

**General Biological Assessment
Mountain View IV, Section 27
County of Riverside, California**

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Executive Summary

Natural Resources Assessment, Inc. (NRA, Inc.) was contacted by AES SeaWest, Inc. to conduct a general biological assessment for the construction of a wind energy conversion system on 361.5+ acres in the upper Coachella Valley. The proposed action is the construction of a wind energy conversion system on the site.

The work was focused on the desert tortoise (*Gopherus agassizii*) and other sensitive species, but included a general biological assessment of two adjacent sites in Sections 27 and 28 and a determination of potential jurisdictional drainages and wetlands. Desert tortoise surveys were conducted using standard survey techniques following protocols recommended by the U.S. Fish and Wildlife Service.

Impacts to general biological resources for the site include temporary and permanent loss of plant communities and wildlife habitat. Relative to the area of the two sites, the impact acreages are small and would generally be confined to areas previously disturbed by the construction, operation and land removal of a previous wind energy facility.

Because only a small portion of the site will be permanently removed as habitat, and the majority of the sites will be left as open space, the loss of plant communities and wildlife habitat is not considered to be significant.

Impacts to most of the sensitive resources observed or potentially present are not expected to be significant.

The California Desert Native Plants Act of 1982 protects native plants from indiscriminate collection. Silver cholla may be affected by project construction. NRA, Inc. recommends that the siting of turbines and roads be planned to avoid removal of cactus species. 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. All protected cactus species to be removed will be flagged and transplanted back on site in an undisturbed area prior to construction.

The entire Whitewater Floodplain is a major wildlife corridor. The proposed development of the wind energy facility is not expected to significantly affect wildlife movement, because most of the site will remain undeveloped. Any non-significant impacts to wildlife movement are being addressed in the fencing design. Three strand barbed wire fencing is proposed for the project, selected to accommodate movement through and under fencing.

Habitat fragmentation in the Whitewater floodplain area has already occurred as a result of freeway, highway and railway line construction. No significant additional fragmentation is expected to occur as a result of wind energy facility development, especially since much of the site will remain as natural habitat.

The potential for bird collisions with wind turbines exists with a proposed wind project. Based on the very large magnitude of migratory birds, the very low level of documented mortalities, the lack of suitable habitat for most migratory species of concern, the loss of migratory birds as a result of the proposed project would be considered to be a may affect, but not likely to adversely affect, impact.

There are no wetlands on site, and therefore no impacts to wetlands or riparian habitats.

The project is located within the former floodplain of the Whitewater River, but is well outside the current boundaries of the river flow. It currently has no active connection to the Whitewater River. Based on the location and site conditions, it is our professional judgment that the project does not come under the jurisdiction of the U.S. Army Corps of Engineers.

Because we anticipate no Corps permit will be required, no 401 permit is required from the State Water Quality Control Board's regional office for the Colorado River region.

There are several small drainages that run across the site from northwest to southeast, eventually dying out in the Whitewater floodplain area. These small drainages meet the criteria for jurisdictional drainages under the CDFG.

All proposed roads and facilities would be at the existing grades. Impacts to drainages are expected to be minimal. Because of the expected minimum amount of area that will be affected, NRA, Inc. recommends on site mitigation for drainage impacts in the form of appropriate road design and siting of wind turbines away from jurisdictional drainages.

Additional impacts include indirect impacts that result in decreased use of the site or adjacent habitats by wildlife due to increases in human activity. These impacts are not considered to be significant because of the relatively small affect on biological resources and the low level of human activity proposed for the site.

Cumulative impacts are not considered to be significant since the proposed wind energy facility will preserve a majority of the land as open space. This allows for continued use of the site by plant and animal species, and displaces more intense urban/industrial uses that could be built on the same property. Wind energy facilities also provide protection by securing the remaining open space from illegal trespass and concomitant destruction or loss of plant communities, wildlife habitat, as well as general wildlife and individual species of concern.

The site is within the proposed Whitewater Floodplain Conservation Area, designated under the Draft Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). The goals for the Conservation Area are overall preservation of the Whitewater Floodplain.

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, we believe that the development and presence of the powerline will be compatible with the plan goals.

1.0 Introduction

Natural Resources Assessment, Inc. (NRA, Inc.) was contacted by AES SeaWest, Inc. to conduct a general biological assessment for the construction of a proposed wind energy conversion system (WECS) in the upper Coachella Valley. The purpose of the biological assessment was to determine the potential impacts to sensitive biological resources resulting from WECS construction.

2.0 Project Location and Description

The project site is located in the upper Coachella Valley, south of Interstate 10 (Figure 1). The property consists of 361.5± acres in Section 27, Township 3 south, Range 4 east, Desert Hot Springs 7.5' U.S. Geological Survey (USGS) topographic map (Figure 1).

The proposed project is the construction of wind turbines, roads and ancillary structures. Most of these structures will be erected on existing wind turbine sites and roads that have been disturbed since the mid 1980s.

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).
- General texts and other documents identifying potential resources on the property.
- 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).
- Our previous work on the properties in 2001 (Natural Resources Assessment, Inc.).
- The California Desert Native Plants Act of 1982

3.2 Field Surveys

Field surveys for the project were conducted on April 26 through 28, 2005, by NRA, 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), modified by our previous findings. Belt transects approximately 10 to 20 meters (30 to 60 feet) wide were walked in parallel over the property. The survey encompassed the entire area of the site.

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 the south and east sides of the project site. There was no need to survey the north side due to the presence of an existing WECS project. The west boundary is another WECS project, which NRA, Inc. had already surveyed in April 2005.

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 site.

4.0 Results

4.1 Research

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

The USFWS had categorized the Section 27 property as Essential Habitat for the Coachella Valley milkvetch (*Astragalus lentiginosus* var. *coachellae*) and had proposed designating the adjacent property on Section 28 as Critical Habitat. These proposed designations are not currently in effect, but may be adopted during the construction of the project and was taken into consideration in the project analysis.

