within DWMAs, while maintaining and protecting other sensitive species and ecosystem functions. DWMAs were developed to provide "reserve level" protection for the tortoise (USFWS, 1994b). Critical habitat was designated to identify areas containing key biological and physical attributes that are essential to the desert tortoise's survival and conservation, such as space, food, water, nutrition, cover, shelter, and reproductive sites. As part of the actions needed to accomplish the recovery of this species, land management goals within all DWMAs include restriction of human activities that adversely affect desert tortoises (USFWS, 1994b).

The desert tortoise is a long-lived reptile with a high domed shell, stocky, elephant-like limbs, and a short tail. *Gopherus agassizii* is one of four tortoise species found in North America. The desert tortoise's range includes the Mojave Desert region of Nevada, southern California, and the southwestern corner of Utah, and the Sonoran Desert region of Arizona and northern Mexico. The desert tortoise is divided into two primary populations, the Mojave and the Sonoran. The Mojave population is located north and west of the Colorado River and the Sonoran includes all tortoises south and east of the river in Arizona and Mexico (Averill-Murray and Swann, 2002). The Mojave population is primarily found in creosote bush (*Larrea tridentata*) dominated valleys with adequate annual forbs for forage.

Adult desert tortoises typically weigh 10 pounds or more and reach lengths of 11 to 16 inches (USFWS, 1994). Desert tortoises have been known to live up to 70 years or more but the typical adult likely lives 25 to 35 years (USFWS, 1994). Like many long-lived species, the tortoise has a relatively slow rate of reproduction. Sexual maturity is primarily size dependent (≥ 180 to 208 millimeters) with tortoises typically achieving breeding status at 15 to 20 years of age. Mating generally occurs in the spring (mid-March to late-May), with nesting and egg-laying occurring between April and July (Rostral et al., 1994; USFWS, 1994b). Desert tortoises have also been known to lay eggs in the fall (USFWS, 1994b). The female tortoise typically lays eggs in an earthen chamber approximately 2.7 to 3.9 inches deep, excavated near the mouth of a burrow or under a shrub (Woodbury and Hardy, 1948; USFWS, 1994b). Following egg-laying, the female covers the eggs with soil. Clutch sizes range from two to 14 eggs, with an average of five to six eggs (Luckenbach, 1982). Females can produce as much as three clutches in a season. Eggs are subject to predation from a variety of predators, and female tortoises have been observed apparently defending their clutches from Gila monsters (Gienger and Tracy, 2008). The eggs typically hatch 90 to 120 days later, between August and October. Hatchlings are born with a yolk sac that protrudes through the plastron. Eggs incubated above 89.3 degrees Fahrenheit (°F) develop into females and males are the result of cooler incubation (USFWS, 1994b). This yolk sac typically sustains the animal for up to six months. Hatchling desert tortoises often go into hibernation in the late fall but often emerge for short active periods on warm sunny or rainy days (Luckenbach, 1982).

Desert tortoise activity is seasonally variable. Peak adult and juvenile desert tortoise-activity in California typically coincides with the greatest annual forage availability during the early spring and summer. However, tortoises will emerge from their burrows at any time of year when the weather is suitable. Hatchling desert tortoises typically become active earlier than adults and their greatest activity period can be expected between late winter and spring. During active periods, tortoises feed on a wide variety of herbaceous plants, including cactus, grasses, and annual flowers (USFWS, 1994b).

Annual home ranges have been estimated between 10 and 450 acres and are age, sex, seasonal, and resource density dependent (USFWS, 1994b). Although adult males can be aggressive toward each other during the breeding season, there can be a great deal of overlap in individual home ranges (USFWS, 1994b). More than 1.5 square miles of habitat may be required to meet the life history needs of a tortoise and individuals have been known to travel as much or more than 7 miles at a time (BLM, 2001). In drought years, tortoises can be expected to wander farther in search of forage.

During their active period, desert tortoises retreat to shallow burrows and aboveground shade to escape the heat of the day. They will also retire to burrows at nighttime. Desert tortoises are primarily dormant in winter in underground burrows and sometimes congregate in communal dens.

Tortoise population densities have changed over time, resulting in their federal and state listing. Estimated densities of the total desert tortoise population in the 1980s ranged from 10 to 84 individuals per 0.5 hectare (Boarman, 2002). The same estimate for tortoises less than 140 millimeters in length ranged from 2 to 63 individuals for every 0.5 hectares, with the realization that juvenile tortoises are more difficult to find and likely underrepresented in population estimates based solely on survey data. As presented in Boarman (2002), juvenile

survivorship of 75 percent per year may be necessary to maintain population stability and survivorship of upwards to 97 percent may be required for the recovery of a declining population, making raven predation a major cause for concern.

The RSEP site is located within the NECO Planning Area Boundary where the BLM classifies the area as Category III tortoise habitat (BLM, 2002). RSEP is also located approximately 6.2 miles west of the Chemehuevi DWMA and the Chemehuevi critical habitat unit. The project area and much of the surrounding Rice Valley contains suitable and occupied desert tortoise habitat.

Desert tortoise presence/absence surveys were performed for the RSEP between April 18, 2009 and May 18, 2009 by Sundance Biology, Inc. The surveys were performed as outlined in the USFWS's *Survey Protocol for Non-Federal Action that may Occur within the Range of the Desert Tortoise* (USFWS, 1992).

The **Couch's spadefoot toad**'s (*Scaphiopus couchi*, BLM Sensitive Species and California Species of Concern) range includes central Texas and southwestern Oklahoma through Baja California. It is found in southeastern California along the Arizona border in Imperial, Riverside, and San Bernardino counties and in the Chemehuevi Wash, east of the Rice Valley, south to Ogilby in Imperial County.

Throughout its distribution, the toad is associated with desert washes, desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats and requires friable sand for burrowing. It also takes shelter from the heat under logs and debris. Like many amphibians, the spadefoot toad needs temporary pools that hold water for at least 10 to 12 days for successful metamorphism of tadpoles. They are known to use runoff basins at the base of sand dunes for breeding and are often found breeding in artificial impoundments such as stock tanks or roadside ditches.

Couch's spadefoot toad is primarily nocturnal and active in the spring and early summer after rain events. Termites are typically a large part of their diet and they are thought to be able to survive an entire year off of one large feeding episode. They spend most of the year inactive and underground and typically complete local seasonal migrations from winter refuge to breeding ponds. Breeding occurs quickly after rains, which most likely take place between April and August.

This species has a relatively small home range and it is unlikely that there are any sufficiently inundated pools or ditches in the general RSEP vicinity to support breeding. The NECO distribution map for Couch's spadefoot toad includes the eastern half of the proposed solar site and the entire proposed generator tie-line corridor. The NECO distribution map for this species appears to be based off a buffer from the Colorado River.

Birds

The following list of bird species from Table 5.2-4 are unlikely to occupy the Rice Valley as residents or seasonally for breeding or wintering habitat but may pass through the Rice Valley during migration or local dispersal: the **elf owl** (*Micrathene whitneyi*, California Endangered), **western yellow-billed cuckoo** (*Coccyzus americanus occidentalis*, Federal Candidate and California Endangered), **Gila woodpecker** (*Melanerpes uropygialis*, California Endangered), **gilded flicker** (*Colaptes chrysoides*, California Endangered), **hepatic tanager**

(*Piranga flava*, California Species of Concern), **vermilion flycatcher** (*Pyrocephalus rubinus*, California Species of Concern), **yellow-breasted chat** (*Icteria virens*, California Species of Concern), **willow flycatcher** (*Empidonax trailii*, California Endangered), **southwestern willow flycatcher** (*Empidonax trailii extimis*, Federal Endangered and California Endangered), **brown-crested flycatcher** (*Myiarchus tyrannulus*), **mountain plover** (*Charadrius montanus*, proposed Federal Endangered, BLM Sensitive Species, and California Species of Concern), **yellow warbler** (*Dendroica petechia*, California Species of Concern), **summer tanager** (*Piranga rubra*, California Species of Concern), and **crissal thrasher** (*Toxostoma crissale*, California Species of Concern). This list of bird species is in no way comprehensive and the native species protected under the Migratory Bird Treaty Act are too numerous to include. During the April/May 2009 desert tortoise surveys, biologists observed an interesting array of bird species including those that likely occupy the Rice Valley (i.e., common poorwill [*Phalaenoptilus nuttallii*] and black-throated sparrow [*Amphispiza bilineata*]) and others that were likely migrating through to possibly the Colorado River Valley (i.e., yellow-headed blackbird [*Xanthocephalus xanthocephalus*] and great-tailed grackle [*Quiscalus mexicanus*]).

The following bird species are more likely to occupy the Rice Valley or the surrounding mountains.

The **red-tailed hawk** (*Buteo jamaicensis*) and **prairie falcon** (California Species of Concern) were both seen during the April/May 2009 desert tortoise surveys. The Rice Valley typifies the kind of open habitat where these and other raptor are often found foraging. Rice Valley, however, lacks trees that would provide opportunities for raptor nest sites. The most likely local nest sites for falcon, hawk, and eagle species are probably limited to the transmission line poles along SR 62 and the existing transmission line along the southern end of the Valley which RSEP will tie in to. The surrounding mountains provide the best nesting opportunities, especially for species such as the prairie falcon and the golden eagle.

The **ferruginous hawk** (*Buteo regalis*, BLM Sensitive Species) is more common in open semiarid habitats throughout the Great Basin and the Great Plains. However, they breed from Canada south to Arizona and east toward Oklahoma and retire to the southwestern United States down to central Mexico for the winter. Nests sites can be on rocky outcrops, trees, on the ground, and on structures like power poles but the project area is likely south of the expected breeding range for this species. Migrating or wintering ferruginous hawks are likely to forage in the Rice Valley.

The breeding season distribution of the **Swainson's hawk** (*Buteo swainsoni*, California Threatened) appears to be slowly moving further south with time. This raptor's breeding range includes open habitat from western Canada to northern Mexico but is most prevalent in the Great Basin and California's Central Valley. Their nest sites are often associated with large trees in riparian corridors and/or near agricultural fields. This species could nest on power poles in or near the Rice Valley but are more likely to nest along the Colorado River Valley, which includes well-developed riparian trees and agricultural development. Even so, it would not be surprising to find the Swainson's hawk migrating through or foraging in the Rice Valley. This species famously migrates down to southern South America for the winter and often does so in large flocks.

The **prairie falcon** was seen in the project area during the April/May 2009 desert tortoise surveys, nest sites have been identified in the adjacent mountains in the CNNDB (CNDDB, 2009), and the NECO distribution map for this falcon includes the entire RSEP area. The prairie falcon likely nests in the surrounding mountains and frequently forages over Rice Valley and proposed RSEP area. Some prairie falcons migrate as far south as central Mexico but others complete more local migrations that would qualify them as year-round residents of their breeding habitat. The Colorado Desert is far enough south that the winter population may be composed of resident falcons along with more northern migrants, possibly making the winter population larger than the breeding season population.

According to the NECO, there are few known **golden eagle** (Bald and Golden Eagle Protection Act, BLM Sensitive Species, California Fully Protected Species, and California Species of Concern) nest sites in the NECO Planning Area (BLM, 2002). This large raptor is found throughout the western United States and is a year-round resident in the southwestern deserts. The NECO distribution map for the golden eagle includes the entire RSEP area but it is surprising that the plan relegates the species' presence primarily to passing migrants and occasional wintering birds. Other than paucity of historical records, there are no reasonable limitations that would prevent golden eagles from nesting in the mountains surrounding Rice Valley and foraging in the RSEP area.

The **western burrowing owl** (*Athene cunicularia hypugaea*, BLM Sensitive Species and California Species of Concern) is a diurnal owl that is widespread throughout the western United States, but has declined primarily because of habitat modification, poisoning of its prey, and introduced nest predators. This species is known to establish its underground nests in the abandoned burrows of ground squirrels, kit fox, desert tortoise, and other wildlife. Relatively, this bird is found in low densities in desert habitats, but can occur in much higher densities near agricultural lands, such as those in Imperial County, where rodent and insect prey tend to be more abundant. A burrowing owl habitat assessment and survey of the RSEP solar site and generator tie-line was completed by the biologists from Sundance Biology, Inc while conducting desert tortoise surveys between April 18, 2009 and May 18, 2009. During the survey, typical burrowing owl whitewash was observed within the proposed RSEP. The NECO distribution map for the burrowing owl includes the entire RSEP area (BLM, 2002). This species breeding season is typically from February through August, but the Rice Valley is likely occupied by wintering burrowing owls as well.

The **loggerhead shrike** (*Lanius ludovicianus*, California Species of Concern) can be found within open habitat types, including sage scrub, non-native grasslands, chaparral, riparian, croplands, and areas characterized by open scattered trees and shrubs. They are often observed perched on fence posts, or other prominent perches. The loggerhead shrike forages for large insects and lizards over open ground within areas of short vegetation, usually impaling prey on thorns, wire barbs, or sharp twigs to cache for later feeding. The biologist from Sundance Biology, Inc. observed a loggerhead shrike while conducting desert tortoise surveys between April 18, 2009 and May 18, 2009. This bird species' breeding season is typically between March and August but they are mostly non-migratory and could be expected in the proposed project area throughout the year.

The **Le Conte's thrasher** (*Toxostoma lecontei*, BLM Sensitive Species and California Species of Concern) is a desert resident that inhabits areas with sparse desert scrub, alkali desert scrub,

and desert succulent scrub habitats with open desert washes. It can be found year-round throughout much of the Mojave and Colorado deserts of California. The Le Conte's thrasher population densities are among the lowest of passerines, estimated at less than five birds per square mile in optimal habitat. This low population density decreases the probability of their detection during field surveys. The Le Conte's thrasher feeds on seeds, insects, small lizards, and other small vertebrates. According to the CNDDB, this thrasher has been observed in the Rice Valley (CNDDB, 2009), and the NECO distribution map for the species includes the entire RSEP area (BLM ,2002). The Le Conte's thrasher's breeding season is typically begins between March and April but the species can be expected in the Rice Valley throughout the year.

The **Bendire's thrasher** (*Toxostoma bendirei*, BLM Sensitive Species and California Species of Concern) is another thrasher species of the southwestern deserts. This bird's breeding range includes southeastern California as well as southern Nevada, Arizona, and western New Mexico. They typically complete a short migration to winter in southern Arizona and northwestern Mexico. Bendire's thrashers frequent flat desert areas with scattered stands of thorny shrubs, yucca, and cactus for cover, foraging, and nesting. Their nests are typically located in a cactus or shrub. According to the CNDDB, Bendire's thrasher has been observed immediately north of the Rice Valley (CNDDB, 2009). Although the NECO distribution map for Bendire's thrasher does not include the RSEP area, based on the habitat it is reasonable to conclude that this bird could occur in the project area (BLM, 2003).

Mammals

The **California leaf-nosed bat** (*Macrotus californicus*, BLM Sensitive Species and California Species of Concern) is primarily found in the mountain ranges bordering the Colorado River Basin where it is typically associated with desert riparian, desert washes, desert scrub, desert succulent scrub, alkali scrub, and palm oasis habitats. According to the NECO distribution map, the California leaf-nosed bat is expected to occur throughout the RSEP area (BLM, 2002). If present, this bat may roost in the mines of surrounding mountains and would likely forage over the proposed project area.

The **pallid bat** (*Antrozous pallidus*, BLM Sensitive Species and California Species of Concern) can be found throughout most of the western United States, south to central Mexico and Cuba. This bat will roost in any cavity including a rock crevice, cave, mine, hollow trees, as well as artificial structures. The NECO distribution map for the pallid bat includes the entire RSEP area (BLM, 2002). They typically migrate to Mexico in the winter; therefore the pallid bat is most likely to be in the Rice Valley area during the spring and summer.

The **Townsend's big-eared bat** (*Plecotus townsendii*, BLM Sensitive Species and California Species of Concern) is found throughout California, in all but subalpine and alpine habitats, and may be found at any season throughout its range. This species roosts in caves, mines, tunnels, buildings, or other human-made structures but are extremely sensitive to disturbance of roosting sites. The NECO distribution map for the Townsend's big-eared bat includes the entire RSEP area (BLM, 2002). This bat species may roost in nearby mountains and forage through Rice Valley but activity is more likely concentrated along the Colorado River Valley.

The range of the **occult little brown bat** *(Myotis lucifugus occultus*, California Species of Concern) includes the southwestern United States to central Mexico. Like many bats, this

species usually forages close to water and riparian. Although it is typically associated with desert riparian communities along the Colorado River there are only a few records of its occurrence along the Colorado River between Needles and Yuma (BLM, 2002). The general RSEP vicinity lacks the associated perennial water source and well-developed riparian washes but the NECO distribution map for the occult little brown bat includes the southern end of the proposed generator tie-line corridor (BLM, 2002).

The range of the **fringed myotis** (*Myotis thysanodes*, BLM Sensitive Species) includes most of the central and western United States where it is associated with a variety of habitats including desert scrub. In the desert, roost sites are likely within an hour's flight from forested or riparian areas. According to the NECO, there are only two known remaining roosts for this species in the NECO Planning Area and both are located in the Old Woman Mountains, approximately 25 miles northwest of RSEP (BLM, 2002). The NECO distribution map for the fringed myotis does not include the RSEP area but identifies the species range to the north of the proposed solar site in the Turtle Mountains and immediately south of the proposed generator tie-line interconnection point. Given the proximity of the expected distribution, this species has the potential to at least move through the Rice Valley.

The **cave myotis'** (*Myotis velifer*, BLM Sensitive Species and California Species of Concern) range extends from the southwestern United States to Honduras. True to its name, this species is primarily a colonial cave dweller but will also roost in rock crevices, under bridges, and in other structures. According to the NECO, there are historic records of this species from abandoned mines in the Riverside Mountains (BLM, 2002) and the NECO distribution map for the species includes the southern end of the proposed generator tie-line corridor

The range of the **western mastiff bat** (*Eumops perotis*, BLM Sensitive Species and California Species of Concern) includes the southwestern United States through central Mexico. This bat species forages over a wide range of habitats including dry desert washes, chaparral, and agricultural areas and primarily roosts in high crevices. The NECO distribution map for the western mastiff bat does not include the RSEP area but identified habitat immediately south of the proposed generator tie-line interconnection point (BLM, 2002). This bat species may roost in nearby mountains and possibly forage or move through the Rice Valley.

The **pocketed free-tailed bat**'s (*Tadarida femorosaccus*, California Species of Concern) range includes southern California to Texas and south through Baja California and central Mexico. It is only known from a few locations in California, which include the Chocolate and Cargo Muchacho mountains in Imperial County (BLM, 2002). Their presence is typically associated with a variety of habitats including low-elevation desert scrub areas with rocky outcrops where they often roost in rock crevices. The NECO distribution map for the pocketed free-tailed bat does not include the RSEP area but does identify habitat immediately south of the proposed generator tie-line interconnection point (BLM, 2002). This bat species may roost in nearby mountains and possibly forage or move through the Rice Valley.

The range of the **Colorado Valley woodrat** (*Neotoma albigula venustra*) includes southern Nevada, southeastern California, western Arizona, and northeastern Baja California. This rodent is associated with a variety of desert habitats including low elevations to pinyon-juniper woodlands where it is typically found with prickly pear cactus (*Opuntia* sp.) and mesquite (*Prosopis* sp.). They often use rocky areas or the bases of trees and shrubs to

establish their distinctive nests or "middens." There are cacti in the proposed RSEP footprint but the project area lacks the rocky outcrops or well vegetated dry washes with mesquite or other tree species where woodrat middens would be expected. These distinctive middens were not observed during the April/May 2009 desert tortoise surveys. However, the NECO distribution map for the Colorado Valley woodrat includes the southern half of the proposed generator tie-line corridor (BLM, 2002).

The **American badger** (*Taxidea taxus*, California Species of Concern) was once fairly widespread throughout the open grassland habitats of California but are now an uncommon, permanent resident found throughout most of the state, with the exception of the northern North Coast area. They are most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions, prairies, parklands, and cold desert areas. Rice Valley includes appropriate habitat for the badger and the CNDDB includes a badger record from the SR 62/SR 95 intersection, approximately 14.5 miles northeast of the RSEP area (CNDDB, 2009).

The localized population of the **Yuma mountain lion** (*Felis concolor browni*, California Species of Concern) is restricted to the Colorado Desert from Joshua Tree Nation Park to the Colorado River. This large cat typically avoids open and sparsely vegetated areas and is primarily expected in the dense riparian of the Colorado River and dense micorphyll washes in mountainous areas. As with other mountain lion populations throughout the western United States, their range is also dictated by the range of their primary prey. In NECO Planning Area and much of the Yuma mountain lion's range, their primary prey is the burro deer (*Odocoileus hemionus eremicus*) (BLM, 2002). The NECO distribution map for the mountain lion includes the southern half of the proposed generator tie-line corridor (BLM, 2002). Although this distribution does not overlap with the suspected distribution of the burro deer, this area is close to the base of the Big Maria, West Riverside, and Riverside mountains. Mountain lions would be expected to generally avoid the flat and sparsely vegetated proposed solar site and generator tie-line corridor footprint but they may pass through the area if moving between the mountain ranges that frame the Rice Valley. The barrier posed by the Colorado River Aqueduct, railroad, and SR 62 likely limit the north-south passage opportunities for the mountain lion and funnel it through the limited overpass crossings of the aqueduct.

Nelson's bighorn sheep (*Ovis canadensis nelsoni,* BLM Sensitive Species) is widely distributed from the White Mountains in Mono County to the Chocolate Mountains in Imperial County. Bighorn sheep are typically found on open, rocky, steep areas used for escape cover with available water and herbaceous vegetation for forage. This subspecies is now reduced to small isolated subpopulations within the larger Sonoran metapopulation where herds are typically small (< 10 sheep) and are defined by the mountain range they occupy (BLM, 2002). The Turtle Mountains to the north of RSEP and the Maria Mountains to the south are likely occupied and the West Riverside and Riverside Mountains to the east and southeast are considered demes that may one day be repopulated. On rare occasion, bighorn sheep may venture into the Rice Valley to forage. For the long-term viability of the metapopulation it is important that the species be able to move between the local mountain ranges, which includes passage through the RSEP area.

Wildlife Survey Methods

General wildlife and protocol desert tortoise surveys were performed by biologists from Sundance Biology, Inc. between April 18, 2009, and May 18, 2009, using a crew that varied between 11 and 14 persons (Appendix 5.2C). The field team walked a set of transects that covered the 2,560-acre project parcel boundary area and the 10.0-mile-long generator tie-line. Transect spacing was at 30 feet between transect centerlines, the standard width for desert tortoise presence/absence surveys. No more than five biologists surveyed together in a team, to maintain efficiency and accuracy.

To ensure transect accuracy, a set of UTM coordinates for transect endpoints for virtual north-south transects were calculated for the power plant site. This resulted in 357 transects each approximately 2 miles in length. For navigation of transects Lowrance iFinder handheld GPS units were used. Seven parallel routes spaced 30 feet apart were programmed into the Lowrance GPS units to navigate the 10.0-mile-long, 200-foot-wide generator tie-line corridor.

Each team was equipped with an iFinder GPS. One member of each team was responsible to navigate the selected transect. When the end of a transect was reached, the team shifted five transects (for a five person team) and the navigator programmed the beginning and ending point of the team center transect for the next trip. Team members focused on a search area that included 15 feet on either side of them. The members of each team remained close to one another without leading or lagging in order to increase the precision of searching. When one member of the team stopped to investigate an observation, all members of the team stopped. Team members were instructed to search beneath every shrub.

Zone of influence (ZOI) transects were conducted in suitable tortoise habitat along all sides of both the main project site and along the generator tie-line project boundary at 100; 300; 600; 1,200; and 2,400 feet from the survey area perimeter. The power plant site also had additional ZOIs conducted at 0.75-mile and 1.0-mile, per California Energy Commission (CEC) requirements.

