

≡ Natural Resources Assessment, Inc. ≡

**General Biological Resources Assessment
Mountain View IV Powerline and Substation Site Survey
Palm Springs, California**

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November 8, 2006

Project Number: SEA05-101

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CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Karen Kirtland
Natural Resources Assessment, Inc.

November 8, 2006

Date

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Executive Summary

Mountain View Power Partners IV, LLC (“MVPP IV”) proposes to utilize and extend an existing, 34.5 kV aboveground powerline and construct a new electrical substation to interconnect a wind energy project. Natural Resources Assessment, Inc. (NRA, Inc.) was contacted by MVPP IV to conduct a general biological assessment of the proposed powerline alignment and substation site (the “Corridor”). The purpose of the biological assessment was to determine the potential impacts to sensitive biological resources resulting from the construction of the proposed facilities within the Corridor.

The Corridor is located in the upper Coachella Valley, south of Interstate 10, north of Palm Springs, and east of Indian Avenue.

NRA, Inc. conducted a data review and field assessment of the proposed line and substation Corridor. The field review included Zone of Influence (ZOI) surveys for the desert tortoise, as well as an assessment of potential sand dunes and sand sheet habitats for sand dwelling species.

Suitable habitat exists on Corridor for the Coachella Valley milkvetch and Coachella Valley fringe-toed lizard. Mitigation measures that address these species and the triple-ribbed milkvetch include (in summary):

- Designation of a field contract representative (FCR) responsible for overseeing compliance with mitigation measures
- Development and presentation of an education program on sensitive species
- Minimization of impacts to habitat and species
- Preconstruction surveys of all construction areas to identify sensitive species present in the area
- Monitoring of construction activity
- Formal recordation and reporting of all survey and monitoring actions.

Depending upon final project design, there may be impacts to Garnet Wash. In the event of such impacts mitigation will be addressed through the 404 Permit, 401 Permit and 1602 Agreement processes for jurisdictional drainages and streambeds.

Removal of protected silver cholla will comply with the regulations of the California Desert Native Plants Act of 1982.

No other significant impacts were identified.

Cumulative impacts are not expected to be significant.

1.0 Introduction

Mountain View Power Partners IV, LLC (“MVPP IV”) proposes to utilize and extend an existing, wooden aboveground powerline and construct a new electrical substation to interconnect a wind energy project. Natural Resources Assessment, Inc. (NRA, Inc.) was contacted by MVPP IV to conduct a general biological assessment of the proposed powerline alignment and substation site (the “Corridor”). The purpose of the biological assessment was to determine the potential impacts to sensitive biological resources resulting from the construction of the proposed facilities.

2.0 Project Location and Description

The Corridor is located in the upper Coachella Valley, south of Interstate 10 and east of Indian Avenue (Figures 1 and 2). It extends from the southern boundary of Section 22 with Section 27, and proceeds north to near the northern boundary of Section 22, Township 3 south, Range 4 west of the Desert Hot Springs 7.5’ U.S. Geological Survey (USGS) topographic map.

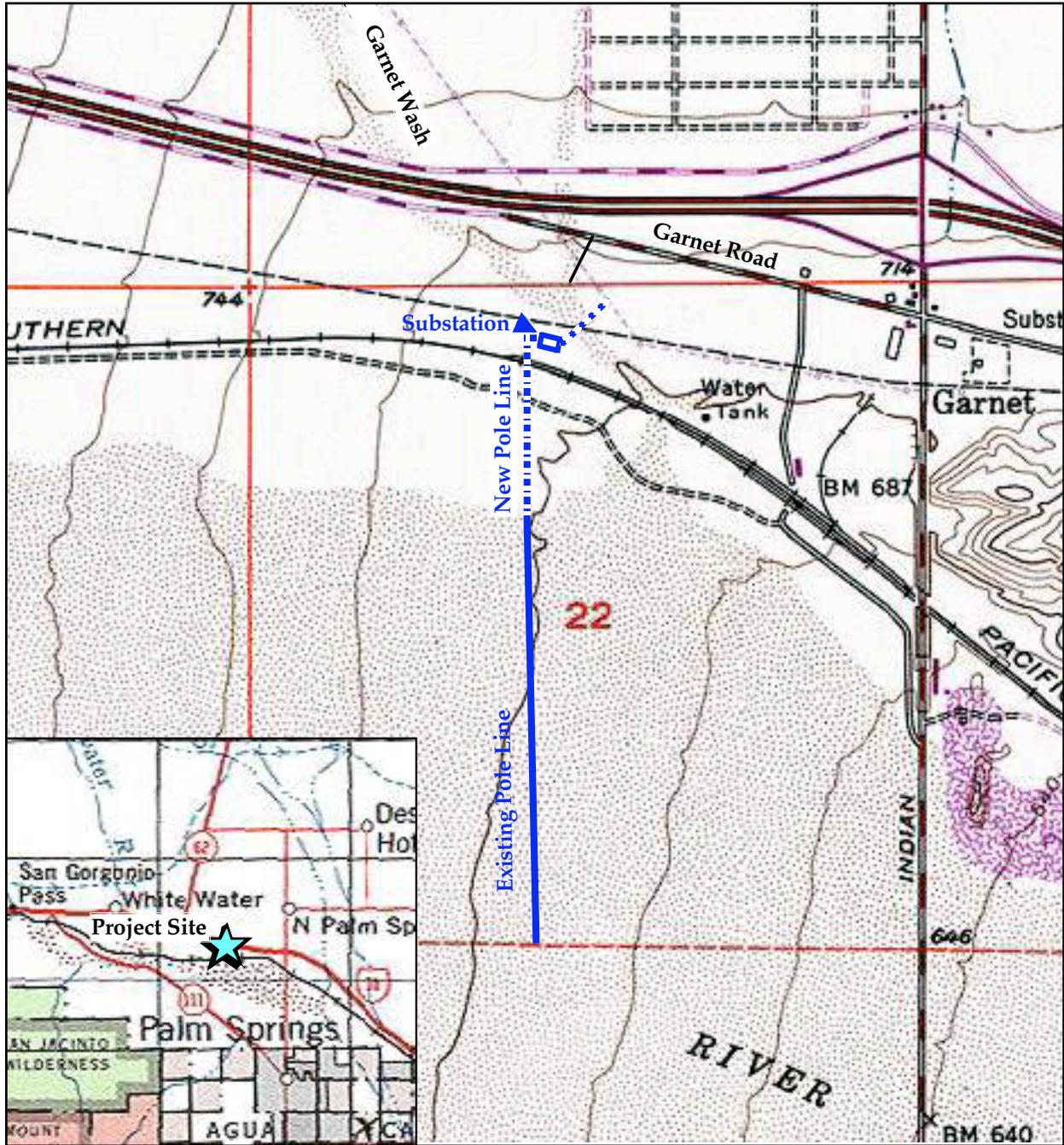
In the northern part of Section 22, the powerline will cross a set of Union Pacific Railroad tracks and enter a small substation to be built for the project. From the substation, the line extends northeast to an existing Southern California Edison (SCE) 115 kilovolt tower line (Figures 1 and 2). The proposed 34.5 kV overhead powerline will be between 60 and 80 feet in height, the substation will include overhead electrical structures between 30 and 80 feet in height, and the 115 kV tap line to the existing SCE 115 kV line will be approximately 100 feet in height.

3.0 Methods

3.1 Data Search

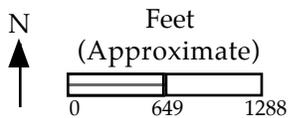
NRA, Inc. reviewed the standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- Lists and maps of sensitive biological resources provided by the California Natural Diversity Data Base.
- The Draft Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP)
- The California Desert Native Plants Act of 1982
- Available graphics and documents on the distribution of desert tortoise habitat and the classification of tortoise habitats in the area.
- Previous site assessment reports on nearby wind energy facility developments (LSA 1994, VHBC 1999a, 1999b and Natural Resources Assessment, Inc. 2000, 2005).



Source: Desert Hot Springs (1978) 7.5' USGS topographic quadrangle

Figure 1. Regional Location and Project Vicinity

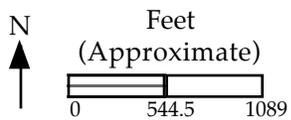


Powerline Replacement and Upgrade
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 Riverside County, California



Source: TerraServer 2002

Figure 2. Project Aerial



Powerline Replacement and Upgrade
General Biological Assessment
Riverside County, California

- Our previous work on adjacent properties in Sections 28 and 27 (Natural Resources Assessment, Inc. 2005).
- General texts and other documents identifying potential resources on the property.

3.2 Field Surveys

Field surveys for the Corridor were conducted on September 19 and 21, 2006 by Ms. Karen Kirtland of NRA, Inc. and Ms. Stephanie Pacheco of Tetra Tech, Inc. The field surveys were focused on the desert tortoise, but included observations of occupied or potential habitat for other sensitive biological resources.

Desert tortoise surveys were conducted using standard survey techniques according to the protocols recommended by the U.S. Fish and Wildlife Service (USFWS). Belt transects approximately 10 meters (30 feet) wide were walked north and south parallel along the powerline alignment, and east and west across the substation site. The survey encompassed the entire area of the powerline and the substation.

The line of survey within each belt transect followed an approximate zig zag pattern. The pattern was based on the location of suitable habitat within the transect and was designed to identify sign within suitable habitat areas.

Zone of Influence (ZOI) transects were walked on both sides of the powerline alignment and around the substation site. The ZOI transects were modified or reduced in number as dictated by trespass issues or a lack of suitable habitat (such as along the north side of the substation south of Garnet Avenue).

Sign surveyed for included nests, tracks, scat, burrows, skeletal and shell remains, and live animals, as well as sensitive plant species. During the surveys, notes were made on the plant and animal species observed, the surface characteristics and topography of the project area, and the suitability of the habitat for sensitive species potentially present on the Corridor.

4.0 Results

4.1 Research

Information provided by the Bureau of Land Management (BLM) indicate that the Corridor is located in Category III habitat (Bureau of Land Management 2000). The Corridor is not in U.S. Fish and Wildlife Service (USFWS) Critical Habitat for the desert tortoise.

Data provided by the California Natural Diversity Data Base (CNDDDB) indicated a number of sensitive species were identified as occurring on the White Water, Desert Hot Springs and Palm Springs 7.5' USGS topographic quadrangles.

NRA, Inc. identified a number of other species potentially present, including other species of reptiles, birds and mammals, and a number of bat species (Table 1, Appendix B).

Based on the information available from the former draft CVMSHCP, the portions of the Corridor south of the Union Pacific Railroad are within the Whitewater Floodplain Conservation area. This should be reassessed if a final CVMSHCP plan is prepared and adopted in the future.