Data provided by the California Natural Diversity Data Base (CNDDB) 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 draft CVMSHCP, the property is within the Whitewater Floodplain Conservation area. As of 2006, the draft CVMSHCP is currently in limbo and its proposed requirements do not apply.

4.2 Field Surveys

4.2.1 Weather

The weather was variable throughout the survey period. In early April, the weather was clear, ranging from the sixties to the mid seventies (degrees Fahrenheit) with gusty winds up to 20 miles per hour. On the last day in late April, the weather was in the mid sixties (degrees Fahrenheit) with light rain and a mild wind.

4.2.2 Soils and Topography

The project site is dominated by different types of Carsitas soils ranging from gravelly to cobbly to fine sand areas.

The site is relatively flat, with elevations ranging from 560 to 720 feet above sea level. The overall slope is northwest to southeast (Photo 1, Figure 1).



Photo 1. Panoramic showing topography and soils.

4.2.3 Plant Communities

The Sonoran creosote bush scrub on site supports a sparse distribution of cheesebush (*Hymenoclea salsola*) and sweetbush (*Bebbia juncea*). Scrub density is approximately 10 percent (Figure 2, Photo 2). Average shrub height is 60 centimeters (2 feet).

Mediterranean grass (*Schismus barbatus*) formed the dominant ground cover (approximately 30 percent) at the time of the surveys.

Based on the CVMSHCP, the stabilized shielded sand dunes make up most of the natural community of the property. The extreme northeastern corner of the project area may extend into ephemeral sand fields (Figure 3).

4.2.4 Wildlife

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



Photo 2. Scrub cover on site. Looking east to south from the northern boundary.

No amphibians were observed due to the limited availability of surface water. Side-blotched lizard (*Uta stansburiana*), Great Basin whiptail (*Aspidoscelis tigris tigris*) and desert horned lizard (*Phrynosoma platyrhinos*) were some of the reptile species observed.

Bird species observed included horned lark (*Eremophila alpestris*), loggerhead shrike (*Lanius ludovicianus*), mourning dove (*Zenaidura macroura*) and common raven (*Corvus corax*).

At the time of the survey, there was ponded water in the last levee on the western boundary. This pond provided temporary foraging habitat for mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), and other water birds. The drying mudflats around the pond provided foraging habitat for killdeer (*Charadrius vociferus*) and least sandpiper (*Calidris minutilla*). The water appears to have been a result of the heavy winter rains from 2004 to 2005.

Common mammal species observed included Audubon's cottontail (*Sylvilagus audubonii*), 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 site consist primarily of off-road vehicle use, as well as vehicle and foot traffic, use of existing dirt roads and small amounts of trash dumping. Outside of these areas, the level of disturbance is low.

Subsequent to our field survey, the Coachella Valley Water District (CVWD) has been cleaning their water ponds of excess silt and sand. The CVWD has followed past policy of spreading the excess material over portions of Section 27 and 28, east of the existing towerlines on Section 28, and extends east onto Section 27. This excess material has resulted in a reduced shrub cover in these areas.

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 only *Chamaesyce* sp. seen on site was desert spurge (*Chamaesyce polycarpa*). The sand sheets and sand dunes preferred by this species do not exist in large amounts on this site and no Arizona spurge were observed during the survey.

4.2.6.2 Coachella Valley Milkvetch

The Coachella Valley milkvetch (*Astragalus lentiginosus* var. *coachellae*) 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

The surveys were conducted at a time of year when this species is observable. NRA, Inc. surveyed the adjacent property to the west and identified several hundred plants.

The sand sheets and sand dunes preferred by this species do not exist on site. The field team did not find any plants on this property. Based on the findings on the adjacent property, and the lack of suitable habitat on this site, this species is not expected to occur, or to occur very infrequently.

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 Orocopia 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

The surveys were conducted during the flowering period for this species. This species was not observed, and the site does not contain suitable rocky slopes or canyon wall habitat preferred by this species. Triple-ribbed milkvetch is not expected on site.

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

NRA, Inc. found one old scat belonging to tortoise was found on site (Photo 3, Figure 4). The scat was partly fragmented and somewhat battered.

No other tortoise sign was found on site.

NRA, Inc. took the scat of Land Management (BLM) for evaluation. We discussed the scat, its condition, and location with the BLM biologist, Mr. Mike Massar. NRA, Inc. staff had speculated that, based on the condition and location of the scat, it had probably been washed down during flooding from higher up along the Whitewater drainage. There is a known population up on the Whitewater Bench that may have produced this scat. Mr. Massar concurred that this was a possibility, especially because of the lack of sign elsewhere on site.

We discussed the flooding regime for the project site with AES SeaWest, Inc. They provided data showing that there were 16 days of moderate to heavy rain or observed surface flows on the wind energy sites between December 2004 and the end of February, 2005. These rain events caused surface flooding on the northern portion of Sections 27 and 28 on approximately 1/3 of the days. This is an unusually high amount of surface flooding for these sites, and could account for the presence of the scat on site.

Based on the lack of other sign both on site and in the Zone of Influence, the probability that the scat came from elsewhere off-site, and our discussion with Mr. Massar, it is our professional judgment that desert tortoise is not present on site.



Photo 3. Desert tortoise scat.

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 its 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 on site. At least two individuals were seen on the adjacent property in sandier soils. The sand sheets and sand dunes preferred by this species do not exist on site. Based on the lack of sightings during the survey and the absence of good habitat, this species is not expected to be present on site, or is present only rarely.

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 on site for the San Diego horned lizard. No individuals were observed, but horned lizard scat was found indicating that one or more horned lizard species occurs on site.

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 on site during the surveys, although several desert horned lizards (*Phrynosoma platyrhinos*) were observed. The sand dune and sandy flat habitat preferred by this species does not occur on site. Based on the lack of sightings during the survey and the absence of good habitat, this species is not expected to be present on site.