Any tortoise or large mammal burrows encountered that could potentially be used by tortoises were visually checked. When the end was not visible, burrow entrances were gated with small sticks placed vertically in the soil at the entrance and checked periodically during the survey for tortoise activity. Very small burrows that could be potentially utilized by juvenile tortoises but are much more often rodent burrows were also visually checked when encountered. Only definitive tortoise sign was recorded.

The locations of all desert tortoises and desert tortoise sign (e.g., live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks) were recorded. Potential desert tortoise burrows were monitored for tortoise activity during the survey period if the end of the burrow was not visible. Evidence of sensitive or listed species other than the desert tortoise was also noted and recorded using the GPS.

5.2.1.6 Results of the Botanical Surveys

5.2.1.6.1 Habitat and Vegetation Communities

Sonoran creosote bush scrub was the only vegetation community identified during the 2009 botanical surveys as occurring on the project site or along the generator tie-line right-of-way

(ROW). Three vegetation and habitat communities occur within a 1-mile radius of the project site: Sonoran creosote bush scrub, active and stabilized sand dune, and desert wash. Sand dunes and desert washes constitute important second community types located near the project facilities (Figure 5.2-3). Vegetation type descriptions, including the dominant and subdominant plants observed in each community are provided in Appendix 5.2B). Generalized descriptions of these communities are provided below.

Sonoran Creosote Bush Scrub

Sonoran creosote bush scrub was the only vegetation community type that was identified in the proposed solar site and generator tie-line ROW during the 2009 botanical surveys. Examination of the area within one mile of the proposed project facilities indicates that nearly all of this area also consists of this vegetation community. As stated in the NECO, this creosote bush community is the most dominate plant community below the 3,000 foot elevation throughout the Colorado Desert (BLM, 2002). Sonoran creosote bush scrub (or Sonoran desert scrub) covers approximately 3.8 million acres or 69 percent of the NECO planning area (BLM, 2002). As evident in the Rice Valley, the shrubs in this community are typically widely spaced and flowering annuals are expected to be observed from late February to March.

Shrub species observed in the project area during the March 2009 botanical surveys include creosote bush (*Larrea tridentata*), burrobrush (*Hymenoclea salsola*), burro-weed (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), and white rhatany (*Krameria grayi*). Herbaceous species present include *Calycoseris wrightii*, pebble pincushion (*Chaenactis carphoclinia* var. *carphoclinia*), desert dandelion (*Malacothrix glabrata*), desert five-spot (*Eremalche rotundifolia*), *Palafoxia arida* var. *arida*, devil's lettuce (*Amsinckia tessellata*), *Cryptantha nevadensis*, *Pectocarya platycarpa*, mustard (*Brassica tournefortii*), onyx flower (*Achyronychia cooperi*), rattlesnake weed (*Chamaesyce polycarpa* var. *hirtella*) Arizona lupine (*Lupinus arizonicus*), *Camissonia boothii* ssp. *condensata*, plantain (*Plantago ovata*), big galleta (*Pleuraphis rigida*), and Mediterranean grass (*Schismus barbatus*).

Active and Stabilized Sand Dune

Portions of the Rice Valley Dunes are located within one mile of the proposed RSEP area. The Rice Valley Dunes are a system of small dunes rising 30 to 40 feet above the valley floor to form a long, narrow band running through the middle of Rice Valley. These active and stabilized dune habitats occur south and southwest of the propose RSEP area. Active sand dune habitat is characterized by sparse vegetative cover and actively moving sand. Stabilized dune habitat consists of more dense vegetative cover that limits the movement of sand by wind.

Species typically found in desert dunes include creosote bush, fourwing saltbush (*Atriplex canescens*), burro-weed, big galleta, Indian ricegrass (*Achnatherum hymenoides*), and evening primrose (*Oenothera* spp.) (Sawyer and Keeler-Wolf, 1995). During the March 2009 botanical surveys of the project area, a reference population of the special-status Harwood's eriastrum (*Eriastrum harwoodii*) located adjacent to Blythe-Rice Road within the Race Valley Dunes was visited. Species observed in the vicinity of the Harwood's eriastrum reference population include chaparral sand-verbena (*Abronia villosa* var. *aurita*, a special-status species), big galleta, creosote bush, evening primrose, *Cryptantha* sp., and Mormon tea (*Ephedra* sp.).

Washes

Numerous washes occur within one mile of the project area and range in size from small poorly defined ephemeral washes to large washes with well-defined channel beds and banks. The majority of the washes that flow through the proposed RSEP site flow from north to south and originate in the Turtle Mountains to the north. The majority of washes that cross the generator tie-line corridor flow in a southwest or southerly direction from the West Riverside Mountains. Based on observations during March 2009 botanical surveys in the project area, vegetation is typically sparse in the beds of these washes and consists of annual and perennial herbaceous species. Shrub species typically present along the banks include creosote bush, burrobrush, burro-weed, and brittlebush. Tree species potentially occurring along the banks of the larger washes include palo verde (*Cercidium* sp.), smoke tree (*Psorothamnus spinosus*), screw bean (*Prosopis pubescens*) and ironwood (*Olneya tesota*). Neither the project site nor the generator tie-line include areas of significant wash vegetation and, for this reason, there are no areas mapped as a Wash vegetation or habitat type in Figure 5.2-3, although such areas occur in washes upslope and upstream of the generator tie-line corridor.

Areas Previously Disturbed

The proposed plant site is located on the site of a former airfield (Rice Army Airfield) that was used during World War II as a training site, later transferred to private use, and then abandoned sometime between 1955 and 1958 (Freeman, 2009). The abandoned airfield once consisted of two paved 5,000-foot-long runways and numerous dispersal pads or hardstands extending beyond the runways to the south (Freeman, 2009). Various dirt roads, concrete pads, and portions of the old runways were observed during surveys in the proposed solar site. Since the time the airfield was abandoned, the project area has been colonized by predominately native annual and perennial species. Previously paved areas, such as the runways, taxiways, and aircraft hardstands, have been colonized by burrobrush and creosote bush, but have a lower density of creosote bush shrubs than surrounding areas. It is for this reason that these areas are clearly visible on aerial photographs despite recolonization by native species.

5.2.1.6.2 Invasive Weeds

Mediterranean grass (*Schismus arabicus* and *S. barbatus*), Sahara mustard (*Brassica tournefortii*), and filaree (*Erodium cicutarium*) were the only weed species observed in the proposed project area. Sahara mustard has a Cal-IPC rating of "high." Species rated as high have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically (Cal-IPC, 2006). Sahara mustard is also listed as a "problem weed" by the Mojave Weed Management Plan (2009). CDFA (2007) does not rate Sahara mustard.

Mediterranean grass and filaree are rated by Cal-IPC as "limited." Species with a rating of "limited" are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic (Cal-IPC, 2006).

5.2.1.6.3 Special-Status Plant Survey Results

The botanical surveys determined that the proposed project site provides suitable habitat for seven special-status plant species. No federal or state listed plants were observed, but two special-status plant species were identified during the botanical surveys. A total of 30 to 40 individuals of the Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*) were observed at five separate locations within the proposed electrical generator tie-line corridor. This annual is a CNPS list 2.2 species. The chaparral sand-verbena (*Abronia villosa* var. *aurita*), a CNPS list 1B.1 plant, was the only special-status plant species observed in the solar generation site. Sycamore recorded two individuals of this annual species.

In addition, Wiggin's cholla (*Cylindropuntia wigginsii*), a CNPS list 3 species, was observed during the desert tortoise surveys. This occurred in ZOI transects surrounding the generator tie-line and one specimen was observed on the main project site. The exact location was not recorded.

The distribution of special-status plants found in the survey is shown in Figure 5.2-4. Detailed descriptions of the special-status plants observed, their distribution, and conservation status are included in the following sections.

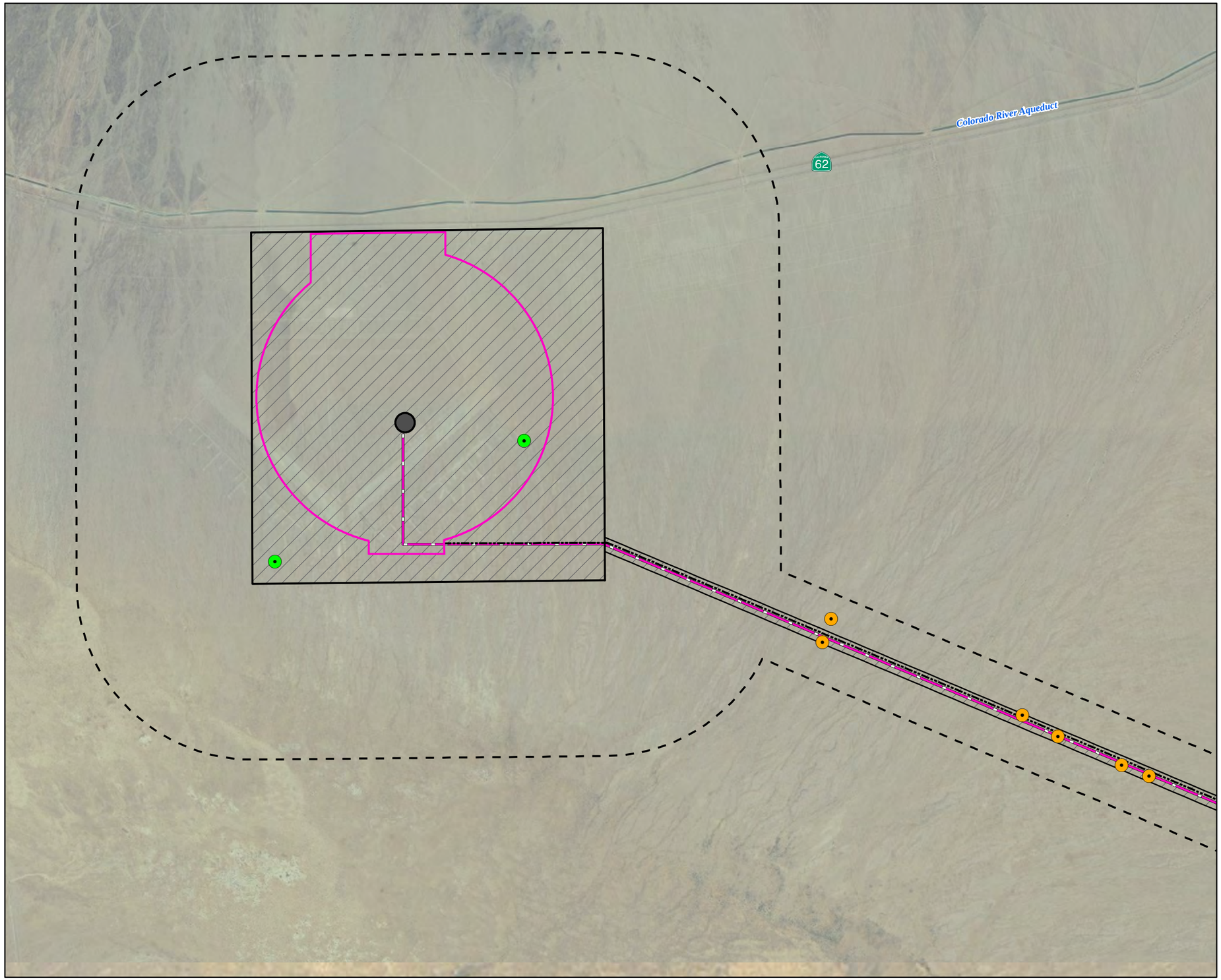
Harwood's Milk-Vetch (Astragalus insularis var. harwoodii) CNPS 2.2

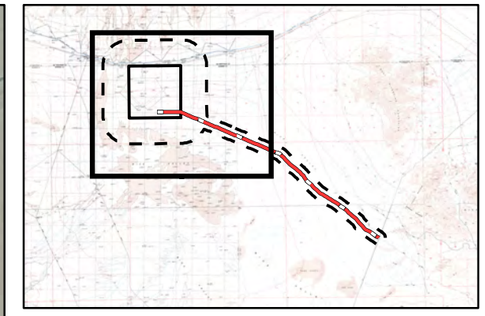
A perennial herb found in desert dunes and sandy or gravelly Mojavean desert scrub from 0 to 2,300 feet, blooms January through May (CNPS, 2009). Harwood's milk-vetch was observed at five locations within the proposed generator tie-line alignment corridor (Figure 5.2-4). A total of 30 to 40 individuals were observed. Three additional individuals were observed north of and outside the proposed generator tie-line alignment corridor. The plants were growing in loose sandy/gravelly soils in small desert wash features. Harwood's milk-vetch was not observed in the plant site portion of the project area.

In California, this species is known from Imperial, Riverside, and San Diego counties (CNPS, 2009). This species is also known to occur in Arizona and Mexico (CNPS, 2009). There are no CNDDB records for this species on the Rice, Grommet, Big Maria Mountains Northwest, or the 12 surrounding quads. The closest CNDDB record for this species is located approximately 24.75 miles south of the RSEP on the Ripley quad. The CNDDB record does not state the date when this species was observed.

Chaparral Sand-Verbena (Abronia villosa var. aurita) CNPS 1B.1

This annual herb is found in chaparral, coastal scrub, and desert dunes from 25 to 5,250 feet and is typically in bloom between January and September (CNPS, 2009). Identification of chaparral sand-verbena requires close examination of its fruits. During the March 23-27, 2009 botanical surveys, two individual Abronia plants were observed at two locations on the RSEP site (Figure 5.2-4). The locations were mapped with a sub-meter-accurate GPS. One of the plants was in flower and the other had only leaves. Neither of the two plants had fruits. During a reconnaissance-level survey of the proposed generator tie-line alignment corridor that has since been eliminated from the proposed project, a large population of *Abronia villosa* var. *aurita* was identified (verified at UC Berkeley Herbarium, June 2009). This population is located along Midland Road (road sign says Blythe-Rice Road) approximately 2.4 miles west of the project site.





LEGEND

RARE PLANTS

- Chaparral sand verbena
- Harwood's milkvetch
- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- INTENSIVE SURVEY AREA
- PROJECT FENCELINE BOUNDARY
- BIOLOGICAL SURVEY AREA
- POWER BLOCK/RECEIVER
- PROPOSED SUBSTATION
- BUFFER

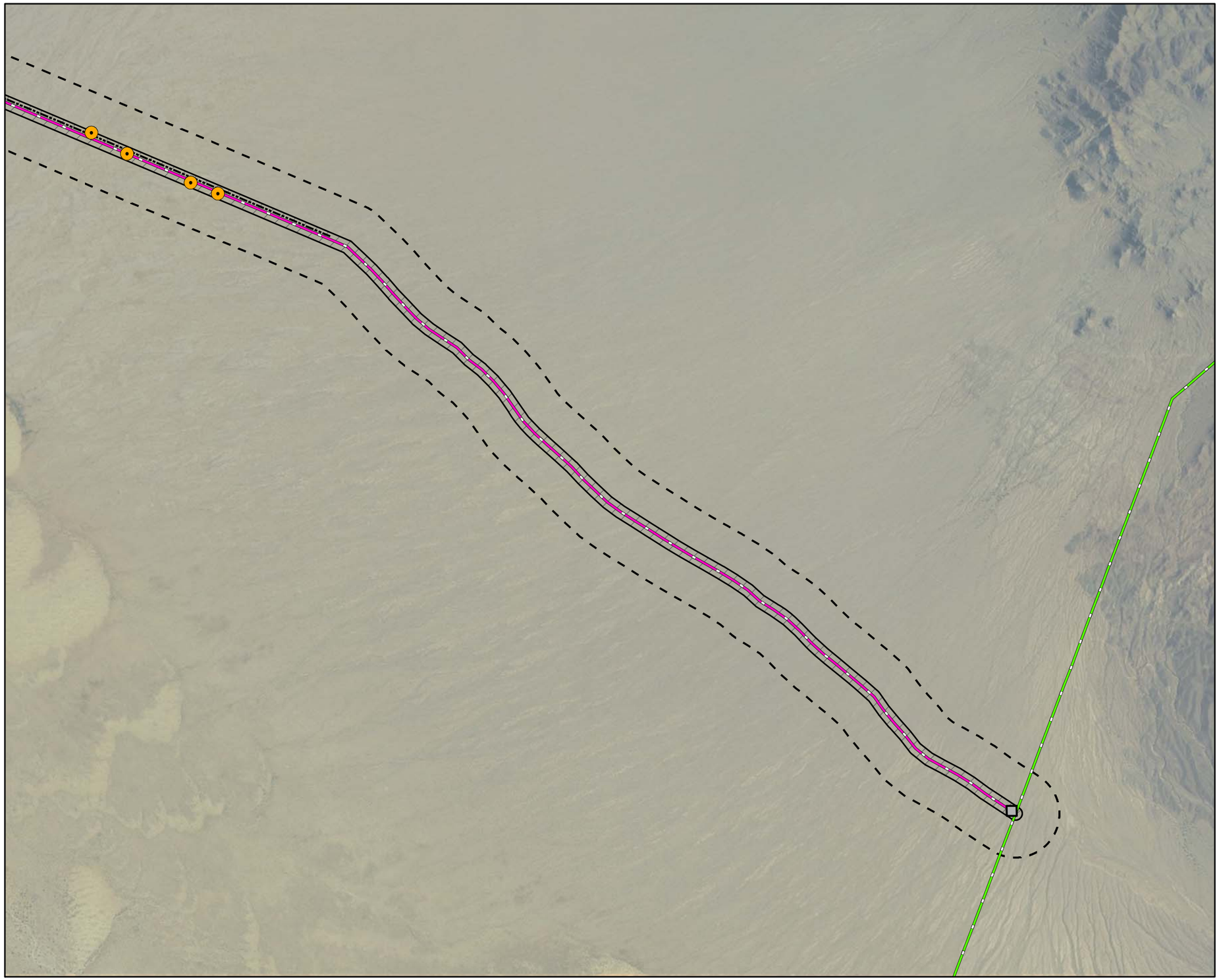
Notes:
1. Source: Sycamore Environmental Consultants, Inc. Field Survey, 2009.
2. The Intensive Survey Area is the area within the project site boundary and a 200ft. corridor along the Generator Tie-Line.

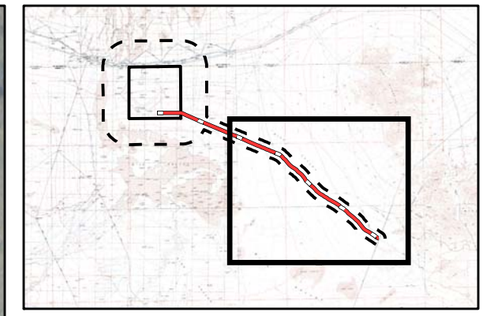
This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,500 3,000
Feet

FIGURE 5.2-4A
BOTANICAL RESOURCES SURVEY AREA AND RARE PLANT FIND LOCATIONS
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA





LEGEND

RARE PLANTS

- Chaparral sand verbena
- Harwood's milkvetch
- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- INTENSIVE SURVEY AREA
- PROJECT FENCELINE BOUNDARY
- BIOLOGICAL SURVEY AREA
- POWER BLOCK/RECEIVER
- PROPOSED SUBSTATION
- BUFFER

Notes:
1. Source: Sycamore Environmental Consultants, Inc. Field Survey, 2009.
2. The Intensive Survey Area is the area within the project site boundary and a 200ft. corridor along the Generator Tie-Line.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,500 3,000
Feet

FIGURE 5.2-4B
BOTANICAL RESOURCES SURVEY AREA AND RARE PLANT FIND LOCATIONS
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

CH2MHILL

On May 8, 2009, Dr. Little conducted an additional site visit to determine if the two Abronia plants observed in the project site were in fruit and could be identified. Using the GPS data from the March 23-27 survey, Dr. Little returned to the two locations where the Abronia plants were previously observed. Neither plant was found at the location previously recorded. The plants of this annual species could have been eaten by wildlife, died and been blown away, or crushed by off-road vehicles. The leaves and flowers of the two Abronia plants observed in the project area were very similar to those of the *Abronia villosa* var. *aurita* observed west of and outside the project area. The seeds of *Abronia villosa* var. *aurita* are winged and adapted for wind dispersal. Given the close proximity of the *Abronia villosa* var. *aurita* population 2.4 miles directly west of the project area along Midland Road and the high velocity winds that blow from west to east, it would not be surprising that seeds from the Midland Road population could be transported into the project area. Based on the similar leaves and flowers of the two specimens observed in the project area and the nearby population of *Abronia villosa* var. *aurita*, it is assumed that the plants in the project area were *Abronia villosa* var. *aurita*. This species was not observed in the generator tie-line corridor portion of the project area.

In California, this species is known from Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. This species is also known to occur in Arizona and Baja California (CNPS, 2009). There are no CNDDB records for this species on the Rice, Grommet, or Big Maria Mountain's Northwest quads. The closest CNDDB record for this species is from 1910, located approximately 8.5 miles east of the proposed RSEP on the Vidal quadrangle. The location of this record is mapped as a "best guess" in the CNDDB (CNDDB, 2009).

Wiggin's Cholla (Cylindropuntia wigginsii) CNPS 3

According to the desert tortoise survey report (See Appendix 5.2C):

> This plant is rarely found in California. This succulent may be a sporadic hybrid between Opuntia ramosissima and Opuntia echinocarpa. This taxon is only mentioned in The Jepson Manual (Hickman, 1993) under O. ramosissima as 'possibly O. ramosissima X O. echinocarpa'. Pinkava (2004) says this is just a dwarf form of C. echinocarpa. Even so, the CNPS has identified this as a List 3 plant (to be reviewed).

The CNPS recommends that List 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

Wiggin's cholla is a shrubby cane-type cactus known from San Diego, Imperial, and Riverside counties in California and also from Arizona. Habitat consists of Sonoran Desert Scrub on sandy soils of the lower desert (below 1,000 feet).

5.2.1.7 Wetlands and Waters Inventories

Desert drainages and washes were examined during field surveys for botanical and wildlife resources and were also examined using aerial photographs. Water flowing in washes from the Turtle Mountains is intercepted by large berms upslope and upstream of the RSEP site that were constructed for the Colorado River Aqueduct and Arizona-California Railroad as drainage controls. These large berms funnel runoff from Turtle Mountain toward two channels that cross the aqueduct, and then to culverts under the Arizona-California railroad,

and then across SR 62 onto the RSEP site area. Water in these two channels was formerly intercepted by berms constructed south of the aqueduct, railroad, and highway to direct flow around and away from Rice Army Airfield. These berms have breached, however, and form small, multiple branching channels running to the south that eventually merge with natural channels of stormwater flow that predate the airfield. For these reasons, stormwater drainage on the project site is relatively undeveloped. Stormwater from the project site drains into the Rice Valley dry lake basin, which does not have an outlet to the Colorado River. The washes that cross the generator tie-line corridor are also shallow, poorly defined and developed, and lacking in hydrophytic vegetation.

Because Rice Valley is a basin that drains internally and does not connect to navigable waters or cross state boundaries, the project area's drainages are not subject to jurisdiction of the U.S. Army Corps of Engineers (USACE) under the Clean Water Act. There are no wetlands or waters of the United States within the project's area of potential effects. Appendix 5.2E contains correspondence with USACE that documents the non-jurisdictional status of the ephemeral drainage features on the RSEP site and that cross the generator tie-line.

Appendix 5.2E also contains a table that documents the acreages of ephemeral washes that the project could affect, should the Colorado River Basin Regional Water Quality Control Board consider these to be Waters of the State. These include ephemeral washes and drainage features within the power plant fenceline and also those that cross the portion of the generator tie-line (4.6 miles between the power plant fenceline and Rice Valley Road) that will require construction of a new access road. For the portion of the generator tie-line route that runs parallel to Rice Valley Road, it is assumed that the transmission towers would not be sited in wash channels and that, therefore, the project would have no impact on these channels. The conceptual drainage design study prepared for the RSEP also contains information about project drainage. This study is found in Appendix 5.15C.