4.2 Field Surveys

4.2.1 Weather

On September 19, the temperature at the time of the survey was in the low seventies (degrees Fahrenheit) at the start of the day, rising into the mid nineties (degrees Fahrenheit) by the end of the survey. The skies were clear, with no wind in the morning and a mild wind (two to five miles per hour) by the afternoon. On September 21, the temperature was in the mid nineties (degrees Fahrenheit), cooling down in the afternoon to the mid seventies (degrees Fahrenheit) . The cloud cover was scattered and thin. Winds were zero to one mile per hour.

4.2.2 Soils and Topography

The area of the powerline is dominated by different types of Carsitas soils, ranging from gravelly to cobbly to fine sand. Starting from the south, the powerline crosses through a mix of Carsitas cobbly sand and Carsitas gravelly sand (Photos 1 and 2). In this area, there are small patches of drift sand that have collected around scrub and similar wind obstructions.

Approximately 1300 feet south of the railroad tracks, the powerline crosses through a large patch of Carsitas fine sand. The change is obvious on the surface. In this area, sand sheets and sand hummocks form an almost continuous cover (Photo 3).

The substation is located primarily on Carsitas fine sand (Photo 4). The extension of the powerline to the existing SCE tower crosses over an area of Carsitas gravelly sand.

The powerline alignment is relatively flat, with elevations ranging from 590 to 710 feet above sea level. The overall slope is northwest to southeast (Figure 1).

The substation and extension of the powerline are on a mostly flat area, at an elevation of approximately 610 feet. There is a slight slope extending northwest to southeast (Figure 1). The extension of the powerline crosses Garnet Wash (Figure 1).

4.2.3 Plant Communities

There are two plant communities along the powerline alignment and the substation. Most of the southern half of the alignment is sparsely covered with a desert scrub mix of sweetbush (*Bebbia juncea*) and scalebroom (*Lepidospartum squamatum*) and an occasional sticktight plant (*Petalonyx thurberi*) (Photo 1). The few remaining annual plants included doveweed (*Eremocarpus setigerus*), red-stemmed filaree (*Erodium cicutarium*), and desert spurge (*Chamaesyce polycarpa*). Scrub density is less than 10 percent.



Photo 1. Alignment of powerline line from the south. Soil is Carsitas cobbly sand.
Note sparse shrub cover.



Photo 2. Looking south along the alignment. Mix of Carsitas gravelly and cobbly soils.



Photo 3. Looking west from pole line. Soil is Carsitas fine sand. Note the buildup of sand hummocks around the creosote bushes.



Photo 4. Substation site on Carsitas fine sand. Plant community is creosote bush scrub.

Further north, the plant species occurring along the alignment include desert willow (*Chilopsis linearis*), creosote bush (*Larrea tridentata*), Mormon tea (*Ephedra nevadensis*), and Emory's indigo bush (*Psoralea emoryi*). Scrub cover is approximately 10 percent (Photo 3).

North of the railroad tracks, on both the substation site and the extension of the alignment, the dominant plant species is Sonoran creosote bush scrub (Photo 4). This plant community includes creosote bush, burrobush (*Ambrosia dumosa*), and Emory's indigo bush. Scrub density varies from approximately one to two percent in the sandy hummocks and sheet sand areas of the site to 10 percent in areas with sandy soils. The average shrub height is 45 centimeters (1.5 feet).

Mediterranean grass (*Schismus barbatus*) formed the dominant ground cover at the time of the surveys, ranging from less than five percent to 30 percent.

All plant species observed are listed in Appendix A.

Based on the former CVMSHCP, most of the alignment south of the railroad tracks lies in ephemeral sand fields. The extreme northern section (south of the railroad tracks) lies in active sand fields.

The substation area and powerline extension north of the railroad tracks are not included in the CVMSHCP. NRA, Inc. classifies this area as Sonoran desert scrub.

4.2.4 Wildlife

Wildlife observations made during the surveys were dominated by mammal species. Observations of wildlife included scat, tracks, burrows, nests, calls, and individual animals.

No amphibians were observed due to the limited availability of surface water. Side-blotched lizard (*Uta stansburiana*), Great Basin whiptail (*Cnemidophorus tigris tigris*) and zebra-tailed lizard (*Callisaurus draconoides*) were the only reptile species observed.

The only bird species observed were mourning dove (*Zenaidura macroura*) and common raven (*Corvus corax*).

Common mammal species observed included black-tailed jackrabbit (*Lepus californicus*), Merriam's kangaroo rat (*Dipodomys merriami*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), and coyote (*Canis latrans*).

All wildlife species observed are listed in Appendix A.

4.2.5 Disturbances

Disturbances to the powerline alignment south of the railroad tracks consist primarily of former and current activities from wind field construction and maintenance. Off-road vehicle use, as well as vehicle and foot traffic, use of existing dirt roads and small amounts of trash dumping has occurred in the vicinity of the substation site and powerline extension north of the railroad tracks. This area is also traversed by underground utilities with access roads.

4.2.6 Sensitive Biological Resources

4.2.6.1 Arizona Spurge

The Arizona spurge (*Chamaesyce arizonica*) is a perennial plant growing from a tap root. It is found primarily in Sonoran desert scrub on sandy soils. Arizona spurge occurs at elevations ranging from 150 to 900 feet.

The historical distribution included Riverside and San Diego counties, as well as populations in Arizona and Baja California. It is not known to occur in Imperial County, although suitable habitat exists.

Impacts to this species have resulted from residential and commercial development, as well as many areas being converted to agricultural and recreational uses. The California Native Plant Society lists this species as List 2. This plant is not currently listed by the USFWS or the CDFG.

Project Site Findings

The sand sheets and sand hummocks preferred by this species are present on the Corridor and this species could potentially be present.

4.2.6.2 Coachella Valley Milkvetch

The Coachella Valley milkvetch (*Astragalus lentiginosus* var. *cochellae*) is a winter annual and sometimes short-lived biennial found only in the Coachella Valley. It is found in sandy places, such as sand dunes and sand sheets, below 1200 feet in elevation. It occurs in creosote bush scrub, desert wash and sand dune communities.

The historical distribution of this species included most of the Coachella Valley and parts of the Imperial Valley. Its distribution has been severely restricted due to agricultural developments in Imperial County, and residential and commercial development in the Coachella Valley south of Interstate 10.

The milkvetch is currently listed as endangered by the USFWS and as a List 1b plant by the California Native Plant Society. The CDFG does not currently list this species.

Project Site Findings

Suitable habitat for the milkvetch occur throughout the powerline alignment, with the most suitable habitat in the sand sheets and sand dunes in the northern portions, south of the railroad. Because of the timing of the surveys, this species could not be observed. However, it is known to occur immediately south and southwest of the powerline, and this species may be present along the alignment.

4.2.6.3 Triple-ribbed Milkvetch

The triple-ribbed milkvetch (*Astragalus tricarinatus*) is a perennial species that occurs on gravelly soils in creosote bush scrub and Joshua tree woodland plant communities. The historical distribution of this species extends from the head of the Coachella Valley to the Orocochia Mountains. It occurs on exposed, rocky slopes and canyon walls from 1,400 to 4,000 feet in elevation. The flowering period is from February to May.

Triple-ribbed milkvetch is listed as endangered by the USFWS and a List 1b plant by the California Native Plant Society. The CDFG does not currently list this species.

Project Site Findings

This species is a perennial shrubby herb that prefers gravelly soils. There is anecdotal evidence that this species prefers specific soil types (S. White, pers. comm.). Triple-ribbed milkvetch was not observed during the survey, and the site does not contain suitable rocky slopes or canyon wall habitat preferred by this species. Triple-ribbed milkvetch is not expected on the Corridor.

4.2.6.4 Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is a desert dwelling reptile that occurs throughout the Mojave and Sonoran deserts. It is found in California, Arizona, Nevada and Utah, occurring in almost every type of habitat except dry lakes or playas, sand dunes and sand sheets and rocky slopes (except in Arizona, where they occur almost exclusively on rocky slopes).

Desert tortoises construct underground burrows as living quarters, and spend most of the year down in the burrows. They come out for forage in the early spring (February and March) and remain active above ground until early June, when they retreat to their burrows for most of the summer, fall and winter months. They will emerge and be active during the fall months of September and October, depending upon late summer weather conditions. Although they stay underground for most of the year, tortoises can be found active above ground at all times of the year.

Desert tortoise populations are in decline due to the introduction of a contagious respiratory disease known as Upper Respiratory Tract Disease (URDS). URDS became prevalent in tortoise populations starting the late 1980s. Other impacts include ongoing conversion of habitat to residential and commercial development, as well as impacts from recreational users. Both the California Department of Fish and Game and U.S. Fish and Wildlife Service list the tortoise as threatened.

Project Site Findings

No sign of tortoise was found along the alignment, on the substation site, along the powerline extension or in the Zone of Influence (ZOI). Based on the lack of sign both on site and in the ZOI, desert tortoise is not expected to be present on site.

4.2.6.5 Coachella Valley Fringe-toed Lizard

The Coachella Valley fringe-toed lizard (*Uma inornata*) is restricted to fine, wind blown sand of dunes, flats, riverbanks and washes in the Coachella Valley. This species is found in creosote bush scrub, other sparse scrub habitats with suitable sandy soils. They occur from near sea level up to 1600 feet elevation in suitable habitat. This species is active at temperatures between 95° to 110° F.

The Coachella Valley fringe-toed lizard is especially adapted to live in sand dunes. It has fringes on the rear toes that enable it to move easily and swiftly on loose sand. In addition, the Coachella Valley fringe-toed lizard hides from predators by “swimming”, or rapidly digging down and through loose sand to bury itself. It has a countersunk jaw to prevent sand from entering it’s mouth when it burrows.

This historical distribution of this species includes the former sand dunes in the Coachella Valley (Zeiner, et al 1988). This distribution has been contracted due to residential and commercial development in the Valley areas below the Pass. This species is now found only in the non-developed sand dunes of the upper Coachella Valley and areas north of the Interstate 10 freeway.

Loss of habitat to development and fragmentation of large dune areas have severely restricted the range and population numbers of this species. The Coachella Valley fringe-toed lizard is listed as threatened by the USFWS and endangered by the CDFG.

Project Site Findings

No Coachella Valley fringe-toed lizards were observed along the powerline alignment and substation; however, they are known to be present southwest of the site. Suitable habitat exists in the sand dunes and sandy hummocks south of the railroad tracks, and this species is likely to be present.

4.2.6.6 San Diego Horned Lizard

The San Diego horned lizard (*Phrynosoma coronatum blainvillei*) is found in a wide variety of habitats (Stebbins 1966). Habitats preferred by this species include annual grassland, coastal sage scrub, alluvial fan scrub, broadleaf woodland and coniferous forest. It is common in lowland areas along sandy washes with low scattered shrubs, such as found in alluvial fan scrub.

The horned lizard is typically found on or near loose sandy soils in these plant communities. Other habitat requirements seem to include warm conditions, such as open areas for sunning and patches of loose soils for burial.