Previous surveys conducted in 2001 identified this species as present on adjacent property to the west; however, as least one individual described in 2001 as a flat-tailed horned lizard was later found to be misidentified. Because of the ambiguity and the lack of documentation for the additional sightings, and the lack of historical presence of the flat-tailed horned lizard in this area, this species is presumed absent from this section of the Whitewater floodplain.

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

A single burrowing owl and burrow was found on site (Figure 4).

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 on site. It is unlikely to nest on site, since the scrub habitat is very open with short shrubs, and this species prefers taller, thicker scrub.

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.

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 not observed on site. In addition, the site lacks the sand dunes, sand flats and sandy mounds preferred by this species. Based on the field surveys, Palm Springs ground squirrel does not appear 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 throughout the site. 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 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

There is a high probability that this species occurs on site. Suitable sandy soils (Carsitas sand) are found throughout the project area.

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 sand dunes or springs exist on site; therefore, 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 calhouni) 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

No sand dunes exist on site; therefore, this species is not expected to be present within the project area.

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

The California Desert Native Plants Act of 1982 protects native plants from indiscriminate collection.

Project Site Findings

Silver cholla (Opuntia echinocarpa) occurs on site 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.

Habitat fragmentation will be limited to turbine pads, roads, and ancillary structures.

4.5 Bird Collisions

The potential for bird collisions with wind turbines exists with a proposed wind project. The relatively high number of losses at Altamont Pass in central California has received substantial public attention, to the effect that the U.S. Fish and Wildlife Service (1994) has issued a policy statement regarding their response to this issue. The policy requires the USFWS to enforce the regulations of the Migratory Bird Treaty Act, 16 USC-703-712, the Bald and Golden Eagle Protection Act, 16 USC-668, and the federal Endangered Species Act.

Previous work by LSA (1994) included review of some of the available literature on the issue of bird collisions. The LSA report includes a detailed discussion of this review. The conclusions made were that bird collisions occur for a number of reasons, the principal one being the presence of significant numbers of migratory or resident birds flying at altitudes exposing them to turbines. The location of wind turbines in areas with high concentrations of birds include areas such as the Altamont Pass, which is known for its high quality raptor habitat. The evidence suggests that end turbines and the locations of wind energy facilities within narrow canyon areas (such as the Altamont Pass) would appear to be influences affecting collisions with turbines.

Other factors influencing bird collision numbers include the following:

- Location of limited habitats. Examples include ponds in wind energy facilities (that provide water and vegetation, and are used for low level take off by water birds) and concentrations of prey and suitable foraging habitats (such as raptor habitat in Altamont Pass).*
- Areas of high use. Examples include ridges and slopes where updrafts provide opportunities for soaring and foraging by raptors.*

- *Topographic location. Wind energy facilities in narrow canyons have a greater potential for bird collisions than wind energy facilities in more open areas.*
- *Tower height and design. Both the height of the tower and the nature of the support structure affect the probability of bird collisions. Taller towers are more likely to be in the path of high-flying bird species such as raptors and migratory flight paths. Lattice towers provide perch sites for bird species, whereas monopoles do not.*
- *Turbine rotor speed. High speed turbine rotors are very difficult for flying birds to see and avoid.*

In the report titled “Avian Monitoring and Risk Assessment at Tehachapi Pass and San Gorgonio Pass Wind Resource Areas, California: Phase 1 Preliminary Results”, 830 carcass searches were conducted by the California Energy Commission on 180 sites in the San Gorgonio Pass over a large geographic area during all four seasons of the year. Over the four seasons, 31 bird mortalities were found within 400 meters (0.25 miles) of wind turbines, and nine mortalities were found greater than 400 meters from wind turbines. The nine mortalities are not believed to be related to wind turbines. This data indicates that some mortalities occur on sites even if there are no wind turbines.

Approximately half of the 31 mortalities were migratory birds (nine were not identified as to species). Of these mortalities, 25 percent occurred in the fall. Based on these figures, approximately four bird mortalities per year were migratory birds found in the fall within 0.25 miles of 180 wind turbine sites searched. The following table lists the bird species found dead for the entire year.

San Gorgonio Wildlife Fatalities			
Species	No.	Species	No.
Unidentified Grebe sp.	1	Mourning Dove	1
Unidentified Egret sp.	1	Burrowing Owl	1
Mallard	3	White-throated Swift	1
Unidentified Teal sp.	1	Common Raven	1
Sora	1	European Starling	1
American Coot	8	Western Meadowlark	1
Red-tailed Hawk	1	Unidentified Bird sp.	9
Rock Dove	8	Unidentified Bat sp.	1

As these data show, very low levels of bird mortality (31 birds) were identified associated with wind turbines in the San Gorgonio Pass.

In 830 carcass searches conducted over 12 months no vireos, flycatchers or brown pelican carcasses were found within 400 meters of any wind turbines. This would indicate that the project would not likely pose a significant risk to these bird species.

The report also estimates Bird Risk, which is an expression of the relative risk of birds killed per search site, which takes the amount of bird use into account. The report shows that Bird Risk was lowest during the fall season, about half the average level for the year. In addition, Bird Risk was also at or below average for spring, also a high migratory bird use time of the year. These low Bird Risk figures further support the conclusion that project impacts to migratory birds are not significant.

The report did not address the amount of migratory bird use that occurs in the San Geronio Wind Resource Area. However, 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." From this data we can conclude that the very large number of migrating birds (approximately 37 million) which have been estimated as passing through the Coachella Valley in the fall, result in very few mortalities (approximately 4 mortalities over 180 wind turbine sites).

In addition, the McCrary, et al (1982) report identifies 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. These features of the site reduce the probability of bird strikes, based on the studies discussed above.

The lack of forest, woodland, riparian or open water habitats closer than 1.0 mile from the site reduces the likelihood that migratory species using these habitats, such as vireos, flycatchers, rails and pelicans, will be close to turbines 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. There is a single drainage that flows through the site. This drainage flows between two shallow, artificially created berms, and appears to have been constructed to convey water off site from properties to the northwest. It eventually dies out in the Whitewater floodplain east of Indian Avenue.