5.2.1.8 Special-Status Wildlife Survey Results

This survey effort was also intended to provide a general assessment of the proposed site's overall value for wildlife. Additionally, all wildlife and their sign incidental to these surveys conducted within, and adjacent to, the proposed project area were identified to species. Binoculars were used to aid in bird identification. Trees do not occur within the project area and no raptor nests were observed. Presence of several wildlife species and their sign were further documented via photographs taken within, and adjacent to, the proposed project area during the survey. The results of this survey are summarized in this section. The wildlife species observed during the desert tortoise surveys are listed in Table 5.2-4. Figure 5.2-5 shows the wildlife survey area and locations its findings. The CEC Siting Regulations, Appendix B (g)(13)(B)(i) require that maps of survey findings be provided at a scale of 1:6,000 (1 inch equals 500 feet). We have provided maps at this scale in large format to the CEC staff and will provide the large-format maps on request to other parties. Because of the large size of the project site area and generator tie-line, however, the maps are provided at a smaller scale for inclusion in the printed AFC document.

5.2.1.8.1 Reptiles

Desert Tortoise

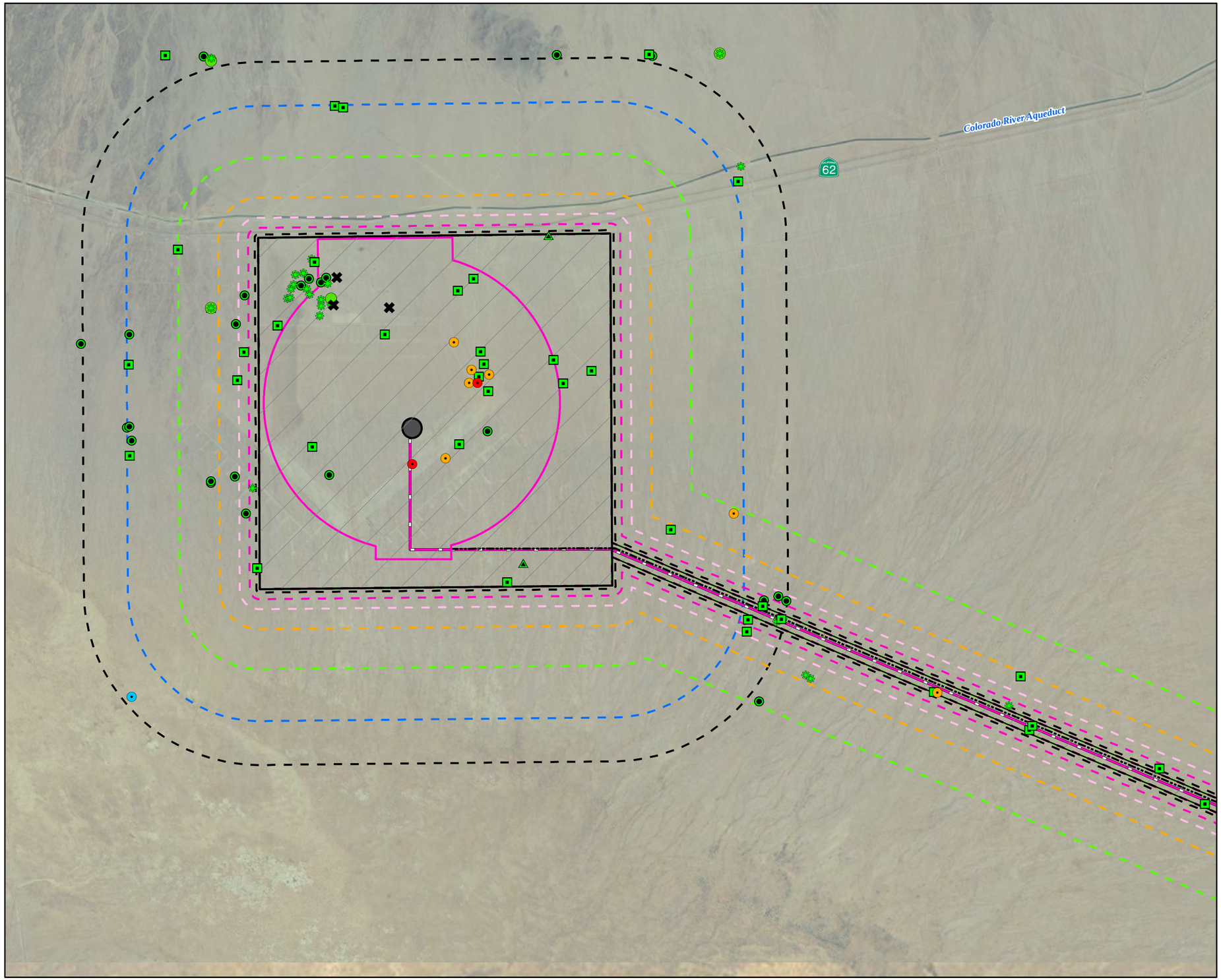
There is a surprising lack of documentation of desert tortoise in Rice Valley. Although Chemehuevi DWMA and desert tortoise critical habitat unit is only 6.2 miles to the east of the proposed site and immediately adjacent to Rice Valley, the closest CNDDB record for tortoise is approximately 4.7 miles to the east in the adjacent Vidal Valley (BLM, 1986). According to the CNDDB record, the densities in that area are between 20 to 50 tortoises/square miles (BLM, 1986). There is lowland connectivity between Rice and Vidal Valleys, south of SR 62, on the north and south ends of the approximately 4.5-mile-long West Riverside Mountains (Figure 5.2-1). As shown in the USFWS's draft revised desert tortoise recovery plan, Bury's (et al.) 1994 distribution map excludes the project area and Rice Valley (USFWS, 2008) but the USGS includes the project area but little else of Rice Valley in its draft desert tortoise habitat model (Nussear et. al, 2009).

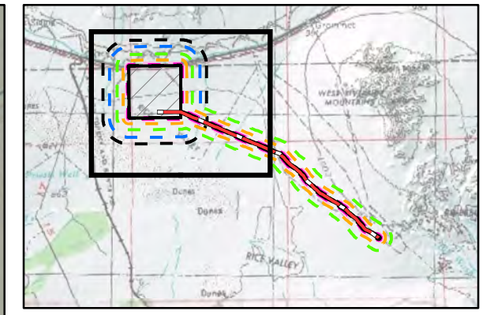
TABLE 5.2-4
Incidental Observations of Wildlife Species from the 2009 Desert Tortoise Protocol Surveys of the Project Area

Scientific Name	Common Name
BIRDS	
Order: Falconiformes	**Hawks and Vultures**
Cathartidae	**New World Vultures**
Cathartes aura	Turkey Vulture
Accipitiridae	**Hawks**
Buteo jamaicensis	Red-tailed Hawk
Falconidae	**Falcons**
Falco mexicanus	Prairie Falcon
Order: Columbiformes	**Doves And Pigeons**
Columbidae	**Pigeons and Doves**
Zenaida asiatica	White-Winged Dove
Order: Strigiformes	**Owls**
Strigidae	**Typical Owls**
Athene cunicularia	*Burrowing Owl*
Order: Caprimulgiformes	**Nightjars**
Caprimulgidae	**Goatsuckers**
Chordeiles acutipennis	Lesser Nighthawk
Phalaenoptilus nuttallii	Common Poorwill
Order: Passeriiformes	**Passerines and Perching Birds**
Laniidae	**Shrikes**
Lanius ludovicianus	Loggerhead Shrike
Corvidae	**Jays, Magpies, and Crows**
Corvus corax	Common Raven
Alaudidae	**Larks**
Eremophila alpestris	Horned Lark
Hirundinidae	**Swallows**
Hirundo rustica	Barn Swallow
Mimidae	**Mimic Thrashers**

TABLE 5.2-4
Incidental Observations of Wildlife Species from the 2009 Desert Tortoise Protocol Surveys of the Project Area

Scientific Name	Common Name
Mimus polyglottos	Northern Mockingbird
Parulidae	**Wood-Warblers**
Dendroica townsendi	Townsend's Warbler
Wilsonia pusilla	Wilson's Warbler
Thraupidae	**Tanagers**
Piranga ludoviciana	Western Tanager
Emberizidae	**Emberizids**
Amphispiza bilineata	Black-throated Sparrow
Icteridae	**Blackbirds**
Xanthocephalus xanthocephalus	Yellow-Headed Blackbird
Molothrus ater	Brown-headed Cowbird
MAMMALS	
Order: Carnivora	**Flesh-Eaters**
Canidae	**Dogs, wolves, and foxes**
Canis latrans	Coyote
Vulpes macrotis	Kit Fox
Order: Lagomorpha	**Pikas, Hares, and Rabbits**
Leporidae	**Hares and Rabbits**
Lepus californicus	Black-tailed Jackrabbit
REPTILES	
Order: Testudines	**Turtles**
Testudinidae	**Land Tortoises**
Gopherus agassizii	Desert Tortoise
Order:Squamata	**Lizards And Snakes**
Iguanidae	**Iguanids**
Callisaurus draconoides	Zebra-tailed Lizard
Dipsosaurus dorsalis	Desert Iguana
Uta stansburiana	Side-blotched Lizard
Crotaphytidae	**Collard and Leopard Lizards**
Gambelia wislizenii	Long-Nosed Leopard Lizard
Teiidae	**Whiptails**
Cnemidophorus tigris	Western Whiptail
Viperidae	**Pit Vipers**
Crotalus cerastes	Sidewinder
Colubridae	**colubrids**
Masticophis flagellum	Coachwhip
Pituophis catenifer	Gopher Snake
Salvadora hexalepis	Western Patch-Nosed Snake





LEGEND

- BURROWING OWL
- LOGGERHEAD SHRIKE
- MOJAVE FRINGETOED LIZARD
- LIVE DESERT TORTOISE (DT)
- DT BURROW
- DT EGG SHELL FRAGMENTS
- DT SCAT
- DT SHELL-SKELETAL REMAINS
- DT TRACKS
- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
- PARKER-BLYTHE TRANSMISSION LINE
- 100 FT. ZONE OF INFLUENCE TRANSECT
- 300 FT. ZONE OF INFLUENCE TRANSECT
- 600 FT. ZONE OF INFLUENCE TRANSECT
- 1200 FT. ZONE OF INFLUENCE TRANSECT
- 240 FT. ZONE OF INFLUENCE TRANSECT
- 3/4 MI. ZONE OF INFLUENCE TRANSECT
- 1 MI. ZONE OF INFLUENCE TRANSECT
- INTENSIVE SURVEY AREA
- PROJECT FENCELINE BOUNDARY
- BIOLOGICAL SURVEY AREA
- POWER BLOCK/RECEIVER
- PROPOSED SUBSTATION

Notes:
1. Source: Sundance Biology Inc. Desert Tortise field survey, 2009.
2. The Intensive Survey Area is the area within the project site boundary and a 200ft. corridor along the Generator Tie-Line.

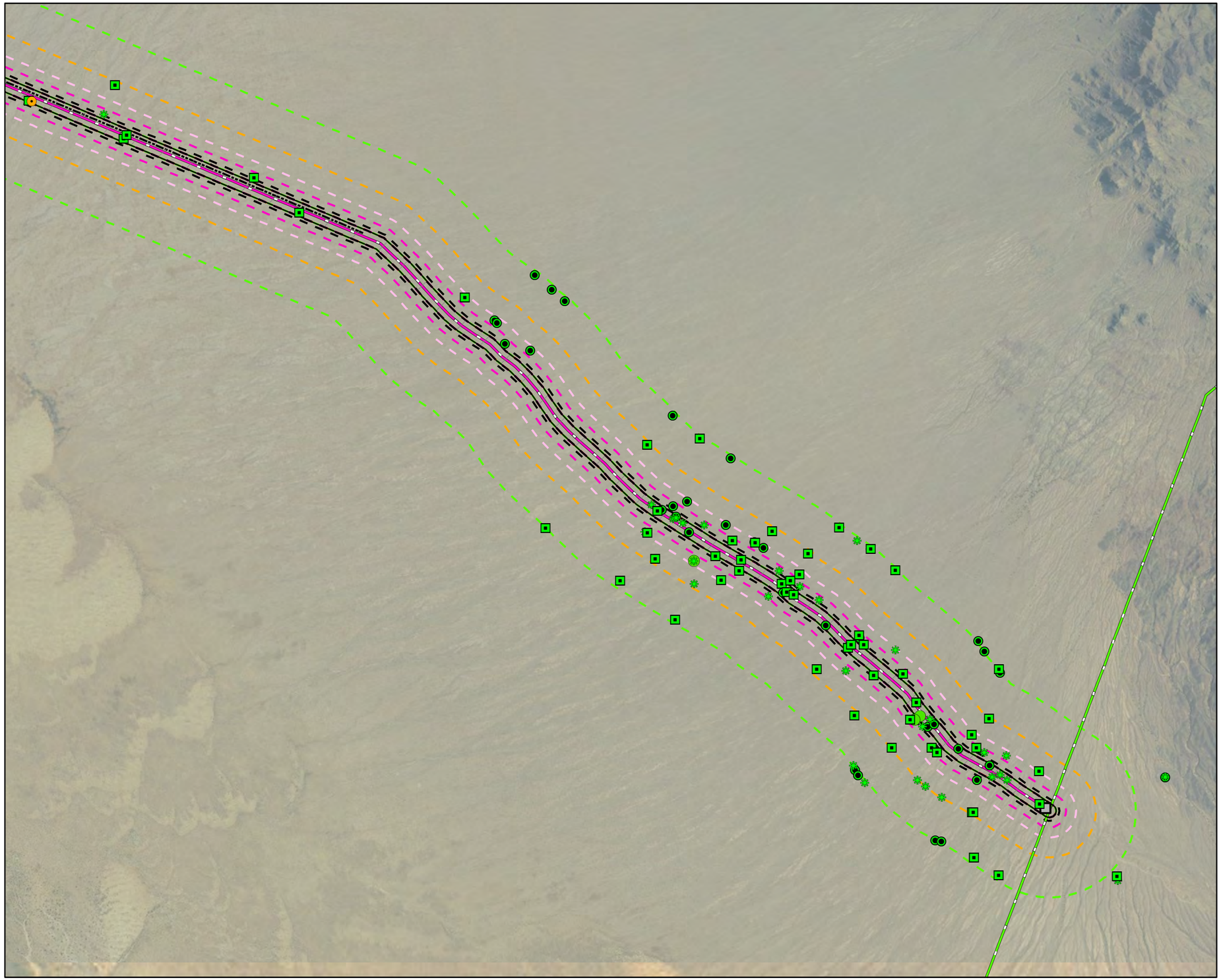
This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

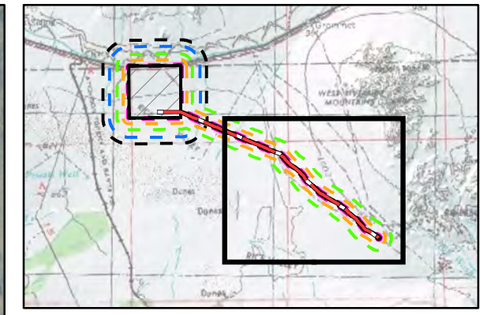
N

0 1,500 3,000
Feet

FIGURE 5.2-5A
WILDLIFE RESOURCES SURVEY AREA AND FIND LOCATIONS
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

CH2MHILL





LEGEND

- BURROWING OWL
- LOGGERHEAD SHRIKE
- MOJAVE FRINGETOED LIZARD
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- DT BURROW
- DT EGG SHELL FRAGMENTS
- DT SCAT
- DT SHELL-SKELETAL REMAINS
- DT TRACKS
- TRANSMISSION LINE ACCESS ROAD
- GENERATOR TIE-LINE
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- 1200 FT. ZONE OF INFLUENCE TRANSECT
- 240 FT. ZONE OF INFLUENCE TRANSECT
- 3/4 MI. ZONE OF INFLUENCE TRANSECT
- 1 MI. ZONE OF INFLUENCE TRANSECT
- INTENSIVE SURVEY AREA
- PROJECT FENCELINE BOUNDARY
- BIOLOGICAL SURVEY AREA
- POWER BLOCK/RECEIVER
- PROPOSED SUBSTATION

Notes:
1. Source: Sundance Biology Inc. Desert Tortise field survey, 2009.
2. The Intensive Survey Area is the area within the project site boundary and a 200ft. corridor along the Generator Tie-Line.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,500 3,000
Feet

FIGURE 5.2-5B
WILDLIFE RESOURCES SURVEY AREA AND FIND LOCATIONS
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

The Center for Biological Diversity filed action against BLM in 2000 for failing to enter into formal Section 7 consultation under the FESA with USFWS for the continued use of the Rice Valley sheep grazing allotment, which at that time excluded but surrounded the proposed solar site (USDC, 2000). With NECO, BLM limited this grazing primarily due to bighorn sheep concerns but the effects and incidental take of desert tortoises in Rice Valley was addressed in the biological opinion issued for NECO (BLM, 2002). In the 2005 biological opinion for the California Desert Conservation Area (CDCA), USFWS stated that the restriction of grazing would have limited benefits for the desert tortoise due to the low densities in Rice Valley (USFWS, 2005). In turn, groups like CNPS have advocated the compete relinquishment of the Rice Valley grazing allotment to the benefit of the desert tortoise and other species (CNPS, 2001).

BLM described the Rice Valley as Category III tortoise habitat in the NECO (BLM, 2002). Other than the shallow dunes at the southern edge of Rice Valley, there is reason to believe that the Rice Valley would at least support a low density of desert tortoise. The valley has appropriate habitat and connectivity to well-documented and monitored occupied habitat north, east, and west of the proposed project. It appears that there has been little monitoring of the desert tortoise in the Rice Valley due to little past development pressure since the species' listing and the dedication of limited resources to the nearby DWMAs.

The Colorado River Aqueduct, railroad, and SR 62 are stacked in a narrow linear corridor crossing the northern end of the Rice Valley. Individually each of these features is a significant barrier to north-south tortoise movement. In combination, the three pose a formidable barrier. On the north side of the aqueduct, "V"-ditches are used to funnel runoff from the Turtle Mountains into a series of widely spaced overpasses. The concentrated drainage is then passed under the railroad in box culverts or at locations where the railroad is elevated on small bridge trestles and then flows over SR 62. Connectivity north and south of the aqueduct is limited to aqueduct overpasses. Box culverts or trestles represent "safe" passage across the railroad but there is no safe passage of SR 62. As shown in Figure 5.2-1 there are only 14 of these conduits within the 12-mile corridor that passes through the Rice Valley. Of these 14 breaches in linear barrier, two exit directly into the northern boundary of the proposed solar site.

Sundance Biology, Inc. confirmed desert tortoise presence on the proposed project site as a result of its April and May 2009 desert tortoise surveys. They found a total of seven tortoises, 91 shell-skeletal remains, 66 potential burrows, three egg shell fragment locations, and 56 scat "events" (Figure 5.2-5). The majority of the findings in and near the proposed project were concentrated at the northwestern corner of the proposed solar site and the southern end of the proposed generator tie-line alignment. The observations included one tortoise on the proposed solar site and three along the proposed generator tie-line alignment. Although only seven tortoises were found as a result of covering 2,560 acres for the proposed solar site, 10.0 miles of proposed generator tie-line alignment, plus the ZOI transects, appropriate tortoise habitat was found throughout the project areas. A surprising number of tortoise carcasses were found distributed fairly evenly throughout the survey area including the proposed generator tie-line corridor. This may suggest that tortoises in the Rice Valley were subjected to and continue to experience significant pressure from drought, disease, and/or some combination of adverse effects. Egg shell fragments found on the eastern edge of the proposed solar site confirm that breeding is occurring locally and

difficult to detect juvenile and hatchling tortoises are likely within the proposed project area.

Mojave Fringe-Toed Lizard

Although there are no CNDDB records of this species in the Rice Valley, it is known to occur in the dune areas on the southern end of the Valley. Managing the Rice Valley Dunes for this species' habitat was cited as a reason why the BLM shut down the Rice Valley Dunes Off-Highway Recreation Area (BLM, 2002). Sundance Biology, Inc. observed a Mojave fringe-toed lizard on a desert tortoise ZOI transect 0.75 mile from the project area in dune habitat (Figure 5.2-5). Although there is no dune habitat within the proposed project footprint, Sundance Biology, Inc. concluded that this lizard may wander up sandy washes into the proposed project area and the proposed project has the potential to indirectly affect the lizard's blow sand dune habitat dynamics.

5.2.1.8.2 Birds

Prairie Falcon

The prairie falcon is not uncommon in dry environments such as the Colorado Desert. A prairie falcon was seen during the April-May 2009 desert tortoise surveys and the CNDDB includes records of two prairie falcon nest sites in the Arica and Little Maria mountains that border Rice Valley. Prairie falcons nesting on the rock ledges of the surrounding mountains could be expected to forage in Rice Valley and the proposed project area.

Golden Eagle

There are no local CNDDB records for this large raptor species in the Rice Valley area but appropriate nesting habitat is found in the surrounding mountains. Whether it is attributable to a former eagle nest or not, a historic mine located in the Little Maria Mountains directly south of the proposed solar site is labeled as the "Eagle Nest Mines" on BLM's Blythe 1:100,000 topographical map. The proposed project area provides foraging habitat for golden eagles that may be nesting in the surrounding mountains.

Western Burrowing Owl

The lack of local CNDDB records for the burrowing owl likely reflects a lack of surveys or limitations of database's value when past observations are not reported. Likely habitat for this diurnal owl occurs throughout Rice Valley including the proposed project area. Sundance Biology, Inc. found burrowing owl sign at appropriately sized burrows within the proposed solar site and along the proposed generator tie-line (Figure 5.2-5). This species could be found in the Rice Valley during the breeding and non-breeding season and there is a strong likelihood that the species will be encountered during project construction.

Loggerhead Shrike

This predatory passerine was observed three times in the project area in May 2009 by Sundance Biology, Inc. The biologists concluded that the birds may be nesting in the project area.

5.2.1.8.3 General Wildlife

The desert tortoise survey conducted between April 18, 2009, and May 18, 2009 was also intended to characterize the habitat within the proposed project area and to document the other animal species that occurred there. Binoculars were used to aid in bird identification. No nests were observed. Noteworthy observations included the western tanager (*Piranga*

ludoviciana), great-tailed grackle (*Quiscalus mexicanus*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). These species are typically associated with wetland and riparian habitats. It is likely that these three species were observed passing through the Rice Valley on their way eastward toward the Colorado River. A complete list of wildlife species observed during the biological surveys is found in Table 5.2-4 and in Appendix 5.2C.

5.2.2 Environmental Analysis

This section identifies biological resources that may be affected either directly or indirectly by the proposed project. Direct and indirect impacts are also characterized as either permanent or temporary in nature. These impact categories are defined below and are applied as part of the environmental analysis.

- **Direct**: The California Environmental Quality Act (CEQA) defines direct impacts as those resulting from the project and occurring at the same time and place. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities would be considered a direct impact. Examples include loss of habitat resulting from clearing vegetation, encroaching into wetlands, diverting natural surface water flows, and harm of individuals.
- **Indirect:** CEQA defines indirect impacts as those caused by the project but occurring later in time or farther removed in distance, though still reasonably foreseeable and related to the project. As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples include elevated noise and dust levels, increased human activity, decreased water quality, and the introduction of invasive wildlife (e.g., feral cats, dogs, and burros) and plants.
- **Permanent:** All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include the removal of native habitat for the construction of a building or permanent road.
- **Temporary:** Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include increased vehicle movement and noise from construction activities and habitat loss during underground pipeline trenching activities (assuming re-vegetation).

Potential direct and indirect impacts to biological resources were evaluated to determine the permanent and temporary effects of project construction, operation, maintenance, and decommissioning of the project and supporting facilities.

5.2.2.1 Standards of Significance

The proposed project would result in a significant impact on biological resources if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered, threatened, candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS;

- Has a substantial adverse effect on federal or state protected waters of the U.S. (including wetlands) as defined by Sections 404 and 401 of the Clean Water Act or the Porter-Cologne Act, either through direct removal, filling, hydrological alteration, or other means;
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory native wildlife corridors, or impede the use of wildlife nursery sites;
- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;
- Threatens to eliminate a plant or animal community;

As defined in CEQA Section 15380, a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future.