The San Diego horned lizard is active year round. The greatest level of activity is during the warmer seasons of the year, when ant populations are most active above ground. The horned lizard is less active during the cooler periods of the year, mainly from August to October.

The historical distribution for the San Diego horned lizard includes the coastal and inland areas of southern California from Ventura County to Baja California (Stebbins 1985). Known localities include

the San Bernardino Valley area of San Bernardino County, with some populations extending through the Cajon Pass into the Mojave Desert. Riverside County populations include all of the coastal area of Riverside, extending through the Banning Pass and Anza area into the Coachella Valley (California Natural Diversity Data Base report for the Palm Spring area).

Fragmentation and loss of habitat to urban development and agricultural practices have seriously contributed to the reduction in populations for this species. As a result, the San Diego horned lizard is listed as a species of special concern by the CDFG. It is not listed by the USFWS.

Project Site Findings

Suitable habitat exists for the San Diego horned lizard along the alignment and the substation. No individuals were observed, but horned lizards are known to be present immediately south of the project area. This species is expected to be present.

4.2.6.7 Flat-tailed Horned Lizard

Flat-tailed horned lizard (*Phrynosoma mcallii*) is restricted to windblown sand. It is found only on dunes and sandy flats in the lower deserts, from the Coachella Valley south to the head of the Gulf of California and into extreme northeastern Baja and southeastern Arizona. The flat-tailed horned lizard is described as being found from below sea level up to around 600 feet elevation.

The flat-tailed horned lizard prefers fine sand areas with sparse vegetation cover, found in desert washes and desert flats (Zeiner, et al 1988). The habitats of the flat-tailed horned lizard and the Coachella Valley fringe toed lizard frequently overlap, although the flat-tailed horned lizard has a wider distribution.

This historical range of this species extended from central Riverside County to San Diego and Imperial counties. This habitat has become restricted, mostly in the Imperial and Riverside county areas. Substantial populations now are found primarily in undeveloped areas north of Interstate 10, eastern San Diego County and Imperial County outside of agricultural areas.

Impacts to this species include agricultural, residential, and commercial development, as well as recreational uses. The flat-tailed lizard is listed as a Species of Special Concern by the CDFG. It is not listed by the USFWS.

Project Site Findings

The flat-tailed horned lizard was not observed along the alignment or on the substation site. They may be present in the sand hummocks and sand sheet habitats south of the railroad tracks.

4.2.6.8 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a resident species in lowland areas of southern California. It prefers open areas for foraging and burrowing, and is found widely scattered in open desert scrub. This species is scarce in coastal areas, being found mainly in agricultural and grassland habitats. The largest remaining numbers are in the Imperial Valley, where it is common in the agricultural fields (Zeiner, et al 1990a).

Burrowing owls generally forage low to the ground, skimming just above the vegetative cover. This behavior allows the burrowing owls to avoid collisions with wind turbines. They generally use burrows constructed by other burrowing species, primarily ground squirrels in coastal and agricultural areas and desert tortoises in the desert.

The historical range of the burrowing owl included habitats throughout California and in other western states. The habitat has been severely constricted by the conversion of much of its former habitat to agricultural development, ground squirrel poison control methods and destruction of burrows as a result of increased recreational use. The burrowing owl is listed as a Species of Special Concern by the CDFG. It is not listed by the USFWS.

Project Site Findings

No burrowing owls or burrows were found along the alignment or in the substation area. This species may forage across the project site, but no nesting areas were found.

4.2.6.9 Le Conte's Thrasher

The Le Conte's thrasher (*Toxostoma lecontei*) is an uncommon and local resident in low desert scrub habitats such as open desert wash, desert scrub, alkali desert scrub and desert succulent shrub habitats. It is also occasionally found in Joshua tree woodland mixed with scattered shrubs (Zeiner, et al 1990a).

The historical range includes Inyo and Kern counties down through eastern Los Angeles, San Bernardino, Riverside, and San Diego counties, as well as Imperial County outside the agricultural area around El Centro. There are also populations found in southwestern corner of the San Joaquin Valley.

The breeding range extends from these areas into eastern Mojave, north into the Owens Valley and south into the lower Colorado Desert. This species is also recorded from southern Nevada and Utah, as well as western Arizona and New Mexico.

Loss of habitat from agricultural development and the increase in off-road activity have contributed to the decline of this species. The Le Conte's thrasher is listed as a Species of Special Concern by the CDFG.

Project Site Findings

This species was not observed during the surveys. The Le Conte's thrasher may forage along the alignment and the substation site. It is unlikely to nest on site, since the scrub habitat is very open with short shrubs, and this species generally prefers taller, less widely scattered shrubs.

4.2.6.10 Palm Springs Round-tailed Ground Squirrel

The Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*) prefers sandy arid sites in low flat desert areas (Hall 1981). This animal is often found on sand dunes, and will also dig into fine sand collected on banks and around shrubs. Typical habitat sites include floodplains and alluvial fans.

The Palm Springs round-tailed ground squirrel is found in creosote bush scrub, mesquite shrub, saltbush scrub and palo verde wherever sandy soils accumulate (Zeiner, et al 1990b). It is typically found along floodplains and alluvial fans.

Impacts to the Palm Springs round-tailed ground squirrel are primarily residential and commercial development of its preferred habitat. Most of the populations south of Interstate 10 have been affected by the increase in growth of the Coachella Valley area. The ground squirrel is currently listed as a candidate species by the USFWS and as a Species of Special Concern by the CDFG.

Project Site Findings

Ground squirrel burrows were observed along the alignment, and the alignment south of the railroad tracks supports the sand hummocks, sand flats and sandy mounds preferred by this species. Although no trapping was conducted, based on the habitat type and the presence of ground squirrel burrows this species is expected to be present on site.

4.2.6.11 Palm Springs Pocket Mouse

The Palm Springs pocket mouse (*Perognathus longimembris bangsi*) prefers sandy soil for burrowing. It is found in creosote bush scrub and Joshua tree woodland (Hall 1981, Zeiner et al 1990b). This species occurs throughout the upper Coachella Valley in suitable habitat. This species is active primarily at night from late spring to later summer.

The Palm Springs pocket mouse is part of the little pocket mouse (*Perognathus longimembris*) subspecies complex. All the member subspecies seem to prefer open, sandy areas with sparse vegetative cover. This historical range of the Palm Springs pocket mouse is confined to the Coachella Valley area.

Impacts to the Palm Springs pocket mouse include residential and commercial development of its preferred habitat, as well as increasing recreation use. Most of the populations south of Interstate 10 have been affected by the increase in growth and use of the Coachella Valley area. The Palm Springs pocket mouse is currently listed as a Species of Special Concern by the CDFG.

Project Site Findings

Burrows belonging to a pocket mouse species were observed along the alignment. Palm Springs pocket mouse were previously trapped northwest of the site and are known to occur further south. In addition, the only pocket mouse species recorded from this area of the Coachella Valley is the Palm Springs pocket mouse. Therefore, the burrows observed should belong to this species.

4.2.6.12 Southern Grasshopper Mouse

The southern grasshopper mouse (*Onychomys torridus ramona*) is a small rodent found in the more arid regions of southern California. The preferred habitat types are alkali desert scrub and desert scrub habitats, with lower densities in succulent shrub, wash and riparian areas (Hall 1981, Zeiner et al 1990b).

These species is found in sandy habitats in both the Mojave and Sonoran deserts, in areas with low to moderate shrub cover. It prefers friable soils for digging burrows.

Habitat for the southern grasshopper mouse has been reduced by recreational uses and loss of sandy soil habitats to residential and commercial development. This species is listed as a CSC by the CDFG. It is not listed by the USFWS.

Project Site Findings

Individuals of this species were trapped two miles southwest of the project site in sandy areas just north of Palm Springs (California Natural Diversity Data Base 2005).

There is a high probability that this species occurs along the alignment. Suitable sandy soils (Carsitas sand) are found throughout the project area south of the railroad line.

4.2.6.13 Coachella Valley Giant Sand Treader Cricket

The Coachella Valley giant sand treader cricket (*Macrobaenetes valgum*) is known from sand dune ridges in the Coachella Valley. The population size is regulated by the amount of rainfall. The habitat requirements for this species seem to include areas where springs dampen the sand year round.

Impacts to this species include the loss of habitat from development and destruction of habitat from recreational use. This species is not currently listed by the CDFG or the USFWS.

Project Site Findings

No springs exist along or in the vicinity of the alignment, the substation site, or the powerline extension, and the sandy soils were dry throughout. This species is not expected to be present within the project area.

4.2.6.14 Coachella Valley Jerusalem Cricket

The Coachella Valley Jerusalem cricket (*Stenopelmatus calhillaensis*) is known from a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs. This species appears to be limited to large, undulating dunes piled up at the north base of the San Jacinto Mountains.

The destruction of large dune areas by off-road recreational driving impacts this species. The Coachella Valley Jerusalem Cricket. This species is not currently listed by the CDFG or the USFWS.

Project Site Findings

Sand hummocks suitable for this species exist along the powerline alignment south of the railroad; therefore, the Coachella Valley Jerusalem cricket could potentially be present within the powerline alignment south of the railroad tracks.

4.3 Protected Native Plant Species

The California Desert Native Plants Act regulates the taking of desert plant species for commercial purposes. It also regulates the permitting process for the taking of desert plant species in general, making it unlawful for “any person to destroy, dig up, mutilate or harvest any living native plant, or the living or dead parts of any native plant, except its fruit, without obtaining written permission from the landowner and a permit” (State of California 1982, Division 23, Chapter 5, Section 80111).

Project Site Findings

Silver cholla (*Opuntia echinocarpa*) occur along the powerline alignment and may be affected by project construction.

4.4 Habitat Fragmentation and Wildlife Movement

Wildlife movement and the fragmentation of wildlife habitat have come to be recognized as important wildlife issues that must be considered in assessing impacts to wildlife. In summary, habitat fragmentation is the division or breaking up of larger habitat areas into smaller areas that may or may not be capable of independently sustaining wildlife and plant populations. Wildlife movement (more properly recognized as species movement) is the temporal movement of species along various types of corridors. Wildlife corridors are especially important for connecting fragmented wildlife habitat areas.

A more detailed synthesis of current scientific thinking and the experience of field biologists on the subjects of wildlife movement and habitat fragmentation is provided in Appendix C.

Project Site Findings

The Whitewater River floodplain functions as a wildlife corridor. It has been somewhat affected by the various types of land uses along the river, but still provides a large amount of open space for movement. On site movement also still exists.

The Corridor is currently disturbed, with many miles of existing graveled roads, former wind turbine sites, existing wind turbines, overhead and underground electrical lines, buildings and electrical transformers. These disturbed areas have contributed to fragmentation of the habitats on site but still provide open space for wildlife movement.

Habitat fragmentation from construction will include removal or disturbance of vegetation and installation of facilities, but will be limited to wooden power poles, a fenced substation site, and gravel access roads constructed at-grade.