There are no wetlands on site, and therefore no impacts to wetlands or riparian habitats.

The project is located within the former floodplain of the Whitewater River, but is well outside the current boundaries of the river flow (Figure 2). It currently has no active connection to the Whitewater River. Based on the location and site conditions, it is our professional judgment that the project does not come under the jurisdiction of the U.S. Army Corps of Engineers.

Because we anticipate no Corps permit will be required, no 401 permit is required from the State Water Quality Control Board's regional office for the Colorado River region.

The small drainage meets the criteria for jurisdictional drainages under 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). However, as of 2006, the CVMHSCP has not been adopted and its requirements are in limbo.

5.0 Discussion

The proposed project is wind energy facility development. Overall impacts to general biological resources include temporary and permanent loss of wildlife habitat.

5.1 General Biological Resources

The proposed wind energy facility development will result in the setting aside of habitat for sensitive and other species. Since the total area of construction and permanent habitat loss is expected to be small, most of the site will remain in its current condition. The property will be fenced using three-strand barbed wire and lockable gates to protect the site from many of the impacts that are on going, such as trash dumping and off-road vehicle traffic. This type of fencing allows passage through the site by most wildlife species.

As part of the construction, the unauthorized trash dumps will be removed and the site will be fenced against further trespass. On-site operations activity will be restricted to roads and gravelled areas. As a result, the project may actually experience an increase in habitat quality and replacement that will further offset losses due to construction.

Because of the large amount of open space that will remain on 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

5.2.1 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 occupied habitat (98 percent) is expected to remain relatively intact. Therefore, no significant impacts to this species are expected..

5.2.2 Coachella Valley Milkvetch

The survey team did not locate any milkvetch plants on site at a time when the species was visible. Because no plants were found, and no suitable habitat exists on the site, no impacts are expected to occur.

As part of the overall mitigation for all sand dwelling species, we have recommended mitigation measures to protect this species during construction (Section 5.3).

5.2.3 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. Therefore, no impacts are expected to occur.

Regardless, plants may occur on site that were no 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 5.3).

5.2.4 Desert Tortoise

Based on our findings and discussion with B LM staff, the one tortoise scat found does not indicate tortoise are present on site. 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.

5.2.5 Coachella Valley Fringe-toed Lizard

The field survey team did not observe any fringe-toed lizards during the surveys and no suitable habitat is present on site. Therefore, the siting of turbines and project construction activity will not 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 5.3).

5.2.6 Flat-tailed Horned Lizard

The field survey team did not observe any flat-tailed horned lizard during the surveys. The preferred habitat for this species, sand dunes and sand sheets, are absent from the site. Therefore, this species is not expected to be present and no impacts are expected to occur.

5.2.7 Palm Springs Round-tailed Ground Squirrel

Ground squirrel burrows were not found on site, and the site lacks suitable sandy soils for this species and this species is not expected to be present on the site. Therefore, no impacts to this species are expected to occur as a result of project construction.

5.2.8 Burrowing Owl

At least one burrowing owl exists on site, and one burrow was found. NRA, Inc. recommends that impacts to the burrow be avoided by adopted a construction setback of a minimum 200 feet distance if construction takes place during the non-breeding season and a minimum of 500 feet if construction takes place during the breeding season (Riverside County measures).

Burrowing owls usually flow low to the ground and perch on low posts (Sibley 2003, National Geographic Society 2002). Although no height elevation is given, personal and anecdotal observations have noted flight no higher than 10 meters (30 feet). For the current project, two alternative wind turbine models are

proposed, consisting of the MHI 1000A and Gamesa G52 models. The rotor height information is as follows:

- *The total wind turbine height (tip of blade) ranges from 281 feet (MHI 1000A) to 299 feet (Gamesa G52).*
- *The height of bottom of the rotor ranges from 80 feet (MHI 1000A) to 128 feet (Gamesa G52) at the lowest point of the blade arc.*

There, impacts from rotating blades at no lower than 80 feet are expected to be extremely rare.

Because the species can colonize new areas fairly rapidly, we recommend a focused survey for that species be conducted prior to project construction related ground disturbance. The survey should be conducted according to the following recommended guidelines of the Burrowing Owl Consortium (1993) and in consultation with the CDFG and the USFWS.

Please note that occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

If animals are present, one or more of the following mitigation measures will be required:

- 1. If avoidance is the preferred method of dealing with potential project impacts, then no disturbance should occur within 50 meters (approx. 160 ft.) of occupied burrows during the non breeding season of September 1 through January 31 or within 75 meters (approx. 250 ft.) during the breeding season of February 1 through August 31.*
- 2. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird. The configuration of the protected habitat should be approved by the Department.*
- 3. To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approx. 300 ft.} foraging radius around the burrow) per pair or unpaired resident bird, should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the Department. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances. The Burrowing Owl Consortium (BOC) has also developed mitigation guidelines (Burrowing Owl Consortium 1993) that can be incorporated by CEQA lead agencies and which are consistent with this staff report.*
- 4. When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.*

5. *If owls must be moved away from the disturbance area, passive relocation techniques (as described below) should be used rather than trapping. At least one or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.*
6. *The project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the Department.*

Passive Relocation - With One-Way Doors

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

Passive Relocation - Without One-Way Doors

3. *Two natural or artificial burrows should be provided for each burrow in the project area that will be rendered biologically unsuitable. The project area should be monitored daily until the owls have relocated to the new burrows. The formerly occupied burrows may then be excavated.*

4. *Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe should be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.*

5.2.9 Le Conte's thrasher

Foraging habitat is present on site, however, there is no nesting habitat. The siting of turbines and project construction activity will have only minimal impacts on foraging habitat for this species, but will not impact individuals. Therefore, impacts to this species are not considered to be significant.