5.2.2.1 Potential Impacts of Project Construction, Operation, and Maintenance

5.2.2.1.1 Construction of the RSEP Sites and Associated Buildings and Roads

The 1,410-acre RSEP solar generation site will include the solar collection field, power block, administration and maintenance buildings, switchyard, two water wells, two leach fields, and three evaporation ponds (Figure 2.2-1 and 2.2-2). One of the onsite wells is an existing well that will be modified for use. A second new well will be drilled. Construction and operations access to the site will be directly off of SR 62. A temporary logistics area will be used during construction and will be located between SR 62 and the solar site. This area will included a temporary 11-acre parking area, 31–acre RV trailer park for the workers, and an 18-acre construction office, laydown, and heliostat assembly area. These logistics areas are included within the 1,504-acre area subject to grading, but will be disassembled prior to operation. Power during construction will be provided by a connection to the existing 12-kV generator tie-line that parallels the south side of SR 12 and is immediately adjacent to the project site, and from onsite generators. The structures in the temporary logistics area will be removed following construction. This area will be restored but the habitat value will be limited due to being located between the aqueduct/railroad/SR 62 corridor and the RSEP site.

The perimeter of the solar site will be surrounded by a security fence with an attached desert tortoise exclusion fence. The logistics area will be included within the fencing during construction. Following construction, the temporary fencing around the logistics area between the solar site and SR 62 will be removed. The perimeter access road around the heliostat field will act as a small berm and will be surrounded by an unlined ditch to direct stormwater around the solar site. A dirt, gravel, or paved road will be located on the raised berm on the inside of the ditch and the fenced perimeter. This road will be graded as needed for maintenance. Onsite run-off will be directed toward an onsite, approximately

30-acre-foot detention basin. All detention basins will be designed to percolate, evaporate, or drain the flows (at pre-existing flow rates) from the site.

Site preparation is expected to begin in the first quarter of 2011 and with clearing and grubbing of the power block area. Other areas within the 1,410-acre heliostat field will be cleared only as needed to install the heliostats or provide permanent access to them for mirror washing. Therefore, some level of grading within the heliostat field is expected to continue for the length of time that it takes to install the 17,500 heliostats. Areas next to and under the heliostats will be left ungraded but may be disturbed by vehicles during construction.

Construction will likely include a peak workforce of approximately 438 onsite personnel and work will occur between 5 a.m. and 7 p.m. on weekdays and Saturdays. Additional hours, including night work will be needed to complete tasks such as continuous concrete pours and to avoid extreme temperatures. RSEP is expected to employ up to 47 full-time employees during operation and is designed for an operating life of 30 years.

Generator Tie-line Construction

The proposed 230-kV electrical generator tie-line will be approximately 10.0 miles long and extends from the southeast corner of the solar site across Rice Valley to the existing Western Blythe-Parker 161 kV/230 kV transmission line near the base of the Riverside Mountains (Figure 5.2-1). Approximately 8.0 miles of the new generator tie-line will be located on BLM land. Construction of the first 4.6 miles of the tie-line originating from the solar site will require the construction of a 12-foot-wide dirt service road. The remaining 5.4 miles of the line will follow an existing dirt road (Rice Valley Road) to the interconnection substation. It is unlikely that the existing dirt road will need to be widened or improved for use. Steel, 85- to 115-foot-tall monopoles will be installed approximately every 600 feet for a total of 90 poles. Each pole will be supported by a 4-square-meter concrete base foundation. At the interconnection, a new 300 x 400 foot electrical substation will be constructed. The interconnection substation will be surrounded by a chain link security fence with attached tortoise exclusion fencing.

Road construction for the approximately 4.6 miles of new dirt road will be completed with a grader. The majority of the equipment staging for the pole installation (i.e., drill rigs, concrete trucks, and trailers with pole section) will be from the dirt road. After the foundations are drilled and poured, the poles will be assembled in sections. The electrical generator tie-lines will be strung from rubber-tired spooling trucks positioned near the towers. The proposed electrical generator tie-line is discussed in greater detail in Section 3.0.

Operation and Maintenance

The heliostat field and solar power generation equipment will be started daily and generated electricity will be interconnected to Western's Blythe-Parker 161 kV/230 kV transmission line. Raw water will be drawn daily from two onsite wells, located within the main solar site.

Groundwater will go through a treatment system for use as boiler make-up water and to wash the heliostats, and water consumption will be minimal (estimated at no more than 180 acre-feet/year). No reject streams from water treatment are planned to be generated onsite under the treatment scheme. However, for current planning purposes, three

evaporation ponds of approximately 5 acres each are included. They can serve for boiler commissioning and emergency outfalls from any of the processes. These ponds will be appropriately covered to prevent any standing water from subsidizing potential predators of desert tortoise or other special-status species.

Operation and maintenance requirements necessitate the washing of the solar heliostats at night for approximately 260 days per year. Best Management Practices (BMPs) for the use of wash water are outlined in the Stormwater Pollution Prevention Plan (SWPPP). The water used for this process will be of relatively high quality but will contain trace amounts of chemicals such as oxygen scavengers that are not expected to result in substantial changes in water quality. A pressure washer or other method will be used to wash the heliostats to minimize the amount of water used, and no water will run offsite due to the onsite basin catchment system and the earthen berm surrounding the proposed solar site. Due to the high evaporation rates in the area, and the minimal amount of water used, it is likely that wash water will evaporate at or just below the ground surface. By implementing good engineering practices and BMPs in the project design and operation, and because storm water discharge during construction will adhere to a SWPPP and to state water quality standards, no significant impacts to surface or subsurface water quality are expected during construction or operation of the project

Rapidly germinating weeds such as tamarisk (*Tamarix* spp), will quickly colonize areas of moist soil such as those expected to occur in the solar fields after wash water is used to clean the mirrors. Aggressive weed control will be needed during construction, operations, and maintenance activities to minimize the germination, introduction, and spread of noxious weeds.

Onsite stormwater runoff will be directed toward onsite detention basins and offsite stormwater will be directed around the site.

Impacts to biological resources resulting from the construction of project facilities (e.g., solar field, substation, and power tower), access road, and staging areas, and the subsequent operation and maintenance of these facilities depend primarily on the proximity and quality of the habitat, the presence and rarity of special-status species, the presence and quality of breeding habitat, and the effectiveness of measures instituted to protect these resources from exposure to project activities. As discussed in detail below, impacts to biological resources due to construction of the solar field, project facilities, and generator tie-line, as well as operation and maintenance, are considered less than significant with the incorporation of the mitigation measures provided in Section 5.2.4, Mitigation Measures.

5.2.2.1.2 Impacts to Special-Status Plants

Perennial Plants

Construction of the proposed project site could result in permanent impacts to the Wiggin's cholla. One individual of this species was noticed during the tortoise surveys. Wiggin's cholla is a CNPS List 3 (review and gather information) species.

Annual Plants

Construction of the proposed project site could result in permanent impacts to the chaparral sand-verbena. Individuals of this species were recorded at two locations within the RSEP site. One of these locations is outside of the heliostat circle in the southwestern corner of the

parcel and could easily be avoided, and the other is within the heliostat circle within the eastern third of the site.

Construction of the generator tie-line could affect the five populations of Harwood's milk vetch that were discovered along the generator tie-line (totaling 30 to 40 individual plants). Judicious siting of the generator tie-line and its access road could lead to avoidance of this species during final project design.

5.2.2.1.3 Noxious Weeds

Species of noxious weeds and other weedy species are likely to invade disturbed areas and may continue to invade for many years following the initial ground-disturbing activity and washing of the mirrors. The removal of existing vegetation and soil disturbance due to construction could create conditions suitable for the germination, establishment, and spread of noxious weeds. Construction equipment is a known noxious weed vector and can transport weeds from other areas into previously weed-free areas, or cause the rapid and widespread increase of already established noxious weeds (Von Der Lippe and Kowarik, 2007).

Three species of invasive weeds that are not specifically know as noxious weeds, were observed within the project area during the 2009 surveys, Mediterranean grass (*Schismus arabicus* and *S. barbatus*), filaree (*Erodium cicutarium*), and Sahara mustard (*Brassica tournefortii*).

The possible spread or introduction of noxious weeds due to project construction is a potentially significant impact. Aggressive weed control throughout the project site and along roadsides used to access the site will be required during project construction and operation. Weed control measures may result in preventing the re-colonization of native desert species, depending on the time of year that weed control is implemented.

5.2.2.1.4 Impacts to Sonoran Creosote Bush Scrub Vegetation

Approximately 1,504 acres (2.35 square miles) of the Sonoran Creosote Bush Scrub Community type could be displaced by project facilities, disturbed by construction, or permanently lost by ongoing, long-term, disturbance associated with operations and maintenance of facilities and the need to reduce standing vegetation due to fire hazard.

5.2.2.1.5 Impacts to Wetlands and Other Waters

Construction activities, including vegetation clearing and grading, would result in alteration, rerouting, fill, and loss of some of the existing ephemeral washes within the heliostat field. Features most likely to be affected are the small, weakly expressed ephemeral washes that lack a defined bed and bank. Following construction, annual rainwater will flow freely across the entire site with the exception of the power block areas, the substation, and storage building. Water diverted by the diversion berms will be discharged back into the ground downstream of the power block corners. As needed during operations, accumulated sediment and debris along the perimeter fence will be removed to ensure fence integrity and to maintain natural drainage across the site.

Construction of the power blocks, substation, and administration building would result in the permanent loss of ephemeral washes within the heliostat field and power block areas. Additional construction activities such as the construction of the generator tie-line access road and placement of additional power poles would result in permanent and temporary

disturbances and a small amount of additional impacts to the washes in the project study area.

Operation and maintenance of the heliostat mirrors would require vehicle access between every other row to wash the mirrors on a regular basis. Less frequent access would be necessary for maintenance and vegetation clearing or cropping. These activities would involve driving through existing drainages and also through drainages that have reformed due to natural processes.

Construction and operation of the facility are not likely to result in a substantial loss of ephemeral washes or a change in the drainage patterns or hydrology of the site because most washes are expected to naturally reform. The temporary and permanent loss of ephemeral drainages is therefore not considered to have a significant impact on biological resources. Construction and operation may require permits from the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) and CDFG, and these permits may have special conditions; however, replacement of lost ephemeral wash habitat is typically not required. BMPs, as listed in the project SWPPPs, will be implemented during project construction and operation.

5.2.2.1.6 Impacts to Special-Status Wildlife Species

Overview

Temporary and permanent impacts to special-status wildlife could occur from removal and crushing of shrubs and herbaceous vegetation (resulting in loss of nesting/breeding and foraging habitat), vegetation clearing, trenching, entombment of animals in dens or burrows, collisions with vehicles, collision with power line conductors or towers, electrocutions, heat from concentrated solar radiation, increased predation, disturbance from noise, and further fragmentation of habitat. These impacts have the potential to be significant.

RSE anticipates that impacts to biological resources will be sufficiently avoided, minimized, and mitigated with the successful implementation of the proposed mitigation measures listed in Section 5.2.4. Species-specific impacts are discussed in the following sections.

Mojave Fringe-Toed Lizard

The construction of the proposed RSEP would not include direct impacts to the dune sand habitat which the Mojave fringe-toed lizard is so closely associated with. However, as previously mentioned, loose sand from dry desert washes is a blow sand source and fringe-toed lizards have the potential to leave the Rice Valley dunes and traveling up these sandy washes into the proposed solar site or generator tie-line corridor. This species could be harassed, crushed, buried, or stranded if they wander into the proposed footprint during construction.

Desert Tortoise

The desert tortoise is protected under the FESA, the CESA, and Title 14, California Code of Regulations (Sections 670.2 and 670.5), and any potential impacts to individuals of this species, or habitat critical to their survival, resulting from the proposed project must be mitigated/offset to reduce those impacts to a less-than-significant levels. Significant direct and indirect impacts could occur to the desert tortoise as a result of the RSEP if the proposed mitigation measures detailed in Section 5.2.4 are not implemented.

The proposed project site is not within critical habitat for the desert tortoise or a DWMA but desert tortoise presence has been confirmed in the project footprint. The construction of the RSEP would result in the loss of approximately 1,504 acres of desert tortoise habitat through the clearing and grubbing of vegetation for the installation of project facilities and structures. Tortoises will be permanently excluded from the solar site, which will limit the amount of available suitable habitat for burrowing and forage as well as providing a barrier to movement. Displacement of desert tortoises will likely adversely affect individuals who have lost all or a portion of their established home range as a result of the exclusion as well as the tortoises that occupy home ranges in which the displaced tortoises would subsequently occupy. Without the implementation of appropriate mitigation measures, these actions could result in direct mortality, injury, or harassment of individuals as a result of encounters with vehicle or heavy equipment, whether on the project site or from vehicles straying from existing roads or designated areas into adjacent habitat. Other direct impacts could include individuals being crushed or entombed in their burrows, possible collection or vandalism by project-related personnel, disruption of tortoise behavior during construction or operation of facilities, disturbance by noise, injury, or mortality from encounters with workers' or visitors' pets. Also, tortoises may take shelter under parked vehicles and be killed, injured, or harassed when the vehicle is moved.

Additionally, the permanent loss of desert tortoise habitat that would occur from the removal and crushing of shrubs and herbaceous vegetation would indirectly impact the species through the loss of burrowing, breeding, and foraging habitat. Other potential direct impacts to desert tortoise resulting from construction and installation, operation, modifications or improvements, and maintenance of project facilities may include project facilities acting as a barrier impeding the natural movements of desert tortoise throughout their habitat and compaction of soils. Also, increased levels of surface-disturbing activities and potentially wash water-induced vegetation may increase the abundance of alien plants and wildfire frequency (Brooks et al., 2003).

Increased vehicle travel will occur from the construction and improvement of access roads, which could disturb or even kill individual tortoises. During the 24 month-long time period in which the RSEP workforce is at its largest (months 6 to 30) an estimate of the average daily traffic would be as high as 765. Likewise during this time period, the average total of construction truck traffic would be approximately 90 per day. However, for all other periods during construction (and to a much greater extent during operations and maintenance activities) daily average vehicle activity would be less. In addition to potential collisions between vehicles and individual tortoises, additional impacts may include habitat fragmentation, increases in predator populations (especially common raven and coyote) using vehicle road kills to supplement the diet, changes in plant community from fires, loss of foraging and burrowing habitat from the road, restriction of movements and gene flow, changes in plant composition due to alien plant introductions along the road corridor, and mortality of tortoises from various illegal activities such as collecting for pets or food and shooting of tortoises. The potential for the most severe impacts are along paved roads where vehicle frequency and speed is greatest, although tortoises on dirt roads may also be affected depending on vehicle frequency and speed. Census data indicate that desert tortoise numbers decline as vehicle use increases (Bury et al., 1977) and tortoise sign increases with increased distance from roads (Nicholson, 1978). Additional unauthorized

impacts that may occur from casual use of the new and existing roads in the project area, including unauthorized trail creation.

Food-related trash or excess water associated with the RSEP activities could attract tortoise predators such as the common raven, kit fox, and coyote. Natural predation in undisturbed, healthy ecosystems is generally not an issue of concern. However, predation rates may be altered when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1,500 percent from 1968 to 1988 in response to expanding human use of the desert (Boarman, 2002). Since ravens were scarce in this area prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM, 1990). In addition to ravens, feral dogs have emerged as significant predators of the tortoise. Dogs may range several miles into the desert and have been found digging up and killing desert tortoises (USFWS, 1994a; Evans, 2001). Dogs brought to the project site may harass, injure, or kill desert tortoises, particularly if allowed off leash to roam freely. The worker environmental awareness training is intended to reduce the potential for these impacts.

If tortoise-proof fencing is installed to exclude tortoises from the work areas, over time breaches may occur, thus allowing tortoises to pass through the barrier and be impacted by project-related activities. Temporary fencing left in place following removal of the threat to tortoises in the area may also contribute to habitat fragmentation. Materials and equipment left behind following construction may entrap or entangle tortoises, attract desert tortoise predators, or provide shelter for tortoises, which when removed may result in displacement or injury of the tortoise.

Construction of the generator tie-line interconnection would result in additional 12 acres of desert tortoise habitat impacts. This includes the permanent loss of vegetation for forage and cover within the approximately 13.4-acres that will be cleared for the new generator tie-line maintenance and access road (4.6-miles of new 24-foot-wide roadway disturbance area) and small areas of disturbance for the transmission towers (approximately 90 towers and 400 square-foot disturbance area per tower) totaling less than one acre. The impacts of habitat restoration after the 30-year life of the facility and weed-control during operations and maintenance in these and other project areas may be significant without proper planning and implementation. These activities may involve the use of heavy equipment, all-terrain vehicles (ATVs), or hand-tools and include re-contouring, ripping of soil, ground watering, broadcast seeding, use of water trucks for dust abatement, and planting of live vegetation. Use of vehicles and heavy equipment may increase the risk of injury or mortality of individual tortoises, result in short-term displacement and/or noise during the project, create short-term loss of vegetation, and result in temporary ground disturbance due to fencing or the installation of barricades. Many potential effects of habitat restoration are the same as, or similar to, other surface-disturbing activities identified above. Activities associated with weed treatments that may affect the desert tortoise include application of herbicides, clearing or cutting vegetation by hand or machinery, and use of ATVs on disturbed areas for site access. Effects to the desert tortoise include unintentional removal or destruction of plants used by tortoises for forage or shelter, soil compaction, alteration of local microclimate through vegetation removal, and harassment, injury, or mortality of tortoises as a result of vehicle or machinery operation.

Beneficial effects of the habitat restoration activities may include long-term improvement of species diversity (including food sources), long-term reduction in erosion, long-term increased habitat quality, increased tortoise abundance and distribution through habitat enhancement, decreased potential for future alien plant invasions, and decreased wildfire potential.

Potential impacts from the activities of capturing, handling, and relocating desert tortoises might be significant. Blythe et al. (2003) found that Sonoran desert tortoises moved less than 0.5 mile had returned to their home ranges within a few days. Unless movement barriers are in place, tortoises are likely to return to potentially harmful conditions. Tortoises may die or become injured by capture and relocation if these methods are performed improperly, particularly during extreme temperatures, or if they void their bladders. Averill-Murray (2001) determined that tortoises that voided their bladders during handling had significantly lower overall survival rates (0.81 to 0.88) than those that did not void (0.96). If multiple desert tortoises are handled by biologists without the use of appropriate protective measures, such as reused latex gloves, pathogens may be spread among tortoises.

The impending "take" of the species will require consultation under Section 7 of the FESA with USFWS, as well as an incidental take permit from CDFG under the CESA. In terms of CEQA and the National Environmental Policy Act (NEPA), the proposed measures in Section 5.2.4, along with additional measures provided by USFWS, CDFG, BLM, and CEC, are expected to sufficiently reduce the significance of the project's impacts on the desert tortoise.

5.2.2.1.7 Impacts to Burrowing Owl

Burrowing owl sign was confirmed on the proposed project site and suitable habitat for this ground dwelling bird was identified throughout the proposed project area. Noise and activity associated with construction of the RSEP during the non-nesting season could disturb burrowing owls and cause them to avoid the construction area. It is unlikely that the burrowing owl density is great enough that displaced owls would be unable to find sufficient habitat for forage and cover in nearby areas with less human activity. Burrowing owls are more likely to be directly impacted by the project if they have a nest established or are attempting to establish a nest in or near the project area during construction activities. Nesting season is typically from February 1 through August 31 and during this period there is potential for individual owls, young, and eggs to be destroyed or their nests abandoned. The project will result in the permanent loss of approximately 1,504 acres of burrowing owl habitat. However, this loss will likely be offset by the amount of available appropriate habitat nearby and if offsite habitat is acquired and managed in perpetuity for the burrowing owl. Mitigation measures to reduce significant impacts to burrowing owls are included in Section 5.2.4.

5.2.2.1.8 Impacts to Raptors

Raptors such as the golden eagle, prairie falcon, and red-tailed hawk are likely to find suitable nesting sites in the surrounding mountains and existing transmission line poles in the area. Noise and activity associated with project construction during the non-nesting season could disturb raptors and cause them to avoid the construction area. However, predators such as raptors are sometimes attracted to areas being subjected to ground disturbance such as plowed agricultural fields or the clearing and grubbing of the proposed RSEP solar site. These activities often expose their prey or provide scavenging

opportunities. As with the burrowing owl, it is unlikely that the raptor density is great enough in the general vicinity that displaced birds would be unable to find sufficient habitat for forage and cover in nearby areas with less human activity. Raptors are more likely to be directly impacted by the project if they have a nest established or are attempting to establish a nest in or near the project area during construction activities. Nesting season is typically from February 1 through August 31 and during this period there is potential for individual birds, young, and eggs to be destroyed or their nests abandoned. Nest sites in the surrounding mountains are likely far enough away from the proposed construction site to avoid being directly impacted by the construction activities. Nests on the adjacent transmission line poles along SR 62 or nests that may occur on the existing towers near the proposed generator tie-line substation and tie-in could be affected. The project will result in the permanent loss of approximately 1,504 acres of raptor foraging habitat. However, this loss will likely be offset by the amount of available appropriate habitat nearby and if offsite habitat is acquired and managed in perpetuity in a way that is beneficial to raptors. The intensity of the concentrated solar heat generated by the heliostats is extreme enough to result in the death of or injury to raptors that fly too close to the receiving tower during production. Mitigation measures to reduce significant impacts to raptors are included in Section 5.2.4.

5.2.2.1.9 Impacts to Nesting Migratory and Resident Birds

Although occupied bird nests were not observed during the 2009 surveys, there are a variety of shrub and ground nesting bird species that are likely to nest throughout the proposed RSEP area. As discussed for the burrowing owl and other raptor species, adult and fledged juvenile birds may chose to avoid the proposed project area if deterred by the construction activity and the associated noise. However, individual birds may be attracted to the construction site or not sufficiently disturbed to leave the vicinity. Insufficient trash disposal or the availability of water could result in some bird species having a common presence in the active construction site. The primary risk during construction is the direct destruction of occupied nests or the disturbance of occupied nest that results in nest failure. Much of this risk can be avoided by initiating and completing all clearing and grubbing activities prior to the nesting season. Some bird species will readily nest in artificial structures and it is not uncommon to find killdeer (*Charadrius vociferus*) nesting on the gravel laid down for the construction logistics area or passerines building nests in onsite trailers or stored equipment. Biological monitors and project personnel will need to be diligent in identifying potential nest-building behavior prior to egg laying. The project will result in the permanent loss of approximately 1,504 acres of bird habitat. However, this loss will likely be offset by the amount of available appropriate habitat nearby and if offsite habitat is acquired and managed in perpetuity in a way that is beneficial to bird species. The intensity of the concentrated solar heat generated by the heliostats is extreme enough to result in the expedient death or injury to birds that may fly too close to the receiving tower during production. Measures designed to minimize these potential impacts are included in Section 5.2.4.

5.2.2.1.10 Impacts to American Badger

The project area contains foraging and denning habitat for the American badger. Construction of the RSEP could result in significant impacts to the American badger via mortality, injury, or harassment, as well as the loss of approximately 1,504 acres of habitat. Badgers do not typically adapted readily to human activity and it is likely that they may

also avoid remaining habitat surrounding the fenced RSEP during operation. This species also tends to have a large home range which will be interrupted by the barrier of the fenced approximately 1,410-acre solar site. The primary direct impacts are associated with the initial clearing and grubbing of the proposed solar site when badgers could be buried or otherwise killed or injured by ground-disturbing equipment. Displaced badgers will likely find appropriate habitat nearby that is less subject to human activity. Increased traffic on SR 62 during construction and operation is likely to increase the possibility of collisions with badger in the local area. Concurrent with the desert tortoise clearance survey, a qualified biologist will perform a preconstruction survey for badger dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. Measures intended to minimize potential impacts to the badger are included in Section 5.2.4.