4.5 Bird Collisions and Electrocutions

The potential for bird collisions always exists with vertical structures, including overhead electrical lines. Utility poles and substation structures can be a risk to raptors and other birds through collisions with wires, guy cables or pole members, or electrocutions.

In response to this public agencies and organizations, including the Rural Electrification Association (now called the Rural Utilities Service), US Fish and Wildlife Service, National Audubon Society, and Edison Electric Institute (EEI) worked together to identify high risk electric line configurations, and develop methods to reduce bird electrocutions. In 1989 APLIC, the Avian Power Line Interaction Committee, was formed with biologists from the utility industry, USFWS, and the National Audubon Society. APLIC's scope includes bird electrocution and nest issues, and it serves as a clearinghouse for information and communication on power line/avian issues. Its membership includes USFWS, EEI, Electric Power Research Institute, electric utilities, the National Rural Electric Cooperative Association (NRECA), and the Rural Utilities Service (RUS).

APLIC has produced guidelines and practices for minimizing electrocutions (*Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996*) and also collisions (*Mitigating Bird Collisions with PowerLines: The State of the Art in 1994*). These guidelines provide methods for monitoring and assessment, as well as mitigation measures to minimize bird mortality associated with utility structures.

Birds are electrocuted by power lines because of the following factors:

1. Environmental factors such as topography, vegetation, prey, and other, behavioral or biological factors that influence bird use around power poles, and
2. Insufficient separation between conductors or with grounded lines or hardware.

Electrocution can occur when a bird touches two energized parts or an energized part and a grounded part of the electrical equipment. Most electrocutions occur on medium-voltage distribution lines between 4 kilovolts and 34.5 kilovolts, where the spacing between conductors may be sufficiently close to be bridged by bird's wings or bodies. Structures can be made safer by providing adequate horizontal and vertical clearances between energized parts to accommodate a large bird. Because dry feathers do not conduct electricity, contact must be made between fleshy parts such as the feet, wrists, or skin for electrocution to occur.

Factors that influence collision risk can be divided into those related to avian species, those related to the environment, and those related to the location and configuration of the electrical lines. Species-related factors include habitat use, body size, flight behavior, age, sex, and flocking behavior. Heavy-bodied, less agile birds or birds in large flocks may lack the ability to quickly negotiate obstacles, making them more likely to collide with overhead lines. Similarly, inexperienced birds or those distracted by territorial or courtship activities may collide with lines.

Environmental factors may include the effects of weather and time of day on visibility of cables, surrounding land use practices that may attract birds, and human activities that flush birds into lines. Line-related factors may include the configuration and location of the line, placement with respect to other structures, and nearby topographic features.

The proposed powerline and substation facilities are between 60 and 100 feet in height. A report by McCrary, et al (1982) titled "Nocturnal Avian Migration Assessment of the San Geronio Wind Resource Study Area, Fall 1982" found that approximately 37 million birds flew through the Coachella Valley during the fall of 1982, based on the valley's average width of 16 km." The report found that the very large number of migrating birds (approximately 37 million) which have been estimated as passing through the Coachella Valley in the fall, fly at elevations greater than 100 feet, which places them higher than the proposed pole lines or substation facilities.

The number of bird collisions with man-made structures appear to be size-related. McCrary, et al (1982) states that "the vast majority of birds killed by collisions with man-made structures are passerines (i.e. sparrows, warblers, blackbirds etc)." The report further notes that flocking species belonging to the waterfowl, shorebird and gull groups die at a much lower frequency than other species. The report states, "During a 25 year study of avian mortality at a 308 m [meter] TV tower in Florida, only 0.3% of 42,384 known avian fatalities were waterfowl, less than 0.2% were shorebirds and gulls, and 96.7% were passerines. . .".

Project Site Findings

The project site is located on the Whitewater floodplain, a flat and relatively low elevation site. The surrounding mountain ranges are several miles away. Topography on and adjacent to the site does not provide opportunities for raptors to soar or use updrafts because the site and surrounding terrain are flat. No adjacent topographic features exist that will tend to concentrate birds through the powerline corridor or substation. These characteristics of the site reduce the probability of bird strikes, based on the factors discussed above.

Other factors increasing the likelihood of collision include poor visibility due to weather conditions. The powerline and substation are located in an area that has an abundance of clear days with good visibility, minimizing this risk factor.

The lack of forest, woodland, riparian or open water habitats closer than 0.9 miles from the site reduces the likelihood that migratory species using these habitats, such as vireos, flycatchers, rails and pelicans, will be close to the powerline or substation structures during flight takeoff, and therefore reduce the likelihood of collision.

4.6 Jurisdictional Drainages and Wetlands

4.6.1 Army Corps of Engineers

The Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria. Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate (waterway) commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations.

4.6.2 California Department of Fish and Game

The California Department of Fish and Game (CDFG), through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFG.

Determining the limits of wetlands is not typically done in obtaining CDFG Agreements. The reason for this is that CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mulefat and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas.

4.6.3 State Water Resources Control Board

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the State Water Resources Board (Board) under Section 401 of the Clean Water Act. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices referred to as Regional Water Quality Control Boards.

Project Site Findings

NRA, Inc. looked at regional aerial photos of the project site and the Coachella Valley, and evaluated the site conditions. Although this portion of the alignment is in the floodplain of the Whitewater River, there are no drainages along the powerline alignment south of the railroad tracks.

The powerline north of the railroad tracks and the substation site are not within a defined floodplain. Garnet Wash crosses under the proposed 115 kV tap connecting the substation to the existing SCE 115 kV power line. There are two existing access roads that cross Garnet Wash. These roads service a high pressure gas line and a petroleum pipeline running parallel to the railroad tracks.

Garnet Wash eventually connects with Whitewater River, which brings it under the jurisdiction of the Corps. Garnet Wash may also come under the jurisdiction of the CDFG.

4.7 Coachella Valley Multiple Species Habitat Conservation Plan

The site is within the proposed Whitewater Floodplain Conservation Area designated under the Draft Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). This document was recently withdrawn.

5.0 Discussion

The proposed project is the construction of a wooden pole powerline and substation. Construction of the powerline and 115 kV tap will not include any filling or grading. The substation site will be graded and graveled. Total temporary disturbance is estimated to not exceed 3.0 acres (0.75 percent of the site) for the powerline, substation and 115 kV tap, and permanent disturbance is estimated at 1.2 acres (0.4 percent of the site).

5.1 General Biological Resources

The proposed project will use existing access roads to the extent possible, plus compaction of native sandy soils, and an existing 0.5 mile long power pole line.

Temporary disturbance is not expected to exceed 0.7 percent. Permanent disturbance is not expected to exceed 0.5 percent of the site. Since the total area of construction and permanent habitat loss is small, most of the site will remain in its current condition.

Because of the large amount of open space that exists in the vicinity of the site, the relatively small amount of plant communities and wildlife habitat that would be lost is not considered to be significant.

5.2 Sensitive Biological Resources

Impacts to listed species are automatically significant and must be mitigated. For determination of the level of significance to sensitive but non listed resources, CEQA requires that the impact be such that

the habitat of the protected resource will be substantially degraded or reduced, cause a wildlife population to drop below self-sustaining levels, or that the plant or animal community will be eliminated. CEQA also finds that the impacts are significant if there are cumulative effects from future probable projects.

5.2.1 Species That Will Not Be Significantly Impacted

Impacts to the following species are not expected to be significant. Therefore, no mitigation measures have been prepared to address the impacts of the project.

5.2.1.1 Arizona Spurge

The Arizona spurge is on a relatively low priority list for the CNPS, and is not listed by the CDFG or the USFWS. The loss of individuals is expected to be small and not drop below self-sustaining levels. The majority of potential habitat is expected to remain relatively intact. No significant impacts to this species are expected.

5.2.1.2 Desert Tortoise

The site is not adjacent to occupied habitat, and, no animals were found resident on site. The proposed project will have no impacts to occupied desert tortoise habitat and will not have impacts to desert tortoises wandering on to the site from adjacent properties.

Regardless of the survey results, tortoises cannot be subject to take per the requirements of state and federal law. This report and recommended mitigation measures do not constitute authorization for incidental take of desert tortoise. Handling or other inappropriate treatment of tortoises must be avoided until authorization is obtained from the USFWS and CDFG.

It should also be noted that the general practice of the USFWS is to recognize the validity of the surveys findings for a period of one year, after which time the findings are considered to be outdated.

5.2.1.3 Palm Springs Round-tailed Ground Squirrel

Ground squirrel burrows were found on site, and the site provides suitable sandy soils for this species. Although construction may impact individuals and habitat, the relatively small amount of habitat lost is not expected to be significant. The number of individual animals impacted is expected to be small, and therefore are not considered significant.

5.2.1.4 Burrowing Owl

No burrowing owls or burrows occupied by burrowing owls were found on site. Therefore, there will be no direct take of individuals or occupied nesting habitat.

MVPP IV proposes to follow recommended APLIC practices for minimizing electrocution risk (see Section 5.5 below). The addition of approximately 0.5 mile of overhead electrical line under these

conditions is not likely to present a significant collision or electrocution risk to this species. Therefore, impacts to this species are not considered to be significant.

5.2.1.5 Le Conte's Thrasher

Foraging habitat is present on site, however, there is no suitable nesting habitat. Construction activity will have only minimal impacts on foraging habitat for this species, but will not impact individuals. MVPP IV proposes to follow recommended APLIC practices for minimizing electrocution risk (see Section 5.5 below). The addition of approximately 0.5 mile of overhead electrical line under these conditions is not likely to present a significant collision or electrocution risk to this species. Therefore, impacts to this species are not considered to be significant.

5.2.1.6 Palm Springs Pocket Mouse

The siting of turbines and project construction activity will impact occupied habitat for this species, and may impact individual animals. The proposed project design has a minimal loss of occupied habitat, but may impact individual animals. Due to the small numbers expected to be impacted and the extent of habitat to be preserved (98 percent), impacts to this species are not expected to be significant.

5.2.1.7 Grasshopper Mouse

This species may be present on site, and may be impacted by the construction and operation of the project. However, the proposed project design is expected to have a minimal loss of habitat for this species, although individual animals may be affected. This impact is not expected to be significant due to the small area of impact expected (two percent) and the small numbers of animals expected to be lost to construction.

5.2.1.8 Coachella Valley Giant Sand Treader Cricket

The Coachella Valley giant sand treader cricket is known from sand dunes ridges in the vicinity of the Coachella Valley. No sand dunes or springs exist on the site, therefore, impacts to this species are not expected to occur.

5.2.1.9 Coachella Valley Jerusalem Cricket

The Coachella Valley Jerusalem cricket is known from a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs. This species appears to be limited to large, undulating dunes piled up at the north base of the San Jacinto Mountains. If this species is present, impacts to habitat are small and not expected to be significant. The number of individuals lost to construction is also expected to be small, and therefore not significant.