5.2.10 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.

5.2.11 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.

5.2.12 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.

5.2.13 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. Since no sand or dune areas exist on the site, this species is not expected to be present. Consequently, no impacts are expected to occur to this species as a result of project construction.

5.3 Mitigation Measures for 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.

5. *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.*

1. *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.*
 2. *Distribution and occurrence*
 1. *General behavior and ecology*
 2. *Species sensitivity to human activities*
 3. *Legal protection*
 4. *Penalties for violation of State or Federal Laws*
 5. *Reporting requirements*
 6. *Project protection mitigation measures.*

7. *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.*
 1. *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.*
 2. *Poles and guy wires installed shall be completed by avoiding crushing or removing perennial vegetation to the maximum extent possible.*
 3. *All vehicles shall be confined to existing access routes or previously disturbed areas to the maximum extent possible.*
 4. *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.*
 5. *Desert willow hummocks shall be avoided, with no disturbance to occur within five (5) meters, to the extent possible.*
 6. *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.*

7. *The FCR/biological monitor shall maintain a record of the date, time and location of all CV fringe-toed lizards, CV milkvetch, and triple-ribbed milkvetch found in the right of way. Any damage, injury or death to any of these species shall be recorded.*
8. *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.*
9. *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.*
10. *All trash and food items shall be properly contained and regularly removed from the project site.*
11. *No pets shall be permitted on the project site.*

5.4 Protected Native Plant Species

Silver cholla is 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 turbines and 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.

5.5 Habitat Fragmentation and Wildlife Movement

The proposed project is not expected to have significant impacts to wildlife movement. Any non significant impacts to wildlife movement are being addressed in the fencing design. Three-strand barbed wire fencing is proposed for the project, selected to accommodate movement through and under fencing. Habitat fragmentation has also already occurred as a result of the freeway, highway and railway line construction. No significant additional fragmentation is expected to occur as a result of wind energy facility development, especially since approximately 98 percent of the site will remain as natural habitat.

5.6 Bird Collisions

The current design elements of the wind turbines at the combined facilities are as follows:

- *The site 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 towers will use a monopole design, eliminating perching sites for birds.*

- *Because the site is at a low elevation relative to known migratory flight paths, this additional height is not anticipated to significantly increase bird collisions.*
- *Electrical lines will be underground, eliminating potential perches and opportunities for electrocution or collisions with wires or poles.*

Based on these characteristics, the wind energy facility may affect, but not significantly adversely affect, migratory birds with regard to wind turbine collisions.

5.7 Drainages and Wetlands

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. In our professional judgment, a 404 permit is not needed. 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.

All proposed roads and facilities would be at the existing grades. Therefore, impacts to the drainage are expected to be minimal. Because of the expected minimum amount of area that will be affected, NRA, Inc. recommends on site mitigation for drainage impacts in the form of appropriate road design and siting of towers away from the drainage.

5.8 Additional Impacts

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:

- 12. 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 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.*
- 1. Human related intrusion. There will be an incremental increase in permanent human presence in the area. Overall human activity on the wind energy facility site is expected to decrease after construction, and will be limited to occasional maintenance visits (two to six visits per day, usually a light truck with a two person crew). The site is adjacent to two wind energy facilities that experience a low level of human presence. Therefore, this impact is not considered to be significant.*
- 2. Noise. There will be an increase in noise level due to turbine operation. Ambient noise on site is lowest in the center of the site, with a moderate increase towards the north, east and west (due to the existing wind energy facilities and adjacent roads). The wind energy facility is not expected to add significantly to the noise levels in regards to disruption of wildlife activity, and therefore this impact is not considered to be significant.*

3. *Vibration. There may be in an increase in ground vibration due to turbine operations. At present, the only ground vibration is due to traffic on the dirt roads. It is possible that when operational, the wind towers 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.*
4. *Facility lighting. No nighttime lighting is proposed for this project and therefore no impacts are expected to occur. The Federal Aviation Administration requires lighting of a portion of the wind turbines with flashing red strobe lights to provide warnings to air traffic. Since these lights are of low intensity (red spectrum) and are intermittent, they are not expected to have a significant impact on wildlife.*
5. *Non-native, invasive plant species. No landscaping is proposed for this site. In addition, due to the limited extent of disturbance and the minimal use of this site by humans (possibly further reduced because of restricted access to the site), the introduction of exotic and non-native plant species is expected to be minimal.*
6. *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. In addition, since the construction of the wind energy facility will require clean up of numerous trash piles, the site may actually experience an improvement in habitat quality. Therefore, this impact is not considered to be significant.*
7. *Trash. Trash degrades habitat value and encourage the introduction of pest species. The wind energy facility should experience a decrease in trash because of pre-construction clean up requirements and ongoing site maintenance clean up. In addition, the site will be fenced against illegal access, with a resulting decrease in trash accumulation by outside persons. AES SeaWest, Inc. has established procedures with the on site personnel to ensure that no trash accumulation is created by their activities. Therefore, this impact is not expected to be significant.*

5.9 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). The goals for the Conservation Area are overall preservation of the Whitewater Floodplain (Coachella Valley Association of Governments 2004).

Because the CVMSHCP was not adopted as of 2006, its goals and requirements do not apply. However, in our professional judgment, the development and presence of wind energy conversion systems is compatible with the original goals. Specifically:

The detailed goals of the CVMSHCP are to:

- 8. Represent native ecosystem types or natural communities across their natural range of variation in a system of conserved areas.*
- 9. 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.*
- 10. 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.*
- 11. Maximize connectivity among populations and avoid habitat fragmentation within Conservation Areas to conserve biological diversity, ecological balance, and connected populations of Covered Species.*
- 12. 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.*
- 13. Manage the Conservation Areas adaptively to be responsive to short-term and long-term environmental change and new science.*

The Plan does not specifically address wind energy development in this area and does not provide an exemption for this type of development. However, in our professional judgment, the development and presence of wind energy conversion systems is compatible with these goals. Specifically:

- 14. The native ecosystem types or natural communities will be substantially maintained in their natural range of variation on site.*
- 15.*

The protection of the area through fencing and patrol will help to “maintain or restore self-sustaining populations or metapopulations of the species included in the Plan”.