5.2.2.1.11 Impacts to Bats

There is no obvious bat roosting habitat within the proposed RSEP footprint but a variety of bat species may roost in the mines, caves, and crevices within the nearby hills. It is unlikely that noise associated with the construction within Rice Valley will directly or indirectly affect those potential roost or maternity sites through impacts associated with noise, dust production, or increased human activity. The project will result in the loss of 1,504 acres of potential foraging habitat. It is unlikely that the Rice Valley represents an important foraging area and bat species are likely to find sufficient forage in neighboring areas. These nocturnal animals will avoid the concentrated heat produced by the solar facility during the day and will likely be able to avoid collision with the single receiving tower. Measures included in Section 5.2.4 are intended to minimize potential impacts to bat species.

5.2.2.1.12 Impacts to Nelson's Bighorn Sheep

It is unclear how projects such as RSEP would affect the small herds of bighorn sheep that inhabit the mountain ranges north and south of the proposed project area. The bighorn is not known to enter Rice Valley for foraging or movement but preserving the travel corridors between the surrounding mountains is an important factor in the future viability of the local metapopulation. RSEP will likely contribute to the cumulative effects associated with the existing barrier created by the aqueduct, railroad, and SR 62 along the northern boundary of Rice Valley. Other than vehicle traffic on SR 62, there is no consistent human activity in Rice Valley. It is unclear how construction and operation of RSEP will influence bighorn sheep behavior. Noise from construction, existence of the facility, reflected light from the mirrors, and full-time human activity during operation has the potential to influence their behavior. Without an effective means of measuring these effects, it is problematic to propose minimization and avoidance measures that would reduce their significance. RSE is interested in discussing this issue with BLM and CDFG.

5.2.2.1.13 Noise and Lights

Noise from construction, operations, and demolition activities could temporarily discourage wildlife from foraging and nesting adjacent to the project area. Many bird species rely on vocalization during the breeding season to attract a mate. Noise levels from certain construction, operations, and demolition activities could reduce the reproductive success of nesting birds. Construction activity noise levels are provided in Section 5.7. The expected loudest composite noise levels are approximately 89 dBA at 50 feet from the activity, which results in noise levels of approximately 77 and 61 dBA at distances of 200 and 400 feet from

the activity, respectively. Project-induced noise at the southern boundary of the heliostat field fenceline will be approximately 52 dBA.

Noise impacts to wildlife are difficult to measure; however, results of several studies summarized by Golden, et al. (1980; *Environmental Impact Data Book*, Table 8-9, page 517) indicate no impacts from aircraft noise at 75 dBA for several wildlife species (caribou, waterfowl, moose, bison). Burrowing owl, for example, have been noted to reside within 100 to 200 feet of an active railway with measured noise levels of approximately 90 dBA at a distance of 50 feet from the railway (see Rio Linda/Elverta Power Project, 01 AFC-01, Appendix J-1, Map Sheet A).

The construction and commissioning period is approximately 30 months from start to finish, and wildlife often become habituated to ongoing general construction noise. Weisenberger et al. (1996) found that bighorn sheep responded to aircraft over-flights with increased heart rates and altered behavior; however, animal response decreased with increased exposure. In general, nearly all equipment will be specified to have near-field maximum noise levels that do not exceed 90 dBA at three feet from the activity (or 85 dBA at three feet where available as a vendor standard) to limit the noise exposure of plant personnel to acceptable levels (Section 5.7). As a result of these design features, the temporary nature of these activities, and the adherence to noise-reducing mitigation measures, the noise levels at the project fenceline are not expected to have any significant impact on nearby wildlife resources.

Operational noise, anticipated to be less than 50 dBA at the project boundary, will be more consistent and at a much lower level than for construction. The power plant will operate an average of about 12 hours a day, seven days a week throughout the year, with the exception of scheduled shutdowns for maintenance. The solar field and power generation equipment will be started up each morning after sunrise and insolation build-up. The heliostats will be stowed in the evening when insolation drops below the level required to generate power, but the generation equipment will often continue operation using the liquid salt storage system during peak demand hours. This pattern will tend to concentrate noise-generating activities during the daylight and evening hours when ambient levels (such as the adjacent SR 62) are typically highest. Therefore, with the implementation of noise-reducing mitigation measures, the impact on surrounding wildlife is expected to be less-than-significant.

Bright night lighting could disturb wildlife that occurs adjacent to the project site (e.g., nesting birds, foraging mammals, and flying insects). Night lighting is also suspected to attract migratory birds to areas and, if the lights are on tall towers or structures, collisions could occur. Additionally, certain lighting may attract insects which in turn may attract birds such as nighthawks and bats to forage. The RSEP lighting will meet the requirements for security, operations and maintenance, and safety, and will be shielded and pointed downward and away from the habitat outside of the project area to minimize impacts to nesting birds and other nearby wildlife, and to reduce the potential for avian and bat attraction and collision. Also, night lighting will have switches to allow them to be turned off when not in use. FAA-required, flashing white lights will be the only permanently-on lighting for the taller facility structures.

5.2.2.1.14 Impacts to Trees

Several screw bean (*Prosopis pubescens*) trees were observed in the northwestern portion of the plant site. A small screw bean tree was observed in the generation tie-line corridor west of the location of the proposed interconnection substation. No other trees were observed in the project area. The project will avoid these trees.

5.2.2.1.15 Potential for Collision, Burn, and Electrocution Hazard to Birds and Bats

The project design for all phases will result in the construction of up to 90 transmission towers 85 to 115 feet in height, and a solar receiver tower that will be 653 feet high to the top of the crane. Numerous other project-related structures lower in height will also be constructed. These structures, along with the proposed electric generator tie-lines, could result in bird and/or bat collisions. Most bird collisions involve nocturnal migrants flying at night in inclement weather and low-visibility conditions, colliding with tall, guyed television or radio transmission towers (CEC, 1995; Kerlinger, 2000 in Final Staff Assessment for Contra Costa Power Plant).

Birds that fly into the reflected sunlight between the heliostats and the transmission towers could be impacted. The heat intensity of the reflection is high enough to potentially enflame the bird. However, many birds generally migrate at night and at an altitude that would avoid ground structures, except when crossing over topographic features (e.g., ridge tops) or when inclement weather forces them down closer to the ground. Therefore, low-flying individual birds may be impacted during daylight operation. However, the heliostats will be stowed at height of 14 feet at night and during inclement weather.

The project area is not known to be a flyway for migrating birds. There are no topographic or ecological features that would attract birds to this location or "funnel" them into the vicinity of the power towers, boiler stacks, or other elevated features of the project. Bird collisions are expected to be rare due to the lack of proximity to migratory pathways, ridge tops, and concentrations of waterfowl. Based on the lack of locations of concentrated roosting sites for bats specific to the project area, it is anticipated that large numbers of bats would not use specific routes to move between roosts and foraging and watering sites. Shielded lighting consisting of sodium bulbs that are directed downward will reduce the potential for avian and bat attraction and collision. Measures intended to minimize potential impacts to birds and bats are included in Section 5.2.4.

Large raptors can be electrocuted by transmission lines when a bird's wings simultaneously contact two conductors of different phases, or a conductor and a ground. This happens most frequently when a bird attempts to perch on a structure with insufficient clearance between these elements. The presence of distribution lines 69 kV or less represents more of a danger to raptors than transmission lines greater than 69 kV, because the spacing between elements in distribution lines is much less than that of transmission lines. This increases the chance of phase-to-phase or phase-to-ground contact because the conductors are closer together than the wingspan of many raptor species, thus allowing the bird species to contact both elements at once causing electrocution (APLIC, 1996). The proposed generator tie-line would be 230 kV. While increasing the potential for electrocution associated with the installation of distribution and transmission lines in the project area is a potential significant direct impact to raptors, the line will incorporate design measures to greatly reduce the chance of electrocution. The installation of transmission lines and poles will be constructed according to the most recent "raptor-friendly" guidelines (APLIC, 2005), ensuring that

conductor wires are appropriately spaced to minimize the potential of raptor electrocution. Additionally, all overhead power lines will be equipped with raptor perch guards. Therefore, the installation of the additional generator tie-line line segment is not expected to increase avian electrocutions in the area, and the "raptor-friendly" design would reduce potential impacts. These measures are outlined in Section 5.2.4.

5.2.2.1.16 Impacts to Wildlife Corridors

As previously stated, the completed and fenced RSEP solar site will be a barrier to local movements of terrestrial, non-avian wildlife. In conjunction with the existing aqueduct, railroad, and SR 62 corridor, the project will present an additional barrier to north-south movement between the Turtle Mountains and the Maria Mountains. The project will also impede localized east-west movements. Most species will be effectively diverted around the site which may not be significant given the existing barriers, primarily the aqueduct. Locating the RSEP adjacent to the existing disturbance along SR 62 likely will cause fewer adverse effects to wildlife that if the facility were proposed elsewhere in Rice Valley. The new generator tie-line is not expected to impact wildlife movement.

5.2.2.1.17 Impacts to Biological Resources of Recreational or Commercial Value

Although recreational activities occur in the general vicinity, there are no known recreational activities that occur on a regular basis within the project area. Hence, there are no biological resources of recreational or commercial value (such as hunting, fishing, or bird watching) that would be affected by the project. The proposed solar site is located on private property that is accessible but not intended for public access. The new generator tie-line will not be fenced and will not exclude any previous recreational activities.

5.2.2.2 Conflict with Regional Habitat Conservation Plans

RSEP is not within the planning area for a Habitat Conservation Plan administered under section 10 of the FESA. The proposed project does not conflict with the CDCA or NECO. RSEP is located in the eastern portion of the NECO Planning Area Boundary. Because the project site lies outside of USFWS-designated critical habitat and a DWMA, these activities are not expected to conflict with the USFWS Desert Tortoise Recovery Plan. Therefore, construction of the project would not conflict with the goals of the BLM conservation plans or other regional conservation plans.

5.2.3 Cumulative Effects

Although the environmental effects of an individual project may not be significant when that project is considered in isolation, the combined effects of several projects may be significant when considered collectively. This section addresses potential cumulative effects to the environment that could be associated with implementation of the RSEP in concert with one or more other past, present, and reasonably foreseeable probable future projects.

Section 15130 of the CEQA Guidelines requires that a project's cumulative effects be discussed when "[t]he incremental effect is cumulatively considerable . . ." According to CEQA Guidelines §15065(c), the term cumulatively considerable means "[t]hat the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects . . ."

Specifically, CEQA Guidelines §15355 define cumulative effects as:

> "[t]wo or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative effects can result from individually minor but collectively significant projects taking place over a period of time."

Consideration of the cumulative effects that would be associated with the RSEP is focused on activities located along the SR 62 corridor. Those activities include past, present, and reasonably foreseeable future developments along this roadway. There are currently no projects actively seeking authorization within 15 miles of the RSEP. For this reason, cumulative adverse impacts are unlikely to occur.

5.2.4 Mitigation Measures

The following section describes the proposed measures that are intended to avoid, minimize, offset, and mitigate the potential adverse effects of the project to biological resources. It also includes a summary of the proposed plan to monitor and document the effectiveness of their implementation. Measures associated with the desert tortoise were primarily developed using the guidelines provided in the NECO (BLM, 2002). These and measures contained within the USFWS biological opinion and other resource agency permits will be coalesced in a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). The BRMIMP will be prepared prior to construction and will outline how RSE will implement the measures.

5.2.4.1 Designated Persons

A Field Contact Representative, Designated Biologist, Authorized Biologist(s), and Biological Monitor(s) will be appointed to oversee compliance with the protection measures for the desert tortoise and other species.

a. The project owner's Environmental Compliance Manager (ECM) will act as the Field Contact Representative (FCR). This individual will be responsible for upper-level management of the natural resources and other environmental compliance issues associated with the project. This person will be the primary point of contact with the resource agencies during construction. The FCR will have the authority to halt any activities that may result in "take" of a special-status species and/or noncompliance with the measures contained in the BRMIMP. The FCR will also submit the monthly compliance report to the CEC Compliance Project Manager (CPM).

b. The Designated Biologist will be assigned to oversee the implementation of the BRMIMP, coordinate the Authorized Biologist and Biological Monitor activity, act as the primary contact with the FCR during construction, and prepare monthly compliance reports for the FCR. The Designated Biologist has the authority to halt

any activities that are in violation with the BRMIMP or may result in such a violation and to inform the FCR and construction/operation managers when those activities can be resumed. The Designated Biologist will also have the authority to speak directly with the resource agencies regarding compliance issues. The resume of the proposed Designated Biologist, with at least three references and contact information will be submitted to the CPM for approval at least 90 days prior to the start of construction. If the Designated Biologist needs to be replaced, the resume of the proposed replacement will be submitted to the CPM at least ten working days prior to the termination or release of the former Designated Biologist.

c. The Authorized Biologist or Biological Monitor will be onsite during ground-disturbing activities that have the potential to impact sensitive species and will be the principal agents in the direct implementation of the BRMIMP and compliance assurance. The Authorized Biologist and Biological Monitor will be responsible for Worker Environmental Awareness Program (WEAP) training, general surveys, compliance monitoring, and reporting. They will act on behalf of the Designated Biologist when the Designated Biologist is not available and will also have the authority to halt any activities that are in violation with the BRMIMP or may result in such a violation. Authorized Biologists will be the only persons to perform desert tortoise surveys and have direct contact with desert tortoises. The names and statement of qualifications of all proposed Authorized Biologists and Biological Monitors will be submitted to USFWS, BLM, Western, CDFG, and CEC for review and approval at least 30 days prior to initiation of any tortoise handling, clearance, and pre-activity surveys. Project activities will not begin until the Authorized Biologists and Biological Monitors are approved.

5.2.4.2 Worker Environmental Awareness Training

a. The BRMIMP will include a WEAP that will address the types of construction activities that may affect the desert tortoise and other biological resources. The WEAP will also describe the protective measures listed in the BRMIMP. Special emphasis will be placed on explaining the protective measures developed for the desert tortoise and the consequences of noncompliance. At a minimum, the program will contain information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protective measures associated with the desert tortoise.

b. The WEAP will be administered to all onsite personnel including employees, contractors, contractors' employees, supervisors, inspectors, subcontractors, and delivery personnel. A pamphlet that outlines basic critical information on dealing with desert tortoises encountered on the project will be provided to all personnel attending the program.

c. Participants will sign an attendance sheet and will receive a WEAP sticker to be worn on their hardhat. The stickers will be handed out individually to the attendees by the presenter. Workers will be provided with a wallet-sized card with a summary of key measures and information about what to do if they need to contact someone about compliance issues or if they observe a desert tortoise or other wildlife species on or near the RSEP.

d. The WEAP will be presented by the Field Contact Representative, Designated Biologist, Authorized Biologist, or Biological Monitor and may include an oral presentation, video/PowerPoint, and written materials.

e. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work.

f. The WEAP sign-in sheets will be kept on file for at least 6 months after the start of commercial operation. During RSEP operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

5.2.4.3 Compliance and Reporting

a. The FCR will oversee compliance with the BRMIMP including the assurance that sufficient numbers of Authorized Biologists and Biological Monitors are present during ground-disturbing or any other activities that could impact biological resources.

b. All non-compliance with the BRMIMP will be documented immediately and reported to the FCR. The FCR will then document and report the corrective action. As stated in the NECO, such incidents may include but are not limited to the following: (1) imminent threat of injury or death to a desert tortoise; (2) unauthorized handling of a desert tortoise, regardless of intent (3) operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads, and (4) conducting any construction activity without a biological monitor where one is required (BLM, 2002).

c. The CPM will be contacted for resolution if the FCR, Designated Biologist, Authorized Biologist, or Biological Monitor do not agree on a matter of compliance or the implementation of a measure contained in the BRMIMP.

d. The FCR or Designated Biologist will contact the CPM for a field review once the construction has been completed.

e. Proof of WEAP training and fulfillment of compensation requirements will be provided to CPM.

f. Observations of desert tortoise, burrowing owls, or of any listed or sensitive animal species will be reported to the CNDDB within 30 calendar days of the observation.

g. The CEC, BLM, Western, USFWS, and CDFG will be notified within one working day of the discovery of death or injury to a desert tortoise or any other special-status animal that occurs due to RSEP-related activities. Notification will include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5-minute quadrangle with GPS coordinates, and any other pertinent information.

h. The FCR will also submit the monthly compliance report to the CPM. The report will include the number of persons who have completed the WEAP training in the prior

month and a running total of all persons who have completed the training to date, along with a summary of the activities that have taken place and the BRMIMP measures that have been implemented (construction activities that were monitored, species observed).

i. A post-construction compliance report prepared by the Designated Biologist will be submitted to the CEC, BLM, Western, USFWS, and CDFG no later than January 31 following each year of construction or within 30 calendar days of any break in construction activity lasting more than 30 calendar days. This report will detail (i) dates that construction occurred; (ii) a general description of the status of the project site and construction activities, including actual or projected completion dates, if known; (iii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iv) an explanation of failure to meet such measures, if any; (v) known project effects on the desert tortoise and other special-status species, if any; (vi) occurrences of incidental take of species; (vii) a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure; an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for project impacts, (viii) documentation of employee environmental education; and (ix) other pertinent information.

j. The FCR or Designated Biologist will report any information to the appropriate agencies regarding take or suspected take of federal or state listed wildlife species not authorized by the USFWS biological opinion or CDFG incidental take permit. The FCR or Designated Biologist will notify the appropriate agencies via electronic mail and telephone within 24 hours of receiving such information. Notification will include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the appropriate agency regarding the disposition of the specimen or the appropriate agency takes custody of the specimen.

5.2.4.4 Compensation

a. RSE will offset the loss of desert tortoise habitat through a USFWS, CDFG, and BLM acceptable assessed financial contribution based on the final construction footprint. The compensation ratio is expected to be 1:1 based on the prescription in NECO for Category III tortoise habitat.

b. If the assessed financial contribution were used to acquire land for compensation, or if land were to be substituted for the financial contribution, then it will have a conservation easement or other appropriate entitlement, management plan, and endowment to manage the habitat in perpetuity; all of which will be reviewed and approved, and completed within 24 months following the start of construction.

5.2.4.5 Noxious Weeds

a. Noxious weed control will be implemented during construction and operation of the RSEP to reduce the potential for introducing noxious weeds to the project area. A Noxious Weed Control Plan will be prepared and submitted to CEC, BLM, and

Western for review and approval prior to construction. The Noxious Weed Control Plan will contain: (1) an assessment of noxious weeds that potentially could be introduced to the project area; (2) a description of measures to be used to survey for their presence during construction and operation; (3) monitoring and weed control methods to be employed during operation; and (4) reporting requirements. The BMPs included in the plan to prevent the spread and propagation of weeds will include: limiting ground disturbance and access; washing vehicles as necessary; and restoring areas of temporary disturbance in a timely manner.

The noxious weed control plan will outline steps to take to identify and treat weeds prior to seed maturation and dispersal to minimize the potential for weed establishment. In order to identify weeds while infestations are relatively small and easily controlled, the Authorized Biologist or Biological Monitor will conduct regular surveys for noxious weeds and full inspections at least two times per year (timed to occur early and late in the growing season) with special emphasis placed along the primary construction access roads.

b. Noxious weed infestations will be flagged by the Biological Monitor and controlled, using either mechanical (hand pulling, mowing) or chemical methods as approved by BLM and CEC. Only state and BLM-approved herbicides will be used, and all herbicide applicators will possess a qualified herbicide applicator license from the state. All herbicide applications will follow U.S. Environmental Protection Agency label instructions and be performed in accordance with federal, state, and local laws and regulations.

c. All temporarily disturbed areas will be rehabilitated following construction as outlined

5.2.4.6 Special-Status Plants

Avoidance of some special-status plants may be feasible during construction of the proposed project, but over the long-term, avoidance is not practicable because of the need to reduce the standing vegetation to prevent fire hazards and to maintain clear access to wash the heliostat mirror arrays and otherwise operate the facility.

Mitigation for the loss of special-status plants will be developed in coordination with the resource agencies, as part of the habitat replacement plan for the loss of desert tortoise, and may consist of the following approaches (or a combination thereof): (1) translocation of existing plants to an offsite location (outside the project site limits); (2) salvage of the plants to botanical institutions and native plant nurseries; (3) salvage of the plants to the general public; and (4) a fee in lieu of mitigation.

Brief summaries of these mitigation approaches are listed below:

a. Translocation (defined as transplanting plants to an offsite location) of salvaged perennial species to an offsite location that will be protected. If this option is selected, a rare plant translocation plan will be prepared as part of the BRMIMP and submitted to the CEC, CDFG, Western, and BLM for approval prior to implementation.

b. Seed from annual plants could also be collected and donated to botanical gardens or to universities for propagation and study.

c. If special-status annual plants are identified during preconstruction surveys, seed will be collected and re-spread to a suitable offsite location and monitored to determine if the seed germinates and grows. If this option is selected, a rare plant seeding and monitoring plan will be developed. This plan will be included in the BRMIMP and submitted to the CEC, USFWS, CDFG, Western, and BLM for approval prior to implementation.

d. A fee in lieu of, or as partial mitigation, may also be implemented. The exact fee and the appropriate fee recipient would be determined through coordination with the CEC, BLM, Western, CDFG, and USFWS.

5.2.4.7 Special-Status Wildlife

5.2.4.7.1 Desert Tortoise Construction Measures

a. Authorized Biologists will conduct all activities, such as locating desert tortoises and their sign (i.e., conduct presence/absence and clearance surveys) and attempting to ensure that the effects of the project on the desert tortoise and its habitat are minimized in accordance with the measures stated in the terms and conditions of the USFWS biological opinion. Authorized Biologists will keep current with the latest information on USFWS and CDFG protocols and guidelines. An authorized biologist will have thorough and current knowledge of desert tortoise behavior, natural history, and ecology, physiology, and will have demonstrated substantial field experience and training to safely and successfully:

   – handle and temporarily hold desert tortoises
   – excavate burrows to locate desert tortoise or eggs
   – relocate/translocate desert tortoises
   – reconstruct desert tortoise burrows
   – unearth and relocate desert tortoise eggs
   – locate, identify, and record all forms of desert tortoise sign

b. Biological Monitors will oversee all project construction activities with the potential to affect the desert tortoise. The Biological Monitors will provide oversight to ensure proper implementation of protective measures, record and report desert tortoise and tortoise sign observations in accordance with approved protocol, report incidents of noncompliance in accordance with the biological opinion and other relevant permits, and contact an Authorized Biologist in the event that a desert tortoise needs to be moved from harm's way and places in pre-selected "safe areas."

   The Biological Monitors will assist the Authorized Biologists during surveys and often serve as "apprentices" to acquire experience. Biological Monitors will not be authorized to conduct desert tortoise presence/absence or clearance surveys unless directly supervised by an Authorized Biologist. "Directly supervised" means the Authorized Biologist is in direct voice and sight contact with the Biological Monitor.

c. During construction, RSEP will comply with the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council, 1994).

d. The boundaries of all areas to be disturbed (project sites and linear corridors) will be flagged before beginning any activities, and all disturbances will be confined to the flagged areas. All project vehicles and equipment will be confined to the flagged areas. Survey crew vehicles would remain on existing roads. Disturbance beyond the construction zone will be prohibited except to complete a specific task within designated areas or emergency situations.

e. A desert tortoise translocation/relocation plan will be implemented as part of the relocation effort and will outline the following procedures.

   The Authorized Biologist will maintain a record of all desert tortoises encountered and relocated during project surveys and monitoring. This information will include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations; general conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released (whether animals voided their bladders); and diagnostic markings (i.e., identification numbers).

   All potential desert tortoise burrows within the fenced area will be searched for presence. In some cases, a fiber optic scope may be used to determine presence or absence within a deep burrow. Burrows inhabited by tortoises will be excavated by Authorized Biologists or Biological Monitors supervised by an authorized biologist using hand tools. To prevent reentry by a tortoise or other wildlife, all burrows will be collapsed once absence has been determined. Tortoises excavated from burrows will be relocated to unoccupied natural or artificial burrows outside the fenced area immediately following excavation.