5.2.1.10 Other Sensitive Species

Other sensitive species that were not seen but for which habitat exists on site are discussed in the sensitive species table. Impacts to these species are not expected to be significant due to one or more of

the following factors: 1) No suitable habitat exists on site; or, 2) The use of the site is limited to occasional or seasonal visits and the site does not encompass a substantial portion of their range

5.2.2 Species That Will Be Significantly Impacted

Impacts to the following species are expected to be significant either because the impact is to a listed species or because project construction may cause the local population to drop below self-sustaining levels. Mitigation for these impacts is provided in Section 5.2.3.

5.2.2.1 Coachella Valley Milkvetch

Construction will impact habitat and may impact individual plants if they occur within the alignment or the area of the substation. Because of the expected small percentage of area that will be lost to project construction, impacts to habitat are not expected to be significant.

As part of the overall mitigation for all sand dwelling species, we have recommended mitigation measures to protect this species during construction (Section 5.2.3).

5.2.2.2 Triple-ribbed Milkvetch

The survey team did not locate any triple-ribbed milkvetch plants on site at a time when the species should have been visible. No plants were found, and no suitable habitat exists on the site. No impacts are expected to occur.

Regardless, plants may occur on site that were not observable due to weather conditions affecting growth. Therefore, construction may potentially impact individual plants. Due to the limited known distribution of this species, this impact would be considered to be significant.

As part of the overall mitigation for all sand dwelling species, we have recommended mitigation measures to protect this species during construction (Section 5.2.3).

5.2.2.3 Coachella Valley Fringe-toed Lizard

Coachella Valley fringe-toed lizards are known to be present south and southwest of the project area, and are expected to occur in the sandy soils on site. Therefore, the construction of the powerline and the substation may impact occupied habitat for this species.

The Coachella Valley Fringe-toed Lizard Habitat Conservation Plan has addressed impacts to this species for most potential development within the plan boundary. Projects that lie within the Habitat Conservation Plan boundary must pay a standard mitigation fee.

In addition, as part of the overall mitigation for all sand dwelling species, we have recommended additional mitigation measures to protect this species during construction (Section 5.2.3)

5.2.2.4 Flat-tailed Horned Lizard

The field survey team did not observe flat-tailed horned lizard during the surveys, however, the preferred habitat for this species occurs onsite. Potential habitat will be impacted by construction, and individual animals may be impacted. Impacts to habitat during construction is not expected to be significant, due to the small area that will be impacted. Permanent impacts are expected to be minimal.

Impacts to individuals are not expected to be significant due to the small number that are likely to be affected.

5.2.3. Mitigation Measures for Significant Impacts to Species

The significant project impacts will occur primarily to sand-dwelling species. Therefore, we have grouped together those mitigation measures that apply in common to these species.

1. The right of way Holder shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with protective measures for the Coachella Valley fringe-toed lizard and the Coachella Valley milkvetch, involved in compliance coordination with the BLM, and shall be authorized to halt any construction related actions that may be in violation of protective measures for threatened or endangered species.
2. Prior to initiating any surface disturbing activities, Holder shall prepare and present an endangered species education program to all employees/contractors involved in any construction activities. The program will be conducted using the CVFTL and CV milkvetch program already approved by the USFWS. The program will contain, at a minimum, the following topics for the Coachella Valley fringe-toed lizard and Coachella Valley milkvetch:
 1. Distribution and occurrence
 2. General behavior and ecology
 3. Species sensitivity to human activities
 4. Legal protection
 5. Penalties for violation of State or Federal Laws
 6. Reporting requirements
 7. Project protection mitigation measures.

3. Education programs previously prepared and approved by BLM and USFWS for wind energy development projects in the area may be used without further approval, provided the program has incorporated the required topics.
4. Locations of poles, guy anchors, and trenches, shall be chosen to avoid habitat suitable for CVFTL and CV milkvetch to the maximum extent possible utilizing the existing project design and layout. Work area boundaries shall be conspicuously staked, flagged or marked to minimize surface disturbance to surrounding habitat.
5. Poles and guy wires installed shall be completed by avoiding crushing or removing perennial vegetation to the maximum extent possible.
6. All vehicles shall be confined to existing access routes or previously disturbed areas to the maximum extent possible.
7. Not more than thirty days prior to construction activity in the area to be disturbed, the biological monitor/FCR shall survey the construction area for CV milkvetch. Any CV milkvetch plants present shall be marked with a flagged stake and protected from damage, by avoiding any surface impacts within five (5) meters of the plant to the extent possible.
8. Desert willow hummocks shall be avoided, with no disturbance to occur within five (5) meters, to the extent possible.
9. If any triple-ribbed milkvetch are found, the Holder shall suspend operations in the vicinity, and notify BLM to determine whether the plants may be affected by the holders actions.
10. The FCR/biological monitor shall maintain a record of the date, time and location of all CV fringe-toed lizards and CV milkvetch, triple-ribbed milkvetch found in the right of way. Any damage, injury or death to any of these species shall be recorded.
11. Within 90 days of completion of the work, the FCR shall prepare and submit (to BLM and USFWS) a brief report summarizing the project. The report shall include a description of the project and compliance with stipulations.
12. Five color photographs each will be taken by the FCR or biological monitor before, during and after construction. These photographs will be sent by e-mail to the project proponent and included in the report.
13. All trash and food items shall be properly contained and regularly removed from the Corridor and substation site.
14. No pets shall be permitted on the Corridor site.

5.3 Protected Native Plant Species

Silver cholla cactus are present in low numbers on the site. Project construction may result in the removal of some protected individuals. Recommended mitigation is to avoid removal of cactus specimens during construction of the pole line and access roads. All protected cactus species to be removed will be flagged and transplanted back on site in an undisturbed area prior to construction. Any construction that removes any protected plant species would require a permit from the agricultural commissioner or local sheriff in the county where protected plants will be removed.

5.4 Habitat Fragmentation and Wildlife Movement

The proposed powerline and substation are not expected to have significant impacts to wildlife movement because the facilities are primarily overhead lines and structures that have minimal impacts on wildlife movement. Total temporary disturbance is estimated to not exceed 3.0 acres (0.75 percent of the 400 acre Section 22 BLM property) and permanent disturbance is estimated to be no more than 1.2 acres, or 0.5 percent.

Habitat fragmentation has already occurred as a result of the Interstate 10 freeway, Highway 111, Union Pacific Railroad, and substantial wind energy facilities and roads in the vicinity. No significant additional fragmentation is expected to occur as a result of the powerline and substation development, especially since approximately 99.6 percent of the site will remain in its present condition.

5.5 Bird Collisions and Electrocutions

The current design elements of the powerline and the substation are as follows:

- The project is on a relatively level and broad alluvial fan, in an area where bird movement is not constrained or funneled through a narrow passage.
- No topographic features associated with high bird use occur on the site or in adjacent areas.
- The powerline will be constructed using wooden poles, minimizing perching sites for birds.
- The powerline will utilize the Avian Protection Plan Guidelines prepared by the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) and US Fish & Wildlife Service (Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996) that are designed to minimize the risk of bird electrocutions associated with overhead electrical structures.
- Because the site is at a low elevation relative to known migratory flight paths, the height of poles and substation structures (less than 100 feet) are not anticipated to significantly increase bird collisions.
- The majority of the powerline will utilize an already existing wooden pole line.

Based on this information, the powerline and substation may affect, but not significantly adversely affect, migratory birds with regard to collisions and electrocutions.

5.6 Drainages and Wetlands

No filling or grading is proposed within the Garnet Wash or the Whitewater floodplain, south of the railroad tracks. Existing roads crossing Garnet Wash will be used to access the substation and no additional impact to the wash will occur. Therefore, no 404 Permit or 1602 Agreement is required.

Based on conversations with the Bureau of Land Management (BLM), similar projects in the Whitewater floodplain have not been required to obtain a 404 permit. NRA, Inc. recommends that the question of jurisdiction be reviewed with the Corps and the CDFG. If a 404 permit is required, the project proponent will also need to obtain a Section 401 permit from the RWQCB.

5.7 Additional Impacts

Construction of the powerline and 115 kV tap will not include any filling or grading. The substation site will be graded and graveled, with temporary disturbance during construction estimated to be 1.2 acres, and permanent disturbance estimated to be approximately 0.6 acres. Total temporary disturbance is estimated to not exceed 3.0 acres (0.75 percent of the site) for the powerline, substation and 115 kV tap, and permanent disturbance is estimated at 1.2 acres (0.4 percent of the site).

Additional impacts include indirect impacts that result in decreased use of the site and/or adjacent habitats by wildlife due to increases in human activity. These impacts are:

1. Construction related impacts, including a temporary increase in human activity. This impact will be temporary during construction, which is estimated to take up to six months. Since there is already a low level of human presence in the vicinity because of the ongoing maintenance of the adjacent wind energy facilities, maintenance of flood berms by the Coachella Valley Water District, and use of the substation site by off-road users, this impact is not expected to add substantially to the existing levels of human activity in the area. Therefore, this impact is not significant.
2. Human related intrusion. The powerline alignment is in the middle of an existing wind energy field that experiences a low level of human presence. Overall human activity along the powerline and at the substation is expected to decrease after construction, and will be limited to occasional maintenance visits. Therefore, this impact is not considered to be significant.
3. Noise. There should be no increase in noise level along the powerline. There may be a small incremental increase in noise from the operation of the substation, but the increase is not expected to add substantially to the noise already created by the nearby freeway. This impact is not considered to be significant.

4. Vibration. There may be an increase in ground vibration due to substation operations. At present, the only ground vibration is due to traffic on the freeway, dirt roads and operating wind turbines on adjacent properties. It is possible that when operational, the substation may pass on some vibration from movement into the ground. Small mammals, such as kangaroo rats, use ground vibration to sense predator movement and avoid foraging aboveground at the time. There may be some impact to small mammals as a result; however, this impact is not expected to be significant.
5. Facility lighting. No nighttime lighting is proposed for this project and therefore no impacts are expected to occur.
6. Non-native, invasive plant species. No landscaping is proposed for the powerline or the substation. In addition, due to the limited extent of disturbance and the minimal use of this site by humans, the introduction of exotic and non-native plant species is expected to be minimal.
7. Fire and hazardous waste. During construction and after project completion, fire incidents (cigarettes) and hazardous waste dumping (accidental or otherwise) may decrease the quality of the remaining habitat in the vicinity of the project site. The decrease in habitat quality will further impact wildlife species through the loss of habitat. The equipment and material used on site will be made of nonflammable material, decreasing the risk of fire. This impact is not considered to be significant.
8. Trash. Trash degrades habitat value and encourages the introduction of pest species. AES Seawest, Inc. has established procedures with the on site personnel to ensure that no trash accumulation is created by their activities. This impact is not expected to be significant.