- 16. The preservation of approximately 98 percent of the site in natural open space will serve to “sustain ecological and evolutionary processes necessary to maintain the functionality of the conserved natural communities and habitats for the species included in the Plan”. The construction of the WECS site will not substantially alter the fluvial sand transportation system across the floodplain and areas to the east.*
- 17. Site fencing will be designed to “maximize connectivity among populations and avoid habitat fragmentation within Conservation Areas to conserve biological diversity, ecological balance, and connected populations of Covered Species.” The towers and roads do not add substantially to habitat fragmentation.*
- 18. The protection of the area through fencing and patrol will help to “Minimize adverse impacts from off-highway vehicle (OHV) use, illegal dumping, edge effects, exotic species, and other disturbances” by limiting access both to vehicles and to dumping of garden litter, a substantial source of weeds.*
- 19. Joint access or use of the site may be possible to “manage the Conservation Areas adaptively to be responsive to short-term and long-term environmental change and new science.”*

5.10 Project Measures

[TO BE DETERMINED]

5.11 Additional Project Conditions

These additional project conditions are intended to provide additional information for use by the resource agencies:

[TO BE DETERMINED]

5.12 Cumulative Project Impacts

The proposed wind energy 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, the proposed project has been designed to share access with existing wind projects on adjacent properties. The project will use the same system of roads, electrical lines, transmission lines, substations, operations, and maintenance facilities in use by other wind projects in the area, thereby minimizing cumulative impacts.

The development of wind energy facilities in the San Gorgonio Pass is consistent with and encouraged by the Riverside County Comprehensive General Plan, and has resulted in transforming the character of the area from vacant native desert areas to more industrial in nature.

As determined by the proceeding analysis, direct and indirect impacts from the proposed combined project are considered to be less than significant with applied mitigation. The project contribution to cumulative impacts will be incremental. 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.*

Wind energy facility developments generally preserve a majority of the land (approximately 98 percent) as open space. This allows for continued use of the site by plant and animal species, and displaces more intense industrial, urban or residential uses which could be built on the same properties.

In addition, because wind energy facilities incorporate security fencing, they cumulatively provide protection against many of the impacts that are ongoing on these properties, including illegal trash dumping, illegal trespass (both foot and vehicle traffic) and off-road vehicle use. This provides an added benefit by protecting large areas of wildlife habitat, drainages and individual plant and animals from degradation, illegal collection for the pet trade and accidental mortality associated with these illegal activities. Therefore, the cumulative biological impacts of the combined project are not considered to be significant.

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Appendix A - Flora and Fauna Compendium

** denotes non-native species*

Flora

GNETAE

Ephedraceae
Ephedra nevadensis

JOINTED STEM PLANTS

Ephedra family
Mormon tea

ANGIOSPERMAE: DICOTYLEDONES

Asclepiadaceae
Sarcostemma cynanchoides

DICOT FLOWERING PLANTS

Milkweed family
Climbing milkweed

Asteraceae
Bebbia juncea
Chaenactis xantiana
Encelia farinosa
Hymenoclea salsola
Lasthenia gracilis
Malacothrix glabrata
Stephanomeria exigua

Sunflower family
Sweetbush
Mojave pincushion
Desert brittlebush
Cheesebush
Desert goldfields
Desert dandelion
Annual mitra

Bignoniaceae
Chilopsis linearis

Bignonia family
Desert willow

Boraginaceae
Amsinckia tessellata
Cryptantha angustifolia
Tiquilia plicata

Borage family
Desert fiddleneck
Narrow-leaved forget-me-not
Desert coldenia

Brassicaceae
**Brassica tournefortii*

Mustard family
Sahara mustard

Cactaceae
Opuntia echinocarpa

Cactus family
Silver cholla

Capparaceae
Isomeris arborea

Caper family
Bladderpod

Chenopodiaceae
**Salsola tragus*
Euphorbiaceae
Chamaesyce polycarpa

Saltbush family
Russian thistle
Spurge family
Desert spurge

<i>Fabaceae</i>	<i>Pea family</i>
<i>Acacia greggii</i>	<i>Catclaw</i>
<i>Psoralea argemone</i>	<i>Indigo bush</i>
<i>Geraniaceae</i>	<i>Geranium family</i>
* <i>Erodium cicutarium</i>	<i>Red-stemmed filaree</i>
<i>Hydrophyllaceae</i>	<i>Waterleaf family</i>
<i>Phacelia campanularia</i>	<i>Desert bluebells</i>
<i>Loasaceae</i>	<i>Stick-leaf family</i>
<i>Petalonyx thurberi</i>	<i>Sticktight</i>
<i>Nyctaginaceae</i>	<i>Four O'clock family</i>
<i>Abronia villosa</i>	<i>Sand verbena</i>
<i>Onagraceae</i>	<i>Evening primrose family</i>
<i>Camissonia boothii</i>	<i>Woody bottle-washer</i>
<i>Polemoniaceae</i>	<i>Phlox family</i>
<i>Eriastrum sapharinum</i>	<i>Sapphire phlox</i>
<i>Polygonaceae</i>	<i>Buckwheat family</i>
<i>Chorizanthe rigida</i>	<i>Desert spiny-herb</i>
<i>Eriogonum thomasi</i>	<i>Thomas' buckwheat</i>
<i>Zygophyllaceae</i>	<i>Caltrop family</i>
<i>Larrea tridentata</i>	<i>Creosote bush</i>
ANGIOSPERMAE: MONOCOTYLEDONAE	MONOCOT FLOWERING PLANTS
<i>Poaceae</i>	<i>Grass family</i>
* <i>Bromus madritensis</i>	<i>Red brome</i>
* <i>Schismus barbatus</i>	<i>Mediterranean grass</i>