   The animals will be transported in clean cardboard boxes. A new box will be used for each individual tortoise and will be properly discarded after a single use. The new burrow will be located at least 300 feet from the outside of the permanently fenced area and will be of similar size, shape, and orientation to the original burrow. The new burrow locations will be determined by the Authorized Biologist. Relocated tortoises will not be placed in existing occupied burrows.

   The Authorized Biologist will wear disposable surgical gloves when handling desert tortoises. A new pair will be donned for each tortoise handled to avoid the transmission of upper respiratory tract disease (URTD). Shell notching will not be performed. Any equipment used on the tortoises will be sterilized between each use.

   Desert tortoises will be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. No desert tortoise will be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95ºF (35ºC). Ambient air temperature will be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise will be captured if the ambient air temperature is anticipated to exceed 95ºF (35ºC) before handling and relocation can be completed. If

the ambient air temperature exceeds 95ºF (35ºC) during handling or processing, desert tortoises will be kept shaded in an environment that does not exceed 95ºF (35ºC), and the animals will not be released until ambient air temperature declines to below 95ºF (35ºC).

To monitor for survivorship and health, for a period of 1 year following their translocation/relocation, the desert tortoises will be located at least monthly by the Authorized Biologist during the periods of activity (spring: March–May and fall: August–October) and once during the two non-active periods (summer: June–July and winter: November–February). For the following 2 years, they will be located at least once in the spring and once in the fall. In order to locate all translocated/ relocated tortoises, it will be necessary that they be marked and fitted with radio transmitters. All pertinent information will be recorded, such as behavior, physical characteristics, health characteristics and any visible signs of URTD, as well as any potential anomalies the individual desert tortoise might display.

f. Tortoise handling, artificial burrow construction, egg handling and other procedures will follow those described in the *Guidelines for Handling Desert Tortoise During Construction Projects* (Desert Tortoise Council, 1994).

g. Before the start of construction activities for any project element, a temporary tortoise fence will be installed to enclose the work area for those activities. The permanent desert tortoise exclusionary fencing will be incorporated into the permanent security fence and will be consistent with the guidance of the Desert Tortoise Recovery Office (DTRO) and the specifications will be included in the BRMIMP. Desert tortoise guards will be installed at the gated entries to prevent desert tortoises from gaining entry. The temporary exclusionary fencing will consist of galvanized hard wire cloth or silt fencing. The fencing will be buried approximately 6 inches below ground or bent at a right angle toward the outside of the right-of-way and covered with dirt, rocks, or gravel to discourage the desert tortoise from digging under the fence. The fence installation will be supervised and monitored under the direction of authorized biologists and desert tortoise monitors.

h. Within 24 hours prior to the start of construction of the desert tortoise-exclusion fence for a given location, a desert tortoise survey will be conducted using techniques providing 100 percent coverage of the construction area and an additional transect along both sides of the fenceline transect to provide coverage of an area approximately 90 feet wide centered on the fence alignment. Transects will be no greater than 30 feet apart. The fence alignment will be flagged prior to the biological survey. Two complete passes of complete coverage will be conducted. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, will be examined to determine occupancy. Any burrow within the fenceline will be collapsed after confirmation that it is not occupied by a desert tortoise, or if occupied, the desert tortoise has been removed.

i. Following construction of the desert tortoise exclusion fence, the fenced area will be cleared of desert tortoises. Two complete passes with complete coverage will be conducted as described above. If no desert tortoises are observed during the second survey, a third survey will not be conducted. Transects will be no wider than 30 feet.

Each separate survey will be walked in a different direction to allow opposing angles of observation. If a desert tortoise is located on the second survey, a third survey will be conducted. The authorized biologists will be primarily responsible for the clearance surveys. Some authorized biologists may be substituted with desert tortoise monitors and will be placed between authorized biologists during the surveys. Once the area surveyed is deemed free of desert tortoises the areas may be open to a vegetation salvage program, if the BLM desires.

All potential desert tortoise burrows located will be excavated by hand by an Authorized Biologist, desert tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises. If excavated during May through July, the Authorized Biologist will search for desert tortoise nests/eggs, which are typically located near the entrance to burrows. All desert tortoise handling and removal, and burrow excavations, including nests, will be conducted by an Authorized Biologist in accordance with the USFWS-approved protocol (Desert Tortoise Council, 1994).

j. A Biological Monitor will be onsite during initial clearing and grading to identify tortoises missed during the clearance survey. Should a desert tortoise be discovered, an Authorized Biologist will remove the tortoise as outlined in the translocation plan.

k. Access by project-related personnel to RSEP will be restricted to established access points. Cross-country vehicle and equipment use outside designated work areas and approved access areas will be prohibited.

l. Personnel will be required to exercise caution when traveling to and from the site. To minimize the likelihood of vehicle strikes of desert tortoises outside the fenced areas, a 20 mile per hour speed limit will be enforced on authorized access routes other than SR 62. Speed limit signs will be posted on both sides of these roads.

m. Trash receptacles at the work site and workforce trailer/RV park will have self-locking lids to prevent entry by opportunistic predators such as common ravens and coyotes. Trash receptacles will be emptied daily.

n. Other than law enforcement or security personnel, project personnel will be prohibited from bringing pets and firearms to the project site.

o. A comprehensive raven management and control plan will be drafted and submitted to USFWS, CDFG, BLM, Western, and CEC for approval prior to implementation.

p. Project employees working outside the fenced areas will be required to check under a vehicle or equipment before it is moved. Desert tortoises may be moved by an Authorized Biologist.

q. At the end of each work day, trenches, bores and other excavations outside the permanently fenced area that constitute wildlife pitfalls will either be immediately backfilled, sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, covered, or fully enclosed with fencing to prevent any entrapment. All excavations outside the permanently fenced area will be inspected periodically throughout and at the end of each workday by an Authorized Biologist or Biological Monitor. Should a

tortoise become entrapped, an Authorized Biologist will remove and relocate the tortoise to a safe location.

r. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, will be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.

s. All vehicles and equipment will be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. An Authorized Biologist, Biological Monitor, CEC, and the BLM will be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan. Hazardous spills will be immediately cleaned up and the contaminated soil will be properly disposed of at a licensed facility.

t. All fuel, transmission or brake fluid leaks, or other hazardous waste leaks, spills or releases will be reported immediately. The project proponent will be responsible for spill material removal and disposal to an approved offsite landfill. Servicing of construction equipment will take place only at a designated area. All fuel or hazardous waste leaks, spills, or releases will be stopped or repaired immediately and cleaned up at the time of occurrence. Service/maintenance vehicles will carry a bucket and pads to absorb leaks or spills.

u. All unused material and equipment, including soil and rock piles, will be removed upon completion of any maintenance activities located outside the permanently fenced area.

v. To minimize dust emissions and topsoil erosion, water will be applied to the construction area, dirt roads, trenches, spoil piles and other areas where ground disturbance has taken place. The minimal amount of water will be applied to meet safety and air quality standards in an effort to prevent puddling, which would attract desert tortoises and common ravens to the construction site.

w. The Designated Biologist, Authorized Biologist, or FCR will notify BLM, Western, USFWS, and CDFG within 24 hours upon locating a dead or injured desert tortoise. The notification will be made by telephone and in writing to the BLM, USFWS Carlsbad Field Office, CDFG Desert District Office, and CEC. The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Tortoises fatally injured due to project-related activities will be submitted for necropsy, at the expense of RSE, as outlined in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoises (Gopherus agassizii)* (Berry, 2001). Tortoises with minor injuries will be transported to a nearby qualified veterinarian for treatment at the expense of RSE. If an injured animal recovers, the BLM, USFWS, CDFG, and CEC will be contacted for final disposition of the animal.

5.2.4.7.2 Desert Tortoise Operation Measures

The following protection measures will be common to all maintenance activities performed during RSEP operation:

a. The Authorized Biologist or FCR will make initial notification to the BLM, USFWS, CDFG, and CEC within 24 hours upon locating a dead or injured desert tortoise during the RSEP operation phase. The notification must be made by telephone and in writing to the BLM, USFWS Carlsbad Field Office, CDFG Desert District Field Office, and CEC. The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Tortoises fatally injured or killed from project-related activities will be submitted for necropsy, at the expense of RSE, as outlined in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoises (Gopherus agassizii)* (Berry, 2001). Tortoises with minor injuries will be transported to a nearby qualified veterinarian for treatment at the expense of RSE. If an injured animal recovers, the BLM, USFWS, CDFG and CEC will be contacted for final disposition of the animal.

b. An FCR will be responsible for overseeing compliance with the desert tortoise protection measures during operation. The FCR will have a copy of all measures when work is being conducted on the site. The FCR must be onsite during any activities located outside established tortoise exclusion areas or which otherwise have the potential to result in the take of tortoise. The FCR will have the authority to halt all activities that are in violation of the measures. Work will proceed only after hazards to the desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by the Authorized Biologist. The FCR may be a project manager, RSE's representative, or a biologist.

c. Vehicle parking, material stockpiles, and construction-related materials used for maintenance or repair activities will be located within the permanently fenced area.

d. WEAP training will continue for all RSEP personnel during the RSEP operation phase. All employees and their contractors involved with operation and maintenance will attend the agency-approved WEAP. These employees will participate in the education program prior to initiation of work activities. New employees will receive formal, approved training prior to working onsite. During the WEAP training, employees will be instructed to exercise caution when commuting to the project area. To minimize the likelihood for vehicle strikes of desert tortoises, the posted speed limit on the access roads other than SR 62 will be 20 miles per hour. Speed limit signs will be posted on both sides of access roads to remind drivers of the speed limit when entering and exiting.

e. The Authorized Biologist and Biological Monitors will be present during maintenance outside the established tortoise exclusion areas and off established roads (such as cleaning the generator tie-line conductors) to assist in the implementation of protection measures for the desert tortoise and to monitor compliance. The appropriate number of Authorized Biologists and Biological Monitors will be dependent upon the nature and extent of the work being conducted.

f. The removal of desert tortoises from harm's way will be conducted according to the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council, 1994).

g. All encounters with desert tortoise will be reported to an Authorized Biologist, Biological Monitor, or FCR. These designees will maintain records of all desert tortoises encountered during the operation phase. This information will include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations; general conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location where it was released (and whether animals voided their bladders); and diagnostic markings (i.e., identification numbers).

h. Only Authorized Biologists will handle desert tortoises during RSEP operations activities and only if necessary. When a desert tortoise is moved, an Authorized Biologist will be responsible for taking appropriate measures to ensure that the animal is not exposed to temperature extremes that could be harmful. When handing desert tortoises or excavating their burrows, the Authorized Biologist will follow the appropriate protocols outlined in *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council, 1994).

i. An Authorized Biologist will perform desert tortoise clearance surveys and an Authorized Biologist or Biological Monitor will perform monitoring within maintenance-need areas outside the permanently fenced area during maintenance activities that have demonstrated the potential to affect the desert tortoise. The Authorized Biologist or Biological Monitor will be responsible for assisting crews in compliance with protection measures, performing surveys in front of the crew as needed to locate and avoid sensitive species, and performing compliance monitoring.

j. Any area of disturbance from maintenance activities outside the permanently fenced areas will be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. As needed, work area boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows identified outside the permanently fenced area by an Authorized Biologist or Biological Monitor will be avoided to the extent possible. Also, previously disturbed areas within the permanently fenced area will, to the extent possible, be used for the stockpiling, storage, parking, and any other surface-disturbing activity.

k. Any damage to the permanent fencing will be repaired immediately. Following installation, the permanent fencing will be inspected yearly and after major rainfall events.

5.2.4.7.3 Burrowing Owl

A Burrowing Owl Mitigation and Monitoring Plan will be prepared for the project and submitted to CDFG for approval at least 90 days prior to construction. The plan will be

based on the CDFG Memorandum entitled Staff Report on Burrowing Owl Mitigation (CDFG, 1995) and will include the following measures:

a. A preconstruction survey of suitable habitat at the project site and a 150-meter (approximately 500-foot) buffer (where possible and appropriate based on habitat) will be conducted within 30 days prior to construction to ensure no additional burrowing owls have established territories since the spring 2009 desert tortoise survey. If ground-disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site will be resurveyed.

b. Occupied burrows on or within 500 feet of the project footprint will not be disturbed during the nesting season (February 1 through August 31) unless the Biological Monitor verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

c. A 500-foot buffer will be established around occupied burrows and noise and visual barriers, such as haystacks or plywood fencing, will be erected if needed to shield the burrow from construction activities. Signs (in English and Spanish) will be posted to instruct workers to avoid the area. The methods used will be determined on a case-by-case basis in consultation with CDFG.

d. When destruction of occupied burrows is unavoidable, existing unsuitable burrows will be enhanced (cleared of debris), or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands. `

e. If owls must be moved away from the disturbance area, passive relocation techniques (as described below) will be used rather than trapping. At least one or more weeks will be necessary to allow the owls to acclimate to the alternate burrows.

    1. Passive relocation with one-way doors. Owls will be excluded from burrows in the immediate impact zone and within a 50-meter (approximately 160-foot) buffer zone by installing one-way doors in burrow entrances. One-way doors (e.g., modified dryer vents) will be left in place 48 hours to ensure owls have left the burrow before excavation. Two natural or artificial burrows will be provided for each burrow in the project area rendered biologically unsuitable. The area will be monitored daily for one week to confirm owl use of burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.

    2. Passive relocation without one-way doors. Two natural or artificial burrows will be provided for each burrow in the project area rendered biologically unsuitable. The project area will be monitored daily until the owls have relocated to the new burrows. The formerly occupied burrows will then be excavated. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe will be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.

5.2.4.7.4 Nesting Migratory and Resident Birds

a. The generator tie-line and all electrical components will be designed, installed, and maintained in accordance with APLIC Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 to reduce the likelihood of electrocutions of large birds.

b. The generator tie-line and all electrical components will be designed, installed, and maintained in accordance with the APLIC Mitigating Bird Collisions with power lines: The State of the Art in 1994 to reduce the likelihood of bird collisions.

c. Facility lighting will be designed, installed, and maintained to prevent side casting of light toward wildlife habitat, and flashing or strobe lights will be used on the receiving tower to minimize the risk of avian collisions.

d. The Authorized Biologist(s) and Biological Monitor(s) will perform a preconstruction survey, concurrent with the desert tortoise clearance survey, for nesting birds in the project area, including areas within 500 feet of all project facilities, the generator tie-line corridor, and access roads.

e. If construction is to occur during the nesting season between February 1 and August 31, all sites to be disturbed will be surveyed for ground-nesting and shrub-nesting birds prior to construction. This survey will likely be performed concurrently with the desert tortoise clearance survey if both efforts occur within seasonal window. The surveys will include all potential nesting habitat in the active project areas and within 500 feet of the proposed work boundaries for the heliostat field and the generator tie-line corridor. At least two pre-construction nest surveys will be conducted with at least ten days in between. One or both surveys will be conducted no more than 14 days prior to the associated construction activity. Follow-up surveys will be conducted if construction activities are inactive for more than three weeks following the initiation of construction. These survey results, including the mapped nest locations, will be included in the monthly reports submitted to the CPM.

f. If an active nest of a species protected under the Migratory Bird Treaty Act (MBTA) or Bald and Golden Eagle Protection Act (BGEPA) is found, the Designated Biologist will consult with CDFG to determine the appropriate buffer zone.

g. The Biological Monitor will monitor the success of the buffer to determine if it is adequate. Construction activities and timing may be modified to avoid impacts to nesting birds. The nests will be monitored until the nestlings have fledged or dispersed.

h. Facilities that may attract avian species such as common ravens to perch or nest will be fitted with anti-perching devices such as Bird-Be-Gone or similar material.

i. Frequent disturbance (every few days) may be initiated in the project areas just prior to the nesting season to discourage nesting in the construction right-of-way.

j. During both the construction and operation and maintenance phase, a speed limit of 20 mph will be established and enforced. The speed limit will reduce the potential for loss of bird species due to collisions with vehicles.

k. Avian monitoring at the evaporation ponds would be conducted twice monthly for the first 2 years of project operation. The Project ECM will continue monitoring after the first two years, at least twice a month for the life of the project. The monitor (appointed biologist or ECM) would identify bird species and/or functional groups (e.g., waterfowl, waders, shorebirds, upland shorebirds) using the ponds, record the behavior of the birds (e.g., feeding, swimming, wading, nesting), and note any mortalities or physical infirmities (e.g., birth defects or reduced growth) associated with any bird observed on or adjacent to the evaporation ponds. Any dead bird that can be safely retrieved from the evaporation ponds would be collected by a biologist or ECM and sent to a qualified laboratory to determine if the mortality was directly related to salt toxicosis or encrustation. Documented mortality resulting from salt toxicosis or encrustation would result in corrective measures implemented in coordination with the agencies.

5.2.4.7.5 Raptors and Bats

a. The hills and existing power poles in the project vicinity may provide suitable nesting and roosting structure for raptors. If construction activities take place between February 1 and August 31, the Authorized Biologist or Biological Monitor will survey for raptor nests within these areas prior to the start of construction. Additionally, crevices within these hills may provide suitable roosting habitat for bats. The raptor and bat surveys will occur at construction sites adjacent to suitable nesting and roosting habitat for raptors and bats, and will be conducted prior to each phase of construction that involves the use of heavy equipment. If an active raptor nest or bat maternity roost is found, no construction activity will occur within 1,200 feet of these areas, which will be monitored by the Authorized Biologist or Biological Monitor. Construction activities and timing may be modified to avoid impacts to these species.

b. To further minimize potential impacts to foraging raptors and bats, design features may include the following:

    1. All overhead power lines will be equipped with raptor perch guards. This will minimize perching locations and electrocution hazards to birds (CEC, 1995).

    2. Overhead power lines appropriately spaced to minimize the potential of raptor electrocution using the latest APLIC (2005) recommended guidelines for line spacing.

    3. USFWS-approved bird flight diverters installed on the new power lines. The diverters will be installed per manufacturer's specifications; replaced when damaged or deemed defective; and maintained for the full length of the generator tie-line for the life of the facility.

    4. Shielded lighting consisting of sodium bulbs that are directed downward to reduce light pollution and potential for avian and bat attraction and collision.

    5. A threshold of significance for raptor/migratory bird (species protected under the MBTA and the BGEPA) mortality will be established. Monthly post-mortality surveys for such species will be conducted by the Authorized Biologist or Biological Monitor during the first year of project operation. If this threshold of

significance is met or exceeded, adaptive management practices will be implemented to reduce such impact. Based on the results of these monthly post-mortality surveys, it will be determined if these surveys are to continue after the initial year.

5.2.4.7.6 American Badger

a. The Authorized Biologist or Biological Monitor will perform a preconstruction survey, concurrent with the desert tortoise clearance survey, for badger dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If badger dens are found, each den will be classified as inactive, potentially active, or definitely active.

b. Inactive dens will be excavated by hand and backfilled to prevent reuse by badgers.

c. Potentially and definitely active dens will be monitored by the Authorized Biologist or Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) at the entrance. If no tracks are observed in the tracking medium after three nights, the den will be excavated and backfilled by hand. If tracks are observed, the den will 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 badger from continued use. The den will then be excavated and backfilled by hand to ensure that no badgers are trapped in the den. This will be performed outside of the breeding season to ensure young are not affected.

5.2.4.8 Site Rehabilitation Plan

5.2.4.8.1 Temporary Impacts

Temporarily disturbed areas associated with the project site and generator tie-line will be rehabilitated and revegetated as appropriate after construction as described in the site rehabilitation plan to be included in the BRMIMP. Elements of the rehabilitation plan are described below.

The site rehabilitation plan will include the following sections and details: (1) goals and objectives of the rehabilitation; (2) a description of methods employed to achieve the rehabilitation goals and objectives; (3) success criteria used to determine if the rehabilitation is successful; (4) a monitoring and maintenance program, including details on remedial measures; (5) noxious weed control plan; (6) a description of annual reporting; and (7) a rehabilitation implementation and monitoring timeline and schedule of planned activities. The scope of this plan will be proportionate to the magnitude of the expected impact. The corridor to be disturbed by the generator tie-line construction is not expected to exceed 50 feet in width. All practicable measures to avoid sensitive resources (e.g., mapped special-status plant species) will be taken during construction to reduce impacts to the maximum degree possible.

Arid region soils typically do not have substantial soil horizon development, and soils in the project area are sandy and rocky, with little organic matter. However, soil mycorrhizal fungi, seeds, or rhizomes may be present to aid in rehabilitation. Therefore, the top six inches of topsoil will be salvaged and either stockpiled within the corridor until it can be re-spread following construction. Decompacting and/or scarifying (e.g., imprinting) the

re-spread topsoil area prior to seeding may be required. The disturbed corridor will then be seeded with native species such as creosote bush and white bursage, or other species native to the area. Target vegetation density and composition will be comparable with the surrounding landscape. Seeding will be timed to coincide with seasonal rains (typically late fall and early spring) but desert rainfall patterns are unpredictable. If rainfall is low, germination will be poor, and re-seeding may be required.

5.2.4.8.2 Permanent Impacts

Over the long-term, once the RSEP facilities are no longer needed, the structures will be removed and the project area will be rehabilitated to approximate preconstruction conditions. A formal rehabilitation plan for the RSEP facility closure will be developed by RSE and submitted to the BLM, Western, USFWS, CDFG, and the CEC at least one year prior to facility closure. Sensitive natural community type habitat mitigation elements will be addressed as a component of the desert tortoise habitat mitigation effort.

The RSEP facility closure rehabilitation plan will follow currently accepted site rehabilitation practices in use by BLM, Western, USFWS, and CDFG or other appropriate resource agencies, at the time of project closure, and it is expected to include the following sections and details: (1) goals and objectives of the rehabilitation; (2) a description of methods employed to achieve the rehabilitation goals and objectives; (3) success criteria used to determine if the rehabilitation is successful; (4) a monitoring and maintenance program, including details on remedial measures; (5) noxious weed control plan; (6) a description of annual reporting; and (7) a rehabilitation implementation and monitoring timeline and schedule of planned activities.

5.2.5 Laws, Ordinances, Regulations, and Standards

This section describes the LORS related to biological resource protection. The following sections and Table 5.2-5 describe the primary LORS and list the responsible governmental agencies. The primary federal and State of California regulatory agencies include the USFWS, BLM, USACE, CEC, CDFG, and the CRBRWQCB.

TABLE 5.2-5
Laws, Ordinances, Regulations, and Standards for Biological Resources

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
Endangered Species Act of 1973 Title 16 United States Code (USC) §1531 et seq. (16 USC 1531 et seq.), Title 50 Code of Federal Regulations (CFR) §17.1 et seq. (50 CFR 17.1 et seq.)	Designates and protects federally threatened and endangered plants and animals and their critical habitat.	USFWS	A biological assessment (BA) will be prepared based on the desert tortoise protocol survey results. No critical habitat has been designated in the project area. BLM will initiate formal Section 7 consultation with the USFWS.
Section 404 of Clean Water Act of 1977 (33 USC §1344).	Requires permit to dredge or fill jurisdictional wetlands or waters of the U.S.	USACE	There are no jurisdictional waters or wetlands in the project area.