5.8 Coachella Valley Multiple Species Habitat Conservation Plan

As of 2006, the CVMSHCP had not been adopted and currently is in limbo. Therefore, the goals of the CVMSHCP do not apply at this time. However, if the plan is resurrected similarly to its current form, we believe that the development and presence of the powerline will be compatible with the plan goals.

The detailed goals of the CVMSHCP were to:

1. Represent native ecosystem types or natural communities across their natural range of variation in a system of conserved areas.

2. Maintain or restore self-sustaining populations or metapopulations of the species included in the Plan to ensure permanent Conservation so that Take Authorization can be obtained for currently Listed Species and Non-listed Species can be covered in case they are listed in the future.
3. Sustain ecological and evolutionary processes necessary to maintain the functionality of the conserved natural communities and habitats for the species included in the Plan. Specifically for the Whitewater Floodplain Conservation area, the conservation of the fluvial sand transportation system across the floodplain and areas to the east.
4. Maximize connectivity among populations and avoid habitat fragmentation within Conservation Areas to conserve biological diversity, ecological balance, and connected populations of Covered Species.
5. Minimize adverse impacts from off-highway vehicle (OHV) use, illegal dumping, edge effects, exotic species, and other disturbances in accordance with the Management and Monitoring Programs.
6. Manage the Conservation Areas adaptively to be responsive to short-term and long-term environmental change and new science.

The Draft CVMSHCP showed the site as having “Excellent” Wind Energy Potential, but did not specifically address powerline development in this area and does not provide an exemption for this type of development.

5.9 Project Measures

Various measures and design decisions were made by MVPP IV to minimize impacts to habitat and sensitive species. They included the following:

- The use of an existing pole line was chosen to minimize new disturbance in the Corridor.
- The placement of the substation north of the railroad tracks and outside of the sand species habitat was chosen to minimize impacts to these species.
- Overhead lines were chosen to minimize grading, trenching and excavation and to allow surface movement during and after construction
- Power lines will be built using APLIC standards to minimize electrocution risks to birds
- Powerline routing was chosen to minimize the distance and disturbance area.
- Siting of the substation was chosen to avoid grading or filling in Garnet Wash.
- Placement of the 115 kV tap will not require filling or grading in Garnet Wash.

5.10 Cumulative Project Impacts

The proposed powerline will utilize an existing wooden pole line and add a substation and additional overhead lines. It lies mostly within an existing wind energy facility. The facility is one of several wind energy facility projects existing or projected for development in the Coachella Valley area. There are presently approximately 3,500 existing turbines covering about 20 square miles within the San Gorgonio Pass and upper Coachella Valley area.

The following approved wind energy projects are part of the total 3,500+ existing turbines:

- Section 22 wind energy facilities (BLM ROW Grants CA 15562, CA 15562-B, CA 15562-C and CA 15562-D), San Gorgonio WestWinds, Dutch Energy and San Jacinto Power Company wind energy facilities, roads and power lines on approximately 400 acres immediately adjacent to the proposed powerline.
- Section 21 wind energy facilities (City of Palm Springs CUP 5.0764 and CUP 5.0765) Altech III and Windustries wind energy facilities, roads and power lines located 0.5 miles northwest and west of the proposed powerline and substation.
- Section 18 (WECS #107). Mountain View Powers Partners, LLC has constructed 36 wind turbines on approximately 400 acres of land approximately 2 miles northwest of the proposed powerline and substation.
- Section 20 wind energy facility (BLM Land ROW Grants CA 15562-A , Phoenix South). San Gorgonio West Winds and PacWest I have constructed 14 wind turbines on approximately 100 acres of land located approximately one mile southwest of the proposed powerline and substation.
- Section 16 wind energy facility (CUP for the 16 West project). Mountain View Powers Partners, LLC has constructed 10 wind turbines on approximately 60 acres of land located one northwest of the proposed powerline and substation.

In an effort to minimize cumulative impacts, access to the powerline will use the existing roads of the wind energy facility, thereby minimizing cumulative impacts.

As determined by the proceeding analysis, the project contribution to cumulative impacts will be incremental and not significant. They include the following:

- Reduction and loss of plant communities
- Reduction and loss of wildlife habitats
- Increases in indirect impacts to wildlife and wildlife habitat.

6.0 References

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7.0 Personal Communication

Scott White, Scott White Consulting, Rialto, California.

Appendix A - Flora and Fauna Compendium

* denotes non-native species

Flora

GNETAE

Ephedraceae

Ephedra nevadensis

JOINTED STEM PLANTS

Ephedra family

Mormon tea

ANGIOSPERMAE: DICOTYLEDONES

Asteraceae

Bebbia juncea

Dicoria canescens

Encelia farinosa

Eriophyllum wallacei

Lepidospartum squamatum

DICOT FLOWERING PLANTS

Sunflower family

Sweetbush

Dicoria

Desert brittlebush

Woolly daisy

Scale-broom

Bignoniaceae

Chilopsis linearis

Bignonia family

Desert willow

Boraginaceae

Pectocarya heterocarpa

Tiquilia plicata

Borage family

Slender desert popcorn

Desert coldenia

Cactaceae

Opuntia echinocarpa

Cactus family

Silver cholla

Chenopodiaceae

**Salsola tragus*

Saltbush family

Russian thistle

Cucurbitaceae

Cucurbita foetidissima

Gourd family

Calabazilla

Euphorbiaceae

Chamaesyce polycarpa

Eremocarpus setigerus

Spurge family

Desert spurge

Doveweed

Fabaceae

Psoralea argemone

Pea family

Indigo bush

Geraniaceae

**Erodium cicutarium*

Geranium family

Red-stemmed filaree

Loasaceae

Petalonyx thurberi

Stick-leaf family

Sticktight

Zygophyllaceae

Larrea tridentata

Caltrop family

Creosote bush

ANGIOSPERMAE: MONOCOTYLEDONAE

MONOCOT FLOWERING PLANTS

Poaceae

**Schismus barbatus*

Grass family

Mediterranean grass

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

Fauna

REPTILIA

REPTILES

Phrynosomatidae

Callisaurus draconoides

Uta stansburiana

Spiny lizards and their allies

Zebra-tailed lizard

Side-blotched lizard

Teiidae

Cnemidophorus tigris tigris

Whiptails and their allies

Great Basin whiptail

AVES

BIRDS

Columbidae

Zenaida macroura

Pigeons and doves

Mourning dove

Corvidae

Corvus corax

Crows and ravens

Common raven

MAMMALIA

MAMMALS

Leporidae

Lepus californicus

Rabbits and hares

Black-tailed jackrabbit

Heteromyidae

Perognathus longimembris bangsi

Dipodomys merriami

Pocket mice and kangaroo rats

Pal m Springs pocket mouse

Merriam's kangaroo rat

Canidae

Canis latrans

Vulpes macrotis

Foxes, wolves and relatives

Coyote

Kit fox

Nomenclature follows Grenfell et al. 2003, Hall 1981, and Stebbins 1966.

AES Seawest, Inc. Powerline
General Biological Assessment

Natural Resources Assessment, Inc.

Appendix B - Sensitive Species Table

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Plants				
Deep Canyon snapdragon <i>Antirrhinum cyathiferum</i>	Found in washes and on rocky slopes in Sonoran desert scrub. Known only from Riverside, primarily around the Deep Canyon area.	Annual, blooming period Feb-Apr	FED: ND STATE: ND CNPS: 2	None. The project site does not contain washes or rocky slopes.
Coachella Valley milk vetch <i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Annual to occasional biennial. Sandy places below 1,200 feet. Creosote bush scrub. Coachella Valley, Riverside County.	February - May	FED: END STATE: ND CNPS: 1B	Expected. Several hundred plants have been observed to the immediate south and southwest.
Triple-ribbed milkvetch <i>Astragalus tricarinatus</i>	Perennial. Occurs on gravelly soils in creosote bush scrub and Joshua tree woodland plant communities. Historical distribution extends from the head of the Coachella Valley to the Orocopia Mountains. It occurs on exposed, rocky slopes and canyon walls from 450 to 550 meters (1,400 to 4,000 feet) in elevation.	February - May flowering period	FED: END STATE: ND CNPS: 1B	None. The project site does not contain washes or rocky slopes. This species was not observed on site.
Ayenia <i>Ayenia compacta</i>	Perennial. Mojave Desert scrub, Sonoran Desert scrub. Sandy and gravelly washes in the desert. Dry desert canyons. 150 to 1095 meter elevation	March – April flowering period	FED: ND STATE: ND CNPS: 2	None. Surveys conducted during the flowering period did not locate this species.
Arizona spurge <i>Chamaesyce arizonica</i>	Perennial from a taproot. Found in Sonoran desert scrub on sandy soils. Elevation range from 150 to 900 feet.	March to April	FED: ND STATE: ND CNPS: 2	Low. The sandy soils preferred by this species are present on the project site. None of the <i>Chamaesyce</i> spp. were identified as this species.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Flat-seeded spurge <i>Chamaesyce platysperma</i>	Rare annual. On sandy soils in creosote bush scrub. Near Thousand Palms in Coachella Valley to southwest Arizona.	May	FED: C2* STATE: ND CNPS: 1B	None. The project site is north and west of the known distribution for this species.
White-bracted spineflower <i>Chorizanthe xanti</i> var. <i>leucotheca</i>	Annual herb. Mojave Desert scrub, pinyon juniper woodlands. 300 to 1200 meters in elevation.	April – June	FED: ND STATE: ND CNPS: 1B	None. Site does not contain suitable habitat for this species.
California ditaxis <i>Ditaxis californica</i>	On sandy washes and alluvial fans of the foothills and lower desert slopes. 30 to 910 meters elevation. Occurs in Sonoran desert scrub; known only from Riverside and San Diego counties	Perennial, blooms March-May, Oct-Dec	FED: C2* STATE: ND CNPS: 1B	None. This species is a perennial and would have been observable during the field surveys.
Glandular ditaxis <i>Ditaxis clariana</i>	In dry washes and on rocky hillsides, in sandy soils and sandy flats. Found in Mojave and Sonoran deserts.	Perennial, blooms Dec-Mar	FED: ND STATE: ND CNPS: 2	None. This species is a perennial and would have been observable during the field surveys.
Little San Bernardino Mountains gilia <i>Gilia maculata</i>	Little San Bernardino Mtns. Creosote bush scrub, Joshua tree woodland. Sandy places such as desert dunes. In light-colored quartz sand, often in washes or bajadas. 190-1055 m. (500-4000 ft.).	April - May	FED: C2* STATE: ND CNPS: 1B	Low. The site is south of the known distribution for this species (Little San Bernardino Mountains).