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

Fauna

INSECTA

Nymphalidae

Danaus gilippus strigosus

REPTILIA

Iguanidae

Dipsosaurus dorsalis

Gambelia wislizenii

Phrynosomatidae

Callisaurus draconoides

Uta stansburiana

Phrynosoma platyrhinos

Phrynosoma mcallii

Teiidae

Aspidoscelis tigris tigris

Colubridae

Masticophis flagellum

Pituophis melanoleucus

Chionactis occipitalis

AVES

Anatidae

Anas platyrhynchos

Anas cyanoptera

Charadriidae

Charadrius vociferus

Falconidae

Falco sparverius

Falco mexicanus

Recurvirostridae

Himantopus mexicanus

Scolopacidae

Calidris minutilla

Lanus occidentalis

INSECTS

Brush-footed butterflies

Striated queen

REPTILES

Iguanas and their allies

Desert iguana

Long-nosed leopard lizard

Spiny lizards and their allies

Zebra-tailed lizard

Side-blotched lizard

Desert horned lizard

Flat-tailed horned lizard

Whiptails and their allies

Great Basin whiptail

Colubrids

Coachwhip

Gopher snake

Western shovel-nosed snake

BIRDS

Swans, geese and duck

Mallard

Cinnamon teal

Plovers and relatives

Killdeer

Caracaras and falcons

American kestrel

Prairie falcon

Avocets and stilts

Black-necked stilt

Sandpipers and relatives

Least sandpiper

Western gull

Columbidae
Zenaida macroura

Pigeons and doves
Mourning dove

Camprimulgidae
Chordeiles acutipennis

Goatsuckers
Lesser nighthawk

Cuculidae
Geococcyx californianus

Typical cuckoos
Greater roadrunner

Strigidae
Athene cunicularia
Asio otus

Typical owls
Burrowing owl
Long-eared owl

Tyrannidae
Tyrannus verticaulis

Tyrant flycatchers
Western kingbird

Alaudidae
Eremophila alpestris

Larks
Horned lark

Hirundinidae
Hirundo pyrrhonota

Swallows
Cliff swallow

Corvidae
Corvus corax

Crows and ravens
Common raven

Lanidae
Lanius ludovicianus

Shrikes
Loggerhead shrike

Emberizidae
Amphispiza bellii
Zonotrichia leucophrys

Warblers, sparrows, blackbirds and relatives
Sage sparrow
White-crowned sparrow

Icteridae
Sturnella neglecta

Blackbirds, orioles and relatives
Western meadowlark

Fringillidae
Carpodacus neomexicanus

Finches
House finch

MAMMALIA

Leporidae

Sylvilagus audubonii

Lepus californicus

Sciuridae

Ammospermophilus leucurus

Heteromyidae

Perognathus longimembris bangsi

Dipodomys merriami

Canidae

Canis latrans

Vulpes macrotis

MAMMALS

Rabbits and hares

Audubon's cottontail

Black-tailed jackrabbit

Squirrels, chipmunks and marmots

White-tailed antelope squirrel

Pocket mice and kangaroo rats

Pal m Springs pocket mouse

Merriam's kangaroo rat

Foxes, wolves and relatives

Coyote

Kit fox

Nomenclature follows Borror and White 1970, Grenfell et al. 2003, Hall 1981, and Stebbins 1966.

Appendix B - Sensitive Species Table

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.



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Figure 1 Regional Location and Project Vicinity

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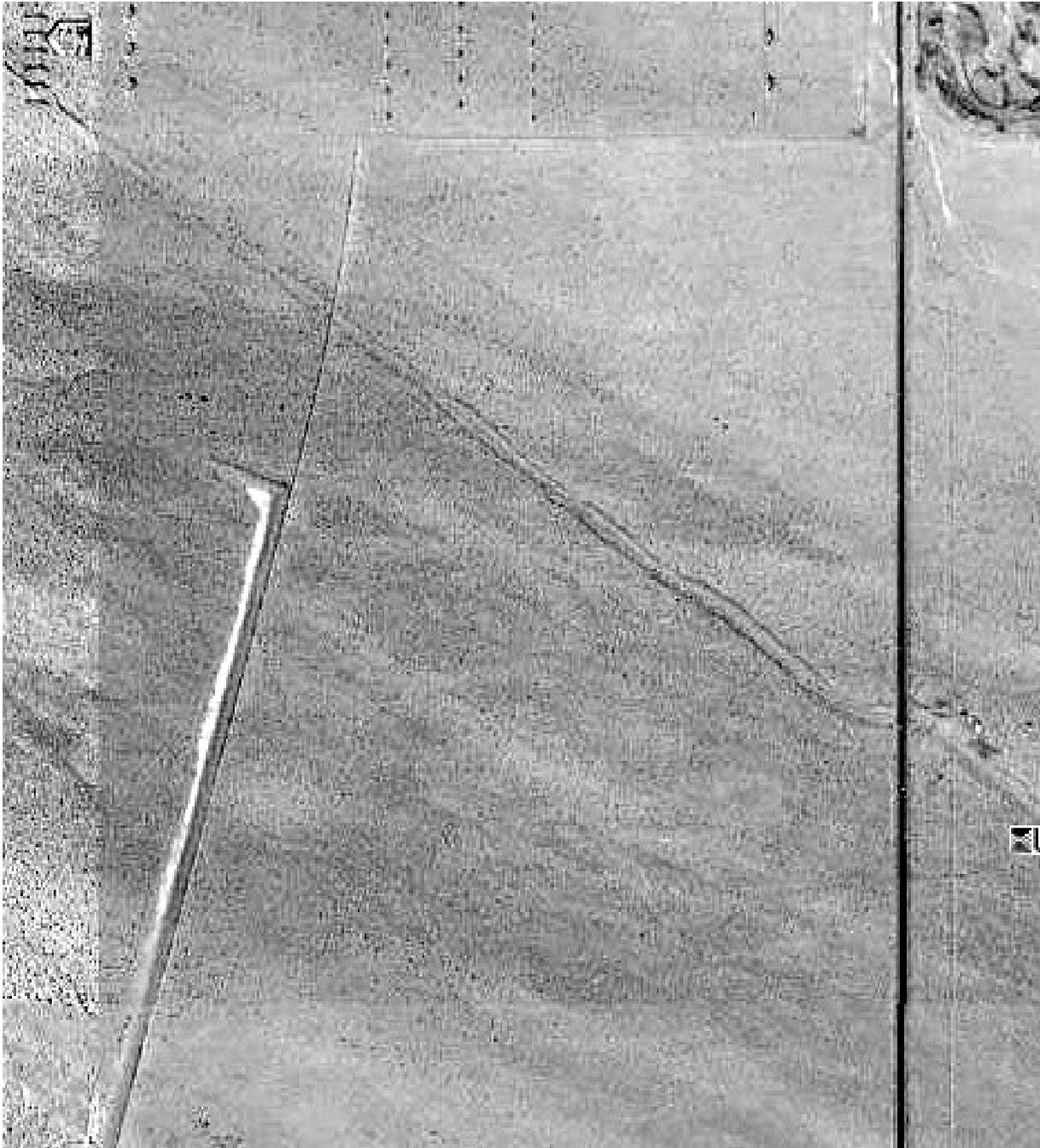
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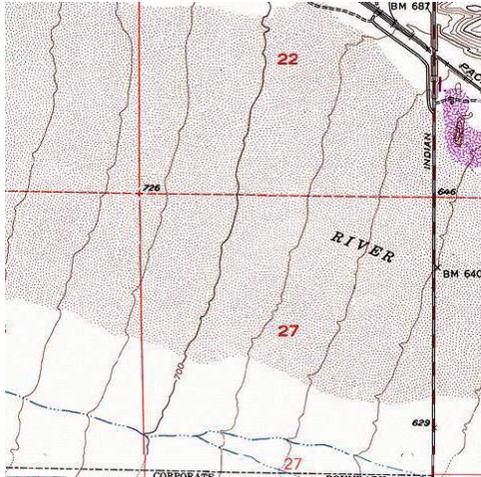
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Feet (Approximate)