TABLE 5.2-5
Laws, Ordinances, Regulations, and Standards for Biological Resources

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
Section 401 of Clean Water Act of 1977	Requires water quality impact analysis for the project when using 404 permits and for discharges to waterways.	RWQCB	There are no jurisdictional waters or wetlands in the project area.
Migratory Bird Treaty Act of 1918 (16 USC §§703-711)	Prohibits the non-permitted take of migratory birds.	USFWS	Project owner will avoid take of migratory birds by implementing avoidance and protection measures.
Bald and Golden Eagle Protection Act of 1940 (16 USC 668).	Prohibits the non-permitted take of bald and golden eagles.	USFWS	Project owner will avoid take of eagles by implementing avoidance and protection measures.
State			
California Environmental Quality Act of 1970 (Public Resources Code §§21000 et seq.).	Sets goals to assist California public agencies in identifying potential significant environmental effects of their actions and either avoiding or mitigating those effects when feasible.	CEC	CEC is the state lead agency and will prepare the necessary CEQA documentation.
Warren Alquist Act of 2005 (Public Resources Code §§25000 et seq.).	A CEQA-equivalent process implemented by the CEC.	CEC	Preparation of this application will result in an assessment prepared by the CEC staff to fulfill the requirements of CEQA.
California Endangered Species Act of 1984 (Fish and Game Code, §2050 through §2098)	Protects California's endangered and threatened species.	CDFG	It is anticipated that the CDFG will issue a 2081 permit for the desert tortoise.
Fish and Game Code Fully Protected Species (§3511: Fully Protected birds, §4700: Fully Protected mammals, §5050: Fully Protected reptiles and amphibians, §5515: Fully Protected fishes)	Prohibits the taking of plants and animals that are Fully Protected in California.	CDFG	Project owner will avoid take of fully protected species by implementing avoidance and protection measures
Fish and Game Code §1930, Significant Natural Areas (SNAs)	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitats. Listed in the CNDDB.	CDFG	There are no SNAs in the project area.
Fish and Game Code §1580, Designated Ecological Reserves (DERs)	The CDFG commission designates land and water areas as significant wildlife habitats to be preserved in natural condition for the general public to observe and study.	CDFG	There are no DERs in the project area.

TABLE 5.2-5
Laws, Ordinances, Regulations, and Standards for Biological Resources

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
Fish and Game Code §1600, Streambed Alteration Agreement (SAA)	Reviews projects for impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions, and other disturbances.	CDFG	The project will not impact waterways
Native Plant Protection Act of 1977, Fish and Game Code, §1900 et seq.	Designates state rare and endangered plants and provides specific protection measures for identified populations.	CDFG	Project owner will minimize or mitigate impacts to rare plant species by implementing minimization measures.
Public Resources Code §§25500 & 25527	Siting of facilities in certain areas of critical concern for biological resources, such as ecological preserves, wildlife refuges, estuaries, and unique or irreplaceable wildlife habitats of scientific or educational value is prohibited or when no alternative, strict criteria is applied.	CDFG	No areas of critical biological concern in project area.
Title 20 CCR §§1702 (q) and (v)	Protects "areas of critical concern" and "species of special concern" identified by local, state, or federal resource agencies in the project area, including the California Native Plant Society (CNPS).	CDFG	No areas of critical concern in project area.
Title 14 CCR Section 15000 et seq.	Describes the types and extent of information required to evaluate the effects of a proposed project on biological resources of a project site.	CEC	AFC provides this information.

5.2.5.1 Federal LORS

5.2.5.1.1 Federal Endangered Species Act, Section 7 (FESA, 16 USC §§1531 et seq., and 50 CFR §17.1 et seq.)

This act provides for the designation and protection of threatened and endangered plant and animal species and habitat critical to their survival. The Act authorizes the USFWS to review a proposed Federal action to assess potential impacts to listed species. Listed species are those that are endangered or threatened and have been listed in the Federal Register. The FESA prohibits the "take" of listed species. The FESA and implementing regulations define "take" to include mortality and other actions that may result in adverse impacts such as harassment, harm, or loss of critical habitat. Federal or private action that may result in a take of a listed species requires consultation with the USFWS pursuant to sections 7 or 10 of the FESA. The USFWS may issue an incidental take permit after issuance of a biological opinion.

It is anticipated that the BLM will provide the federal nexus needed to enter into formal consultation under Section 7 of the federal Endangered Species Act with USFWS to address adverse effects to the threatened Mojave Desert population of the desert tortoise.

5.2.5.1.2 Clean Water Act (CWA), Section 404 (33 USC §1344)

This act requires activities that have the potential to discharge fill materials into "waters of the United States," including wetlands, are regulated under Section 404 of the CWA, as administered by the USACE. Fill activities may be permitted under a Nationwide or Individual Permit. The Nationwide Permit Program involves certain activities that the USACE has preauthorized. Individual Permit applications are submitted to USACE. Section 404 (1)(b) guidelines require USACE to rule in favor of the least environmentally damaging practicable alternative when multiple alternatives are available for a project. Typically, USACE requires mitigation in the form of restoration of areas of temporary impacts, and restoration/enhancement of additional wetland areas at a specified ratio of impacts. Alternatively, in-lieu fees can be paid into a mitigation banking fund.

Given the hydrology of the Rice Valley it is unlikely that Nationwide permits will be needed for the proposed project. Agency coordination will be completed to determine if consultation is required.

5.2.5.1.3 Clean Water Act (CWA), Section 401

This act requires projects needing a Section 404 permit also acquire a CWA Section 401 Water Quality Certification issued by the appropriate RWQCB. Section 401 of the CWA, governed by 33 USC 1341 and 40 CFR 121, requires a water quality certification from the RWQCB when a project will: (1) require a federal license or permit, and (2) result in a discharge to waters of the United States. Such certification may be conditioned.

Given the hydrology of the Rice Valley it is unlikely that Nationwide permits will be needed for the proposed project. Agency coordination will be completed to determine if consultation is required.

5.2.5.1.4 Migratory Bird Treaty Act (MBTA) (16 USC §703–712; 50 CFR §10)

This act prohibits the "take" of migratory birds and their active nests containing eggs or young unless permitted. This regulation can constrain construction activities that have the potential to affect nesting birds either through vegetation removal and land clearing, or other construction or operation related disturbance.

Mitigation measures involving the identification of potential MBTA issues and avoidance of migratory birds and their nests are included in section 5.2.4.7.4.

5.2.5.1.5 Bald and Golden Eagle Protection Act (BGEPA) (16 USC §668; 50 CFR §22 et seq.)

This act protects bald and golden eagles from harm or trade in parts of these species.

Mitigation measures involving the identification and avoidance of potential golden eagle issues are included in section 5.2.4.7.4.

5.2.5.1.6 California Desert Protection Act of 1994 (CDPA)

An Act of Congress which established 69 wilderness areas, the Mojave National Preserve (MNP), and expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Lands transferred to the National Park Service (NPS) were formerly

administered by the BLM and included significant portions of grazing allotments, wild horse and burro Herd Management Areas, and Herd Areas.

5.2.5.1.7 California Desert Conservation Area Plan

The CDCA is one of two national conservation areas established by Congress at the time of the passage of the Federal Land and Policy Management Act (FLPMA). The FLPMA outlines how the BLM will manage public lands. Congress specifically provided guidance for the management of the CDCA and directed the development of the 1980 CDCA Plan (BLM, 1980).

5.2.5.1.8 Northern and Eastern Colorado Desert Coordinated Management Plan

As an amendment to the CDCA Plan, the BLM produced the NECO (BLM, 2002). This document consists of proposed management actions and alternatives for public lands in the NECO Planning Area. This area encompasses approximately 5.5 million acres and is primarily located in the Sonoran Desert in the southeastern corner of California. The NECO plan's purpose and need is summarized as follows:

1. Adopt standards and guidelines for public land health
2. Recover two threatened species: the desert tortoise and Coachella Valley milkvetch
3. Conserve approximately 60 special status plants and animals and natural communities
4. Resolve issues of managing wild horses and burros along the Colorado River
5. Designate routes of travel
6. Resolve issues of the land ownership pattern
7. Resolve issues of access to resources and regulatory burden
8. Incorporate designations contained in the CDPA

This biological resources section was heavily based on the analysis, guidance, and regional characterizations provided in the NECO. The RSEP is within the NECO planning area. According to the NECO, the Rice Valley is in Category III desert tortoise habitat. The NECO addresses most of the species that are included in this biological resources section. The plan included the closure of the adjacent Rice Valley Dunes Off-Highway Recreation Area. Closure of vehicle use was intended to protect blowsand habitat for the Mojave fringe-toed lizard.

5.2.5.1.9 USFWS Desert Tortoise Recovery Plan and Critical Habitat Designation

The *Desert Tortoise Recovery Plan* outlines a strategy for recovery and delisting of the Mojave population of the desert tortoise (USFWS, 1994b). The plan divided the range Mojave population up into six distinct geographical recovery units. The RSEP site is within the Eastern Colorado Recovery Unit. The plan recommends general areas within each recovery unit in which to concentrate recovery efforts. These areas are referred to as DWMA's and were formalized by BLM, which manages them as Areas of Critical Environmental Concern (ACEC). The plan includes 14 DWMAs under reserve-level protection so as to maintain at least one viable population at a minimum density of ten adult desert tortoises per square mile within each of the six recovery units. As stated in the plan, it is critical that these

DWMAs be connected by functional habitat in order to be successful. RSEP area is located approximately 6.2 miles west of the Chemehuevi DWMA.

A draft revised recovery plan was issued in 2008 (USFWS, 2008). The revised plan includes the following strategic elements to improve upon the original recovery plan:

1. Develop, support, and build partnerships to facilitate recover.
2. Protect existing populations and habitat, instituting habitat restoration where necessary.
3. Augment depleted populations in a strategic manner.
4. Monitor progress toward recovery.

The revised recovery plan includes a list of proposed recovery actions intended to achieve the above elements through implementation as well as the following objectives:

1. Maintain self-sustaining populations of desert tortoises within each recovery unit into the future.
2. Maintain well-distributed populations of desert tortoises throughout each recovery unit.
3. Ensure that habitat within each recovery unit is protected and managed to support long-term viability of desert tortoise populations.

The revised plan also includes revised recovery units which combine the former Northern and Eastern Colorado units into one Colorado Recovery Unit.

In 1994 the USFWS designed 6.4 million acres of critical habitat for the Mojave population of the desert tortoise (USFWS, 1994a). This designation was largely based on the proposed DWMAs and primarily includes federal lands in southwestern Utah, northwestern Arizona, southern Nevada, and southern California. The designation includes approximately 4,754,000 acres in California, of which 3,327,400 acres are on BLM-managed lands. The project site is located approximately 6.2 miles west of the Chemehuevi critical habitat unit.

5.2.5.2 State LORS

5.2.5.2.1 California Endangered Species Act (California Fish and Game Code §§2050 et seq.)

The California Endangered Species Act of 1984 (Fish and Game Code Sections 2050-2116), expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the Fish and Game Code. To align with federal regulations, the CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Take of state-listed plants is prohibited under CESA but destruction of state-listed plants is allowed under limited circumstances. The CESA also requires mitigation for impacts to species and their habitat (CNPS, 2001). The CDFG requires a CESA Section 2081 (a) permit for take of candidate or listed threatened and endangered plants for scientific, educational, or management purposes, and a CESA Section 2081 (b) permit for incidental take of listed threatened and endangered plants from all activities, except those specifically authorized by the NPPA. Because plants designated as rare are not included in the CESA, mitigation

measures for impacts to plants designated as rare are specified in a formal agreement between the CDFG and the project proponent.

It is anticipated that RSE will enter into formal CESA consultation with CDFG with the request for a consistency determination for the USFWS's biological opinion addressing the project's effects on the Federal and State threatened desert tortoise.

5.2.5.2.2 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of the 1977 Fish and Game Code (Sections 1900-1913) directed the CDFG to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

5.2.5.2.3 California Department of Fish and Game Code Section 1600, Streambed Alteration Agreement

This code regulates the alteration of the bed, bank, or channel of a stream, river, or lake, including ephemeral washes. The limit of jurisdiction is subject to the judgment of the CDFG and can include up to the 100-year floodplain level. However, CDFG generally asserts jurisdiction up to the top of significant bank cuts or to the outside of any riparian vegetation associated with a watercourse. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of a project. Activities that have the potential to affect jurisdictional areas can be authorized through issuance of a Streambed Alteration Agreement. The Streambed Alteration Agreement specifies conditions and mitigation measures that will minimize impacts to riparian resources from proposed actions.

5.2.5.2.4 Fish and Game Code Section 3503

This code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Mitigation measures involving the identification of potential bird issues and avoidance of migratory birds and their nests are included in section 5.2.4.

5.2.5.2.5 Fish and Game Code Section 3503.5

This code protects all birds of prey and their eggs and nests.

Mitigation measures involving the identification of potential bird issues and avoidance of migratory birds and their nests are included in section 5.2.4.

5.2.5.2.6 Fish and Game Code Section 3511

This code identifies bird species, primarily raptors that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.

Mitigation measures involving the identification of potential bird issues and avoidance of migratory birds and their nests are included in section 5.2.4.

5.2.5.2.7 Fish and Game Code Section 3513

This code makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Mitigation measures involving the identification of potential bird issues and avoidance of migratory birds and their nests are included in section 5.2.4.

5.2.5.2.8 Fish and Game Code Sections 4700, 5050, and 5515

These codes list mammal, amphibian, and reptile species that are fully protected in California.

5.2.5.2.9 California Food and Agriculture Code 80001 et seq.

This code allows removal of certain non-listed desert plants under permits issued by the county agricultural commissioner or sheriff.

5.2.5.2.10 Title 14, California Code of Regulations, Sections 670.2 and 670.5

This code lists animals designated as threatened or endangered in California. California species of special concern (CSC) is a category conferred by CDFG on those species that are indicators of regional habitat changes or are considered potential future protected species. These species do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

5.2.5.2.11 Porter-Cologne Act

Pursuant to California's Porter-Cologne Water Quality Control Act, the state regional water quality control boards (RWCQB) regulate the "discharge of waste" to "waters of the state". All parties proposing to discharge waste that could affect waters of the state must file a waste discharge report with the appropriate regional board. The RWQCB will then respond to the report of waste discharge by issuing waste discharge requirements (WDRs) or by waiving WDRs (with or without conditions) for that proposed discharge. Both of the terms "discharge of waste" and "waters of the state" are broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact "waters of the state."

5.2.5.3 Local and Other Jurisdiction LORS

5.2.5.3.1 Riverside County General Plan

The Land Use and Multipurpose Open Space Elements of the County General Plan (County of Riverside, 2003) contains specific policies to preserve the character and function of open space that benefits biological resources. It also contains specific policies and goals for protecting areas of sensitive plant, soils and wildlife habitat and for assuring compatibility between natural areas and development. The RSEP area and most of eastern Riverside County is designated as Open Space Conservation in the general plan. Although the RSEP is not within one of the 19 area plans contained within the general plan it is addressed in the Eastern Riverside County Desert Areas (Non-Area Plan).

5.2.6 Agencies and Agency Contacts

Involved agencies and agency contacts are listed in Table 5.2-6. Records of conversation with agency personnel are included in Appendix 5.2F.

TABLE 5.2-6
Agency Contacts for Biological Resources

Issue	Agency	Contact
Federal threatened and endangered species – Section 7 consultation; biological surveys	U.S. Fish and Wildlife Service	Pete Sorensen and Tannika Engelhard Biologists 6010 Hidden Valley Road Carlsbad, California 92009 (760) 431-9440 Pete_Sorensen@fws.gov Tannika_Engelhard@fws.gov
Federal threatened and endangered species – Section 7 consultation; biological surveys	U.S. Bureau of Land Management	Mark Massar, Biologist 1201 Bird Center Drive Palm Springs, CA 92262 (760) 833-7100 Mark_Masssar@blm.gov
California threatened and endangered species – CDFG 2081; Streambed Alteration Agreement – CDFG 1600; biological surveys	California Department of Fish and Game	Kim Nicols, Program Manager Inland Desert Region Headquarters 3602 Inland Empire Boulevard Suite C-220 Ontario, CA 91764 (760) 200-9178 knicol@dfg.ca.gov Magdalena Rodriquez, Biologist

5.2.7 Permits and Permit Schedule

Required permits and permit schedule are listed in Table 5.2-7.

TABLE 5.2-7
Permits and Permit Schedule for Biological Resources

Permit	Description	Schedule
USFWS Biological Opinion (BO) pursuant to Section 7 of the ESA.	Several desert tortoises were documented within the project area during the protocol survey. The project is expected to adversely affect this species. Need to produce a biological assessment analyzing impacts to desert tortoise and its habitat. BLM will initiate formal Section 7 consultation with the USFWS. USFWS will issue a BO.	6 – 9 months
CDFG 2081 Permit	Need to consult with CDFG and obtain a 2081 permit for the desert tortoise.	6 – 9 months

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TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Invertebrates						
Cheeseweed owlfly (cheeseweed moth lacewing)	*Oliarces clara*	BLM	RES	Range considered restricted to the Colorado River drainage in southwestern Arizona, southern California, and Clark County Nevada. Usually found on or near bajadas. Adults go to hill tops or elevated areas to mate. Larvae are dependent on creosote.	**Present.** The site is within the Colorado River drainage and provides appropriate creosote bush habitat with adjacent mountains, hilltops, and outcrops for mating. The CNDDB includes a record at the base of the West Riverside Mountains approximately 1.6 miles east of the proposed solar site and immediately adjacent to if not just within the proposed generator tie-line corridor.	The only species of this genus in North America. All others are found only in Australia. Few known populations. Mating appears to involve "hill topping." Adults emerge from the sand between April and May to breed. This species is not thought to feed during their adult phase and die soon after mating. Eggs are laid in sand. Larvae and cocoons closely associated with creosote bush. Larvae probably feed on creosote bush roots.
Mollusk						
White desert snail	*Eremarionta immaculata*	IUCN:VU	RES	Thought to be endemic to the Riverside Mountains which are approximately 6.2 miles from the proposed solar site and approximately 4.0 miles from the proposed generator tie-line corridor. Associated with rocks on talus slopes. Depend on moisture retention in rocky habitat and are often associated with moss and lichens.	**Low.** The proposed project footprint does not include areas of rocky or talus areas where this snail may occur. Construction or operation of the project is not expected to have any indirect effects on the snail's habitat in the adjacent Riverside Mountains.	Little is known about this species. Withdraw within their shells when the microclimates in which they are found become dry. More likely to find shells of dead individuals than live snails. Low productivity due to harsh environment.
Reptiles						
banded gila monster	*Heloderma suspectum cinctum*	BLM CSC IUCN:NT	RES	The northern extent of their range includes the southwest corner of Utah through southern Nevada and into eastern Riverside and San Bernardino Counties. The distribution then extends south into northern Mexico. Associated with rocky areas in high mountain ranges most often linked with riparian areas.	**Low**. There is a historical record of this species in the CNDDB in the Granite Mountains, approximately 17 miles southwest of the RSEP area. This rare lizard is more likely to occur in similar rocky areas in the surrounding mountains but is unlikely to be found in the RSEP area.	Only venomous lizard native to the US. Rarely seen even in areas where they are known to occur. There are only 26 credible records of the species in California.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Chuckwalla	*Sauromalus obesus*		RES	Primarily associated with rocky areas of mountains and outcrops. According to the NECO distribution map, chuckwalla are expected to occur in the Arica Mountains to the west and the West Riverside Mountains to the east.	**Low**. Highly likely to occur in all the surrounding mountains but less likely to occur in the flat, exposed, and sparsely vegetated project footprint in the Rice Valley. The footprint of the solar site and transmission lack associated rocky, tallus, or scree habitat. Appropriate habitat is found within the one mile buffer but it is unlikely that the project will have indirect effects on the chuckwalla. The NECO distribution map for the chuckwalla does not include the RSEP area.	Largest native iguanid lizard in the US. Mating usually between May and June. Hatchlings usually observed in the fall. Inactive during cold winters or extreme heat but likely active year-round in the Rice Valley due to mild winter temperatures. The aqueduct, railroad, and SR 62 is likely very effective in fragmenting the population north and south of the corridor. The primary threats in the Rice Valley area likely include collection, sheep grazing, and successive years of drought.
Colorado Desert fringe-toed lizard	*Uma notata*	BLM CSC IUCN:NT	RES	One of five fringe-toed species in the US. This species' distribution includes the Colorado Desert from the Salton Sea and Imperial Dunes east to the Colorado River and south the northeastern Baja California. Specifically adapted for windblown sand habitat. Primarily expected in dune areas but may also be found in flats, riverbanks, washes, and hummocks with sufficient fine, loose sand for burrowing. According to the NECO, the only place this species occurs within the NECO Planning Area is near the Algodones Dunes.	**Low**. Based on distribution this fringe-toed lizard is more likely to occur is sandy desert habitat south of Riverside County. Fringe-toed lizards in Rice Valley are likely limited to the Mojave fringe-toed lizard. The NECO distribution map for the Colorado Desert fringe-toed lizard does not include the RSEP area.	Threatened by off-road travel on dune habitat and any features or activities that result in the compaction, stabilization of sand or otherwise disrupt the transport of blowsand.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Mojave fringe-toed lizard	*Uma scoparia*	BLM CSC	RES	One of five fringe-toed species in the US. This species' distribution includes sandy areas from the southern end of Death Valley south to the Colorado River and into western Arizona. Specifically adapted for windblown sand habitat. Primarily expected in dune areas but may also be found in flats, riverbanks, washes, and hummocks with sufficient fine, loose sand for burrowing. According to the NECO, this lizard species is known from the Rice Valley (BLM, 2007).	**High/Moderate.** Present within the one-mile buffer. Observed during the April/May tortoise survey in dune habitat approximately 0.75 miles from the proposed project. The associated dune habitat is not within the proposed project footprint. However, as noted by Sundance Biology, this lizard may occasionally move into the footprint by way of the sandy washes. There is also concern regarding the proposed project's potential indirect effects on the local sand transport on which the dune system relies. The NECO distribution map for the Mojave fringe-toed lizard includes all of the RSEP area.	Threatened by off-road travel on dune habitat and any features or activities that result in the compaction, stabilization of sand or otherwise disrupt the transport of blowsand.
Flat-tailed horned lizard	*Phrynosoma mcallii*	BLM FSS CSC IUCN:NT	RES	The species' range includes most of the Colorado Desert from Coachella Valley south through the Imperial Valley, west into Anza-Borrego, and south to northeastern Baja California. Also found in southwestern Arizona and northwestern Sonora, Mexico. Often found on sandy desert hardpan and gravel flats in areas with widely spaced vegetation. Highly dependent on ant prey. Often found in sandy areas but usually not on dunes. According to the NECO, this lizard is only found in the southern edge of the NECO Planning Area.	**Low.** The NECO distribution map for the flat-tailed horned lizard does not include the RSEP area.	The federal proposal to list as threatened was withdrawn in 2006. Can be difficult to detect during surveys. Mates between April and May. Hatchlings usually emerge between July and August.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Desert rosy boa	*Lichanura trivirgata*	BLM FSS	RES	The range of this snake includes desert and chaparral areas throughout the Southwestern US, Baja California, and the Sonoran Desert in Mexico. Typically found in areas with rock outcrops or granitic rock and high sun exposure.	**Moderate.** The NECO distribution map for the rosy boa includes the entire RSEP area and only excludes the dune areas of the Rice Valley.	Primarily crepuscular and often nocturnal. Breeding typically between May and July. Live born offspring between August and November.
Desert Tortoise	*Gopherus agassizii*	FT CT IUCN:VU	RES	Common in desert scrub, desert wash, and Joshua tree habitats. Requires friable soils for burrow and nest construction. Also requires creosote bush habitat with large annual wildflower blooms for foraging.	**Present**. Observed and recorded in project area during the 2009 tortoise surveys. The live tortoise observations were mainly concentrated on the northwest corner of the solar site and southern end of the proposed generator tie-line but carcasses were found distributed throughout the project area.	Presence of burrows, scat, and eggshell fragments suggest that the proposed solar generation site and generator tie-line corridor provide all the life history needs of the tortoise. Large numbers of tortoise carcasses found throughout the project area suggest large die-off and larger former densities.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Couch's spadefoot toad	*Scaphiopus couchi*	BLM CSC	RES	Range from central Texas and southwestern Oklahoma through Baja California. Found in southeastern California along the Arizona border in Imperial, Riverside, and San Bernardino Counties. Associated with desert washes, desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats. Occurs in the Chemehuevi Wash south to Ogilby in Imperial County. Needs friable sand for burrowing. Also takes shelter from the heat under logs and debris. Needs temporary pools that hold water for at least 10 to 12 days for successful metamorphism of tadpoles. Have used runoff basins at the base of sand dunes for breeding. Often found breeding in artificial impoundments such as stock tanks or roadside ditches.	**Low**. This species has a relatively small home range and it is unlikely that there are any sufficiently inundated pools or ditches in the general area to support breeding. The NECO distribution map for Couch's spadefoot toad includes the eastern half of the proposed solar site and the entire proposed generator tie-line corridor. The distribution map appears to be based off a buffer from the Colorado River.	Primarily nocturnal and active in the spring and early summer. More active after rain events. Mainly feeds on termites. Thought to be able to survive an entire year off of one large feeding episode. Spends most of the year underground. Local seasonal migration from winter refuge to breeding ponds. Breeding occurs quickly after rains which most likely take place between April and August. Will absorb moisture through its skin.
Birds						
Yuma clapper rail	*Rallus longirostris yumanensis*	FE CT, FP	RES	Associated with fresh-water marshes with cattail or bulrush. Recent extension of range into lower Colorado River. Closest occupied habitat to the project area includes areas around the Salton Sea and along the Lower Colorado River, primarily within Imperial County.	**Low.** The Rice Valley and surrounding valleys and mountain ranges are arid and include dry desert wash woodlands but not marsh habitats that would support the Yuma clapper rail. It is unlikely that the proposed project would directly or indirectly affect this species.	Diet includes crayfish, small fish, frogs, and aquatic invertebrates. Most individuals are not migratory. Nesting between May through June. No designated or proposed critical habitat.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Golden eagle	*Aquila chrysaetos*	BLM FSC BCC MB CSC FP CDF:S DFG:WL	RES	Open country, rolling foothills, mountain areas and desert; breeds on overhanging ledges, high cliff sites, and large trees. According to the NECO, there are few known golden eagle nest sites In the NECO Planning Area but the species does migrate through the Colorado Desert in the spring and fall and some likely winter there as well.	**Moderate**. Golden eagles have a strong likelihood of nesting in the adjacent mountains. Likely to use the project area for foraging. The NECO distribution map for the golden eagle includes the entire RSEP area.	
Ferruginous hawk	*Buteo regalis*	BLM BCC MB DFG:WL	WNTR	This raptor is most common in the open semiarid habitats throughout the Great Basin and the Great Plains. However they breed from Canada south to Arizona and east towards Oklahoma. Winter in the southwestern US down to central Mexico. Nests sites can be on rocky outcrops, trees, on the ground, and on structures like power poles.	**High**. The project area may be al little south of what you would expect for this species' breeding range. Rice Valley and the surrounding area are typical of the kind of open habitat that ferruginous hawks would likely overwinter. This hawk likely migrates through the Rice Valley. The NECO distribution map for the ferruginous hawk includes the entire RSEP area.	Largest hawk in the US. Sometimes mistaken for a golden eagle. Eggs usually laid between February and July.
Swainson's hawk	*Buteo swainsoni*	MB CT	SUMR	Breeding range includes open habitat from western Canada to northern Mexico. In California, breeding primarily occurs in the Great Basin and Central Valley but also includes the California desert. Winter in southern South America.	**High/Moderate.** Swainson's hawks could be observed migrating through Rice Valley and possibly even nesting near the Rice Valley area. The project footprint lacks any sizeable trees suitable for nesting however this hawk could nest on nearby power poles. This species may be more likely to nest closer to the Colorado River because it is more often associated with riparian habitat and agricultural areas.	Often arrives in breeding grounds later than other raptors. Likely to arrive in southern California for the breeding season between February and March. Typically nest in trees. Diet typically switches from small mammals to insects following the breeding season. Observations appear to be increasing in the southern California desert. Often travel in large flocks when migrating south for the winter.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Prairie falcon	*Falco mexicanus*	MB BCC CSC DFG:WL	RES	Occupies a large range that includes much of western and central North America. Typically associated with open habitat near mountainous areas or cliffs. Usually nest on cliffs.	**Present.** Prairie falcon nest sites have been identified in the CNDDB in the mountains surrounding Rice Valley. The species was observed during the April/May 2009 desert tortoise surveys. Falcons nesting in the nearby mountains likely forage in Rice Valley. This short distance migrant may be present year round in the Rice Valley area. The NECO distribution map for the prairie falcon includes the entire RSEP area.	Egg laying typically begins in March. Some individuals remain residents, some complete short distance migrations, move up or down in elevation, or migrate as far south as central Mexico. Winter population in Colorado Desert may be larger than the breeding season population.
Elf owl	*Micrathene whitneyi*	MB BCC CE	SUMR	Found throughout the southwestern US with the majority of its range in central Mexico. Nests in deciduous tree and cactus cavities. Most common in deserts with giant saguaro (*Carnegiea gigantea*). According to the NECO, the elf owl is only known to occur along the Colorado River Valley in the spring and summer.	**Low**. May pass through the Rice Valley or forage there. There are no appropriate sized cavity trees or cacti in the Rice Valley for this species to nest in. The NECO distribution map for the elf owl does not include the RSEP area.	Diet primarily arthropods, including scorpions. Breeding typically begins in April. Depend on woodpeckers to create nest cavities. Year-round resident in some areas of its range but individuals nesting in southwestern California likely migrate south into Mexico for the winter. Second smallest owl species in the world.
Western burrowing owl	*Athene cunicularia hypugaea*	FSC BLM MB BCC CSC	RES	Habitats includes open grassland habitat with fossorial mammal burrows, often associated with ground squirrels.	**Present**. Typical burrowing owl whitewash observed in front of burrows in the proposed solar generation site during 2009 tortoise surveys. The NECO distribution map for the burrowing owl includes the entire RSEP area.	Use medium to large-sized mammal and tortoise burrows for cover and natal dens. Breeding season is typically from February through August.
Loggerhead shrike	*Lanius ludovicianus*	FSC MB CSC	RES	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. with adequate hunting perches.	**Present**. Observed in project area during 2009 tortoise surveys. Potential shrub nesting on proposed solar site and within generator tie-line corridor.	Largely nonmigratory and has been known to defend year-round territories. Nests are typically well concealed and built in dense shrubs or trees. In California the breeding period typically begins in March and may extend into August.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC FSS MB BCC CE	SUMR	Range includes much of the western US and extends from Canada through Mexico. Close association with well-developed riparian habitat for breeding.	**Low.** Rice Valley has some dry desert wash woodlands but not the true riparian habitat where the yellow-billed cuckoo would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	Currently found in only a few locations in California including records along the Colorado River near Blythe. Will arrive at breeding locations anywhere between April and June. Nests are typically in willow (*Salix* sp.). Little is known about their migration but they usually leave their breeding habitat between July and September.
Gila woodpecker	*Melanerpes uropygialis*	BCC MB CE	RES	Range is primarily in southern Arizona but has been found in extreme southeastern California. Found in typical Sonoran Desert low desert scrub communities but closely associated with saquaro cacti. Typically nest in the cavities of the saguaro but will also use mesquite trees or any available cavity. According to the NECO, the Gila woodpecker is currently only known from a few scattered groups along the Colorado River and may be expected up to a mile up desert riparian washes with hydrologic connectivity with the Colorado River.	**Low**. The site does not include saguaro cacti and lacks large trees that would provide appropriate cavity nests. The NECO distribution map for the Gila woodpecker does not include the RSEP area but does include a small pocket of identified habitat immediately south of the proposed generator tie-line interconnection point.	Cavities excavated by Gila woodpeckers are often later used by elf owls. Diet is also closely linked to the saguaro. This species is an important saguaro pollinator.
Gilded flicker	*Colaptes chrysoides*	BCC MB CE	RES	Has a similar range and life history to the Gila woodpecker. Is a cavity nester that is typically associated with the saguaro cactus forests of the Sonoran Desert. Also found in the Yuma and Colorado Deserts.	**Low**. The site does not include saguaro cacti and lacks large trees that would provide appropriate cavity nests.	