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Little San Bernardino Mountains linanthus <i>Linanthus maculatus</i>	Minute annual. Found in desert dunes in the Sonoran desert. Mojave desert scrub, Joshua tree woodland. Only known from sandy places in Riverside and San Bernardino Cos. 500 to 4000 foot elevation. Microhabitat difficult to pin down.	April - May	FED: C2* STATE: ND CNPS: 1B	Low. This species may be present.
Parish's desert-thorn <i>Lycium parishii</i>	Perennial shrub. Sandy to rocky slopes and canyons below 2000 feet. Possibly coastal sage scrub, definitely in creosote bush scrub. San Bernardino Valley and western Colorado Desert.	March - April flower period	FED: ND STATE: ND CNPS: 2	None. This species is a perennial and would have been observable during the field surveys.
Slender woolly-heads <i>Nemacaulis denudata</i> var. <i>gracilis</i>	Annual species found in dunes or sand from zero to 1600 feet in elevation. Coastal dunes, desert dunes in Sonoran desert scrub. In California, known only from San Diego and Riverside counties.	April-Sep	FED: ND STATE: ND CNPS: List 2	Low. This species has not been recorded from the vicinity of the site.
Purple stemodia <i>Stemodia durantifolia</i>	On mesic sites in sandy soils. Sonoran desert scrub habitat. Elevation 180 – 300 meters (500 to 650 feet). Perennial herb	Most of the year	FED: ND STATE: ND CNPS: 2	None. No wet springs on the site.
Mecca aster <i>Xylorhiza cognata</i>	Species is perennial, found in Sonoran desert scrub on steep canyon slopes. Occurs primarily on sandstone and clay slopes. Endemic to Riverside County. Elevation range 60 to 1000 feet.	Year round	FED: C2* STATE: ND CNPS: 1B	None. Species is perennial and would have been observable during the surveys. Site is not in steep canyon slopes or on sandstone or clay slopes.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Fish				
Desert pupfish <i>Cyprinodon macularius</i>	Scattered ponds throughout the deserts.	Year round	FED: END STATE: END	None. Suitable habitat does not exist on the project site.
Amphibians				
Desert slender salamander <i>Batrachoseps aridus</i>	Isolated in the Hidden Palm Canyon area of Santa Rosa Mtns., and possibly in Guadalupe Canyon, Riverside County.	Unknown	FED: END STATE: END	None. The project site is located outside of the known habitat for this species.
Reptiles				
Desert tortoise <i>Gopherus agassizii</i>	Historically found throughout the Mojave and Sonoran Deserts into Arizona, Nevada, and Utah. Occurs throughout the Mojave Desert in scattered populations. Found in creosote bush scrub, saltbush scrub, thornscrub (in Mexico), and Joshua tree woodland. Found in the open desert as well as in oases, riverbanks, washes, dunes, and occasionally rocky slopes.	February - June, all deserts Aug - Sep Primarily in eastern deserts. Can be present throughout year	FED: THR STATE: THR	None. No sign of desert tortoise was found. Only sign in adjacent areas was likely washdown from off-site.
Coachella Valley fringe-toed lizard <i>Uma inornata</i>	Restricted to fine, wind blown sand of dunes, flats, riverbanks, and washes in the Coachella Valley. Creosote bush scrub, other sparse scrub habitats with suitable soils. Near sea level to 1,600 feet.	Active year round when temps 95° to 110° F.	FED:THR STATE: END	Expected. Species is known to occur the immediate south and southwest of the project site.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i>	Wide variety of habitats including coastal sage scrub, grassland, riparian woodland; typically on or near loose sandy soils; coastal and inland areas from Ventura Co. to Baja Calif.	Apr. - Jul. (with reduced activity Aug. - Oct.)	FED: ND STATE: CSC	Low. Species may occur on site.
Flat-tailed horned lizard <i>Phrynosoma mcallii</i>	Restricted to windblown sand. Dunes and sandy flats of low desert, from Coachella Valley to head of the Gulf of California, extreme ne. Baja to se. Arizona. Below sea level to around 600 feet.	Active year round	FED: ND STATE: CSC	High. This species was observed on adjacent properties to the southwest.
Northern red-diamond rattlesnake <i>Crotalus exsul</i>	Occurs in rocky areas & dense vegetation. Needs rodent burrows cracks in rocks or other surface material. Chaparral, woodland, grassland and desert areas. Coastal San Diego County to the eastern slopes of the mountains.	Year round	FED: C2* STATE: CSC	None. Site lacks rocky areas and dense vegetation preferred by this species.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Birds				
White-tailed kite <i>Elanus leucurus</i>	Open country in South America and southern North America.	Year-round	FED: ND STATE: ND (nesting)	Low. Not observed during the surveys. Forages over a wide range of open habitat and can be expected to occur throughout most of Southern California. Although no nesting habitat was found, foraging habitat exists on the project site.
Northern harrier <i>Circus cyaneus</i>	Grassland and marshy habitats in Southern California. Uncommonly in open desert and brushlands.	Year round	FED: ND STATE: CSC	Low. Not observed during the surveys. Forages over a wide range of open habitat and can be expected to occur throughout most of Southern California. Although no nesting habitat was found, foraging habitat exists on the project site.
Cooper's hawk <i>Accipiter cooperi</i>	Woodland and semi-open habitats, riparian groves and mountain canyons. Uncommon permanent resident in coastal, mountains, and deserts of Southern California. Transients fairly common on coast in fall.	Year round; predominant in summer	FED: ND STATE: CSC	Low. Not observed during the surveys, but are expected to forage infrequently over the property during migration and in winter.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Golden eagle <i>Aquila chrysaetos</i>	Grasslands, brushlands, deserts, oak savannas, open coniferous forests and montane valleys. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	Year round, diurnal	FED: ND STATE: CSC (nesting and wintering)	Low. Not observed during the surveys. Foraging habitat for this species exists over the entire property. No suitable nesting habitat occurs on the project site.
Merlin <i>Falco columbarius</i>	Frequents several habitats including coastal sage scrub and annual grassland. Forages along the coast, and in montane valleys and open deserts with scattered clumps of trees. Rare fall migrant and winter visitor to Southern California.	Fall & winter	FED: ND STATE: CSC	Low. Not observed during the surveys. Can be expected to forage over the project site during migration and in winter. They are expected to use the area very infrequently.
Prairie falcon <i>Falco mexicanus</i>	Nest in cliffs or rocky outcrops; forage in open arid valleys, agricultural fields. Throughout the desert and arid interior portions of coastal counties. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: CSC	Expected. This species was seen during previous surveys on adjacent properties. Foraging habitat exists for this species over the property, but there is no suitable nesting habitat.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	Nests on sandy beaches along the coast and gravelly beaches at the Salton Sea. Also nests on sinks, playas, and old shorelines in the desert. Forages on alkali flats. Nesting sites need protection.	Year round	FED: THR (coastal populations) STATE: CSC	None. Suitable foraging and nesting habitat does not exist on site.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Burrowing owl <i>Athene cunicularia hypugea</i>	Grasslands and rangelands, usually occupying ground squirrel burrows. Resident over most of Southern California. Found in agricultural areas.	Year round	FED: ND STATE: CSC	Moderate. Species may colonize site over time.
Long-eared owl <i>Asio otus</i>	Rare resident in coastal Southern California and uncommon resident in desert areas. Dense willow-riparian woodland and oak woodland. Breeds from valley foothill hardwood up to ponderosa pine habitat.	Nocturnal year round	FED: ND STATE: CSC	Low. This species was seen during surveys on adjacent properties. Foraging habitat exists on the property, but no nesting habitat.
Short-eared owl <i>Asio flammenus</i>	Primarily a rare and local winter visitant to the coast, and a rare fall transient and winter visitant in the desert, including the Salton Sea and the Colorado River. Also recorded at Mystic Lake in the San Jacinto Valley, Riverside County, in summer 1992, and Harper Dry Lake, San Bernardino County, summer 1993.	Fall - Winter	FED: ND STATE: CSC	Low. Available information states that short-eared owls are rare fall transients in the desert and, therefore, may forage on the property.
Vermilion flycatcher <i>Pyrocephalus rubinus</i>	Rare and local resident along Colorado River and Morongo Valley. Rare fall and winter visitor to lowlands in the coast and desert areas, including the Salton Sea. Breeds near water in both riparian groves and mesquite thickets.	April to May breeding	FED: ND STATE: ND	None. No suitable nesting or foraging habitat exists on the project site.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Brown-crested flycatcher <i>Myiarchus tyrannulus</i>	Occurs in riparian woodland and adjacent desert scrub. Fairly common summer resident along the Colorado River. Breeds in Morongo Valley. Unrecorded west of the deserts.	April to May breeding	FED: ND STATE: ND	None. No suitable riparian woodland exists on site.
Black-tailed gnatcatcher <i>Polioptila melanura</i>	Resident in wooded desert wash and desert scrub habitats. Nests in desert wash with mesquite, paloverde, ironwood, and acacia species; absent from areas with salt cedar. Fairly common resident on the Colorado Desert; extending into the eastern Mojave Desert.	Year round	FED: ND STATE: ND	Low. This species may forage on the project site, however, the desert wash habitats preferred by this species do not exist on the project site.
Crissal thrasher <i>Toxostoma crissale</i>	Resident in the southeastern deserts in desert riparian and wash habitats. Nests in dense vegetation along streams and washes. Plant species found in the preferred habitat includes mesquite, screwbean mesquite, ironwood, catclaw, acacia, arrowweed and willow. A common resident along the river, somewhat uncommon to the west. Also resident in the higher northern deserts of eastern San Bdno. and southeastern Inyo.	Year round	FED: ND STATE: CSC	None. The habitat preferred by this species does not exist on site. In addition, the site is outside the known range for this species.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Le Conte's thrasher <i>Toxostoma lecontei</i>	Uncommon and local resident in low desert scrub throughout most of the Mojave Desert, extending up into the southwestern corner of the San Joaquin Valley. Breeding range extends from these areas into eastern Mojave, north into the Owens Valley and south into the lower Colorado Desert, and eastern Mojave. Also recorded from southern Nevada and Utah, as well as western Arizona and New Mexico.	Year round	FED: ND STATE: CSC	Low. Site habitat is not suitable nesting habitat for this species. Species may occasionally forage on site.
Bendire's thrasher <i>Toxostoma bendirei</i>	Breeds in thorny shrubs and cactus in Joshua tree woodland with scattered desert shrubs such as creosote bush and burrobush, primarily in eastern San Bernardino County. Also occur in the eastern Mojave in areas with high numbers of <i>Opuntia</i> , or cholla, cactus (Garrett and Dunn, 1981). Common summer resident in Joshua Tree National Monument (Remsen, 1978).	Resident February - August	FED: ND STATE: CSC	None. This species is only known from San Bernardino County.
Loggerhead shrike <i>Lanius ludovicianus</i>	Open fields with scattered trees, open woodland, scrub. Fairly common resident throughout Southern California.	Year round	FED: ND STATE: CSC	Expected. This species was seen on adjacent properties. Nesting habitat is absent.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Mammals				
California leaf-nosed bat <i>Macrotus californicus</i>	In California, these bats primarily occupy low-lying desert areas, where they roost in caves, mines, and old buildings. Historic records extend west to near Chatsworth, Los Angeles County, but most populations from the California coastal basins are believed to have disappeared. Occurs from northern Nevada, Southern California, and western Arizona south to southern Baja California and Sonora.	Year round nocturnal	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Townsend's western big-eared bat <i>Plecotus townsendii</i> , two ssp.	Requires caves, mines, tunnels, buildings, or other similar structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Found in all but subalpine and alpine habitats throughout California.	Year round Nocturnal	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
<p>Pallid bat <i>Antrozous pallidus</i></p>	<p>Day roosts found in caves, crevices, mines, and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings. Hibernation sites are probably rock crevices. Grasslands, shrublands, woodlands, and forest from sea level through to mixed conifer. Throughout Southern California.</p>	<p>Spring, Summer, Fall Nocturnal Hibernates in Winters</p>	<p>FED: ND STATE: CSC</p>	<p>Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.</p>
<p>Spotted bat <i>Euderma maculatum</i></p>	<p>Found in the western North America from southern British Columbia to the Mexican border, at a small number of widely scattered localities. Habitats range from arid deserts and grasslands through mixed conifer forest up to 10,600 foot elevation. Prefers rock crevices in cliffs, also uses caves and buildings.</p>	<p>Spring, Summer, Fall Nocturnal Hibernates in Winters</p>	<p>FED: ND STATE: CSC</p>	<p>Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.</p>
<p>Western yellow bat <i>Lassiurus xanthinus</i></p>	<p>Found in valley foothill riparian, desert riparian, desert palm oasis and desert wash. Roosts in trees, particularly palms. This species forages over water and among trees.</p>	<p>Spring, Summer, Fall Nocturnal Hibernates in Winters</p>	<p>FED: ND STATE: ND</p>	<p>Low. Nesting habitat is absent. This species may forage over the site.</p>