Wind Energy Facility
Mountain View IV
Palm Springs, California

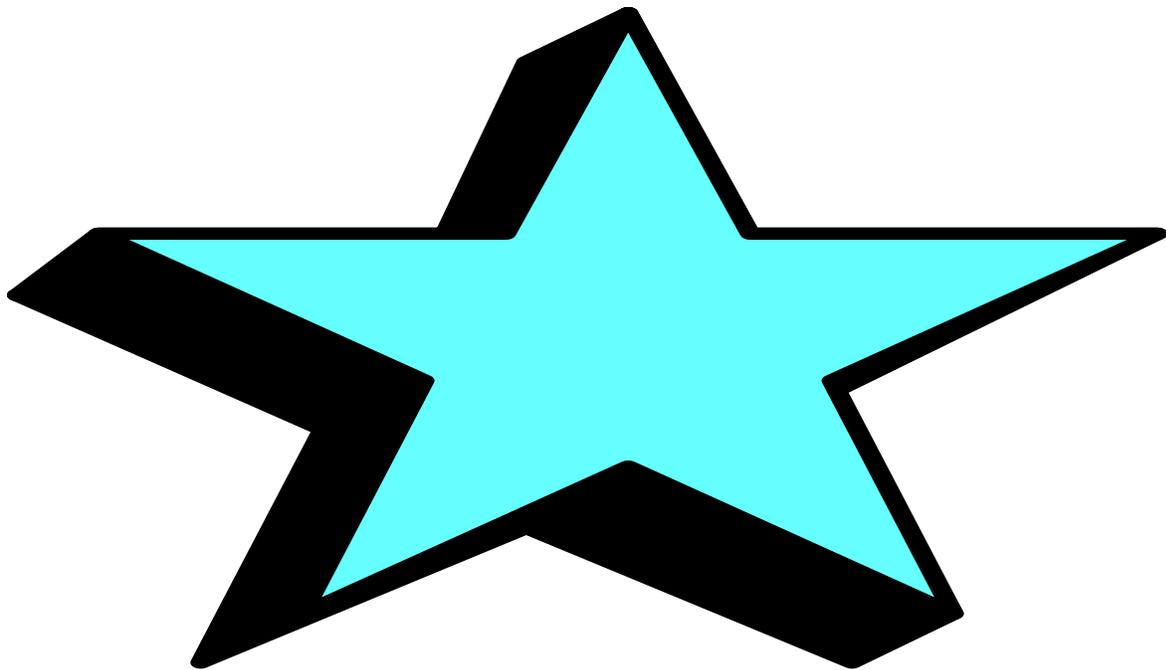
Source: Desert Hot Springs (1978) 7.5 ' USGS topographic quadrangle

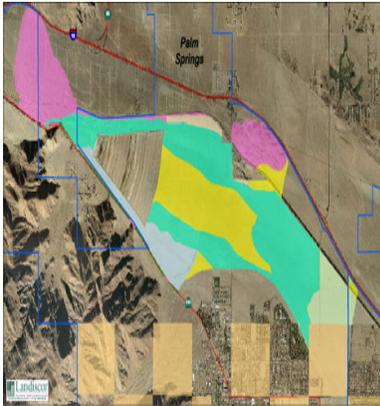




Project Site

Project Site





Natural Communities

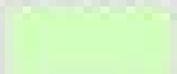


City Boundaries



Indian Reservation Land - Not a Part

Natural Communities



Active sand fields



Ephemeral sand fields



Other Communities



Sonoran mixed woody & succulent scrub



Stabilized sand fields



Stabilized shielded sand fields



Sonoran creosote bush scrub