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Crissal thrasher	*Toxostoma crissale*	MB BCC CSC	RES	The deserts of the southwestern US are the northern boundary of their range which extends southward into central Mexico. In the southwestern US this species is typically associated with desert washes and riparian thickets in the valleys of the Colorado River and Rio Grande.	**Low.** Rice Valley has some dry desert wash woodlands but not the dense shrubby habitat where the crissal thrasher would be expected to be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. The NECO distribution map for the crissal thrasher does not include the RSEP area	Little know about this species.
Bendire's thrasher	*Toxostoma bendirei*	BCC BLM MB BCC CSC, IUCN:VU	SUMR	Breeding range includes southeastern California as well as southern Nevada, Arizona, and western New Mexico. Winters in southern Arizona and northwestern Mexico. Associated with open desert areas with widely-spaced large shrubs, cacti, and trees.	**Moderate**. According to the CNDDB, Bendire's thrasher has been observed immediately north of the Rice Valley. Although it was not observed during the April/May 2009 desert tortoise surveys, based on the habitat it is reasonable to conclude that this bird could occur in the project area and could be directly or indirectly affected by construction and operation of RSEP. The NECO distribution map for Bendire's thrasher does not include the RSEP area	Nests are typically located in a cactus or shrub. Often mistaken for a curved-bill thrasher (*Toxostoma curvirostre*) but distinctive from other thrashers by behavior of flying from bush to bush whereas other thrashers rarely fly.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
LeConte's thrasher	*Toxostoma lecontei*	BLM FSC BCC MB CSC	RES	Range includes the deserts of the southwester US and northwestern Mexico. May be most common in the Gila and Colorado River valleys. Often associated with sparsely vegetated low elevation areas where they nest in shrubs. According to the NECO, this bird species is likely distributed throughout the Colorado Desert.	**High/Moderate**. According to the CNDDB, LeConte's thrasher has been observed in the Rice Valley. Although it was not observed during the April/May 2009 desert tortoise surveys, based on the habitat it is reasonable to conclude that this bird could occur in the project area and could be directly or indirectly affected by construction and operation of RSEP. The NECO distribution map for LeConte's thrasher includes the entire RSEP area.	Nesting typically between March and April. Sometimes group in loose bands of LeConte's thrashers following breeding.
Vermilion flycatcher	*Pyrocephalus rubinus*	CSC MB	SUMR	Wide range includes the southwestern US south through Central America. Typically associated with riparian habitat.	**Low.** Rice Valley has some dry desert wash woodlands but not the true riparian habitat where the vermilion flycatcher would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley. The NECO distribution map for the vermillion flycatcher does not include the RSEP area.	Winters in southern part of the range.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Willow flycatcher	*Empidonax trailii*	MB FSS CE	WNTR	This species breeds in the Sierras but according to the NECO, migrate through or even winter in the Colorado Desert. Migrating or wintering flycatchers would likely visit riparian thickets near springs or along riparian corridors.	**Low.** Rice Valley has some dry desert wash woodlands but not the true riparian habitat where the willow flycatcher would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	
Southwestern willow flycatcher	*Empidonax trailii extimis*	FE MB CE	SUMR	The range of this subspecies extends northward to Owens Valley and south to the Colorado River. Closely associated with riparian thickets, in particular with its namesake willow vegetation. Occasionally found breeding on the Colorado River. Migrate south towards Central America in the winter.	**Low.** Rice Valley has some dry desert wash woodlands but not the true riparian habitat where the willow flycatcher would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	The breeding season typically begins between May and June. Winter migration typically begins in August.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Brown-crested flycatcher	*Myiarchus tyrannulus*	MB DFG:WL	SUMR	Associated with open woodland habitat in the southeastern US and southward to South America. Individuals breeding in the US typically migrate to Mexico or southern Florida in the winter.	**Low.** Rice Valley has some dry desert wash woodlands but not the open woodland habitat where the brown-crested flycatcher would be found. The Rice Valley does not include large trees or cacti with breeding opportunities for cavity nesters. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	Typically nest in tree cavities.
Yellow-breasted chat	*Icteria virens*	MB CSC	SUMR	Breeding range is widespread from the southern plains of Canada to central Mexico. Migrate to Mexico and Central America in the winter. Associated with dense brushy riparian habitats.	**Low.** Rice Valley has some dry desert wash woodlands but not the dense brushy riparian habitat where the yellow-breasted chat would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Yellow warbler	*Dendroica petechia*	MB CSC	SUMR WNTR	Range widespread throughout North America and down to northern South America. Typically associated with riparian habitat. Likely both breeding and wintering birds in southeastern California. According to the NECO, this warbler is extirpated from the California side of the Colorado River Valley but likely migrates through the area between March and April and then again between September and October.	**Low.** Rice Valley has some dry desert wash woodlands but not the true riparian habitat where the yellow warbler would be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley. The NECO distribution map for the yellow warbler does not include the RSEP area	Typically arrive in breeding habitat between April and May. Begin to migrate south between July and August. Typically nest in trees.
Hepatic tanager	*Piranga flava*	CSC MB DFG:WL	RES, SUMR	Range includes the southwestern US down to Argentina. Typically breeds in open pine (*Pinus* sp.) and pine-oak (*Quercus* sp.) forests.	**Low**. More likely to occur in higher elevations such as desert mountain tops with white fir pinon forests. The western tanager, a similar species, observed during the April/May 2009 desert tortoise surveys was likely migrating through the Rice Valley. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	Habitat described as similar to the western tanager. Typically travel to the southern part of their range in the winter but sometime remain in the northern breeding range. “Hepatic” is a reference to the male’s liver-red colored plumage.
Summer tanager	*Piranga rubra*	MB CSC	SUMR	For the western US, the breeding range extends as far north as the southeastern deserts. Primarily associated with forested areas in the eastern US. Migrates to Central America and northern South America for the winter.	**Low.** Rice Valley has some dry desert wash woodlands but not the wooded habitat where the summer tanager would be expected to be found. They have the potential to occur along the nearby Colorado River but the project is unlikely to have any indirect effects on the bird or its habitat. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley.	Only entirely red bird in North America. Specialize in eating bees and wasps.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Mountain plover	*Charadrius montanus*	BLM MB CSC BCC IUCN:NT	WNTR	Primarily a Great Plains breeding bird whose range extends from Montana to Mexico. Often associated with disturbed prairie or semi-desert habitat. Typically winters in the southern part of the range from Texas west to the Central Valley of California. Most individuals are thought to winter in the Imperial Valley. In the Imperial Valley the plover is associated with open grassy fields, grazed agriculture, and alfalfa.	**Low**. Although the shrub community in the Rice Valley is fairly open and sparse, the mountain plover is more likely to be found in the agricultural areas along the Colorado River to the east. As with the other bird species in this table there is the potential that this bird could migrate through Rice Valley. The NECO distribution map for the mountain plover does not include the RSEP area.	Not known to breed in California. Often arrive in wintering habitat in October and leave between February and March.
Mammals						
California leaf-nosed bat	*Macrotus californicus*	BLM FSS CSC WBWG:H	RES	Primarily found in the mountain ranges bordering the Colorado River Basin. Has been observed in the Eagle Mountains. Typically associated with desert riparian, desert washes, desert scrub, desert succulent scrub, alkali scrub, and palm oasis habitats.	**Moderate**. Have the potential to roost in mines of surrounding mountains and likely forage over the proposed project area. The NECO distribution map for the California leaf-nosed bat includes the entire RSEP area.	Do not migrate or hibernate. Typically roosts in rocky rugged terrain with mines and caves. Roost in large groups in the winter and for maternal colonies. Young born between May and July.
Pallid bat	*Antrozous pallidus*	BLM FSS CSC WBWG:H	SUMR WNTR	Range includes most of the western US south to central Mexico and Cuba. Will roost in any cavity including a rock crevice, cave, mine, hollow trees, and artificial structures.	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice. The NECO distribution map for the pallid bat includes the entire RSEP area.	Roosts in small colonies. Unique in eating at feeding roosts. Often feed on crickets and scorpions which they catch on the ground. Likely migratory to Mexico in the winter. Breeding between October and February with birth between May and June.
Townsend's big-eared bat	*Plecotus townsendii*	BLM FSS CSC WBWG:H		Range includes most of western North America from southern Canada to Southern Mexico. Roosts in mines, caves, crevices, and structures.	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice Valley but activity is more likely concentrated along the Colorado River Valley. The NECO distribution map for the Townsend's big-eared bat includes the entire RSEP area.	Males roost solitarily away from females. Females roost in small to large maternity colonies.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Occult Little Brown Bat	*Myotis lucifugus occultus*	CSC WBWG:M		Range from the southwestern US to central Mexico. Only a few records along the Colorado River between Needles and Yuma. Typically associated with desert riparian communities along the Colorado River. Usually forage close to water and riparian.	**Low/Moderate.** The general vicinity lacks the associated perennial water source and well-developed riparian washes. The NECO distribution map for the occult little brown bat includes the southern end of the proposed generator tie-line corridor.	Large maternity roosts. Only known maternity colony in California was under a bridge near Blythe and was removed in 1969. Probably extirpated in California.
Fringed myotis	*Myotis thysanodes*	BLM WBWG:H		Range includes most of the central and western US where it is associated with a variety of habitats including desert scrub. In the desert, roost sites are likely within an hour's flight from forested or riparian areas. Roosts in caves, mines, cliffs, snags, and buildings. According to the NECO there are only two known remaining roosts for this species in the NECO Planning Area and both are located in the Old Woman Mountains, approximately 26 miles northwest of RSEP (BLM, 2007).	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice Valley but the species is more likely roost closer to the Colorado River where it is likely to find more appropriate foraging habitat. The NECO distribution map for the fringed myotis does not include the RSEP area but identifies the species range to the north of the proposed solar site in the Turtle Mountains and immediately south of the proposed generator tie-line interconnection point.	Typically arrive at maternity roosts between April and May. Birth typically between June and July. Adults roost separately from pups.
Cave Myotis	*Myotis velifer*	BLM CSC WBWG:M	SUMR WNTR	Typically associated with desert floodplains and rocky canyonlands. This species' range extends from the southwestern US to Honduras. Range within the southwestern US is primarily in Arizona. Primarily a colonial cave dweller but will also roost in rock crevices, under bridges, and in other structures. According to the NECO there are historic records from abandoned mines in the Riverside Mountains and a few cave myotis remain there as of 1993 (BLM, 2007).	**Low/Moderate.** The NECO distribution map for the cave myotis includes the southern end of the proposed generator tie-line corridor.	Can roost in large colonies of well over a 1,000 individuals. Often found sharing roost site with other bat species but segregate themselves. Birth likely occurs between May and July. Likely migratory in Arizona and California. Will fly long distances to forage.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Western mastiff bat	*Eumops perotis*	BLM CSC WBWG:H	RES	Range includes the southwestern US through central Mexico. Primarily nest in high crevices. Forage over a wide range of habitats including dry desert washes, chaparral, and agricultural areas.	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice. The NECO distribution map for the western mastiff bat does not include the RSEP area but identified habitat is immediately south of the proposed generator tie-line interconnection point.	Largest bat species in California. Likely make short distance season migrations and remain active year round in southern California. Likely give birth in July. Found in small roosting colonies.
Pocketed free-tailed bat	*Tadarida femorosaccus*	CSC WBWG:M	SUMR	Range includes southern California to Texas and south through Baja California and central Mexico. Associated with a variety of habitats including low elevation desert scrub areas with rocky outcrops. Roost in rock crevices and artificial structures.	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice. The NECO distribution map for the pocketed free-tailed bat does not include the RSEP area but identified habitat is immediately south of the generator tie-line interconnection point.	Young are typically born in small maternal colonies between June and July. Very vocal species. Relatively uncommon and only known from a few locations in California. Has been detected in the Chocolate and Cargo Muchacho mountains in Imperial County.
Western mastiff bat	*Eumops perotis*	CSC BLM	RES	Range includes the southwestern US through central Mexico. Primarily nest in high crevices. Forage over a wide range of habitats including dry desert washes, chaparral, and agricultural areas.	**Low/Moderate.** This bat species may roost in nearby mountains and forage through Rice. The NECO distribution map for the western mastiff bat does not include the RSEP area but identified habitat is immediately south of the generator tie-line interconnection point.	Largest bat species in California. Likely make short distance season migrations and remain active year round in southern California. Likely give birth in July. Found in small roosting colonies.
Colorado valley woodrat	*Neotoma albigula venustra*	CSC	RES	Range includes southern Nevada, southeastern California, western Arizona, and northeastern Baja California. Associated with a variety of desert habitats including low elevations to pinyon-juniper woodlands. Typically found with prickly pear cactus (*Opuntia* sp) and mesquite (*Prosopis* sp.) and use rocky areas for cover and nest sites.	**Low/Moderate**. Rice Valley does not include much cacti or mesquite vegetation or rocky areas for nesting and cover. Sign of this species was not observed during the April/May 2009 desert tortoise surveys. The NECO distribution map for the Colorado valley woodrat includes the southern half of the proposed generator tie-line corridor.	Nocturnal. Nests sites are typically noticeable due to a large accumulation of various material over many generations of use.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
American badger	*Taxidea taxus*	CSC	RES	Uncommon, permanent resident found throughout most of California. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions, prairies, parklands, and cold desert areas.	**Moderate**. Rice Valley includes appropriate habitat for the badger. The CNDDB includes a badger record from the SR 62/SR 95 intersection, approximately 14.5 miles northeast of the RSEP area.	Somewhat tolerant of human activities.
Yuma Mountain Lion	*Felis concolor browni*	CSC	RES	Local population restricted to the Colorado Desert from Joshua Tree Nation Park to the Colorado River. Primarily expected in dense riparian of the Colorado River and dense micorphyll washes in mountainous areas. Expected to overlap with the range of its primary prey, burro deer.	**Low/Moderate**. The NECO distribution map for the mountain lion includes the southern half of the proposed generator tie-line corridor.	Low population in the Colorado Desert. Adversely affected by barriers such as SR 62 and the aqueduct.
Nelson's Bighorn Sheep	Ovis canadensis nelsoni	BLM FSS	RES	Open, rocky, steep areas used for escape cover with available water and herbaceous vegetation for forage.	**Low/Moderate**. The Turtle Mountains to the north and the Maria Mountains to the south are likely occupied and the West Riverside and Riverside Mountains to the east and southeast are considered demes that may one day be repopulated. On rare occasion, bighorn sheep may venture into the Rice Valley to forage. For the long-term viability of the metapopulation it is important that the species be able to move between the local mountain ranges which include passage through the RSEP area.	Breeding typically occurs between June and September. Young are typically born between July and September. Now reduced to small isolated subpopulations within the larger Sonoran metapopulation. Herds are typically small (< 10 sheep). Movement between mountain ranges is important to their continued viability.

TABLE 5.2-2
Special-Status Wildlife Species Occurring or Potentially Occurring in Project Area

Common Name	Scientific Name[a]	Status[b]	Season[c]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments

[a]Scientific names are based on the following sources: AOU (1983); Jennings (1983); Zeiner et al. (1990a-c).

[b]Status = Status of species relative to the Federal and California State Endangered Species Acts and Fish and Game Code:

Federal Status

FE = Federally listed as endangered.
FT = Federally listed as threatened.
FPE = Proposed endangered.
FPT = Proposed threatened.
FC = Candidate for listing as federally endangered or threatened. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
FD = Delisted from Federal threatened or endangered status.
FSC = Federal Species of Special Concern. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
MB = Migratory Bird Treaty Act. of 1918. Protects native birds, eggs, and their nests.
BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern.
FSS = USDA Forest Service Sensitive Species.
BLM = BLM Sensitive Species.

California Status

CE = State listed as endangered. Species whose continued existence in California is jeopardized.
CT = State listed as threatened. Species that although not presently threatened in California with extinction are likely to become endangered in the foreseeable future.
CSC = California Department of Fish and Game “Species of Special Concern.” Species with declining populations in California.
FP = Fully protected against take pursuant to the Fish and Game Code Sections 3503.5, 3511, 4700, 5050, 5515.

Other Status

IUCN = The World Conservation Union, Conservation Dependent (CD), Critical Endangered (CR), Endangered (EN), Near Threatened (NT), Vulnerable (VU)
WBWG = The Western Bat Working Group low-medium, medium, medium-high, or high priority.

SOURCE: California Dept. of Fish and Game, California Natural Diversity Database, August 2009; California Native Plant Society, Inventory of Rare and Endangered Vascular Plants of California, 2001.