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
<p>California mastiff bat <i>Eumops perotis californicus</i></p>	<p>Historically from north-central California south to northern Baja California, eastward across the southwestern United States, and northwestern Mexico to west Texas and Coahuila (Hall, 1981; Williams, 1986). In California, most records are from rocky areas at low elevations where roosting occurs primarily in crevices.</p>	<p>Spring, Summer, Fall Nocturnal Hibernates in Winters</p>	<p>FED: ND STATE: CSC</p>	<p>Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.</p>
<p>Pocketed free-tailed bat <i>Nyctinomops femorasacca</i></p>	<p>Spotty distribution in California, ranging from Southern California south to the Baja Peninsula, and through southwestern Arizona to at least central Mexico (Williams, 1986). In California, pocketed free-tailed bats are typically found in rocky, desert areas with relatively high cliffs.</p>	<p>Warmer months. Nocturnal</p>	<p>FED: ND STATE: CSC</p>	<p>Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.</p>

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Big free-tailed bat <i>Nyctinomops macrotis</i>	Found from northern South America and the Caribbean Islands northward to the western United States (Williams, 1986). In the southwestern U.S., populations appear to be scattered. Known breeding localities are in parts of Arizona, New Mexico, and Texas. Prefers rocky, rugged terrain. Roosts in crevices in high cliffs or rocky outcrops. Ranges up to 8,000 foot elevation.	Nocturnal spring - fall Hibernates in Winters	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino and Santa Rosa mountain ranges.	Year round, diurnal and crepuscular activity	FED: ND STATE: CSC	None. Jackrabbits were observed during the field surveys, but the geographic location of the property indicates that the individuals observed belonged to the desert race, and not the coastal race.
Palm Springs round-tailed ground squirrel <i>Spermophilus tereticaudus chlorus</i>	Prefers sandy arid sites, in low flat desert areas. Often found on sand dunes, and will dig in fine sand on banks and around shrubs. Creosote bush scrub, mesquite shrub, saltbush scrub and palo verde, typical floodplain and alluvial fan species.	Year round	FED: C STATE: CSC	Expected. Suitable sandy soils exist as large areas on site, and ground squirrel burrows were seen occasionally in sandy areas.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Palm Springs pocket mouse <i>Perognathus longimembris bangsi</i>	Prefers sandy soil for burrowing. Found in creosote bush scrub, Joshua tree woodland. Coachella Valley.	Nocturnal; active late spring to early fall.	FED: ND STATE: CSC	Expected. Sandy soils are present and pocket mouse burrows were seen.
Grasshopper mouse <i>Onychomys torridus ramona</i>	In the more arid regions of southern California. Especially prefers sandy areas of the Mojave and Sonoran deserts, especially friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Year round	FED: ND STATE: CSC	Expected. Species is recorded from a locality less than two miles southwest of the project site.
Pallid San Diego pocket mouse <i>Chaetodipus fallax pallidus</i>	Desert border areas in eastern San Diego County. In desert wash, desert scrub, desert succulent scrub, pinyon juniper, etc. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	Nocturnal; active year round	FED: ND STATE: CSC	Low. Site does supports some coarse gravel sandy areas.
Peninsular bighorn sheep <i>Ovis canadensis cremnobates</i>	Prefers rugged terrain, and can be found from near the valley floor to the tops of desert mountain ranges. This particular race is confined to the Santa Rosa Mountains.	Year round, seasonal elevation movement.	FED: END STATE: END	None. The site is north of known habitat areas. Bighorn sheep are not expected to move through the site on a regular basis.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Invertebrates				
Coachella Valley sand treader cricket <i>Macrobaenetes valgum</i>	Known from sand dunes and ridges in the vicinity of the Coachella Valley. The population size is regulated by the amount of rainfall; some areas favor permanent habitation where springs dampen the sand year round.	Year round?	FED: ND STATE: ND	None. Sandy dunes and ridges do not exist on site.
Coachella Valley Jerusalem cricket <i>Stenopelmatus calhilaensis</i>	Known from a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs. Found in large, undulating dunes piled up at the north base of the San Jacinto Mountains.	Year round?	FED: ND STATE: ND	Low. The site lacks sources of moisture. The sand sheets and dune preferred by this species occur on site.
Cheeseweed owlfly <i>Oliarces clara</i>	Limited information indicates that this species is found under rocks or in flight over streams. Inhabits the lower Colorado River drainage.	Year round?	FED: ND STATE: ND	None. No streams with water exist on site.
Sensitive Habitats				
Desert fan palm oasis woodland	Found where springs occur or water table is very shallow.	Year round	FED: ND STATE: ND	None. Found in the Martinez Mountains (300 palms) and in Deep Canyon. This plant community is not present on site.

Legend

FED: Federal Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
PE	Taxa proposed to be listed as endangered
PT	Taxa proposed to be listed as threatened
C2*	The U.S. Fish and Wildlife Service (USFWS) revised its classifications of candidate taxa (species, subspecies, and other taxonomic designations). The former designation of "Category 2 Candidate for listing" has been discontinued. The USFWS will continue to assess the need for protection of these taxa and may, in the future, designate such taxa as Candidates. NRA, Inc. has noted the change in species status by marking with an asterisk (*) those C2 candidates that were removed from the list.
C	Candidate for listing. Refers to taxa for which the USFWS has sufficient information to support a proposal to list as Endangered or Threatened and issuance of the proposal is anticipated but precluded at this time.
ND	Not designated as a sensitive species

STATE: State Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
CE	Candidate for endangered listing
CT	Candidate for threatened listing
CFP	California Fully Protected. Species legally protected under special legislation enacted prior to the California Endangered Species Act.
CSC	California Species of Special Concern. Taxa with populations declining seriously or that are otherwise highly vulnerable to human development.
SA	Special Animal. Taxa of concern to the California Natural Diversity Data Base regardless of their current legal or protected status.
ND	Not designated as a sensitive species

CNPS: California Native Plant Society Classifications

1A	Plants presumed by CNPS to be extinct in California
1B	Plants considered by CNPS to be rare or endangered in California and elsewhere
2	Plants considered by CNPS to be rare, threatened or endangered in California, but which are more common elsewhere
3	Review list of plants suggested by CNPS for consideration as endangered but about which more information is needed.
4	Watch list of plants of limited distribution whose status should be monitored.

Occurrence Probabilities

Occurs	Observed on the site during this study or recorded on site by other qualified biologists
Expected	Not observed or recorded on site, but likely to be present at least during a portion of the year
High	Known to occur in the vicinity of the project site. Suitable habitat exists on site.
Moderate	Known to occur in the vicinity of the project site. Small areas of or marginally suitable habitat exists on site.
Low	No reported sightings within the vicinity of the project. Available habitat limited and rarely used.
None	Focused surveys did not locate the species, or suitable habitat does not exist on site.
Unknown	No data is available on whether species is on or in the vicinity of the site, and information about the species is insufficient to make an accurate assessment of probability occurrence.

Appendix C - Habitat Fragmentation and Wildlife Movement

Habitat Fragmentation and Wildlife Movement

Although scientific understanding of wildlife movement and habitat fragmentation issues has increased rapidly in recent years, these are complex topics that generally defy simple analysis. For example, a fire break that serves as a pathway for coyotes may comprise a deterrent to movement by small sedentary species. Habitat fragmentation and wildlife movement are closely related issues, with wildlife movement as an important factor to be considered in discussions of habitat fragmentation. Habitat fragmentation is isolation of one area of habitat from a larger area that provides a more complete and functional system.

As suggested above, the degree of isolation is highly dependent on the effectiveness of the isolating barrier and the species being considered. Bird species may easily traverse even a substantial barrier such as a housing tract. Large mammals may be deterred by a housing development, but can easily cross a narrow strip such as an unfenced road or railway. Very small animals may have difficulty crossing even a road.

In addition to the type of isolating barrier, which primarily affects movement potential, the size of the isolated fragment also affects its viability. The size of available habitat directly affects the population size. Population size, in turn, affects the viability of that population through a variety of other factors, such as the size of the gene pool, the chance that a population would be lost through stochastic events, etc. Animals with the largest territory requirements, e.g., mountain lions, must have hundreds of square miles of contiguous habitat. Many birds and small mammals can survive in a relatively small fragment of habitat. However, for some species, this habitat will probably remain completely functional only if larger predators, e.g. coyote, are present.

A concept that is related to the issue of fragmentation is that of wildlife corridors or linkages. These essentially counteract the effects of fragmentation (although not always completely). Corridors serve to connect areas of large habitat that may otherwise be separated. Corridors also serve to interconnect water, food, and cover availability, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for genetic exchange between wildlife species populations, maintaining genetic variability and adaptability to respond to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. Movement of wildlife varies among different species. Some movement involves small groups, but movement of single individuals is more common.

Wildlife movement also benefits plant species. Many pollinators are relatively sedentary, traveling only short distances between individual plants. Wildlife movement allows for dispersal of pollinators along the linkage, thereby increasing the potential for genetic exchange among different populations of plant species. Corridors also directly help plants in that wind dispersed seeds and seeds that are dispersed by animals may either move through corridors or become established gradually throughout a linkage, colonizing different areas over time.